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- Quest Healthcare Solutions
- Shire
- Teleflex

The companies listed above generously supported our meeting as of the publication date of the Final Program. For a complete list of sponsors and exhibitors, please see signage outside the exhibit hall.

Thank you to all companies who have supported us.
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ABOUT THE MEDICAL UNIVERSITY OF SOUTH CAROLINA

Founded in 1824 in Charleston, The Medical University of South Carolina is the oldest medical school in the South. Today, MUSC continues the tradition of excellence in education, research, and patient care. MUSC educates and trains more than 3,000 students and 700 residents in six colleges (Dental Medicine, Graduate Studies, Health Professions, Medicine, Nursing, and Pharmacy), and has more than 13,000 employees, including approximately 1,500 faculty members. As the largest non-federal employer in Charleston, the university and its affiliates have collective annual budgets in excess of $2.4 billion and annual research funding in excess of $250 million. MUSC operates a 700-bed medical center, which includes the Ashley River Tower (shown in the photograph), the NCI designated Hollings Cancer Center, a nationally recognized Children’s Hospital, a Level I Trauma Center, the Institute of Psychiatry, and the state’s only transplant center. Three MUSC Surgery Department Chairs have served as President of the Southeastern Surgical Congress: Curtis Artz (1966-67), David Cole (2015-16), and David Adams (2017-18). The current chair of the MUSC Department of Surgery is Prabhaker Baliga who was named chair in July of 2015.
SAVE THE DATE

2019 Annual Meeting
February 23 – 26, 2019
The Westin Charlotte
Charlotte, North Carolina

2020 Annual Meeting
February 8 – 11, 2020
Sheraton New Orleans Hotel
New Orleans, Louisiana
LETTER FROM THE PRESIDENT

Dear Members and Guests,

The SESC strives to make a variety of educational options available to the registrants. We have an abundance of talented and accomplished speakers lined up. We are offering an exciting educational opportunity at this year’s offsite Postgraduate Course offering courses for varying experience levels at the Center for Advanced Medical Learning and Simulation right across the street from our hotel. This year’s named lectures will be given by Monica Bertagnolli, MD from Brigham & Women’s Hospital, Dana Farber Cancer Institute (Arthur Hamblin Letton Lecture); Ronald Maier, MD from University of Washington, Harborview Medical Center (Roger T. Sherman Lecture); and Carol-anne Moulton, MD from University of Toronto, UHN (Henry L. Laws II Lecture).

New this year, we will hold the SESC/ACS State Chapter Leadership Summit Luncheon on Sunday prior to the ACS Session. Also new this year, we will hold the SESC Reception on Sunday night. In the past, we have gathered on Saturday evening. We hope you will enjoy this new night to mingle with colleagues. Much to everyone’s delight, Resident Jeopardy will return again on Sunday afternoon with a new twist. Winners of Resident Jeopardy will compete against a team of SESC Past Presidents in “SESC Feud.” As always, we anticipate a competitive and fun spirited event. The inaugural SESC Historical Lecture at the 2017 meeting will continue at the 2018 meeting, re-named the Feliciano-Rozycki Historical Lecture, and will be presented by SESC President-Elect Kevin Behrns, MD. As our newly defined mission statement says “the SESC is dedicated to the presentation, evaluation, and dissemination of current knowledge and research in all phases of general surgery”. I could not be more excited and proud of carrying out this goal through the bright and innovative program lined up for this year’s meeting. I want to thank CME Chair Dimitrios Stefanidis and the CME Committee for all of their hard work.

Enjoy the 86th Annual Meeting, and thank you for supporting the SESC.

David B. Adams
President, Southeastern Surgical Congress
2017-2018
## 2017-2018 EXECUTIVE COUNCIL

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<td>Rebecca C. Britt</td>
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<td>Jose J. Diaz</td>
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## CME COMMITTEE

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### SESC HEADQUARTERS STAFF

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<td>Marjorie Malia</td>
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<td>Jill Willhite</td>
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<tr>
<td>Tracy Brown</td>
<td>Membership, Publications &amp; Events</td>
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<td>Laura Fitzgerald</td>
<td>Manager, Finance</td>
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<td>Corinne Hornsey</td>
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<td>Deborah East</td>
<td>Manager, Exhibits &amp; Sponsorship</td>
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<tr>
<td>Mary Kawulok</td>
<td>Coordinator, Registration &amp; Membership Dues</td>
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<tr>
<td>Shayla Concannon</td>
<td>Manager, CME &amp; Communications</td>
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<tr>
<td>Nora Barrett</td>
<td>Onsite Registration</td>
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The mission of the Southeastern Surgical Congress (SESC) is to serve as the premier regional surgical organization for general surgeons and sub-specialists. The SESC is dedicated to the presentation, evaluation, and dissemination of current knowledge and research in all phases of general surgery through an annual meeting and “The American Surgeon” journal. Fellowship and collegiality for all members, professional development for young surgeons, and presentation opportunities for trainees are core principles of the SESC.
## Past Presidents and Meeting Locations

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<td>Irvin Abell, Jr.</td>
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<td>12</td>
</tr>
<tr>
<td>1939-1940</td>
<td>R.L. Sanders</td>
<td>Birmingham</td>
<td>11</td>
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<tr>
<td>1938-1939</td>
<td>T.C. Davidson</td>
<td>Atlanta</td>
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<tr>
<td>1937-1938</td>
<td>Fred N. Rankin</td>
<td>Louisville</td>
<td>9</td>
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<tr>
<td>1936-1937</td>
<td>C. Jeff Miller (died in office)</td>
<td>Charlotte</td>
<td>8</td>
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<tr>
<td></td>
<td>/John Darrington</td>
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<tr>
<td>1935-1936</td>
<td>William D. Haggard</td>
<td>New Orleans</td>
<td>7</td>
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<tr>
<td>1934-1935</td>
<td>Gerry R. Holden</td>
<td>Jacksonville</td>
<td>6</td>
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<tr>
<td>1933-1934</td>
<td>Frank K. Boland, Jr.</td>
<td>Nashville</td>
<td>5</td>
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<tr>
<td>1932-1933</td>
<td>Willis C. Campbell</td>
<td>Atlanta</td>
<td>4</td>
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<tr>
<td>1931-1932</td>
<td>Charles W. Roberts</td>
<td>Birmingham</td>
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</tr>
<tr>
<td>1930-1931</td>
<td>Edgar G. Ballenger</td>
<td>Atlanta (Biltmore Hotel)</td>
<td>2</td>
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<tr>
<td>May 15, 1930</td>
<td>First Business Meeting</td>
<td>Augusta</td>
<td>1</td>
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<tr>
<td>Year</td>
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<td>City, State</td>
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<tr>
<td>1967</td>
<td>Alton Oschner</td>
<td>New Orleans, LA</td>
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<tr>
<td>1968</td>
<td>Harvey Stone</td>
<td>Baltimore</td>
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<tr>
<td>1969</td>
<td>Howard R. Mahorner</td>
<td>New Orleans, LA</td>
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<tr>
<td>1971</td>
<td>Murray M. Copeland</td>
<td>Houston, TX</td>
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<tr>
<td>1973</td>
<td>Curtis P. Artz</td>
<td>Jackson, MS</td>
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<tr>
<td>1974</td>
<td>George H. Yeager</td>
<td>Baltimore, MD</td>
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<tr>
<td>1975</td>
<td>J.D. Martin, Jr.</td>
<td>Atlanta, GA</td>
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<tr>
<td>1976</td>
<td>Harwell Wilson</td>
<td>Memphis, TN</td>
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<tr>
<td>1978</td>
<td>J. Duffy Hancock</td>
<td>Louisville, KY</td>
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<tr>
<td>1980</td>
<td>William S. McCune</td>
<td>Petoskey, MI</td>
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<tr>
<td>1982</td>
<td>A. Hamblin Letton</td>
<td>Atlanta, GA</td>
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<tr>
<td>1990</td>
<td>Arlie R. Mansberger, Jr.</td>
<td>Augusta, GA</td>
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<tr>
<td>1992</td>
<td>Richard J. Field, Jr.</td>
<td>Centreville, MS</td>
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<tr>
<td>1998</td>
<td>William E. Matory</td>
<td>Washington, DC</td>
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<tr>
<td>2000</td>
<td>R. Benton Adkins</td>
<td>Nashville, TN</td>
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<tr>
<td>2002</td>
<td>Talmadge A. “Joe” Bowden, Jr.</td>
<td>Augusta, GA</td>
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<tr>
<td>2004</td>
<td>Jannette L. Crosby</td>
<td>Atlanta, GA</td>
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<tr>
<td>2007</td>
<td>John E. Skandalakis</td>
<td>Atlanta, GA</td>
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<tr>
<td>2010</td>
<td>Hiram C. Polk</td>
<td>Louisville, KY</td>
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<tr>
<td>2011</td>
<td>R. Phillip Burns</td>
<td>Chattanooga, TN</td>
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<tr>
<td>2012</td>
<td>Henry L. Laws, II</td>
<td>Clanton, AL</td>
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<td>2013</td>
<td>J. Patrick O’Leary</td>
<td>Miami, FL</td>
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<tr>
<td>2014</td>
<td>John B. Hanks</td>
<td>Charlottesville, VA</td>
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<tr>
<td>2015</td>
<td>J. David Richardson</td>
<td>Louisville, KY</td>
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<tr>
<td>2017</td>
<td>Kenneth W. Sharp</td>
<td>Nashville, TN</td>
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</table>
EDUCATIONAL OBJECTIVES

Surgeons must have access to educational activities developed around professional practice gaps. For the Southeastern Surgical Congress, the educational needs center on knowledge, competence and performance, which tie secondarily to patient outcomes. Therefore, we provide evidence-based, up-to-date information around a broad array of surgical topics so our meeting attendees can gain education where information and skills need modification to keep current. The Annual Scientific Meeting provides the latest information by having expert lectures and panels arranged around recognized gaps in patient care or professional development. In addition, scientific presentations and posters are chosen and prioritized by a blinded, peer-review process that ensures high quality, cutting-edge content. The Scientific Meeting encompasses about 60 topics in general surgery that will be delivered through podium/video presentations and our Resident Forum. In addition, over 300 posters have been accepted and will be presented and critiqued at the meeting.

At the end of this activity, participants will be able to:

• Recognize the benefits and drawbacks of novel techniques and practices for the care of surgical patients
• Gain knowledge and competence related to a variety of surgical topics through exposure to numerous surgical research papers on clinical topics in surgery.
• Identify changing practice patterns based on accumulating evidence and adopt innovative techniques that can benefit patients
• Assess gaps in personal practice patterns and take advantage of opportunities to correct these gaps.
• Demonstrate increased knowledge and skills, and an intention to change practice in a broad range of general surgery topics.

CME CERTIFICATES AND EVALUATION FORMS

Evaluation completion, CME and Self Assessment credit will be completed online. You will receive emailed instructions on how to claim CME online immediately following the conference.
EDUCATIONAL OBJECTIVES CONTINUED

DISCLOSURE INFORMATION
In compliance with the ACCME Accreditation Criteria, the American College of Surgeons, as the accredited provider of this activity, must ensure that anyone in a position to control the content of the educational activity has disclosed all relevant financial relationships with any commercial interest. All reported conflicts are managed by a designated official to ensure a bias-free presentation. A complete disclosure list is posted at the registration desk.

CONTINUING MEDICAL EDUCATION CREDIT INFORMATION

ACCREDITATION
This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the American College of Surgeons and the Southeastern Surgical Congress. The American College of Surgeons is accredited by the ACCME to provide continuing medical education for physicians.

AMA PRA Category 1 Credits™
Annual Meeting
The American College of Surgeons designates this live activity for a maximum of 27.75 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Of the AMA PRA Category 1 Credits™ listed above, a maximum of 18.50 credits meet the requirements for Self-Assessment.
GENERAL INFORMATION

HOTEL INFORMATION
Tampa Marriott Waterside Hotel & Marina
700 S Florida Avenue, Tampa, FL 33602
t: 813.221.4900

REGISTRATION HOURS
Saturday, February 10  11:30am - 2:30pm (Il Terrazzo Foyer)

The registration desk will be in the Florida Ballroom Foyer beginning Saturday at 3:30pm.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>Saturday, February 10</td>
<td>3:30pm - 5:00pm</td>
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<tr>
<td>Sunday, February 11</td>
<td>7:00am - 5:00pm</td>
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<tr>
<td>Monday, February 12</td>
<td>6:15am - 6:30pm</td>
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<tr>
<td>Tuesday, February 13</td>
<td>6:15am - 12:10pm</td>
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EXHIBIT HALL HOURS
The Exhibit Hall is located in the Florida Ballroom, Salons 1-3.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>Sunday, February 11</td>
<td>6:30pm - 8:00pm</td>
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<tr>
<td>Monday, February 12</td>
<td>6:15am - 4:30pm</td>
</tr>
<tr>
<td>Tuesday, February 13</td>
<td>6:15am - 9:00am</td>
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</table>

WEATHER/ATTIRE INFORMATION
Typical highs are in the mid-70s and typical lows in the mid-50s.
The dress code for all sessions and events is business attire.

AUDIO/VISUAL
You are welcome to load your slides at the Audio/Visual table in the back of the room at any time during the meeting.

Like us on Facebook
/southeasternsurgicalcongress

Follow us on Twitter
@SESC_AmSurg

#SESC18
SCHEDULE
AT A GLANCE
SCHEDULE AT A GLANCE

SATURDAY, FEBRUARY 10, 2018

9:30am - 10:30am  Surgical Practice Committee Meeting
                   Il Terrazzo Boardroom

10:30am - 11:30am  SESC Executive Committee Meeting
                   Il Terrazzo Boardroom

11:30am - 2:00pm  Registration Open  Il Terrazzo Foyer

12:00pm - 1:00pm  Resident Forum Luncheon  Il Terrazzo

12:00pm - 5:00pm  Postgraduate Courses  Offsite

12:15pm - 1:15pm  Journal Committee Meeting  Il Terrazzo Boardroom

1:00pm - 4:00pm  Resident Forum  Il Terrazzo

1:15pm - 2:15pm  Membership Committee Meeting  Room 8

1:15pm - 2:15pm  Rural Surgery Committee Meeting  Room 10

2:15pm - 3:15pm  Communications Committee Meeting  Room 8

2:15pm - 3:15pm  Finance Committee Meeting  Room 9

2:15pm - 3:15pm  Fellow, Resident & Medical Student Committee Meeting
                   Room 10

3:30pm - 5:00pm  Registration Open  Florida Ballroom Foyer

3:15pm - 4:15pm  Women in Surgery Committee Meeting  Room 8

3:15pm - 4:15pm  Young Surgeons Committee Meeting  Room 9

3:15pm - 4:15pm  Pediatric Surgeons Committee Meeting  Room 10

4:15pm - 5:15pm  CME Committee Meeting  Meeting Room 1

5:15pm - 7:00pm  Council Meeting  Meeting Room 1

7:00pm - 8:00pm  Young Surgeons Reception
                   Waterside Grill Private Dining Room and Patio
SUNDAY, FEBRUARY 11, 2018

7:00am - 5:00pm  Registration Open  Florida Ballroom Foyer

7:00am - 8:00am  Continental Breakfast  Florida Ballroom Foyer

7:00am - 8:00am  APC Breakfast  Il Terrazzo

8:00am - 8:30am  Opening Session  Florida Ballroom, Salons 4-6

8:30am - 9:10am  A. Hamblin Letton Lecture | Monica Bertagnolli, MD  Florida Ballroom, Salons 4-6

9:10am - 11:50am  APC Symposium  Il Terrazzo

9:10am - 11:50am  Scientific Session I  Florida Ballroom, Salons 4-6

10:05am - 10:25am  Morning Break  Florida Ballroom Foyer, Salons 1-3

11:50am - 12:30pm  SESC Presidential Address | David B. Adams, MD  Florida Ballroom, Salons 4-6

12:30pm - 2:00pm  Surgical Practice Luncheon  Il Terrazzo

12:30pm - 2:00pm  Fellow, Resident & Medical Student Luncheon Meeting  Room 8-10

12:30pm - 2:00pm  SESC/ACS State Chapters Leadership Summit Luncheon  Florida Ballroom, Salons 4-6

2:00pm - 4:00pm  American College of Surgeons Session  Florida Ballroom, Salons 4-6

4:00pm - 4:30pm  Feliciano-Rozycki Historical Lecture | Kevin E. Behrns, MD  Florida Ballroom, Salons 4-6

4:30pm - 6:30pm  Resident Jeopardy / SESC Feud  Florida Ballroom, Salons 4-6

6:30pm - 8:00pm  SESC Reception  Florida Ballroom, Salons 1-3
MONDAY, FEBRUARY 12, 2018

6:15am - 6:30pm  Registration Open  Florida Ballroom Foyer

6:15am - 8:00am  Continental Breakfast, Exhibits & ePoster Viewing  
Florida Ballroom, Salons 1-3

6:15am - 8:00am  ePoster Presentations  Florida Ballroom Salons 1-3 & Florida Ballroom Foyer

6:15am - 8:00am  Continental Breakfast, Exhibits & ePoster Viewing  
Florida Ballroom, Salons 1-3

6:15am - 8:00am  ePoster Presentations  Florida Ballroom Salons 1-3 & Florida Ballroom Foyer

8:00am - 8:50am  Complex Acute Care Panel  Florida Ballroom, Salons 4-6

8:50am - 9:30am  Roger T. Sherman Lecture | Ronald V. Maier, MD, FACS, FRCS Ed (Hon.)  
Florida Ballroom, Salons 4-6

9:30am - 11:30am  Scientific Session II  Florida Ballroom, Salons 4-6

10:15am - 10:35am  Morning Break, Exhibits & ePoster Viewing  
Florida Ballroom, Salons 1-3

11:30am - 12:10pm  Henry Laws Lecture | Carol-anne Moulton, MD  
Florida Ballroom, Salons 4-6

12:10pm - 2:00pm  Business Meeting & Luncheon (Members Only)  
Il Terrazzo

2:00pm - 3:40pm  Scientific Session III  Florida Ballroom, Salons 4-6

3:40pm - 4:10pm  Foregut Disasters Panel  Florida Ballroom, Salons 4-6

4:10pm - 4:30pm  Afternoon Break, Exhibits & ePoster Viewing  
Florida Ballroom, Salon 1-3

4:30pm - 5:30pm  Parallel Scientific Session IV  Il Terrazzo

4:30pm - 5:30pm  Parallel Scientific Session V  Meeting Room 8-10

5:30pm - 7:10pm  Video Interactive Session  Florida Ballroom, Salons 4-6
SCHEDULE AT A GLANCE  CONTINUED

TUESDAY, FEBRUARY 13, 2018

6:15am - 12:30pm  Registration Open  Florida Ballroom Foyer

6:15am - 7:00am  Continental Breakfast, Exhibits & ePoster Viewing  
Florida Ballroom, Salons 1-3

6:15am - 7:00am  ePoster Presentations  Florida Ballroom Salons 1-3 &  
Florida Ballroom Foyer

7:00am - 8:45am  Parallel Scientific Session VI  Florida Ballroom, Salons 4-6

7:00am - 8:45am  Parallel Scientific Session VII  Meeting Room 8-10

8:45am - 9:00am  Morning Break  Florida Ballroom, Salons 1-3

9:00am - 10:00am  Living Outside the Hospital  Florida Ballroom, Salons 4-6

10:00am - 12:00pm  Scientific Session VIII  Florida Ballroom, Salons 4-6

12:00pm - 12:10pm  Closing Announcements, Awards &  
Meeting Adjournment  
Florida Ballroom, Salons 4-6
FEATURED LECTURES
PRESIDENTIAL ADDRESS

“The Life and Death of Curtis Artz”
Sunday, February 11, 2018
11:50am – 12:30pm

Introduction:
Kevin E. Behrns, MD
Saint Louis University
Saint Louis, MO

Presenter:
David B. Adams, MD
Medical University of South Carolina
Charlotte, SC

David B. Adams is Professor of Surgery at the Medical University of South Carolina (MUSC). He was born in 1950 in Annapolis, Maryland. He is a 1969 Cum Laude graduate of the Hotchkiss School in Lakeville, Connecticut and was named a Morehead Scholar at the University of North Carolina in 1969. He graduated Phi Beta Kappa from Chapel Hill in 1973. He obtained his medical degree at the Medical College of Virginia in 1977. After completing his internship and residency in surgery in 1982 at the U.S. Naval Hospital, Portsmouth, Virginia, he was named Chief of Surgery at the U.S. Naval Hospital, Guantanamo Bay, Cuba. In 1983 he returned to the continental United States to the U.S. Naval Hospital, Charleston, South Carolina where he was named Chief of Surgery prior to joining the faculty in the department of MUSC in 1986. He has served as Medical Director, One West Trauma Center, Program Director of the General Surgery Residency training program, Chief of the Division of Gastrointestinal & Laparoscopic Surgery, Interim Chair of the Department of Surgery and Co-Director of the Digestive Disease Center. He has been the Course Director of the Medical University Department of Surgery Annual Postgraduate Course in Surgery for the past two decades. He has served as President of the Waring Library Society, South Carolina Surgical Society, South Carolina ACS, Southeastern Surgical Congress, and the Halsted Society.

His has been named as the Best Clinical Instructor in General Surgery, U.S. Naval Hospital Charleston, MUSC Faculty member Alpha Omega Alpha, MUSC Faculty Excellence Award, the Paul H. O’Brien Resident Teaching Award, The Leonard Tow Humanism in Medicine Award, and the MUSC Health Sciences Foundation Outstanding Clinician Award. He has been awarded the U.S. Navy Letter of Commendation from the U.S. Naval Hospital Guantanamo Bay and Charleston, South Carolina.
A. HAMBLIN LETTON LECTURE

This lecture is named for Dr. A. Hamblin Letton to recognize his contributions to the Congress and the field of surgery. His special surgical interest was oncology and, more specifically, breast cancer, which led to the creation of the Breast Center at Georgia Baptist Medical Center, now Atlanta Medical Center. His interest extended to the national forum by service on the Advisory Committee on Cancer Control for the National Cancer Institute and as President of the National American Cancer Society. Dr. Letton’s service to the Congress began as a young surgeon, and he succeeded Dr. B. T. Beasley, the original Secretary of the Congress, in 1960. He retired as the Secretary-Director of the Congress in 1986. Dr. Letton passed away on January 13, 2010, at the age of 93.

"Clinical Cancer Research"

Sunday, February 11, 2018
8:30am – 9:10am

Presenter:
Monica M. Bertagnolli, MD
Brigham & Women’s Hospital,
Dana Farber Cancer Institute
Boston, MA

Dr. Bertagnolli is the Richard E. Wilson Professor of Surgery in the Field of Surgical Oncology at Harvard Medical School, and Chief of the Division of Surgical Oncology at Dana Farber/Brigham and Women’s Cancer Center (DF/BWCC). She is also a member of the Gastrointestinal Cancer and Sarcoma Disease Centers at DF/BWCC, where she collaborates with colleagues in medical oncology, radiation oncology, and pathology to treat cancer patients in a tertiary care setting.

Dr. Bertagnolli graduated from Princeton University, and attended medical school at the University of Utah. She trained in surgery at Brigham and Women’s Hospital, and was a research fellow at the Dana Farber Cancer Institute. Dr. Bertagnolli’s laboratory work focuses upon understanding the role of the inflammatory response in epithelial tumor formation. From 1994-2011, she led gastrointestinal correlative science initiatives within the NCI-funded Cancer Cooperative Groups, where she facilitated integration of tumor-specific molecular markers of treatment outcome into nation-wide clinical
cancer treatment protocols. Dr. Bertagnolli has had numerous leadership roles in multi-institutional cancer clinical research consortia, and currently serves as the Group Chair of the Alliance for Clinical Trials in Oncology, a new NCI-funded clinical trials group formed in 2011 by merger of Cancer and Leukemia Group B, the North Central Cancer Treatment Group, and the American College of Surgeons Oncology Group. She is also the Chief Executive Officer of Alliance Foundation Trials, LLC, a not-for-profit corporation that conducts international cancer clinical trials. In 2016, she was elected to serve as President of the American Society of Clinical Oncology, a term that will begin in June, 2018.
This lecture is named for Dr. Roger T. Sherman to honor his contributions to the Congress, the field of surgery and trauma. Dr. Sherman became a member of the Congress while still a resident and presented one of the first Gold Medal Forum papers. He was President of the Congress in 1984-1985, and was named Secretary-Director in 1986. He served in that capacity until 1993. Dr. Sherman was Whitaker Professor of Surgery at Piedmont Hospital and Emory University School of Medicine when he retired in October 1997. Dr. Sherman passed away on April 9, 2006, at the age of 82.

“Response to Injury and Stress: A Genomic Storm”
Monday, February 12, 2018
8:50am - 9:30am

Presenter:
Ronald V. Maier, MD, FACS, FRCS Ed (Hon.)
University of Washington, Harborview Medical Center
Seattle, WA

Dr. Maier is the Jane and Donald D. Trunkey Professor, Vice-Chair of the Department of Surgery at the University of Washington, and Surgeon-in-Chief at Harborview Medical Center, the Level I Trauma Center in Seattle.

He completed his General Surgery residency at the University of Washington and a post-doctoral fellowship in Immunopathology at the Scripps Research Foundation in La Jolla, California.

Dr. Maier is currently President of the ASA, and has served as past-President of the Society of University Surgeons, Shock Society, AAST, Halsted Society, and Surgical Infection Society. He also served as First-Vice President of the ACS in 2016.

He is a past Director and Chair of the ABS. He has received numerous honors, including the Scientific Achievement Award from the Shock Society (2004); the Lifetime Achievement Award in Trauma Resuscitation from the AHA (2007); the Flance-Karl Award from the ASA (2008); the Parker J. Palmer Courage to Teach Award from the ACGME (2010); the Sheen Award from the ACS (2013), and provided the ACS Scudder Oration on Trauma (2013), and
the AAST Fitts Oration (2017). Dr. Maier is a member of the Gold Humanism Honors Society, He is an elected Fellow of the American Association for the Advancement of Science since 1995.

Dr. Maier has been interested in the critically-ill surgical patient, and the aberrant host immuno-inflammatory response, and subsequent multiple organ failure. Dr. Maier has been funded continuously by the NIH since 1981, totaling more than $20 million, and has been a member and Chair of the NIH Surgery, Anesthesiology and Trauma Study Section. His interest in trauma has involved studies of the acute management of the severely injured and impact of trauma system development on outcomes. Dr. Maier has delivered more than 400 lectures, and has published over 400 peer-reviewed articles and 60+ book chapters.
HENRY L. LAWS, II LECTURE

This lecture is named after Henry L. Laws, II to honor his contributions to the Congress and the field of surgery. Dr. Laws joined the Congress in 1967 and served as President in 1997-1998. He received the Distinguished Service Award in 2012. During his surgical career, Dr. Laws was in private practice, served on the faculty of University of Alabama-Birmingham, was Director of Surgical Residency at Carraway Methodist Medical Center and was a surgeon at the Norwood Clinic. Dr. Laws had a passion for not only clinical care but also for medical education. Dr. Laws passed away on February 25, 2014, at the age of 81.

Monday, February 12, 2018
11:30am – 12:10pm

Presenter:
Carol-anne Moulton, MD
University Health Network
Toronto, Ontario

Carol-anne Moulton graduated from The University of Melbourne, Melbourne, Australia in 1992 and completed general surgical training earning certification from the Royal Australasian College of Surgeons in 2001. She undertook several Fellowships following this including a Fellowship in Upper Gastrointestinal and Laparoscopic Surgery at St. Vincents Hospital in Melbourne, a Fellowship in Hepato-Pancreatico-Biliary (HPB) Surgery at Toronto General Hospital, and a Surgical Education Fellowship at the University of Toronto, earning a Master’s of Higher Education in 2006 and a PhD in 2010. She is an Associate Professor in the Department of Surgery and Co-Director of the HPB Fellowship Program at the University of Toronto, and the Medical Director of the Operating Room at Toronto General Hospital. In early 2010, Dr. Moulton became a Scientist at the Wilson Centre at the University of Toronto, and she is the recipient of the Early Researcher Award from the Ministry of Research and Innovation. Her research has been supported by the Medical Council of Canada, the Royal College of Physicians and Surgeons of Canada, and Physicians’ Services Incorporated. Dr. Moulton’s research program focuses on understanding the complexity of surgical judgement, the development of surgical expertise, and underlying causes of surgeon error.
Previously named the SESC Historical Lecture, this year is the inaugural Feliciano-Rozycki Historical Lecture named after SESC past presidents, and spouses, dedicated to the growth and future of SESC and our mission. David Feliciano served as SESC President in 2016-2017, and Grace Rozycki served as SESC President in 2011-2012.

“The American Surgeon: Documenting our Success”
Sunday, February 11, 2018
4:00pm - 4:30pm

Presenter:
Kevin E. Behrns, MD
Saint Louis University
St. Louis, MO

In January, 2017, Dr. Kevin E. Behrns assumed the role of Vice President for Medical Affairs and Dean of the School of Medicine at Saint Louis University. He is a summa cum laude graduate from the University of St. Thomas in St. Paul, MN. He attended the Mayo Graduate School of Medicine and completed his general surgery residency training at the Mayo Clinic in 1995. He was an assistant and associate professor at the University of North Carolina from 1995-2005. From July, 2005 until June, 2009, Dr. Behrns served as chief of the division of general surgery, vice chairman, interim chairman and in July 2009, was appointed the Edward R. Woodward Professor and Chairman of the University of Florida Department of Surgery until October, 2016.

Dr. Behrns’ clinical interests are focused on benign and malignant pancreatic and biliary diseases. He has a national and international reputation as a pancreatobiliary and oncologic surgeon. He is a co-investigator on NIH-funded projects that study chronic liver injury, ischemia/reperfusion injury to the liver, mitochondrial dysfunction, and hepatocyte autophagy related to liver injury. He is a previous recipient of a National Cancer Institute Ruth Kirchstein Award for postdoctoral research training. He has also authored manuscripts on the quality of surgical care.

Dr. Behrns is currently serving a six-year term on the American Board of Surgery and is the American Board of Surgery representative to the American Board of Plastic Surgery. Nationally, Dr. Behrns holds officer positions, all of
which ascend to the presidency, of the following organizations: the Halsted Society, and the Southeastern Surgical Congress.

He is co-editor of Surgery and editor-in-chief of the Year Book of Surgery. He is an editorial board member of the Journal of the American College of Surgeons, HPB, American Journal of Surgery, and Journal of Gastrointestinal Surgery.
SESC POSTGRADUATE COURSES

Advanced Robotic Skills Course*
Saturday, February 10, 2018
7:00am – 1:00pm
Center for Advanced Medical Learning and Simulations “CAMLs”
Tampa, FL

*Note: By invitation only
Faculty: Sharona Ross, MD; Alex Rosemurgy, MD; Iswanto Sucandy, MD
Guest Faculty: Mark Soliman, MD

Dinner Lecture
Friday, February 9, 2018
6:30pm
Malio’s

Lecture & Video Review – da Vinci General Surgery Procedures

• Tips for Getting Through the Learning Curve
  (Patient Selection Criteria, Recommended Initial Cases & Track Outcomes Metrics)
• In-Depth Anatomy Review & Step-by-Step Surgical Approach
• Procedure Tips & Techniques
• Adequate Instrument Selection & Energy Use
• Use of Advanced Technologies: EndoWrist® One™ Vessel Sealer, EndoWrist Stapler 45, & Firefly™ Fluorescence Imaging
• Managing Difficult Scenarios
Advanced Robotic Skills Course* CONTINUED
Saturday, February 10, 2018
8:00am - 1:00pm

Program Overview and Objectives:
- DaVinci EcoSystem Overview and General Surgery Trends
- Review Da Vinci Port Placement & Patient Positioning
- Review Advance Instrumentation Options:
  - EndoWrist Stapler 45 and EndoWrist One

Lab
9:00am - 12:00pm
Cadaver Lab
- Port Placement & Docking
- Instrument Options
- Hepatopancreaticobiliary Anatomy Identification
- Mesenteric Artery and Vein, Portal Vein
- Dissection using EndoWrist® One™ Vessel Sealer and EndoWrist Stapler 45
- Suturing Techniques and Needle Management
- Needle Management
- 3rd Arm Techniques

Course Wrap-Up on and Close
12:30pm - 1:00pm
Advanced Skills Ultrasound Course
Saturday, February 10, 2018
12:00pm – 5:00pm
Center for Advanced Medical Learning and Simulations “CAMLs”
Tampa, FL

Pre-requisites: Prior ultrasound fundamentals course or its equivalent

AGENDA

Welcome | Wendy Ricketts Greene, MD; Jose Diaz, MD

Program Station Transitions | Jose Diaz, MD

Knobology/Ultrasound Equipment | Erica Sutton, MD, University of Louisville

Pulmonary | Stefan Leichtle, MD, Virginia Commonwealth University

eFAST | Cynthia Talley, MD, University of Kentucky; Thomas Herron, MD, Tampa General Hospital

Cardiac | Jacob Glaser, MD, University of Maryland School of Medicine; Paula Ferrada, MD, Virginia Commonwealth University

Thyroid/Breast | Neil Saunders, MD, Emory University; Snehal Patel, MD, Emory University; Susan Hoover, MD, Moffitt Cancer Center; Angela Williams, MD, Moffitt Cancer Center; Shaneeta Johnson, MD, Morehouse School of Medicine

Interesting Cases | Paula Ferrada, MD, Virginia Commonwealth University

Closing | Jose Diaz, MD; Virginia Shaffer, MD; Wendy Ricketts Greene, MD
Introduction to da Vinci Robotic Skills
Saturday, February 10, 2018
12:00pm - 5:00pm
Center for Advanced Medical Learning and Simulations “CAMLs”
Tampa, FL

Faculty: Sharona Ross MD; Alex Rosemurgy MD; Iswanto Sucandy MD;
Mark Soliman MD

AGENDA

Station 1
Xi system: Principles for Docking and Port Placement for General Surgery
Faculty A - Rosemurgy and Sucandy with ISI Representative

Station 2
X system: Hands-on Core Skills & Advanced Instrumentation
Faculty B - Ross and Soliman with ISI Representative
Review and Practice Small Bowel Resection: Pelvic Stapling & Vessel Sealing
Review and Practice Advanced Suturing for hernia: Mesh Placement

Station 3
Xi console Sim: DaVinci Procedural Simulation Exercises
Ben Ebong, Intuitive Surgical Simulation
Simulator - Procedural and skills
Review Surgeon Scorecard Capability
Compare Scorecards for a winner at end of the day

Station 4
Presentation: Introduction to the Da Vinci Ecosystem by Intuitive?
Ryan Carlson, Intuitive Key Customer US
What’s next with Da Vinci Technology
Overview of DaVinci Ecosystem by Intuitive
Data Analytics of the Future
LOCAL ATTRACTIONS

Enjoy easy access from our hotel to the vibrant Tampa Riverwalk
https://thetampariverwalk.com/

Take the Streetcar from the hotel to Ybor City, home to boutique shops, great restaurants and more
https://yborcityonline.com/

Some other nearby local Attractions include:

**Adventure Island – 12 miles**
https://adventureisland.com/en/tampa/
Set your watch to island time and indulge in a day of fun in the sun. Adventure Island® Tampa’s Key West atmosphere invites you to relax and enjoy the delights of soaking it up in the water or on the shore. With an array of wonderful meals and amenities, life on Adventure Island is one carefree experience after another.

**Florida Aquarium – 6 miles**
https://www.flaquarium.org
The Florida Aquarium enables you to get up close to many of Florida’s aquatic and terrestrial animals and ecosystems, as well as others from around the world. More than a must-see attraction, we are working to protect and restore our blue planet on many conservation fronts, including research and rescue efforts that help restore Florida’s sea turtle and coral populations and to ensure that sharks continue to swim our seas.

**Busch Gardens Theme Park – 12 miles**
https://buschgardens.com/tampa/
Explore Florida’s favorite coasters and thrill rides, right here in Tampa Bay. Whether you’re a coaster enthusiast or want rides that are fun for the whole family, explore Florida’s best coasters, in Tampa Bay. Take on a thrilling triple-launch coaster, a family spin coaster that’s a new ride every time, epic coaster legends and more.

**Beaches/Clearwater & St Pete**
http://www.visitstpeteclearwater.com/things-to-do/beaches
Find your happy place on this 35-mile stretch of white-sand beaches! With so many direct flight options and an easy drive from Orlando, your ultimate, relaxing Florida vacation happens right here on the Gulf Coast.
SIGHTSEEING: AREA TOUR SERVICES
Let those in the know show you around town.

**Deluxe Little Manatee River Canoe Kayak Trip Tampa Tours**
http://www.tampatours.net/
Little Manatee River
Phone: (888) 805 7497

**Port of Tampa Harbor Tours**
https://www.porttb.com/harbor-tours
Tampa Port Authority
Phone: (800) 741 2297

**Sea Life Safari Boat Tour**
https://www.seewinter.com/visit/activities/sea-life-safari/
Clearwater Marine Aquarium
Phone: (727) 441 1790
SCHEDULE
SCHEDULE

SATURDAY, FEBRUARY 10, 2018

7:00am - 1:00pm
Postgraduate Courses (pre-registration required)
Center for Advanced Medical Learning and Simulations “CAMLs”

12:00pm - 1:00pm
Resident Forum Luncheon
Il Terrazzo

Advice on Making your Academic Career Successful

Invited Speakers:
Herbert Chen, MD, University of Alabama
Grace Rozycki, MD, MBA

1:00pm - 4:00pm
Resident Forum Session
Il Terrazzo

Moderators:
Herbert Chen, MD, University of Alabama
Grace Rozycki, MD, MBA

1:10pm - 1:25pm
RF 1. EPIPHRENIC DIVERTICULUM: 20-YEAR SINGLE INSTITUTION EXPerIENCE
Angela Kao MD
Carolina Medical Center
Invited Discussant: Jahnavi Srinivasan MD, Emory University

1:25pm - 1:40pm
RF 2. 17 YEAR REVIEW OF METHODS USED AND OUTCOMES FOR PEDIATRIC ESOPHAGEAL FOREIGN BODY REMOVAL AT A STATE SUPPORTED CHILDREN’S HOSPITAL
P. Benson Ham III MD, MS
Augusta University
Invited Discussant: Don Nakayama MD, MBA, Sacred Heart Medical Group, Florida International University Herbert Wertheim School of Medicine

*Indicates Gold Medal Award Finalist
1:40pm - 1:55pm
**RF 3. MELANOMA IN SITU AT THE MARGIN: RE-EXCISE OR NOT?**
Grace Oh BS
Emory University
**Invited Discussant:** Jeremiah Deneve MD, University of Tennessee

1:55pm - 2:10pm
**RF 4. MOBILE MAMMOGRAPHY AND DIGITAL TECHNOLOGY IN A LARGE-SCALE, APPALACHIAN SCREENING POPULATION**
Emily Pospiech MD
University of Tennessee Medical Center, Knoxville
**Invited Discussant:** Preeti Subhedar MD, MSPT, Emory University

2:10pm – 2:25pm
**RF 5. NATIONALLY REPRESENTATIVE READMISSION FACTORS ASSOCIATED WITH ENDOVASCULAR VS OPEN REPAIR OF ABDOMINAL AORTIC ANEURYSM**
Lukas Gaffney BA
University of Miami
**Invited Discussant:** Khanjan Nagarsheth, MD, MBA, University of Maryland School of Medicine

2:25pm - 2:40pm
**RF 6. COST EFFECTIVENESS OF APPENDICEAL STUMP CLOSURE METHODS DURING LAPAROSCOPIC APPENDECTOMY**
Samuel Kim MD
Eastern Virginia Medical School
**Invited Discussant:** Stephen McNatt MD, Wake Forest School of Medicine

2:40pm - 2:55pm
**RF 7. ANTIBIOTIC IRRIGATION OF THE SURGICAL SITE DECREASES INCIDENCE OF SURGICAL SITE INFECTION AFTER OPEN VENTRAL HERNIA REPAIR**
Lily Fatula MD
Greenville Health System
**Invited Discussant:** Bryant Wilson MD, Piedmont Surgical Associates

*Indicates Gold Medal Award Finalist*
2:55pm - 3:10pm
**RF 8. SEVERITY OF INJURY AND OTHER FACTORS ASSOCIATED WITH EMERGENCY DEPARTMENT LENGTH OF STAY: FIVE-YEAR EXPERIENCE OF A LEVEL 1 TRAUMA CENTER**
Ansab Haider MD
Westchester Medical Center
**Invited Discussant:** Alisa Cross MD, University of Oklahoma

3:10pm - 3:25pm
**RF 9. BEING NARROW-MINDED ISN’T ALWAYS BAD: FOCUSING ON EMERGENT INTERVENTIONS IN UNDERTRIAGE INITIATIVES IMPROVES MORTALITY PREDICTION FOR MAJOR TRAUMA PATIENTS**
Stephen Klepner DO
Philadelphia College of Osteopathic Medicine
**Invited Discussant:** Millard Andrew Davis MD, Baylor College of Medicine

3:40pm – 3:55pm
**RF 10. USE OF TELEMEDICINE IN SURGICAL EDUCATION: SEVEN-YEAR EXPERIENCE**
Mariana F. Jucá Moscardi MD
University of Miami
**Invited Discussant:** Dane Smith MD, Greenville Hospital System

5:15pm – 7:00pm
**SESC Council Meeting**
Meeting Room 1

7:00pm – 8:00pm
**Young Surgeons Reception**
Waterside Grill Private Dining Room and Patio

*Indicates Gold Medal Award Finalist*
SUNDAY, FEBRUARY 11, 2018

7:00am – 8:00pm
Continental Breakfast
Florida Ballroom

7:00am - 8:00am
APC Breakfast Panel: Everything you Wanted to Know about an Advanced Practice Clinician in Sixty Minutes
Il Terrazzo

Moderators:
Thomas V. Clancy, MD, New Hanover Regional Medical Center
Stefanie Owczarski, PA, Medical University of South Carolina

Differences between NP, PA, APC
Stefanie Owczarski, PA | Medical University of South Carolina

How to Work Together
Brice Taylor, PA-C | New Hanover Medical Center
Audrey Cook, PA-C | University of North Carolina

How APCs Can Add Value to Your Practice
Ellis Tinsley, Jr, MD | Wilmington Surgical Associates

8:00am – 8:30am
Opening Session
Florida Ballroom

8:30am - 9:10am
A. Hamblin Letton Lecture
Florida Ballroom, Salons 4-6

Introduction: David B. Adams, MD
Medical University of South Carolina

Clinical Cancer Research
Monica M. Bertagnolli, MD
Brigham & Women’s Hospital, Dana Farber Cancer Institute

*Indicates Gold Medal Award Finalist
9:10am - 11:50am
Scientific Session 1
Florida Ballroom, Salons 4-6

Moderators:
David B. Adams MD, Medical University of South Carolina
Daniel Margulies MD, Cedars-Sinai Medical Center

9:10am - 9:25am
1*. PREDICTING MORTALITY IN THE SURGICAL INTENSIVE CARE UNIT USING ARTIFICIAL INTELLIGENCE AND NATURAL LANGUAGE PROCESSING OF PHYSICIAN DOCUMENTATION
Joshua Parreco MD
University of Miami
Invited Discussant: John Stewart, IV MD, MBA, Duke University School of Medicine

9:25am – 9:40am
2. CLINICALLY SUSPECTED SEPSIS AND BLOOD CULTURES IN POSTOPERATIVE PATIENTS
Libby Copeland-Halperin, MD
Inova Fairfax Medical Campus
Invited Discussant: Deborah Martin MD, Northside Hospital

9:40am - 9:55am
3. DISCREPANCY IN POSTOPERATIVE OUTCOMES BETWEEN AUDITING DATABASES: A NSQIP COMPARISON
William B. Lyman MD
Carolinanas Medical Center
Invited Discussant: Jackson Slappy MD, Emory University

9:55am - 10:05am
4. RESECTION OF RECURRENT RECTAL CANCER FOLLOWING APR USING A MODIFIED KRASKE APPROACH WITH ADIPODERMAL ROTATION FLAP
Emmanuel Zervos, MD
East Carolina University, Brody School of Medicine

10:05am - 10:25am
Morning Break
Florida Ballroom Foyer

*Indicates Gold Medal Award Finalist
10:25am - 10:40am
5. PREDICTORS OF SURGICAL OUTCOMES IN YOUNGER COLON CANCER PATIENTS
Joanna Swinarska BS
Wake Forest University School of Medicine
Invited Discussant: David Shibata, MD, University of Tennessee Health Science Center

10:40am - 10:55am
6*. FEASIBILITY AND SAFETY OF INTRAOPERATIVE COLONOSCOPY AFTER SEGMENTAL COLECTOMY AND PRIMARY ANASTOMOSIS
Phillip Ham MD, MS
Augusta University
Invited Discussant: Jacquelyn Turner, MD, Morehouse School of Medicine

10:55am - 11:05am
V 7. LAPAROSCOPIC REPAIR OF A RECURRENT HIATAL HERNIA WITH ROBOTIC ASSISTED PYLOROPLASTY FOR DYSPHAGIA AND GASTROPARESIS AFTER MESH REPAIR OF A HIATAL HERNIA
Georgina Alizo MD
Medical University of South Carolina

11:05am - 11:20am
8*. REDO OR NOT TO REDO: COMPARISON OF INITIAL AND REOPERATIVE PARAESOPHAGEAL HERNIA REPAIR (PEHR)
Angela Kao MD
Carolinas Medical Center
Invited Discussant: Michael Holzman MD, Vanderbilt University

11:20am - 11:35am
9. USE OF BIO-ABSORBABLE TISSUE REINFORCEMENT REDUCES INCIDENCE OF INTERNAL HERNIA IN ROUX-EN-Y GASTRIC BYPASS PATIENTS
Wes Love MD
Greenville Health System
Invited Discussant: Peter Hallowell MD, University of Virginia

*Indicates Gold Medal Award Finalist
11:35am - 11:50am
10. BIOLOGIC VERSUS BIOABSORBABLE MESH IN COMPLEX VENTRAL HERNIA REPAIR
Richard Jacobson MD
Rush University Medical Center
Invited Discussant: William Hope MD, New Hanover Regional Medical Center

9:10am - 11:10am
APC Symposium
Il Terrazzo

Moderators:
Lindsey O’Meara, CRNP, University of Maryland Medical Center
Tracy Hollen, PA-C, University of Florida

Opioid Distribution
Jeffrey G. Yates, PA-C | Eastern Virginia Medical School

Billing (Academic vs Private Practice)
Darren Trafton | Wilmington Surgical Associates

Transitional Care Coordination
Barbara Eaton, CRNP | University of Maryland Medical Center

10:05am - 10:25am
Morning Break
Florida Ballroom Foyer

Nuts and Bolts of Research
Lindsey O’Meara, CRNP | University of Maryland Medical Center

Great APC Saves (Interesting Cases) Panel
Sarah Rosenberger, CRNP, University of Maryland Medical Center;
Anita Watson, NP, Navicent Health; Jeffrey G. Yates, PA-C,
Eastern Virginia Medical School

*Indicates Gold Medal Award Finalist
11:50am - 12:30pm
**Presidential Address**
Florida Ballroom, Salons 1-3

- **Introduction:** Kevin E. Behrns, MD
  Saint Louis University

- **The Life and Death of Curtis Artz**
  David B. Adams, MD
  Medical University of South Carolina

12:30pm - 2:00pm
**Surgical Practice Luncheon** *(pre-registration required)*
Il Terrazzo

**Moderators:**
Jose J. Diaz, MD, University of Maryland Medical Center
Virginia O. Shaffer, MD, Emory University

- **Alexa in the Operating Room? How Innovations are Influencing Healthcare**
  Eugene M. Langan III, MD | Greenville Health System

- **Persuasive Communication in the Boardroom: How to Talk to the C-Suite**
  Jyotirmay Sharma, MD | Emory University

12:30pm - 2:00pm
**Fellow, Resident, Medical Student Luncheon** *(pre-registration required)*
Rooms 8-10

**Moderator:**
Sunil K. Geevarghese, MD, MSCI, Vanderbilt University Medical Center

- **Break it to Me Gently: Speaking with the Patient and Family and Documenting Bad Outcomes**
  Bradley Thomas, MD | Carolinas Medical Center

- **You Get Served, and It’s Not Lunch This Time**
  Charles Paget, MD | Carilion Clinic

- **The Truth and Nothing but the Truth: The Deposition**
  William Richards, MD | University of South Alabama Health

*Indicates Gold Medal Award Finalist*
Keep Moving Forward: Resilience  
Sunil K. Geevarghese, MD, MSCI | Vanderbilt University Medical Center

Panel Discussion  
Sunil K. Geevarghese, MD, MSCI; Charles Paget, MD; William Richards, MD; John Porterfield, MD; Philip T. Ramsay, MD; Bradley Thomas, MD

12:30pm - 2:00pm  
SESC/ACS State Chapters Leadership Summit Luncheon  
(pre-registration required)  
Florida Ballroom, Salons 4-6

Moderator:  
David B. Hoyt, MD, FACS

ACS Services Overview  
David B. Hoyt, MD, FACS | American College of Surgeons

Challenges for State Chapters Panel  
Panelists:  
David B. Hoyt, MD, FACS, American College of Surgeons  
Barbara Lee Bass, MD, FACS, Houston Methodist Hospital

2:00pm – 4:00pm  
American College of Surgeons Session  
Florida Ballroom, Salons 4-6

Moderator:  
David B. Hoyt, MD, FACS

America’s Opioid Epidemic  
Representative Gregory F. Murphy, MD, FACS | NC House of Representatives

The Life of a Surgeon  
Barbara Lee Bass, MD, FACS | Houston Methodist Hospital

What Will Changes in MOC Mean to You?  
Jo Buyske, MD, FACS, DABS | American Board of Surgery

What the SESC & ACS Have Meant to Me  
Kenneth Sharp, MD, FACS | Vanderbilt University Medical Center

*Indicates Gold Medal Award Finalist
4:00pm - 4:30pm
**Feliciano-Rozycki Historical Lecture**
Florida Ballroom, Salons 4-6

**Introduction:** David B. Adams, MD  
Medical University of South Carolina

**The American Surgeon: Documenting Our Success**  
Kevin E. Behrens, MD  
Saint Louis University

4:30pm - 6:30pm
**Resident Jeopardy / SESC Feud**
Florida Ballroom, Salons 4-6

6:30pm – 8:00pm
**SESC Reception**
Florida Ballroom, Salons 4-6
MONDAY, FEBRUARY 12, 2018

6:15am – 8:00am
Continental Breakfast, Exhibits & ePoster Rounds
Florida Ballroom, Salons 1-3 & Foyer

For complete ePoster listings, please go to the “ePoster Listings” section of the program book.

Kiosk 1 | Breast / Cancer Soft Tissue (ePosters # 1 – 21)
Florida Ballroom, Salons 1-3 & Foyer
Moderators:
George Fuhrman MD, Ochsner Clinic
Laura Witherspoon MD, University Surgical Associates

Kiosk 2 | Cancer (ePosters #22 – 42)
Florida Ballroom, Salons 1-3 & Foyer
Moderators:
Matthew Doepker MD, Palmetto Health-USC Medical Group
James McLoughlin MD, University of Tennessee Medical Center

Kiosk 3 | Colorectal (ePosters #43 – 63)
Florida Ballroom, Salons 1-3 & Foyer
Moderators:
Maryam Saidy MD, Kaiser Permanente
Michael Honaker MD, Navicent Health

Kiosk 4 | Trauma / Critical Care (ePosters #64 – 83)
Florida Ballroom, Salons 1-3 & Foyer
Moderators:
Bryan Morse MD, Emory University
Pascal Udekwu, MD MBA, MHA, WakeMed Health & Hospitals

Kiosk 5 | General Surgery (ePosters #85 – 105)
Florida Ballroom, Salons 1-3 & Foyer
Moderators:
Jessica Burgess, MD Eastern Virginia Medical School
William Richards MD, University of South Alabama

*Indicates Gold Medal Award Finalist
Kiosk 6 | Trauma / Acute Care / Other (ePosters #106 – 126)
Florida Ballroom, Salons 1-3 & Foyer
**Moderators**
Jay Collins MD, Eastern Virginia Medical School
William Hope MD, New Hanover Regional Medical Center

Kiosk 7 | GI (ePosters #127 – 147)
Florida Ballroom, Salons 1-3 & Foyer
**Moderators:**
Matt Mancini MD, University of Tennessee, Knoxville
Peter Hallowell MD, University of Virginia

Kiosk 8 | Trauma/Critical Care (#148 – 167)
Florida Ballroom, Salon 1-3 & Foyer
**Moderator:**
Amy Hildreth MD, Wake Forest School of Medicine

Kiosk 9 | Endocrine and Solid Organ (#169 – 189)
Florida Ballroom, Salon 1-3 & Foyer
**Moderators:**
William Mendez MD, University of Puerto Rico
Joe Sharma MD, Emory University

Kiosk 10 | Pediatric (#190 – 210)
Florida Ballroom, Salon 1-3 & Foyer
**Moderators:**
Don Nakayama MD, MBA, Sacred Heart Medical Group, Florida International University Herbert Wertheim School of Medicine
Paul Danielson MD, Johns Hopkins All Children’s Hospital
Curt Koontz MD, University of Tennessee College of Medicine, Children’s Hospital at Erlanger

8:00am - 8:50am
**Complex Acute Care Panel**
Florida Ballroom, Salons 4-6

**Moderator:**
Daniel Margulies, MD; Cedars Sinai Medical Center

**Panelists:**
David V. Feliciano, MD; University of Maryland, Shock Trauma Center
Rebecca Britt, MD; Eastern Virginia Medical School
Wendy Ricketts Greene, MD; Emory University
Juan Duchesne, MD; Tulane School of Medicine

*Indicates Gold Medal Award Finalist*
8:50am - 9:30am
Roger T. Sherman Historical Lecture
Florida Ballroom, Salons 4-6

**Introduction:** David B. Adams, MD
Medical University of South Carolina

**Response to Injury and Stress: A Genomic Storm**
Ronald V. Maier, MD, FACS, FRCS Ed (Hon.)
University of Washington, Harborview Medical Center

9:30am - 11:30am
**Scientific Session 2**
Florida Ballroom, Salons 4-6

**Moderators:**
Rebecca Britt MD, Eastern Virginia Medical School
David Feliciano MD, University of Maryland Medical Center

9:30am - 9:45am
11. **LONG-TERM SURVIVAL AFTER TOTAL PANCREATECTOMY WITH ISLET-AUTO-TRANSPLANTATION (TPIAT) FOR CHRONIC PANCREATITIS**
Catherine Chung MD
Medical University of South Carolina
**Invited Discussant:** Sunil K. Geevarghese MD, MSCI, Vanderbilt University Medical Center

9:45am - 10:00am
12. **LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA OUTPERFORM OTHER POPULATIONS IN THE NEW HEPATITIS C ERA**
Angel Alsina MD
Tampa General Hospital
**Invited Discussant:** Perry Shen MD, Wake Forest Medical Center

*Indicates Gold Medal Award Finalist*
10:00am - 10:15am
13*. PROGNOSTIC VALUE OF HEPATOCELLULAR CARCINOMA STAGING SYSTEMS: A COMPARISON
Shelby Bergstresser BS
University of Alabama School of Medicine
Invited Discussant: Reid B. Adams MD, University of Virginia Health

10:15am – 10:35am
Morning Break, Exhibits & ePoster Viewing
Florida Ballroom Salons 1-3 & Florida Ballroom Foyer

10:35am - 10:45am
V 14. EXTENDED LEFT HEPATECTOMY FOR A NEUROENDOCRINE CARCINOMA
Iswanto Sucandy MD
Florida Hospital Tampa

10:45am - 11:00am
15. A NOVEL RISK SCORE PREDICTS POST-TRAUMA MORTALITY AMONG NONOGENARIANS
Nicholas Morin DO
New York University
Invited Discussant: Jose J. Diaz MD, University of Maryland Medical Center

11:00am - 11:15am
16. THE IMPACT OF HEMODYNAMIC TRANSESOPHAGEAL ECHOCARDIOGRAPHY ON ACUTE KIDNEY INJURY MANAGEMENT AND USE OF CONTINUOUS RENAL REPLACEMENT THERAPY IN TRAUMA
Alex Sapp MD
Mercer University/Navicent Health
Invited Discussant: Khanjan Nagarsheth MD MBA, University of Maryland School of Medicine

*Indicates Gold Medal Award Finalist
11:15am - 11:30am
17. IS THE FACE AN AIR BAG FOR THE BRAIN AND TORSO? - THE POTENTIAL PROTECTIVE EFFECTS OF SEVERE MIDFACE FRACTURES
Hannah Worix MD
Virginia Tech Carilion School of Medicine
Invited Discussant: Bradley Thomas MD, Carolinas Healthcare

11:30am - 12:10pm
Henry L. Laws Lecture
Florida Ballroom, Salons 4-6

Introduction:
David B. Adams, MD
Medical University of South Carolina

Carol-anne Moulton, MD
University Health Network

12:10pm - 2:00pm
Business Meeting & Luncheon (Members Only)
Il Terrazzo

2:00pm - 3:40pm
Scientific Session 3
Florida Ballroom, Salons 4-6

Moderators:
Bryan Richmond MD, MBA, West Virginia University - Charleston
Emmanuel Zervos MD, East Carolina University/Vidant Health

2:00pm - 2:15pm
18. HURRICANE IRMA IMPACT ON THE INPATIENT POPULATION AT A TERTIARY CHILDREN’S HOSPITAL IN FLORIDA
Andre Hebra MD
Nemours Children's Hospital
Invited Discussant: Don Nakayama MD, MBA, Sacred Heart Medical Group/Florida International University Herbert Wertheim School of Medicine

*Indicates Gold Medal Award Finalist
2:15pm - 2:30pm  
19. PEDIATRIC BILIARY DYSKINESIA: EVALUATING PREDICTIVE FACTORS FOR SUCCESSFUL TREATMENT OF BILIARY DYSKINESIA WITH LAPAROSCOPIC CHOLECYSTECTOMY  
Yamuna Krishna MD  
Greenville Health System  
Invited Discussant: Katie Morgan MD, Medical University of South Carolina

2:30pm - 2:45pm  
20. A TWO DECADE LONG TERM SURVIVAL ANALYSIS OF LIVER TRANSPLANTATION: IMPACT OF SPECIALIZED PROGRAMS  
Angel Alsina MD  
Tampa General Hospital  
Invited Discussant: Clancy Clark MD, Wake Forest Baptist Health

2:45pm - 2:55pm  
21*. ROBOTIC PANCREATICODUODENECTOMY AND CHOLECYSTECTOMY  
Sharona Ross MD  
Florida Hospital Tampa

2:55pm - 3:10pm  
22. DECREASING RESOURCE UTILIZATION WITHOUT COMPROMISING CARE THROUGH MINIMIZING PREOPERATIVE LABS  
Lauren Beliveau MD  
John Peter Smith Hospital  
Invited Discussant: Bruce Ramshaw MD, University of Tennessee Medical Center

3:10pm - 3:25pm  
23*. CAN AXILLARY ULTRASOUND CHARACTERISTICS PREDICT ≥ 3 POSITIVE LYMPH NODES IN PATIENTS MANAGED BY ACOSOG Z0011 CRITERIA  
Emma Rooney MD  
Emory University  
Invited Discussant: Laura Witherspoon MD, University Surgical Associates

*Indicates Gold Medal Award Finalist
3:25pm - 3:40pm

24. ACCURACY OF CLINICAL EXAMINATION AND ULTRASONOGRAPHY IN PREDICTING AXILLARY LYMPH NODE METASTASES IN OPERABLE BREAST CANCER PATIENTS
Shekhar Gogna MD
Westchester Medical Center
Invited Discussant: Marissa Howard-McNatt MD, Wake Forest School of Medicine

3:40pm – 4:10pm

Foregut Disasters Panel
Florida Ballroom, Salons 4-6

Moderator:
Rana C. Pullatt, MD, MRCS

Panelists:
Marco G. Patti, MD, University of North Carolina at Chapel Hill
Alex Rosemurgy, MD, Florida Hospital Tampa
Michael D. Holzman, MD, MPH, Vanderbilt School of Medicine

4:10pm – 4:30pm

Afternoon Break, Exhibits & ePoster Viewing

4:30pm - 5:30pm

Parallel Scientific Session 4
Florida Ballroom, Salons 4-6

Moderators:
Jose J. Diaz MD, University of Maryland Medical Center
Wendy Ricketts Greene MD, Emory University

4:30pm - 4:37pm

QS 1. A DECISION TOOL FOR PREDICTING OUTCOMES IN GERIATRIC ACUTE MESENTERIC ISCHEMIA
Danielle Kay MD
University of Kentucky

*Indicates Gold Medal Award Finalist
4:37pm - 4:44pm
**QS 2. OPTIMIZATION OF RESOURCE ALLOCATION AFTER IMPLEMENTATION OF MILD TRAUMATIC BRAIN INJURY TREATMENT PROTOCOL**
Michael Martyak MD
Eastern Virginia Medical School

4:44pm - 4:51pm
**QS 3. THE LONG TERM EFFECTS OF DECOMPRESSIVE CRANIECTOMY ON FUNCTIONAL OUTCOMES FOLLOWING TRAUMATIC BRAIN INJURY: A MULTICENTER STUDY**
Eliza Moskowitz MD
University of Colorado Health- Memorial Hospital

4:51pm - 4:58pm
**QS 4. INTRAOPERATIVE BLOOD PRODUCT ADMINISTRATION BY SPECIALIZED TRAUMA NURSE CLINICIANS IMPROVES ADHERENCE TO MASSIVE TRANSFUSION PROTOCOL**
Larry May MD
University of Tennessee Medical Center, Knoxville

4:58pm - 5:05pm
**QS 5. DELAYED CLOSURE IS ASSOCIATED WITH DECREASED INFECTION RATE IN AMPUTATIONS AFTER TRAUMA**
Yasmin Ali MD
Wake Forest University School of Medicine

5:05pm - 5:12pm
**QS 6. POST DISCHARGE MORTALITY AFTER GERIATRIC LOW LEVEL FALLS: A FIVE YEAR ANALYSIS**
Ashley Gerrish MD
Virginia Tech Carilion School of Medicine

5:12pm - 5:19pm
**QS 7. SINGLE WORST INJURY ADEQUATE PREDICTOR OF MORTALITY OUTSIDE OF BLUNT TRAUMA**
Lucas Chambers BA
University of Virginia Health System

*Indicates Gold Medal Award Finalist*
5:19pm - 5:26pm  
**QS 8. GERIATRIC PATIENTS ON ANTITHROMBOTIC DRUGS WITH INTRACRANIAL HEMORRHAGE: DOES TRAUMA TEAM ACTIVATION IMPACT OUTCOME?**  
Jeffrey Moyer DO  
Reading Hospital

4:30pm - 5:30pm  
**Parallel Scientific Session 5**  
Meeting Room 8-10

**Moderators:**  
Thomas Clancy MD, New Hanover Regional Medical Center  
Joe Sharma MD, Emory University

4:30pm - 4:37pm  
**QS 9. IMPROVING INFORMATION TRANSFER DURING TRANSITIONS OF CARE VIA STANDARDIZED HANDOFFS**  
Kara Friend MD  
Albert Einstein Medical Center

4:37pm - 4:44pm  
**QS 10. INTERPRETATION OF BASIC CLINICAL IMAGING: ARE SURGICAL RESIDENTS SUPERIOR TO OTHER TRAINEES?**  
Joseph Eid MD  
Providence Hospital

4:44pm - 4:51pm  
**QS 11. BUILDING UPON FLS: AN ADVANCED LAPAROSCOPIC SKILLS CURRICULUM WITH VIDEO-BASED COACHING**  
Vivian Wang MD  
Emory University

4:51pm - 4:58pm  
**QS 12. EMERGENCY GENERAL SURGERY—A MISNOMER?**  
Kirby Quinn BS  
Duke University

*Indicates Gold Medal Award Finalist*
4:58pm - 5:05pm
**QS 13. IMPROVED OUTCOMES WITH PERI-OPERATIVE GLUCOSE MANAGEMENT**
Eric Feliberti MD
Sinai Hospital

5:05pm - 5:12pm
**QS 14. IMAGING-ASSOCIATED RADIATION TRENDS IN A PUERTO RICAN PEDIATRIC SURGICAL POPULATION. IS OVER RADIATION AN ISSUE IN OUR EMERGENCY DEPARTMENTS?**
Keila Diaz Morales MD
University of Puerto Rico

5:12pm - 5:19pm
**QS 15. TARGETS OF OPPORTUNITY: USE OF A SURGICAL QUALITY DASHBOARD TO DEFINE MEANINGFUL STRATEGIES FOR IMPROVED PATIENT OUTCOME**
Lori Gurien MD, MPH
University of Florida College of Medicine, Jacksonville

5:19pm - 5:26pm
**QS 16. ACUTE FULMINANT HEPATIC FAILURE: THE NEMESIS OF LIVER TRANSPLANTATION. A TWO DECADE LONG TERM OUTCOMES AND PSYCHO-SOCIAL STUDY**
Angel Alsina MD
Tampa General Hospital

5:30pm - 7:10pm
**Video Interactive Session**
Florida Ballroom, Salons 4-6

**Moderators:**
Mike Meyers MD, University of North Carolina
Jessica Cioffi MD, University of Florida

5:30pm - 5:38pm
**V 45. MINIMALLY INVASIVE APPROACH TO COLORECTAL MASS WITH SYNCHRONOUS HEPATIC METASTASIS IN A RURAL HOSPITAL**
Kevin Londe MD
Palmetto Surgical Group

*Indicates Gold Medal Award Finalist*
5:38pm - 5:46pm  
**V 46. ROBOTIC DISTAL PANCREATECTOMY AND SPLENECTOMY**  
Alexander Rosemurgy MD  
Florida Hospital Tampa

5:46pm - 5:54pm  
**V 47. OPERATIVE TECHNIQUE OF LAPAROSCOPIC BILIARY PANCREATIC DIVERSION WITH DUODENAL SWITCH**  
Catherine Chung MD  
Medical University of South Carolina

5:54pm - 6:02pm  
**V 48. LAPAROSCOPIC EXCISION OF A GIANT SPLENIC CYST**  
Jeremy Linson MD  
University of Florida College of Medicine

6:02pm - 6:10pm  
**V 49. ROBOTIC CONVERSION OF SLEEVE GASTRECTOMY TO ROUX-EN-Y GASTRIC BYPASS AS AN EFFECTIVE TREATMENT FOR INTRACTABLE GASTROESOPHAGEAL REFLUX**  
Ashley Parinella  
Medical University of South Carolina

6:10pm - 6:18pm  
**V 50. LAPAROSCOPIC GRAHAM PATCH REPAIR OF PERFORATED DUODENAL ULCER USING THE FALCIFORM LIGAMENT**  
Sofiane El Djouzi MD, MS  
Loyola University Medical Center

6:18pm - 6:26pm  
**V 51. THE USE OF BIOABSORBABLE MESH FOR LAPAROSCOPIC REPAIR OF LARGE RIGHT DIAPHRAGMATIC (MORGANI) HERNIA**  
Sofiane El Djouzi MD, MS  
Loyola University Medical Center

6:26pm - 6:34pm  
**V 52. TAPP REPAIR OF SYNCHRONOUSLY INCARCERATED DIRECT AND FEMORAL HERNIAS**  
Jerec Ricci MD  
Medical University of South Carolina

*Indicates Gold Medal Award Finalist*
6:34pm - 6:42pm  
**V 53. LAPAROSCOPIC REVERSAL OF ROUX-EN-Y GASTRIC BYPASS WITH CONVERSION TO SLEEVE GASTRECTOMY**  
Melissa Hite MD  
Medical University of South Carolina

6:42pm - 6:50pm  
**V 54. LAPAROSCOPIC REPAIR OF BOCHDALEK HERNIA**  
Jeffrey Lawrence MBBS  
Ochsner Clinic Foundation

6:50pm - 6:58pm  
**V 55. RIGHT ROBOTIC-ASSISTED TRUNCAL VAGOTOMY FOR MARGINAL ULCERS AFTER GASTRIC BYPASS SURGERY**  
Brett Tracy MD  
Memorial University Medical Center

*Indicates Gold Medal Award Finalist*
TUESDAY, FEBRUARY 13, 2018

6:15am – 7:00am
Continental Breakfast, Exhibits & ePoster Rounds
Florida Ballroom, Salons 1-3 & Foyer

For complete ePoster listings, please go to the “ePoster Listings” section of the program book.

**Kiosk 1- Trauma/Critical Care** (ePosters #211 – 220)
Florida Ballroom, Salons 1-3 & Foyer
**Moderators:**
Richard Gonzalez MD, Loyola University Medical Center
John Cull MD, Greenville Health System

**Kiosk 2- Trauma/Critical Care** (ePosters #221 – 230)
Florida Ballroom, Salons 1-3 & Foyer
**Moderators:**
Indermeet S Bhullar MD, Orlando Health, Inc.

**Kiosk 3- General Surgery** (ePosters #231 – 240)
Florida Ballroom, Salons 1-3 & Foyer
**Moderators:**
Deborah Martin MD, Northside Hospital
Mary Aaland MD, University of North Dakota

**Kiosk 4- HPB** (ePosters #241 - 250)
Florida Ballroom, Salons 1-3 & Foyer
**Moderators:**
Iswanto Sucandy MD, Florida Hospital Tampa

**Kiosk 5 - Vascular** (ePosters #251 – 260)
Florida Ballroom, Salons 1-3 & Foyer
**Moderators:**
Khanjan Nagarsheth MD, University of Maryland School of Medicine

**Kiosk 6- Thoracic** (ePosters #261 - 270)
Florida Ballroom, Salons 1-3 & Foyer
**Moderators:**
Subrato Deb MD, University of Oklahoma Health Sciences Center

*Indicates Gold Medal Award Finalist*
**Kiosk 7- Quality Improvement** (ePosters #272 – 280)
Florida Ballroom, Salons 1-3 & Foyer

**Moderators:**
Rebecca Britt MD, Eastern Virginia Medical School
Peter Lopez MD, Henry Ford Hospital Macomb

**Kiosk 8- Basic Science/Hernia** (ePosters #281 – 290)
Florida Ballroom, Salons 1-3 & Foyer

**Moderators:**
Carl Boyd MD, Medical University of South Carolina
Kimberly Bailey MD, West Virginia University

**Kiosk 9-Education and Systems based practice** (ePosters #291 – 300)
Florida Ballroom, Salons 1-3 & Foyer

**Moderators:**
Pamela Rowland MD, University of Tennessee, Knoxville
E. Shields Frey MD, Brookwood Baptist Health System

**Kiosk 10 – Pediatric** (ePosters #301 – 309)
Florida Ballroom, Salons 1-3 & Foyer

**Moderators:**
Nicole Chandler MD, Johns Hopkins All Children's Hospital

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7:00am - 8:40am
**Parallel Scientific Session 6**
Florida Ballroom, Salons 4-6

**Moderators:**
Alan B. Marr MD, LSU Health Sciences Center
William Richardson MD, Ochsner Clinic

7:00am - 7:07am
**QS 17. THE SURGICAL EXPERIENCE ABOARD USNS COMFORT (T-AH 20) DURING OPERATION CONTINUING PROMISE 2015**
Laura Fluke DO
Naval Medical Center Portsmouth

7:07am - 7:14am
**QS 18. GASTRODUODENAL SURGERY: A PERSISTENT AND CONTINUING CHALLENGE**
Patrick Melmer MD
Grand Strand Medical Center

*Indicates Gold Medal Award Finalist*
7:14am - 7:21am  
**QS 19. SAFETY OF OPTICAL TROCAR ACCESS TO THE ABDOMINAL CAVITY IN A LARGE SERIES OF PATIENTS**  
Marcus Yarbrough MD  
Indiana University School of Medicine

7:21am - 7:28am  
**QS 20. MODERATE SEDATION OR MONITORED ANESTHESIA CARE FOR COLONOSCOPIES; IS THERE A DIFFERENCE?**  
Matthew Ng MD  
Eastern Virginia Medical School

7:28am - 7:35am  
**QS 21. APPENDICEAL CARCINOIDS AND THE REALITY OF NONOPERATIVE MANAGEMENT OF ACUTE APPENDICITIS: A RETROSPECTIVE REVIEW OF THE AMERICAN COLLEGE OF SURGEONS NATIONAL SURGICAL QUALITY IMPROVEMENT PROGRAM DATABASE**  
Maranda Pahlkotter MD  
Grand Strand Medical Center

7:35am - 7:42am  
**QS 22. IMPACT OF ADMITTING SERVICE ON OUTCOMES OF PATIENTS WITH MECHANICAL BOWEL OBSTRUCTION: A COMMUNITY TERTIARY HOSPITAL EXPERIENCE**  
Joseph Eid MD  
Providence Hospital

7:42am - 7:49am  
**QS 23. ROBOTIC CONVERSION OF BILLROTH-I TO ROUX-EN-Y GASTROJEJUNOSTOMY WITH PARTIAL GASTRECTOMY AND VAGOTOMY**  
Anna Martin  
Indiana University School of Medicine

7:49am - 7:56am  
**QS 24. STAY COOL AND HYDRATED: SEASONAL PEAKS IN ACUTE DIVERTICULITIS DURING THE SUMMER MONTHS**  
Brittany Warren MD  
Orlando Regional Medical Center

*Indicates Gold Medal Award Finalist*
7:56am - 8:03am
QS 25. LATER STAGE DISEASE AND EARLIER ONSET OF RECTAL CANCER: EPIDEMIOLOGY AND OUTCOMES COMPARISON OF RECTAL CANCER IN A RURAL APPALACHIAN AREA TO STATE AND NATIONAL RATES
Thao Wolbert MD
Marshall University

8:03am - 8:10am
QS 26. FACTORS INFLUENCING LENGTH OF STAY AFTER ELECTIVE BOWEL RESECTION WITHIN AN ENHANCED RECOVERY PROGRAM
James McLoughlin MD
University of Tennessee Medical Center, Knoxville

8:10am - 8:17am
QS 27. FECAL MICROBIAL TRANSPLANT IN ULCERATIVE COLITIS PATIENTS WITH ILEAL-POUCH ANAL ANASTOMOSIS POUCHITIS
Nathan Klingensmith MD
Emory University

8:17am - 8:24am
QS 28. AN EVALUATION OF FASCIAL CLOSURE TECHNIQUES IN PATIENTS UNDERGOING OPEN VENTRAL HERNIA REPAIR: PRACTICE PATTERNS AND SHORT-TERM OUTCOMES
Sarah Fox MD
New Hanover Regional Medical Center

8:24am - 8:31am
QS 29. INCARCERATED DIAPHRAGMATIC HIATAL HERNIA: A CASE STUDY
Kathryn Sommese MS
Eastern Virginia Medical School

8:31am - 8:38am
QS 30. NATIONAL OUTCOMES AND RISK FACTORS FOR READMISSION AFTER DIAPHRAGMATIC HERNIA REPAIR
Michael Lopez DO
University of Miami

*Indicates Gold Medal Award Finalist
7:00am - 8:40am  
**Parallel Scientific Session 7**  
Meeting Room 8-10

**Moderators:**  
Laura Witherspoon MD, University Surgical Associates  
Jahnavi Srinivasan MD, Emory University

7:00am - 7:07am  
**QS 31. EFFICACY AND SAFETY OF ROUX-EN-Y GASTRIC BYPASS WITH RECURRENT PARAESOPHAGEAL HERNIA REPAIR**  
Matthew Spann MD  
Vanderbilt University Medical Center

7:07am - 7:14am  
**QS 32. EPIDURAL CATHETER USE FOLLOWING DISTAL PANCREATECTOMY**  
Benjamin Zambetti MD  
University of Tennessee Medical Center, Memphis

7:14am - 7:21am  
**QS 33. PERIOPERATIVE OUTCOMES ASSOCIATED WITH THE USE OF ANESTHETIC ADJUNCTS DURING PANCREATODUODENECTOMY**  
Zachary Stiles DO  
University of Tennessee Health Science Center

7:21am - 7:28am  
**QS 34. SINGLE INSTITUTION EXPERIENCE AND LEARNING CURVE WITH ROBOTIC MINOR AND MAJOR LIVER RESECTIONS**  
Aviad Gravetz MD  
Florida Hospital Tampa

7:28am - 7:35am  
**QS 35. ROBOTIC VS LAPAROSCOPIC DISTAL PANCREATECTOMY WITH SPLENECTOMY: A “TAIL” OF TWO TECHNIQUES**  
Chandler Wilfong MD  
Florida Hospital Tampa

*Indicates Gold Medal Award Finalist*
7:35am - 7:42am  
**QS 36. LAPAROSCOPIC TOTAL GASTRECTOMY WITH ROUX-EN-Y RECONSTRUCTION**  
Michael Williford MD  
University of North Carolina

7:42am - 7:49am  
**QS 37. MAGIC VERSUS MACDONALD TREATMENT REGIMENS FOR GASTRIC CANCER: TRENDS AND PREDICTORS OF MULTIMODAL THERAPY FOR GASTRIC CANCER USING THE NATIONAL CANCER DATABASE**  
Mark Jayanathan MD  
Geisinger Medical Center

7:49am - 7:56am  
**QS 38. THE TREATMENT OF TRIPLE NEGATIVE BREAST CANCER, DOES INSURANCE STATUS MATTER?**  
Paul Dale MD  
Mercer University/Navicent Health

7:56am - 8:03am  
**QS 39. A 12-YEAR SINGLE INSTITUTION EXPERIENCE WITH ACCELERATED PARTIAL BREAST IRRADIATION**  
Anthony Scott MD  
Mercer University/Navicent Health

8:03am - 8:10am  
**QS 40. AN INSTITUTIONAL REVIEW OF THE MANAGEMENT OF FDG-PET AVID THYROID INCIDENTALOMAS: ARE WE DOING ENOUGH?**  
Jessica Pries MD  
Ochsner Clinic Foundation

8:10am - 8:17am  
**QS 41. FACTORS PREDICTING THYROID MALIGNANCY IN FINE NEEDLE ASPIRATION BIOPSY SPECIMENS CLASSIFIED AS ATYPIA OF UNCERTAIN SIGNIFICANCE/ FOLLICULAR LESION OF UNCERTAIN SIGNIFICANCE**  
Ciara Brown BS  
Charleston Area Medical Center

*Indicates Gold Medal Award Finalist*
8:17am - 8:24am
**QS 42. DIABETES AFTER TRANSPLANT: AN UNDERAPPRECIATED RISK FACTOR FOR POST-SURGICAL COMPLICATIONS IN KIDNEY RECIPIENTS**
Prabhakar Baliga MD
Medical University of South Carolina

8:24am - 8:31am
**QS 43. IMPROVING SURVEILLANCE OF TRAUMATIC THORACIC AORTIC INJURIES REPAIRED WITH THORACIC ENDOVASCULAR GRAFT PLACEMENT**
Nathan Ludwig MD
University of Louisville

8:31am - 8:38am
**QS 44. OUTCOMES IN MITRAL VALVE REPAIR VERSUS REPLACEMENT: THE SAINT THOMAS HEART EXPERIENCE**
Cesar S. Molina MD
University of Tennessee Medical Center, Nashville

8:45am – 9:00am
**Morning Break, Exhibits & ePoster Viewing**
Florida Ballroom, Salons 1-3

9:00am - 10:00am
**Living Outside the Hospital**
Florida Ballroom, Salons 4-6

**Moderator:**
David B. Adams, MD
Medical University of South Carolina

**What is it Like to be an NFL Punter?**
Alan Herline, MD | Augusta University

**What is it Like to be a Hereford Cattle Baron?**
R. Philip Burns, MD | UT College of Medicine, Chattanooga

*Indicates Gold Medal Award Finalist*
What is it Like to be a Thoroughbred Horse Racer?
J. David Richardson, MD | University of Louisville

What is it Like to Get a Double Lung Transplant? The Other Side of The Knife
Joseph J. Tepas, III, MD | University of Florida College of Medicine-Jacksonville

10:00am - 12:00pm
Scientific Session 8
Florida Ballroom, Salons 4-6

Moderators:
Kevin E. Behrns MD, St. Louis University
Amy Hildreth MD, Wake Forest School of Medicine

10:00am - 10:15am
25. NEGATIVE SESTAMIBI SCANS PREDICT LOWER LIKELIHOOD OF SURGICAL REFERRAL IN PATIENTS WITH PRIMARY HYPERPARATHYROIDISM
Jacob Lloyd MD
University of Tennessee College of Medicine, Chattanooga
Invited Discussant: Snehal Patel MD, Emory University

10:15am - 10:30am
26. COMPARATIVE ANALYSIS OF NISSEN FUNDOPLICATION AND MAGNETIC SPHINCTER AUGMENTATION FOR THE TREATMENT OF MEDICALLY REFRACTORY GERD
William Richards MD
University of South Alabama Medical Center
Invited Discussant: Alex Rosemurgy MD, Florida Hospital Tampa

10:20am - 10:45am
27. AN ACUTE CARE SURGEON’S VIEW OF BARIATRIC EMERGENCIES: ABDOMINAL OPERATIONS CARRY HIGH MORTALITY
Chad Katona MD
Indiana University, Methodist Hospital
Invited Discussant: Bryan Richmond MD, MBA, Western Virginia University - Charleston

*Indicates Gold Medal Award Finalist
10:45am - 11:00am
28. ACS NSQIP SURGICAL RISK CALCULATOR: PILOT ANALYSIS ON FEASIBILITY IN AN ACADEMIC SAFETY NET HOSPITAL
Abbie Jensen MD
University of Florida College of Medicine
Invited Discussant: Joe Sharma MD, Emory University

11:00am - 11:15am
29. THE IMPACT OF TRAUMA CENTER PATIENT VOLUME ON OBSERVED/EXPECTED MORTALITY: DOES SIZE MATTER?
Orlando Morejon MD
Kendall Regional Medical Center
Invited Discussant: Reagan Bollig MD, University of Tennessee Medical Center, Knoxville

11:15am – 11:30am
30. DEFINING OUTCOMES AFTER COLON RESECTION IN BLUNT TRAUMA: IS DIVERSION OR PRIMARY ANASTOMOSIS MORE FAVORABLE?
Alaina Lasinski MD
Loyola University Medical Center
Invited Discussant: Mary Aaland MD, University of North Dakota

11:30am - 11:45am
31*. A CALL FROM THE DESERT: A FIVE-YEAR EXPERIENCE WITH IN CONFLICT TRAUMA TELEMEDICINE
Mariana F. Jucá Moscardi MD
University of Miami
Invited Discussant: Jay Collins MD, Eastern Virginia Medical School

11:45am - 12:00pm
32. PROPOFOL INFUSION SYNDROME: EFFICACY OF A PROSPECTIVE SCREENING PROTOCOL
Thomas Schroeppe1 MD, MS
Memorial Hospital, University of Colorado Health
Invited Discussant: Errington Thompson MD, Marshall University

12:00pm - 12:10pm
Closing Announcements, Awards & Meeting Adjournment
Florida Ballroom, Salons 4-6

*Indicates Gold Medal Award Finalist
MONDAY, FEBRUARY 12, 2018

6:15am - 8:00am  
**Kiosk 1- Breast / Cancer Soft Tissue**  
Florida Ballroom, Salon 1-3 & Foyer  
**Moderators:**  
George Fuhrman MD, Ochsner Clinic  
Laura Witherspoon MD, University Surgical Associates

6:15am - 6:20am  
P 2. DOES THE DAY OF THE WEEK A MASTECTOMY IS DONE INFLUENCE LENGTH OF STAY?  
Anees Chagpar MD MBA MPH  
Yale University

6:20am - 6:25am  
P 1. PROPHYLACTIC ANTIBIOTICS IN IMPLANT-BASED BREAST RECONSTRUCTION  
Katherine Kelley MD  
Eastern Virginia Medical School

6:25am - 6:30am  
P 3. USE OF ONLAY AND LAPAROSCOPICALLY-PLACED PREPERITONEAL MESH FOR FASCIAL REINFORCEMENT IN A PATIENT WITH A RECURRENT ABDOMINAL BULGE AFTER TRANSVERSE RECTUS ABDOMINIS MYOCUTANEOUS FLAP BREAST RECONSTRUCTION, A CASE REPORT  
Brian Hill MD  
Medical University of South Carolina

6:30am - 6:35am  
P 4. SURGICAL MANAGEMENT OF TRAUMATIC BALLISTIC INJURY TO THE BREAST  
Monica Polcz MD  
Vanderbilt University Medical Center

6:35am - 6:40am  
P 5. BREAST NECROSIS AFTER CARDIAC BYPASS SURGERY  
Luis Ozuna DO  
University of Florida College of Medicine

*Indicates Gold Medal Award Finalist
6:40am - 6:45am  
**P 6. DUCTAL CARCINOMA IN-SITU OF THE MALE BREAST**  
Ashlee Stutsrim MD  
Wake Forest University School of Medicine

6:45am - 6:50am  
**P 7. NECROTIZING FASCIITIS OF THE BREAST; CASE REPORT OF A RARE INFECTION**  
Laura Ashley Griffin Ray MD  
University of Mississippi Medical Center

6:50am - 6:55am  
**P 8. PREDICTING PATHOLOGIC COMPLETE RESPONSE TO NEOADJUVANT CHEMOTHERAPY IN TRIPLE NEGATIVE BREAST CANCER**  
Julia Saltalamacchia  
Emory University

6:55am - 7:00am  
**P 9. THE EFFECT OF CONSENSUS 2014 MARGIN GUIDELINES ON RE-EXCISION: A MULTI-INSTITUTION RETROSPECTIVE STUDY**  
Staci Aubry MD  
University of North Carolina

7:00am - 7:05am  
**P 10. NIPPLE-SPARING MASTECTOMY: OUTCOMES, SAFETY, AND IMPROVEMENTS OVER TIME AT AN ACADEMIC BREAST CENTER**  
Christine Velazquez MD  
Wake Forest University School of Medicine

7:05am - 7:10am  
**P 11. OMISSION OF COMPLETION AXILLARY LYMPH NODE DISSECTION IN NODE-POSITIVE BREAST CANCER PATIENTS FOLLOWING TOTAL MASTECTOMY: EXPERIENCE OF A COMMUNITY CANCER CENTER**  
Leslie Son PhD  
Our Lady of the Lake Regional Medical Center

*Indicates Gold Medal Award Finalist*
7:10am - 7:15am
P 12. THE UTILITY OF MARGINPROBE IN DENSE BREAST TISSUE DURING PARTIAL MASTECTOMY
Eric Weiss MD
Albert Einstein Medical Center

7:15am - 7:20am
P 13. DETERMINANTS OF QUALITY OF LIFE IN YOUNG BREAST CANCER SURVIVORS
Eric Feliberti MD
Eastern Virginia Medical School

7:20am - 7:25am
P 14. A RARE CASE OF INVASIVE DUCTILE CARCINOMA PRESENTING IN ACCESSORY BREAST TISSUE
Walker Shearon MD
Atlanta Medical Center

7:25am - 7:30am
P 15. THE EFFECT OF INSURANCE AND RACE ON BREAST CANCER TUMOR BIOLOGY AND SHORT-TERM OUTCOMES
Astrid Botty Van Den Bruele MD
University of Florida College of Medicine

7:30am - 7:35am
P 16. RECURRENT BREAST CANCER PRESENTING AS INGUINAL ADENOPATHY
Kyle Wood MD
Aurora Medical Center Manitowoc County

7:35am - 7:40am
P 17. ALVEOLAR RHABDOMYOSARCOMA OF THE BREAST IN ADOLESCENT FEMALE
Christopher Jean-Louis DO, MPH
Mercer University/Navicent Health

7:40am - 7:45am
P 18. IS BREAST DENSITY A PROGNOSTIC FACTOR FOR BREAST CANCER?
Jennifer Hubbard MD
Yale University

*Indicates Gold Medal Award Finalist
7:45am - 7:50am
P 19. BASALOID SQUAMOUS CELL CARCINOMA - A LITERATURE REVIEW
Yamuna Krishna MD
Atlanta Cancer Research and Education Foundation

7:50am - 7:55am
P 20. TALIMOGENE LAHERPAREPVEC (T-VEC) TREATMENT SHOWS CONTINUED SYSTEMIC RESPONSE IN METASTATIC MELANOMA WHEN TRANSITIONING FROM SUBCUTANEOUS LESIONS TO LYMPHATIC METASESES
Laura Ashley Griffin Ray MD
University of Mississippi Medical Center

7:55am - 8:00am
P 21. NEOADJUVANT TALIMOGENE LAHERPAREPVEC IN THE TREATMENT OF IN TRANSIT MELANOMA OF THE CHEST WALL
Meagan Mahoney MD
University of Mississippi Medical Center

6:15am - 6:20am
P 22. TIMELY LIGATION OF THORACIC DUCT IN POST ESOPHAGECTOMY CHYLE LEAK KEY TO SUCCESSFUL MANAGEMENT
Shekhar Gogna MD
Westchester Medical Center

6:20am - 6:25am
P 23. SUCCESSFUL TREATMENT OF SPLENIC OLIGOMETASTASIS FROM SQUAMOUS CELL CARCINOMA OF THE CERVICAL ESOPHAGUS
Sarah Fox MD
New Hanover Regional Medical Center

*Indicates Gold Medal Award Finalist
6:25am - 6:30am
**P 24. DISCREPANCIES IN CARE: IMPACT OF SOCIOECONOMIC STATUS ON ESOPHAGECTOMIES BEING COMPLETED AT ACADEMIC PROGRAMS**
Ericha Worple DO
Geisinger Medical Center

6:30am - 6:35am
**P 27. PANCREATIC VIPOMA WITH RECURRENT HEPATIC METASTASES**
Andrea Tsoris MD
University of Tennessee Medical Center, Nashville

6:35am - 6:40am
**P 28. PRIMARY SQUAMOUS CELL CARCINOMA OF THE AMPULLA OF VATER**
Emily Evans M4
University of Mississippi Medical Center

6:40am - 6:45am
**P 29. A RARE DIAGNOSIS OF INTRADUCTAL TUBULOPAPILLARY NEOPLASM OF THE PANCREAS FOLLOWING PANCREATICODUODENECTOMY**
Allison Cauthen BS
Mercer University/Navicent Health

6:45am - 6:50am
**P 30. INCISIONAL MALIGNANT EVOLUTION OF PANCREATIC INTRADUCTAL PAPILLARY MUCINOUS NEOPLASM**
Haley Daigle MD, MPH
Augusta University

6:50am - 6:55am
**P 31. MUCINOUS ECCRINE CARCINOMA OF THE SWEAT GLANDS IN THE PERIORBIT: A CASE REPORT AND DISCUSSION**
Sun Kim MD
Conemaugh Memorial Medical Center

*Indicates Gold Medal Award Finalist*
6:55am - 7:00am  
**P 32. ANGIOSARCOMA IN A RENAL TRANSPLANT PATIENT**  
Katharine Lasher MD  
East Tennessee State University

7:00am - 7:05am  
**P 33. MANAGEMENT OF WOLFIANN DUCT CARCINOMA WITH CYTOREDUCTIVE SURGERY AND HYPERTHERMIC INTRAPERITONEAL CHEMOTHERAPY**  
Wade Christopher MD  
University of Mississippi Medical Center

7:05am - 7:10am  
**P 34. RECURRENT SMALL BOWEL OBSTRUCTION CAUSED BY METASTATIC CERVICAL CANCER WITH NEGATIVE PAP SCREENING**  
Danielle Tamburrini DO  
Inspira Health Network

7:10am - 7:15am  
**P 35. NEOADJUVANT CAPECITABINE RESULTS IN SIMILAR TOTAL LYMPH NODE HARVESTS AS 5-FLUOROURACIL BUT AN INCREASED NUMBER OF LYMPH NODES CONTAINING ADENOCARCINOMA UPON RESECTION**  
Katherine Rhoades Smith BS  
Mercer University/Navicent Health

7:15am - 7:20am  
**P 36. LEIOMYOSARCOMA OF THE RENAL PELVIS**  
Katharine Lasher MD  
East Tennessee State University

7:20am - 7:25am  
**P 37. MANAGEMENT OF NEUROENDOCINE CARCINOMATOSIS WITH CYTOREDUCTIVE SURGERY AND HYPERTHERMIC INTRAPERITONEAL CHEMOTHERAPY**  
Wade Christopher MD  
University of Mississippi Medical Center

*Indicates Gold Medal Award Finalist*
7:25am - 7:30am
**P 38. MALIGNANCY IN APPENDICEAL AMYLOIDOSIS: A CASE REPORT**
Morgan Bonds MD
University of Oklahoma Health Sciences Center

7:30am - 7:35am
**P 39. RENAL CELL CARCINOMA: A GENERAL SURGEON’S EXPERIENCE**
Alejandro Chavarriaga MD
Atlanta Medical Center

7:35am - 7:40am
**P 40. GI BLEEDING FROM CANCER WITH ANTICOAGULATION AND DUAL ANTIPLATELET THERAPY: WALKING A FINE LINE**
Katherine Foley MD
Orlando Regional Medical Center

7:40am - 7:45am
**P 41. EXTRASKELETAL OSTEOSARCOMA DIAGNOSED FOLLOWING ACUTE TRAUMATIC INJURY: A CASE REPORT AND LITERATURE REVIEW**
Karleigh Curfman MD
Duke LifePoint Conemaugh Memorial Medical Center

7:45am - 7:50am
**P 42. A PEDUNCULATED PRETENDER: A CASE OF INVASIVE ANORECTAL MUCOSAL MELANOMA**
Marybeth Hall MD
Vanderbilt University Medical Center

6:15am - 8:00am
**Kiosk 3- Colorectal**
Florida Ballroom, Salon 1-3 & Foyer

**Moderators:**
Maryam Saidy MD, Kaiser Permanent
Michael Honaker MD, Navicent Health

6:15am - 6:20am
**P 43. MANAGEMENT OF SIGMOID VOLVULUS**
Cameron Gill MS
Charleston Area Medical Center

*Indicates Gold Medal Award Finalist
6:20am - 6:25am
P 44. INSTITUTIONAL REVIEW OF PATIENT SATISFACTION AND OUTCOMES COMPARING CONVENTIONAL HEMORRHOIDECTOMY AND HEMORRHOID ARTERY LIGATION
Adatee Okonkwo MD
Morehouse School of Medicine

6:25am - 6:30am
P 45. ROBOTIC VS LAPAROSCOPIC RESECTION FOR COLORECTAL DISEASE
Thomas Kleinschmidt MD
Brookwood Baptist Health System

6:30am - 6:35am
P 46. A PROTOCOL TO DECREASE SURGICAL SITE INFECTION RATES IN COLORECTAL SURGICAL PROCEDURES
Ayman Abunimer
Virginia Tech Carilion School of Medicine

6:35am - 6:40am
P 47. CHRONIC CONSTIPATION AND MEGARECTUM AS CAUSE OF TUBOOVARIAN ABSCESS
Elizabeth Wood MD
Loyola University Medical Center

6:40am - 6:45am
P 48. SACRAL NERVE STIMULATOR FOR THE TREATMENT OF ATYPICAL FECAL INCONTINENCE
Mary Chavez MD
Morehouse School of Medicine

6:45am - 6:50am
P 49. COMPARISON OF C-REACTIVE PROTEIN AND WHITE BLOOD CELL COUNT AS PREDICTORS OF INFECTIOUS COMPLICATIONS AFTER COLORECTAL SURGERY
Samuel Kim MD
Eastern Virginia Medical School

*Indicates Gold Medal Award Finalist
6:50am - 6:55am
P 50. IMPACT OF IMPLEMENTATION OF ENHANCED RECOVERY AFTER SURGERY (ERAS) ON COLORECTAL PATIENTS IN A RURAL HOSPITAL
Kevin Londe MD
Regional Medical Center in Orangeburg

6:55am - 7:00am
P 51. LAPAROSCOPIC REDO LOW ANTERIOR RESECTION FOR IATROGENIC ISCHEMIC DESCENDING COLON
Sofiane El Djouzi MD, MS
Loyola University Medical Center

7:00am - 7:05am
P 52. THE S.T.A.R.R. PROCEDURE WITH TWO DIFFERENT DEVICES: COMPARATIVE RESULTS
Aldo Bove MD, PhD
University “G. D’Annunzio”

7:05am - 7:10am
P 53. LAPAROSCOPIC MANAGEMENT OF COLONOSCOPY POLYPECTOMY SNARE ENTRAPMENT
Rachel Martin MD
Orlando Regional Medical Center

7:10am - 7:15am
P 54. RATE OF CONVERSION TO AN OPEN PROCEDURE IS REDUCED IN PATIENTS UNDERGOING COLORECTAL SURGERY IF A ROBOTIC-ASSISTED APPROACH IS UTILIZED
Leah Wells
Mercer University/Navicent Health

7:15am - 7:20am
P 55. CECAL VOLVULUS IN WEST VIRGINIA: REVIEW FROM A LARGE ACADEMIC INSTITUTION
Kimberly Bailey MD
West Virginia University

*Indicates Gold Medal Award Finalist
7:20am - 7:25am  
P 56. PERFORATED SIGMOID DIVERTICULITIS RESULTING IN SUBCUTANEOUS ABSCESS  
John Neill MD  
University of Mississippi Medical Center

7:25am - 7:30am  
P 58. LIPOSARCOMA OF THE COLON PRESENTING AS INTUSSUSCESSION  
Jessica Stephens  
East Tennessee State University

7:30am - 7:35am  
P 59. IMPROVEMENT IN PATHOLOGY LYMPH NODE HARVESTING IMPROVES GUIDELINE ADHERENCE FOR COLORECTAL CANCER  
Alanna Gretschel DO  
Geisinger Medical Center

7:35am - 7:40am  
P 60. COLON CANCER IN AN ADULT WITH TRISOMY 13  
Samuel Kim MD  
Eastern Virginia Medical School

7:40am - 7:45am  
P 61. ADENOSQUAMOUS CARCINOMA OF THE ANUS: AN UNCOMMON MALIGNANCY PRESENTING A TREATMENT CHALLENGE  
Megan Johnson MD  
University of Tennessee Medical Center, Knoxville

7:45am - 7:50am  
P 62. BLINDSIDED BY METASTATIC RECTAL ADENOCARCINOMA: UNFORESEEN CIRCUMSTANCES IN DIAGNOSIS AND TREATMENT  
Gifty Abraham MD  
University of South Alabama Medical Center

*Indicates Gold Medal Award Finalist
7:50am - 7:55am
**P 63. MUIR-TORRE SYNDROME, A RARE PHENOTYPE OF HEREDITARY NON-POLIPOSIS COLORECTAL CANCER WITH CUTANEOUS MANIFESTATIONS**
David Rubay MD
Florida Atlantic University, Charles E. Schmidt School of Medicine

6:15am - 8:00am
**Kiosk 4 – Trauma / Critical Care**
Florida Ballroom, Salon 1-3 & Foyer
**Moderators:**
Bryan Morse MD, Emory University
Pascal Udekwu, MD MBA, MHA, WakeMed Health & Hospitals

6:15am - 6:20am
**P 64. EARLY USE OF EXTRACORPOREAL MEMBRANE OXYGENATION FOLLOWING PENETRATING THORACIC TRAUMA**
Laurel Mulder MD
John H Stroger, Jr. Hospital of Cook County

6:20am - 6:25am
**P 65. VENOARTERIAL EXTRACORPOREAL MEMBRANE OXYGENATION FOR POLYPHARMACY-INDUCED CARDIOGENIC SHOCK AND RESPIRATORY FAILURE**
Jane Chung MD
Medical College of Georgia at Augusta University

6:25am - 6:30am
**P 66. FACTORS CONTRIBUTING TO MORBIDITY AFTER COMBINED ARTERIAL AND VENOUS LOWER EXTREMITY TRAUMA**
Nathan Manley MD, MPH
University of Tennessee Medical Center, Memphis

6:30am - 6:35am
**P 67. PREDICTIVE VALUE OF THE INITIAL TRAUMA SURVEY: IS OUR HUNCH GOOD ENOUGH?**
John Cull MD
Greenville Health System

*Indicates Gold Medal Award Finalist*
6:35am - 6:40am  
P 68. COMPLEX TRACHEOESOPHAGEAL INJURY FROM A GUNSHOT WOUND  
Raquel Weston MD  
University of Florida College of Medicine

6:40am - 6:45am  
P 69. SHOOTER INTENT AS A PREDICTOR OF OUTCOME IN FIREARM INJURY  
W. Aaron Marshall MD  
University of Louisville

6:45am - 6:50am  
P 70. MINIMALLY INVASIVE APPROACH FOR REMOVAL OF BULLET FROM THORACIC AORTIC WALL AFTER GUNSHOT WOUND TO THE CHEST  
Dariam Cardentey Oliva MD  
Orlando Regional Medical Center

6:50am - 6:55am  
P 71. BILATERAL DISTAL URETERAL TRANSECTION IN THE SETTING OF BLUNT TRAUMA  
Desiree Raygor MD  
UF Health Jacksonville

6:55am - 7:00am  
P 73. CORRELATION BETWEEN INJURY SEVERITY SCORE AND SERUM MYOGLOBIN LEVEL IN TRAUMA PATIENTS  
Bradley DeLeu DO  
Genesys Regional Medical Center

7:00am - 7:05am  
P 74. ACUTE TRAUMATIC SUBDURAL HEMATOMA: FACTORS INFLUENCING READMISSION IN THE ELDERLY  
Tran Ho DO  
Genesys Regional Medical Center

*Indicates Gold Medal Award Finalist
7:05am - 7:10am
P 75. INSURANCE STATUS AS A PREDICTOR OF HOSPITAL LENGTH OF STAY IN TRAUMA PATIENTS
Jessica Friedman MD
Tulane University School of Medicine

7:10am - 7:15am
P 76. AN UPDATE ON THE USE OF TEMPORARY INTRAVASCULAR SHUNTING IN THE ERA OF BALANCED BLOOD PRODUCT RESUSCITATION
Caitlin Fitzgerald MD
Emory University

7:15am - 7:20am
P 77. THAT’S NO BEE STING: PENETRATING NECK TRAUMA WITH ISOLATED VERTEBRAL ARTERY INJURY
Julie Zachwieja DO
Henry Ford Macomb Hospital

7:20am - 7:25am
P 78. THE PROBLEM OF EXPOSURE FOR DAMAGE CONTROL IN AN ADOLESCENT WITH MULTIPLE ABDOMINAL GUNSHOT WOUNDS SIX MONTHS AFTER SURGERY FOR A PREVIOUS ABDOMINAL GUNSHOT
Jandie Schwartz DO
Inspira Health Network

7:25am - 7:30am
P 79. DOES 24 HOUR BEDREST AFFECT OUTCOMES IN PATIENTS WITH LOW GRADE (GRADE I-II) SPLENIC LACERATIONS OR HEMATOMAS?
Jared Griffard MD
University of Tennessee Medical Center, Knoxville

7:30am - 7:35am
P 80. DELAYED TRAUMATIC TEMPORAL ARTERY PSEUDOANEURYSM FOLLOWING MOTOR VEHICLE COLLISION
John Vance DO
East Tennessee State University

*Indicates Gold Medal Award Finalist
7:35am - 7:40am
P 81. GOING NOWHERE FAST: A COMPARATIVE STUDY IN MOPED AND MOTORCYCLE TRAUMA
Jennifer Wentzel MD, MS
Grand Strand Medical Center

7:40am - 7:45am
P 82. PSYCHIATRIC COMORBIDITIES AND OUTCOMES IN TRAUMA PATIENTS: IS THERE A SIGNIFICANT DIFFERENCE?
Paul Villaroel MD
Kendall Regional Medical Center

7:45am - 7:50am
P 83. AN UNUSUAL BLUNT TRAUMATIC RETRO-AORTIC HERNIA
Miren Schinco MD
WakeMed Health & Hospitals

6:15am - 8:00am
Kiosk 5- General Surgery
Florida Ballroom, Salon 1-3 & Foyer
Moderators:
Jessica Burgess, MD Eastern Virginia Medical School
William Richards MD, University of South Alabama

6:15am - 6:20am
P 85. GASTRIC PNEUMATOSIS: FATAL OR BENIGN?
Nina Cohen MD
Eastern Virginia Medical School

6:20am - 6:25am
P 86. LOW GRADE APPENDICEAL MUCINOUS NEOPLASM PRESENTING AS AN INTERNAL HERNIA CAUSING A SMALL BOWEL OBSTRUCTION
Delquis Mendoza MD
Wellstar North Fulton Hospital

6:25am - 6:30am
P 87. CLOSED-LOOP BOWEL OBSTRUCTION SECONDARY TO ACUTE APPENDICITIS
Dariam Cardentey Oliva MD
Orlando Regional Medical Center

*Indicates Gold Medal Award Finalist
6:30am - 6:35am
P 88. GASTRIC OUTLET OBSTRUCTION AFTER SUBTOTAL CHOLECYSTECTOMY
John F Tierney MD
Rush University Medical Center

6:35am - 6:40am
P 89. SMALL BOWEL FISTULIZATION WITH ORPHANED INTRAOPERITONEAL VENTRICULOOPERITONEAL SHUNT CATHETER
Jesse Wright MD
Vanderbilt University Medical Center

6:40am - 6:45am
P 90. SMALL BOWEL HEMANGIOMA IN AN ADULT
Laurel Mulder MD
John H Stroger, Jr. Hospital of Cook County

6:45am - 6:50am
P 91. ACCURACY OF MRI IN DIAGNOSING APPENDICITIS DURING PREGNANCY
Fabiola Aguilera MD
Bronx Lebanon Hospital Center

6:50am - 6:55am
P 92. INTERNAL HERNIA AS A CAUSE OF SMALL BOWEL OBSTRUCTION WITHOUT HISTORY OF BOWEL SURGERY
Anastasia Turenkov BA
Eastern Virginia Medical School

6:55am - 7:00am
P 93. CREPITANT CELLULITIS DUE TO STAPHYLOCOCCUS LUGDUNENSIS: CASE REPORT AND REVIEW OF THE LITERATURE
Jaclyn Malat DO
Reading Hospital

7:00am - 7:05am
P 94. MOYNIHAN’S HUMP – AN UNUSUAL ANATOMIC VARIATION ENCOUNTERED DURING LAPAROSCOPIC CHOLECYSTECTOMY
Marcus Yarbrough MD
Indiana University School of Medicine

*Indicates Gold Medal Award Finalist
7:05am - 7:10am
**P 95. SUCCESSFUL MANAGEMENT OF LUDWIG’S ANGINA ONLY TO ENCOUNTER PERFORATED VISCUS DURING RECOVERY**
Sunny Kim MD
Conemaugh Memorial Medical Center

7:10am - 7:15am
**P 96. INTUSSUSCEPTION OF THE SMALL BOWEL SECONDARY TO METASTATIC PROSTATE CANCER**
Caitlin Kelly
Northshore University Health System

7:15am - 7:20am
**P 97. STUMP APPENDICITIS MANAGEMENT**
Robert Rhyne MD
Greenville Health System

7:20am - 7:25am
**P 98. A RARE CAUSE OF CHRONIC ABDOMINAL PAIN: LYMPHANGIOMA OF THE GALLBLADDER**
Laura Fluke DO
Naval Medical Center Portsmouth

7:25am - 7:30am
**P 99. DOUBLE REVERSE MALROTATION: AN UNCOMMON PRESENTATION OF ABDOMINAL PAIN**
Rindi Uhlich MD
University of Alabama at Birmingham

7:30am - 7:35am
**P 100. LIVER VOLVULUS: A RARE COMPLICATION OF WANDERING LIVER**
Kristine Griffin MD
Greenville Health System

7:35am - 7:40am
**P 101. USE OF LIGASURE DEVICE DURING EXCISION OF MASSIVE CHRONICALLY INFECTED PANNICULUS: A NOVEL TECHNIQUE AND REVIEW OF LITERATURE**
Jordan Bilezikian MD
New Hanover Regional Medical Center

*Indicates Gold Medal Award Finalist*
7:40am - 7:45am  
P 102. LAPAROSCOPIC RESECTION OF AN APPENDIX MUCOCELE IN A BREAST CANCER PATIENT  
Hugo Bonatti MD  
Easton Hospital

7:45am - 7:50am  
P 103. ROBOTIC-ASSISTED COMPLETION CHOLECYSTECTOMY FOLLOWING PREVIOUS SUBTOTAL CHOLECYSTECTOMY - A CASE SERIES  
William B. Lyman MD  
Carolinas Medical Center

7:50am - 7:55am  
P 104. SKIN SPARING WIDE LOCAL DEBRIDEMENT OF NECROTIZING SOFT TISSUE INFECTION: CAN LESS BE MORE?  
Annie Laurie Benzie MD  
Ocala Health

7:55am - 8:00am  
P 105. LAPAROSCOPIC REPAIR OF SUPERIOR MESENTERIC ARTERY SYNDROME  
Daniel Verna MD  
Greenville Health System

6:15am - 8:00am  
Kiosk 6 – Trauma / Acute Care / Other  
Florida Ballroom, Salon 1-3 & Foyer  
Moderators:  
Jay Collins MD, Eastern Virginia Medical School  
William Hope MD, New Hanover Regional Medical Center

6:15am - 6:20am  
P 106. ABDOMINAL AND PELVIC VASCULAR INJURY: AN NTDB STUDY  
Ethan Talbot MD  
Bassett Medical Center

*Indicates Gold Medal Award Finalist
6:20am - 6:25am
**P 107. VARIATIONS IN THE RATE OF PEDIATRIC SPLENECTOMY: AN NTDB STUDY**
Ethan Talbot MD
Bassett Medical Center

6:25am - 6:30am
**P 108. REPAIR OF VASCULAR STRETCH INJURY TO DISTAL FEMORAL ARTERY FOLLOWING FEMUR FRACTURE**
April Grant MD
University of Miami

6:30am - 6:35am
**P 109. TEMPORAL FACTORS DRIVE MOTORCYCLE RELATED TRAUMA**
Michael Smith MD
Vanderbilt University Medical Center

6:35am - 6:40am
**P 110. ELECTRONIC CIGARETTE EXPLOSIONS AS A CAUSE FOR BURN INJURY**
Jeffrey Howard MD
University of Louisville

6:40am - 6:45am
**P 111. A NOVEL APPLICATION OF AN OLD TECHNIQUE: THE USE OF EXTERNAL TO INTERNAL CAROTID ARTERY TRANSPOSITION IN TRAUMA**
Abbie Jensen MD
University of Florida College of Medicine

6:45am - 6:50am
**P 112. GROUP G STREPTOCOCCUS LEADING TO NECROTIZING SOFT TISSUE INFECTION AFTER LOWER EXTREMITY VENOUS ABLATION**
Saurabh Gupta MD
Saint Agnes Hospital

*Indicates Gold Medal Award Finalist*
6:50am - 6:55am

**P 113. ISOLATED THROUGH-AND-THOROUGH TRACHEAL INJURY CAUSED BY GUNSHOT WOUND TO RIGHT CHEST SUCCESSFULLY MANAGED WITH PRIMARY REPAIR AND BUTTRESSING INTERCOSTAL MUSCLE FLAP**
Jean-Paul Wuilleumier MD
Medical College of Georgia at Augusta University

6:55am - 7:00am

**P 114. VALIDATING A SCREENING PROTOCOL FOR BLUNT CEREBROVASCULAR INJURY AT A RURAL LEVEL ONE TRAUMA CENTER**
Ashley Thompson MD
Memorial University Medical Center

7:00am - 7:05am

**P 115. DOES RESUSCITATIVE ENDOVASCULAR BALLOON OCCLUSION OF THE AORTA (REBOA) HAVE A ROLE IN UPPER GI BLEED?**
Jessica Stephens
East Tennessee State University

7:05am - 7:10am

**P 116. GASTRIC PERFORATION FOLLOWING CPR WITH AN AUTOMATED MECHANICAL CHEST COMPRESSION DEVICE**
Delquis Mendoza MD
Wellstar North Fulton Hospital

7:10am - 7:15am

**P 117. BIOABSORBABLE MESH REPAIR IS A BETTER ALTERNATIVE TO OPEN ABDOMINAL WOUND MANAGEMENT FOR FASCIAL DEHISCENCE WITH LOSS OF DOMAIN AND PERITONITIS**
Sofiane El Djouzi MD, MS
Loyola University Medical Center

7:15am - 7:20am

**P 118. GALLBLADDER RUPTURE AND ACUTE THORACIC AORTIC DISRUPTION FOLLOWING BLUNT TRAUMA**
Dustin Price DO
University of Florida College of Medicine

*Indicates Gold Medal Award Finalist*
7:20am - 7:25am
**P 119. LOWER EXTREMITY RECONSTRUCTION: REVISITING THE CROSS-LEG FLAP**
Andrew Bonett MD
Greenville Health System

7:25am - 7:30am
**P 120. A CASE OF ACUTE ON CHRONIC MESENTERIC ISCHEMIA INVOLVING MULTIFOCAL CARCINOID OF THE ILEUM**
Cici Zhang MD
Northside Hospital

7:30am - 7:35am
**P 121. RESECTION OF EXTENSIVE RETROPERITONEAL LYMPHANGIOMA**
Meagan Mahoney MD
University of Mississippi Medical Center

7:35am - 7:40am
**P 122. MODIFIED PROTOCOL UTILIZING ADJUVANT RADIATION AFTER EXCISION OF KELOIDS: A CASE SERIES**
Linda Murphy MD
University of Arkansas for Medical Sciences

7:45am - 7:50am
**P 124. A SARCOMATOUS MIMICKER: A CASE OF INTRAMUSCULAR HEMANGIOMA**
Lauren Grimsley MD, MBA
University of Tennessee Medical Center, Knoxville

*Indicates Gold Medal Award Finalist*
7:50am - 7:55am

**P 125. MEDICAL AND WOUND CARE BY NON-PHYSICIANS IN KINGSTON, JAMAICA: THE URBAN UNDERSERVED IN A DEVELOPING NATION AND THE MISSIONARIES OF THE POOR**
Lisa Pedevillano MBS, DO
Inspira Health Network Vineland

7:55am - 8:00am

**P 126. GOT BLOOD? OVERCOMING BLOOD SHORTAGE IN A HOSPITAL-BASED BLOOD BANK IN GHANA**
Deborah Martin MD
Northside Forsyth Hospital, Enchi Government Hospital, Noguchi Memorial Institute for Medical Research

6:15am - 8:00am

**Kiosk 7- GI**
Florida Ballroom, Salon 1-3 & Foyer

**Moderators:**
Matt Mancini MD, University of Tennessee, Knoxville
Peter Hallowell MD, University of Virginia

6:15am - 6:20am

**P 127. LAPAROSCOPIC REPAIR OF GIANT PARAESOPHAGEAL HERNIA**
Jerec Ricci MD
Medical University of South Carolina

6:20am - 6:25am

**P 128. A GIANT FIBROEPITHELIAL POLYP OF THE SMALL BOWEL ASSOCIATED WITH HIGH-GRADE OBSTRUCTION**
Hanjoo Lee MD
Westchester Medical Center

6:25am - 6:30am

**P 129. GASTRIC ELECTRICAL STIMULATION: DO PATIENT FACTORS INFLUENCE DEVICE REMOVAL?**
Aaron Pinnola DO
Medical University of South Carolina & Grand Strand Medical Center

*Indicates Gold Medal Award Finalist*
6:30am - 6:35am
**P 130. THE TRANSGASTRIC OR ENDOSCOPIC APPROACH TO CLOSURE OF A GASTROGAstrIC FISTULA**
Melissa Hite MD
Medical University of South Carolina

6:35am - 6:40am
**P 131. JEJUNAL LYMPHOMA PRESENTING WITH GASTROINTESTINAL BLEED**
Elizabeth Wood MD
Loyola University Medical Center

6:40am - 6:45am
**P 132. A SUCCESSFUL OF SMALL BOWEL GIST TUMOR PRESENTED WITH LOWER GASTROINTESTINAL AND HEMORRHAGE SHOCK: CASE REPORT**
Mohamed El Zaeedi MD
Queens Hospital Center

6:45am - 6:50am
**P 133. OUTCOME OF TRANS-ORAL INCISIONLESS FUNDOPICATION IN MEDICARE BENEFICIARIES IN A CRITICAL ACCESS HOSPITAL**
Medhat Fanous MD
Aspirus Health System

6:50am - 6:55am
**P 134. IMPACT OF ENDOSCOPIC TRAINING FOR SURGEONS IN ENDOLUMINAL AND LAPAROSCOPIC TREATMENT FOR GASTROESOPHAGEAL REFLUX DISEASE: DATA FROM A RURAL, HIGH VOLUME, ANTI-REFLUX PROGRAM**
Medhat Fanous MD
Aspirus Health System

6:55am - 7:00am
**P 135. LAPAROSCOPIC REPAIR OF HIATAL HERNIA IN THE PRESENCE OF ABERRANT LEFT HEPATIC ARTERY USING EXTRACORPOREAL ARTHROSCOPIC KNOTS**
Medhat Fanous MD
Virginia Tech Carilion School of Medicine

*Indicates Gold Medal Award Finalist*
7:05am - 7:10am
P 138. CARCINOID TUMOR WITHIN A MECKEL’S DIVERTICULUM: A CASE REPORT
Riva Das MD
Orlando Regional Medical Center

7:10am - 7:15am
P 139. MORGAGNI HERNIA PRESENTING AS CECAL VOLVULUS
Jordan Crittenden MD
University of Tennessee Medical Center, Nashville

7:20am - 7:25am
P 141. AORTOENTERIC FISTULA AT THE SITE OF A MARGINAL ULCER FOLLOWING ROUX-EN-Y GASTRIC BYPASS
Katherine Dean MD
Greenville Health System

7:25am - 7:30am
P 142. MORBID TALE OF THE ROUX-EN-O CONFIGURATION OF GASTRIC BYPASS SURGERY
John F Tierney MD
Rush University Medical Center

7:30am - 7:35am
P 144. CECAL VOLVULUS CAUSED BY INTERNAL HERNIATION AFTER ROUX-EN-Y GASTRIC BYPASS SURGERY
Jonathan Rehfuss MD
University of Florida College of Medicine

7:35am - 7:40am
P 145. LAPAROSCOPIC MANAGEMENT OF GASTRODUODENAL FISTULA CAUSED BY GASTRIC BAND EROSION
Jerec Ricci MD
Medical University of South Carolina

7:40am - 7:45am
P 146. IS THERE A “HALO EFFECT” FOR BARIATRIC SURGERY?
Rhett Rhyne MD
Greenville Health System

*Indicates Gold Medal Award Finalist
7:45am - 7:50am
P 147. OBSTRUCTION SECONDARY TO LADD’S BANDS IN A MORBIDLY OBESE BARIATRIC PATIENT
Angela Kao MD
Carolinas Medical Center

6:15am - 8:00am
Kiosk 8- Trauma/Critical Care
Florida Ballroom, Salon 1-3 & Foyer
Moderator:
Amy Hildreth MD, Wake Forest School of Medicine

6:15am - 6:20am
P 148. POLYCYTHEMIA VERA IN THE CRITICALLY INJURED TRAUMA PATIENT
Cressilee Butler MD
University of Oklahoma Health Sciences Center

6:20am - 6:25am
P 149. THE CORRELATION BETWEEN DISTAL EXTREMITY TEMPERATURES AND VASOPRESSOR USE
Keitaro Nakamoto MD
Marshall University

6:25am - 6:30am
P 150. RETAINED GLASS IN PLEURAL CAVITY: IS CHEST XRAY ENOUGH?
Clara E. Angeles MD
Westchester Medical Center

6:30am - 6:35am
P 151. FUNGAL NECROTIZING FASCIITIS AFTER PENETRATING TRAUMA
Melissa Hite MD
Medical University of South Carolina

6:35am - 6:40am
P 152. SEVERE PORTA HEPATIS INJURY FROM A THORACOABDOMINAL GUNSHOT WOUND
Sarah Fox MD
New Hanover Regional Medical Center

*Indicates Gold Medal Award Finalist
6:40am - 6:45am
P 153. THE ROLE OF EPINEPHRINE IN PREHOSPITAL PENETRATING TRAUMATIC CARDIAC ARREST: HIGHER DOSE OF EPINEPHRINE IMPROVES SURVIVAL TO ORGAN DONATION IN PATIENTS WITH ISOLATED HEAD INJURIES
Nathan Manley MD, MPH
University of Tennessee Medical Center, Memphis

6:45am - 6:50am
P 154. CONCOMITANT ABDOMINAL EVISCERATION AND MAJOR VASCULAR INJURY: AN EXCEEDINGLY RARE OCCURRENCE
Eric Whitton MS2
Morehouse School of Medicine

6:50am - 6:55am
P 155. GALLBLADDER NECROSIS AFTER RIGHT HEPATIC ARTERY EMBOLIZATION DUE TO TRAUMATIC HEPATIC INJURY
Patricia Martinez Quinones MD
Augusta University

6:55am - 7:00am
P 157. SURVIVAL AFTER SEVERE ACIDOSIS IN BLUNT TRAUMA: A CASE REPORT
Crystal Koerner MD
Morehouse School of Medicine

7:00am - 7:05am
P 158. ANALYSIS OF TREE RELATED TRAUMA
Zoltan Nemeth MD, PhD
Morristown Medical Center

*Indicates Gold Medal Award Finalist
7:05am - 7:10am
**P 159. CARDIAC MIGRATION OF A PROPHYLACTIC INFERIOR VENA CAVA FILTER: A RARE BUT POTENTIALLY LETHAL COMPLICATION THAT MUST BE AVOIDED**
Jaymie Henry MD, MPH
Florida Atlantic University

7:10am - 7:15am
**P 160. RESIDENT ACCURACY IN PERFORMING EXTENDED FOCUSED ASSESSMENT WITH SONOGRAPHY IN TRAUMA; NOT AS GOOD AS WE THINK WE ARE?**
Alexa Soult MD
Eastern Virginia Medical School

7:15am - 7:20am
**P 161. CELIAC ARTERY INJURY IN THE SETTING OF BLUNT ABDOMINAL TRAUMA: A RARE CAUSE OF A COMMON INJURY**
Christian Jevon Bramwell
Morehouse School of Medicine

7:20am - 7:25am
**P 162. PRELIMINARY VALIDATION OF AN UPDATED ABBREVIATED INJURY SCALE (AIS) CONDENSED CHART AS A TOOL FOR GLOBAL INJURY SEVERITY SCORING**
Megan Morrow MD
Florida Atlantic University

7:25am - 7:30am
**P 163. DELAYED PSEUDOANEURYSM DEVELOPMENT FOLLOWING PENETRATING INJURY TO THE PROFUNDA FEMORIS ARTERY**
Matthew Romine MD
University of Alabama at Birmingham

7:30am - 7:35am
**P 164. VIOLENCE AGAINST WOMEN: FACIAL FRACTURES SECONDARY TO ASSAULT IN THE URBAN FEMALE POPULATION**
Nicholas Oleck BA
Rutgers University

*Indicates Gold Medal Award Finalist*
7:35am - 7:40am

**P 165. TUBE THORACOSTOMY MANAGEMENT IN THE COMBAT WOUNDED**

Joseph Bozzay MD
Uniformed Services University- Walter Reed National Military Medical Center

7:40am - 7:45am

**P 166. THE USE OF REBOA IN TRAUMATIC CARDIAC ARREST: THE FIRST PLACEMENTS IN GEORGIA**

Jonathan Nguyen DO
Morehouse School of Medicine

7:45am - 7:50am

**P 167. REGIONAL ANESTHESIA IN TRAUMATIC RIB FRACTURES: A CAUTIONARY TALE**

Abid Khan MD
Memorial Hospital, University of Colorado Health

6:15am - 8:00am

**Kiosk 9- Endocrine and Solid Organ**

Florida Ballroom, Salon 1-3 & Foyer

**Moderators:**

William Mendez MD, University of Puerto Rico
Joe Sharma MD, Emory University

6:15am - 6:20am

**P 169. RESOLUTION OF RAYNAUD'S SYMPTOMS AFTER PARATHYROIDECTOMY: A CASE REPORT**

Jenny Held MD
Naval Medical Center Portsmouth

6:20am - 6:25am

**P 170. LATERAL ECTOPIC THYROID IN A TEENAGED GIRL**

Don Nakayama MD, MBA,
Florida International University

*Indicates Gold Medal Award Finalist*
6:25am - 6:30am
**P 171. HORMONALLY ACTIVE EXTRA-ADRENAL PARAGANGLIOMA ARISING FROM THE SPLEEN**
Matthew Tufts MD
Wake Forest University School of Medicine

6:30am - 6:35am
**P 172. TRENDS IN MANAGEMENT OF PANCREATIC NEUROENDOCRINE TUMORS: A NATIONAL CANCER DATABASE ASSESSMENT**
Brandon Nuckles MD
Geisinger Medical Center

6:35am - 6:40am
**P 173. SKELETAL DESTRUCTION: A CASE REPORT OF A RARE PRESENTATION OF PRIMARY HYPERPARATHYROIDISM**
Jessica Pries MD
Ochsner Clinic Foundation

6:40am - 6:45am
**P 174. APPLICATION AND UTILITY OF LEFT ADRENAL VEIN/INFERIOR VENA CAVA (LAV/IVC) CRITERIA FOR LATERALIZATION IN HYPERALDOSTERONISM**
Randal Zhou MD
John H Stroger, Jr. Hospital of Cook County

6:45am - 6:50am
**P 175. SESTAMIBI SCANNING AND INTRAOPERATIVE PARATHYROID HORMONE RESULTS FOR PARATHYROID RESECTION IN PRIMARY HYPERPARATHYROIDISM**
Thomas Capasso MD
Memorial Regional Hospital

6:50am - 6:55am
**P 176. PHEOCHROMOCYTOMA APPROACH TO DIAGNOSIS**
Jennifer Laporte MD
Emory University

*Indicates Gold Medal Award Finalist*
6:55am - 7:00am
**P 177. PRIMARY B CELL LYMPHOMA OF THE ADRENAL GLAND: AN ATYPICAL PRESENTATION OF A RARE ADRENAL TUMOR**
Laura Ashley Griffin Ray MD
University of Mississippi Medical Center

7:05am - 7:10am
**P 179. PERIVASCULAR EPITHELIOD TUMOR OF THE LIVER: A CASE SERIES AND REVIEW OF THE LITERATURE**
Andrew Mitchell MD
Augusta University

7:10am - 7:15am
**P 180. LAPAROSCOPIC ULTRASOUND GUIDED MICROWAVE LIVER ABLATION**
Joseph Tingen MD
Greenville Health System

7:15am - 7:20am
**P 182. ELEVATED RED CELL DISTRIBUTION WIDTH AND OUTCOMES IN ADVANCED STAGE HCC AT LIVER TRANSPLANT**
Jacentha Buggs MD
Tampa General Hospital

7:20am - 7:25am
**P 183. SURVIVAL AND HCC RECURRENCE AFTER LIVER TRANSPLANT DUE TO NASH RELATED HCC VS. NON-NASH RELATED HCC**
Julio Sokolich MD
Tampa General Hospital

*Indicates Gold Medal Award Finalist*
7:25am - 7:30am  
P 184. CIRRHOTIC CARDIOMYOPATHY AND DIASTOLIC DYSFUNCTION IN LIVER TRANSPLANTATION  
Jacentha Buggs MD  
Tampa General Hospital

7:30am - 7:35am  
P 185. LIVER SIZE MISMATCH IN DECEASED DONOR LIVER TRANSPLANTATION  
Jacentha Buggs MD  
Tampa General Hospital

7:35am - 7:40am  
P 186. THE IMPACT OF CPR IN HIGH-RISK DCD AND ECD DONORS FOR KIDNEY TRANSPLANTATION  
Jacentha Buggs MD  
Tampa General Hospital

7:40am - 7:45am  
P 187. THE IMPACT OF DELAYED GRAFT FUNCTION IN KIDNEY TRANSPLANT PATIENTS  
Jacentha Buggs MD  
Tampa General Hospital

7:45am - 7:50am  
P 188. LIVING KIDNEY TRANSPLANT OUTCOMES WHEN THE SAME SURGEON VS. DIFFERENT SURGEONS PERFORM THE DONOR PROCUREMENT AND THE RECIPIENT TRANSPLANT SURGERIES  
Julio Sokolich MD  
Tampa General Hospital

7:50am - 7:55am  
P 189. OUTCOMES OF DONOR AND RECIPIENT OBESITY IN KIDNEY TRANSPLANTATION  
Jacentha Buggs MD  
Tampa General Hospital

*Indicates Gold Medal Award Finalist
6:15am - 6:20am
**P 190. AN USUAL CAUSE OF SMALL BOWEL OBSTRUCTION IN A PEDIATRIC PATIENT: RIGHT SIDED PARADUODENAL HERNIA**
Doris Kim MD
Medical University of South Carolina

6:20am - 6:25am
**P 191. INTRAPERICARDIAL TERATOMA IN A NEONATE: A REPORT OF AN INTERESTING CASE**
Alessandra Landmann MD
University of Oklahoma Health Sciences Center

6:25am - 6:30am
**P 192. LONG-TERM FOLLOW-UP AFTER STAPLED INTESTINAL ANASTOMOSES IN NEONATES**
Ana Gayle Christian BS
University of Mississippi Medical Center

6:30am - 6:35am
**P 193. PEDIATRIC NISSEN FUNDOPLICATION: A COMMON PROCEDURE WITH THE POTENTIAL FOR LONG-TERM COMPLICATIONS, A REPORT OF AN INTERESTING CASE**
Alessandra Landmann MD
University of Oklahoma Health Sciences Center

*Indicates Gold Medal Award Finalist*
6:35am - 6:40am  
P 194. TOTAL PARENTERAL NUTRITION LIPID EMULSION PLEURAL EFFUSION MASQUERADING AS A CHYLOTHORAX AFTER TRACHEOESOPHAGEAL FISTULA REPAIR  
Caroline Campbell BS  
Medical College of Georgia at Augusta University

6:40am - 6:45am  
P 195. SYSTEMIC THROMBOLYSIS OF AN OCCLUSIVE AORTIC THROMBUS IN A NEONATE ON EXTRACORPOREAL MEMBRANE OXYGENATION  
Chinwendu Onwubiko MD, PhD  
Children’s Hospital of Alabama

6:45am - 6:50am  
P 196. ENTEROVESICULA FISTULA: AN UNSUAL COMPLICATION FOLLOWING TOTAL PROCTOCOLECTOMY WITH IPAA FOR FAMILIAL ADENOMATOUS POLYPOSIS SYNDROME  
Brittany Johnson MD  
University of Mississippi Medical Center

6:50am - 6:55am  
P 197. PEDIATRIC PATIENTS WITH SMALL CELL CARCINOMA OF THE OVARY DO NOT HAVE WORSE SURVIVAL THAN ADULTS: A REVIEW OF THE NATIONAL CANCER DATABASE  
Chinwendu Onwubiko MD, PhD  
Children’s Hospital of Alabama

6:55am - 7:00am  
P 198. TUBO-OVARIAN ABSCESS IN A 2-YEAR OLD GIRL: A RARE REPORT OF BACTERIAL TRANSLOCATION  
Alessandra Landmann MD  
University of Oklahoma Health Sciences Center

7:00am - 7:05am  
P 199. RECURRENT PYLORIC STENOSIS: CASE REPORT AND REVIEW OF THE LITERATURE  
Caroline Hendricks BS  
Medical University of South Carolina

*Indicates Gold Medal Award Finalist
7:05am - 7:10am

**P 200. A CASE OF AN EXTRAGONADAL RETROPERITONEAL TERATOMA IN AN INFANT**
Colton Lott DO
University of Mississippi Medical Center

7:10am - 7:15am

**P 201. MANAGEMENT OF IMPERFORATED ANUS WITH A RARE RECTOPENILE FISTULA NOT COMMUNICATING WITH URETHRA**
Ilan Maizlin MD, MSPH
Children’s Hospital of Alabama

7:15am - 7:20am

**P 202. HEMOPERITONEUM DUE TO A PERFORATED MECKEL DIVERTICULUM**
Jenny Held MD
Naval Medical Center Portsmouth

7:20am - 7:25am

**P 203. A CAUSE OF BOWEL OBSTRUCTION IN A CHILD: MESENTERIC CYSTIC LYMPHANGIOMA**
Laura Fluke DO
Naval Medical Center Portsmouth

7:25am - 7:30am

**P 204. SOCIOECONOMIC DISPARITIES IN INFANTILE HYPERTROPHIC PYLORIC STENOSIS**
Marco Aru MS4
University of Mississippi Medical Center

7:30am - 7:35am

**P 205. RECURRENT PAIN AFTER RESECTION FOR SLIPPING RIB SYNDROME: REPORT OF A DIFFICULT CASE**
Rachael Kuehn BS
University of Mississippi Medical Center

*Indicates Gold Medal Award Finalist*
7:35am - 7:40am  
**P 206. CECAL DUPLICATION CYST PRESENTING AS INTUSSUSCEPTION**  
Jenny Held MD  
Naval Medical Center Portsmouth

7:40am - 7:45am  
**P 207. MESOBLASTIC NEPHROMA RUPTURED IN UTERO**  
Roberto Alva-Ruiz BBA  
Medical College of Georgia at Augusta University

7:45am - 7:50am  
**P 208. FETAL MIDGUT VOLVULUS PRESENTING AS NEONATAL BOWEL OBSTRUCTION.**  
Tal Koppelmann MD  
University of Alabama at Birmingham

7:50am - 7:55am  
**P 209. THE UNKNOWN DANGER OF THE SAFETY CAR SEAT**  
Mary Arbuthnot DO  
Naval Medical Center Portsmouth

7:55am - 8:00am  
**P 210. OMPHALOMESENTERIC DUCT FISTULA WITH ILEAL PROLAPSE WITHIN AN OMPHALOCELE**  
Walter Capote MD  
University of Tennessee College of Medicine, Chattanooga

*Indicates Gold Medal Award Finalist*
TUESDAY, FEBRUARY 13, 2018

6:15am - 7:00am

Kiosk 1- Trauma/Critical Care
Florida Ballroom, Salon 1-3 & Foyer

Moderators:
Richard Gonzalez MD, Loyola University Medical Center
John Cull MD, Greenville Health System

6:15am - 6:20am
P 211. TRAUMATIC DEATH DURING THE FUNCTIONAL YEARS: WORKING TOWARDS PREVENTION
Lauren Allen DO
Kendall Regional Medical Center

6:20am - 6:25am
P 213. FLAIL CHEST: INFLUENCE ON LENGTH OF STAY AND MORTALITY IN BLUNT CHEST INJURY
Pascal Udekwu MBBS, MBA, MHA
WakeMed Health & Hospitals

6:25am - 6:30am
P 214. ELDERLY FALL PATIENTS NEED A URINALYSIS
Anna Shu DO
St. Joseph Mercy, Ann Arbor

6:30am - 6:35am
P 215. RETAINED BULLET OF THE MEDIASTINUM
Danby Kang MD
John H Stroger, Jr. Hospital of Cook County

6:35am - 6:40am
P 216. MULTI-DISCIPLINARY APPROACH FOLLOWING BLUNT POLYTRAUMA
Justin Gerard MD
John H Stroger, Jr. Hospital of Cook County

*Indicates Gold Medal Award Finalist
6:40am - 6:45am
P 217. ABDOMINAL COMPARTMENT SYNDROME DUE TO SPONTANEOUS RECTUS SHEATH HEMATOMA WITH EXTENSION INTO THE RETROPERITONEAL SPACE
Aimal Khan MD
Albert Einstein Medical Center

6:45am - 6:50am
P 218. USE OF AEROSOLIZED ANTIBIOTICS IN GRAM-NEGATIVE VENTILATOR-ASSOCIATED PNEUMONIA IN TRAUMA PATIENTS
Brian Gibson MD
University of Tennessee Memphis

6:50am - 6:55am
P 219. PERI-PROSTHETIC FEMUR FRACTURES ARE BAD ACTORS
Miren Schinco MD
WakeMed Health & Hospitals

6:55am - 7:00am
P 220. TRAUMATIC EXTRATHORACIC LUNG HERNIATION
Joshua Kronenfeld MD
University of Miami

6:15am - 7:00am
Kiosk 2- Trauma/Critical Care
Florida Ballroom, Salon 1-3 & Foyer
Moderators:
Indermeet S Bhullar MD, Orlando Health, Inc.

6:15am - 6:20am
P 221. NON-OPERATIVE MANAGEMENT OF INTRAABDOMINAL FOREIGN BODIES: SELECTED CASES INVOLVING RECURRENT SELF-HARM
Andrew Harner MD
Augusta University

6:20am - 6:25am
P 222. THE NECESSITY FOR OBSERVATION AFTER TRAUMATIC LOSS OF CONSCIOUSNESS
Anjuli Gupta DO
Geisinger Medical Center

*Indicates Gold Medal Award Finalist
6:25am - 6:30am  
P 223. TRAFFIC FATALITIES IN THE YOUNG: A PARTICULAR AND TRAGIC SOUTHERN TIDE  
Jack Sariego MD  
Jefferson Health System

6:30am - 6:35am  
P 224. INFLUENCE OF GEOGRAPHY ON THE VIOLENT DEATH RATE ACROSS THE UNITED STATES  
Jack Sariego MD  
Jefferson Health System

6:35am - 6:40am  
P 226. INSTITUTIONAL REVIEW OF LONGTERM POST-OPERATIVE HARDWARE COMPLICATIONS AFTER OPEN RIB FIXATION  
Andrew Drahos MD  
Mercer University/Navicent Health

6:40am - 6:45am  
P 227. FALL IN THE GRADUATED GERIATRIC POPULATION: PREDICTING ACUTE TRAUMATIC FINDINGS ON COMPUTED TOMOGRAPHY SCANNING OF THE HEAD  
Jennifer Hubbard MD  
Saint Mary’s Hospital

6:45am - 6:50am  
P 229. IMPACT OF TRAUMA VOLUME ON EMERGENCY DEPARTMENT THROUGH-PUT, AS SEEN BY COMPUTED TOMOGRAPHY SCAN COMPLETION TIMES  
Ramupriya Vaithi MS3  
Mercer University/Navicent Health

6:50am - 6:55am  
P 230. GERIATRIC TRAUMATIC HIP FRACTURE READMISSION AND MORTALITY: A LEVEL II COMMUNITY HOSPITAL EXPERIENCE  
Kaitlyn Rountree DO  
Henry Ford Macomb Hospital

*Indicates Gold Medal Award Finalist
6:15am - 7:00am  
**Kiosk 3 - General Surgery**  
Florida Ballroom, Salon 1-3 & Foyer  
**Moderator:**  
Deborah Martin MD, Northside Hospital  
Mary Aaland MD, University of North Dakota

6:15am - 6:20am  
**P 231. COMBINED LAPAROSCOPIC CHOLECYSTECTOMY AND DEROOFING OF A LARGE LIVER CYST WITH A TWO TROCAR TECHNIQUE AND USE OF A NEEDLE GRASPER**  
Hugo Bonatti MD  
Easton Hospital

6:20am - 6:25am  
**P 232. TWO OBSTRUCTIONS WITH ONE STONE: A CASE OF RECURRENT COLITIS FROM A RETAINED APPENDICOLITH**  
William Streiff DO  
Geisinger Medical Center

6:25am - 6:30am  
**P 233. CECAL BASCULE WITH CONCOMITANT APPENDICITIS PRESENTING AS CHILADITI’S SIGN**  
Desiree Raygor MD  
University of Florida College of Medicine

6:30am - 6:35am  
**P 234. LAPAROSTOMY**  
Duaa Gumaa MD  
Ocala Health

6:35am - 6:40am  
**P 235. THE OPEN ABDOMEN: A REVIEW OF OUR EXPERIENCE**  
William Berglind MD, PhD  
Greenville Health System

6:40am - 6:45am  
**P 236. HYPERTRIGLYCERIDEMIA-INDUCED PANCREATITIS: A CASE SERIES OF 57 CASES AT ONE INSTITUTION**  
Jessica Martinolich MD  
Albany Medical Center

*Indicates Gold Medal Award Finalist*
6:45am - 6:50am
**P 237. POSTSPLENECTOMY JAUNDICE: AN UNUSUAL CASE OF SPLENIC AND PORTAL VEIN THROMBOSIS CAUSING CHOLANGIOPATHY**
Levan Tsamalaidze MD
Mayo Clinic Florida

6:50am - 6:55am
**P 238. PERFORATED APPENDICITIS FROM AN INGESTED BALLISTIC PELLET**
Livingstone Dore MD
University of South Florida

6:55am - 7:00am
**P 240. PAINLESS JAUNDICE AND A HILAR MASS WARRANTING AN EXTENDED ICU STAY AFTER LIVER BIOPSY AND BILIARY DRAIN**
Irwin M Mest MD, MBA,
Emory University

6:15am - 7:00am
**Kiosk 4- HPB**
Florida Ballroom, Salon 1-3 & Foyer
**Moderator:**
Iswanto Sucandy MD, Florida Hospital Tampa

6:15am - 6:20am
**P 241. ATYPICAL SOLID SEROUS ADENOMA OF THE PANCREAS**
Kevin Harrell MD
University of Tennessee College of Medicine, Chattanooga

6:20am - 6:25am
**P 242. AFFERENT LOOP SYNDROME WITH PERFORATION AFTER PANCREATICODUODENECTOMY: A CASE REPORT**
Magendran Danapal MD
University of Oklahoma Health Sciences Center

6:25am - 6:30am
**P 243. ROBOT-ASSISTED VERSUS LAPAROSCOPIC LIVER RESECTION: A COST-BENEFIT ANALYSIS FROM A SINGLE CENTER**
Mike Fruscione MD MBA
Carolinas Medical Center

*Indicates Gold Medal Award Finalist*
6:30am - 6:35am  
P 244. CASE REPORT AND REVIEW OF LITERATURE: PRIMARY NEUROENDOCRINE TUMORS OF THE GALLBLADDER  
Ripudaman Joshi  
Staten Island University Hospital

6:35am - 6:40am  
P 245. ARTERIO-ENTERIC FISTULA AFTER IRREVERSIBLE ELECTROPORATION  
Mary Garland MD  
Wake Forest University School of Medicine

6:40am - 6:45am  
P 246. A FATAL CASE OF NECROTIZING PANCREATITIS IN SICKLE BETA THALASSEMIA ZERO  
Taylor Turnbull MS  
Medical University of South Carolina

6:45am - 6:50am  
P 247. ACUTE HEPATIC FAILURE SECONDARY TO HEPATIC CONGESTION FROM METASTATIC GALLBLADDER ADENOCARCINOMA  
Logan Fair MD  
University of Mississippi Medical Center

6:50am - 6:55am  
P 248. EXPERIMENTAL DUAL ELECTRODE-SINGLE NEEDLE HIGH-FREQUENCY IRREVERSIBLE ELECTROPORATION FOR NON- THERMAL PANCREATIC ABLATION  
Michael Passeri MD  
Carolinas Medical Center

6:55am - 7:00am  
P 250. UNDIFFERENTIATED PLEOMORPHIC SARCOMA OF THE GALLBLADDER: A RARE PATHOLOGY FOR A COMMON DIAGNOSIS  
Laith Al-Balbissi MD  
Texas Tech University Health Science Center - Amarillo

*Indicates Gold Medal Award Finalist
6:15am - 6:20am  
**P 251. COMMON ILIAC ARTERIAL-RECTAL FISTULA MANAGED WITH ENDOVASCULAR STENTING IN A PATIENT WITH HISTORY OF PELVIC EXTERNAL BEAM RADIATION**  
Jean-Paul Wuilleumier MD  
Medical College of Georgia at Augusta University

6:20am - 6:25am  
**P 252. VENOBRONCHIAL FISTULA (VBF) SECONDARY TO CENTRAL VENOUS CATHETER WITH SUBCUTANEOUS PORT PRESENTING WITH HEMOPTYSIS**  
Luis Serrano MD  
East Tennessee State University

6:25am - 6:30am  
**P 253. VASCULAR CHALLENGES IN RENAL TRANSPLANT RECIPIENTS**  
Cesar S. Molina MD  
University of Tennessee Medical Center, Nashville

6:30am - 6:35am  
**P 255. RETROGRADE PEDAL ACCESS; AN OVERVIEW OF THE ANATOMICAL CHARACTERISTICS AND ACCESS TECHNIQUES, PITFALLS AND OUTCOME**  
David Rubay MD  
Florida Atlantic University, Charles E. Schmidt School of Medicine

6:35am - 6:40am  
**P 256. FIBROMUSCULAR DYSPLASIA CAUSING HIGH GRADE STENOSIS OF MESENTERIC VESSELS REQUIRING REIMPLANTATION OF INFERIOR MESENTERIC ARTERY**  
Rajavi S. Parikh DO  
New Hanover Regional Medical Center

*Indicates Gold Medal Award Finalist*
6:40am - 6:45am
P 258. OPTIMAL TECHNIQUE FOR REPAIR OF PENETRATING POPLITEAL INJURIES
Neerav Patel MD
Rush University Medical Center

6:45am - 6:50am
P 259. UTILITY OF INTRAVENOUS ULTRASOUND FOR EARLY DIAGNOSIS OF MAY-THURNER SYNDROME
Jennifer Wentzel MD, MS
Grand Strand Medical Center

6:50am - 6:55am
P 260. TREATING DYSPHAGIA: TREATMENT MODALITIES FOR KOMMERELL'S DIVERTICULUM AT AN ACADEMIC CENTER
Kristine So MD
Memorial University Medical Center

6:15am - 7:00am
Kiosk 6- Thoracic
Florida Ballroom, Salon 1-3 & Foyer
Moderator:
Subrato Deb MD, University of Oklahoma Health Sciences Center

6:15am - 6:20am
P 261. CHEST TUBE LOCATION: PHYSICAL EXAM VS. RADIOGRAPH
Emily Lenart DO
Henry Ford Macomb Hospital

6:20am - 6:25am
P 262. LYMPHANGIOHEMANGIOMA OF THE ANTERIOR MEDIASTINUM: A CASE STUDY
Mary Lindemuth MD
University of Oklahoma Health Sciences Center

6:25am - 6:30am
P 263. IATROGENIC INTERCOSTAL PULMONARY HERNIA REPAIRED USING A COMBINATION OF VIDEO-ASSISTED THORACOSCOPIC TECHNIQUE (VATS) AND MINI-TORACOTOMY: A CASE REPORT
Aparna Sodhi BA
University of Florida College of Medicine

*Indicates Gold Medal Award Finalist
6:30am - 6:35am
**P 264. SOLITARY FIBROUS TUMOR OF THE POSTERIOR MEDIASTINUM**
Chesney Burgweger MS
University of Oklahoma Health Sciences Center

6:35am - 6:40am
**P 265. GIANT MATURE INTRAPULMONARY TERATOMA PRESENTING WITH MASSIVE HEMOPTYSIS**
Noah Rozich MD
University of Oklahoma Health Sciences Center

6:40am - 6:45am
**P 266. CHALLENGES IN ESOPHAGEAL CONDUIT TUNNELING IN THE MORBIDLY OBESE: A REPORT OF TWO CASES**
Kayla Watkins MD
University of Oklahoma Health Sciences Center

6:45am - 6:50am
**P 267. NEUROFIBROMA OF THE ANTERIOR MEDIASTINUM: A CASE STUDY**
Mary Lindemuth MD
University of Oklahoma Health Sciences Center

6:50am - 6:55am
**P 268. RARE CASE OF LARGE ESOPHAGEAL LEIOMYOMATOSIS REQUIRING ESOPHAGOGASTRECTOMY**
Sigrid Johannesen MD
University of Oklahoma Health Sciences Center

6:55am - 7:00am
**P 269. CARDIAC METASTASES FROM SQUAMOUS CELL CARCINOMA OF THE TONGUE IN A SEVENTY-YEAR-OLD FEMALE**
Aviva Kaplin DO
Inspira Health Network

7:00am - 7:05am
**P 270. VIDEOTHORACOSCOPIC RESECTION OF A MEDIASTINAL PARATHYROID ADENOMA**
Moahmed El Zaeedi MD
Bronx Lebanon Hospital Center

*Indicates Gold Medal Award Finalist*
6:15am - 7:00am
**Kiosk 7- Quality Improvement**
Florida Ballroom, Salon 1-3 & Foyer

**Moderators:**
Rebecca Britt MD, Eastern Virginia Medical School  
Peter Lopez MD, Henry Ford Hospital Macomb

6:15am - 6:20am  
**P 271. PREVENTION OF POSTOPERATIVE PNEUMONIA IN SURGICAL PATIENTS**  
Michael Caparelli MD  
The Jewish Hospital

6:20am - 6:25am  
**P 272. DOES PREOPERATIVE CHLORHEXIDINE GLUCONATE SHowering DECREASE POSTOPERATIVE WOUND INFECTIONS IN GENERAL SURGERY PATIENTS? A SINGLE INSTITUTION REVIEW**  
Kyle Wood MD  
Aurora Medical Center Manitowoc County

6:25am - 6:30am  
**P 273. SEQUENTIAL COMPRESSION DEVICE UTILIZATION: A QUALITY MULTI-INSTITUTION REVIEW**  
Mohamed Kelli DO  
East Tennessee State University

6:30am - 6:35am  
**P 274. COMPARISON OF HIGHEST LEVEL ACTIVATION CRITERIA ALERT SYSTEM, VERSUS COMBINED ACTIVATION SYSTEM AT A LEVEL 1 TRAUMA CENTER**  
James Foley BS  
University of Virginia Health System

6:35am - 6:40am  
**P 275. TIME TO TRACHEOSTOMY AT A RURAL, LEVEL ONE TRAUMA CENTER: INTERNALLY VAILDATING A TQIP REPORT**  
Timothy Finnegan MD  
Memorial University Medical Center

*Indicates Gold Medal Award Finalist
6:40am - 6:45am
**P 276. BARRIERS TO COLONOSCOPY IN AN UNINSURED PATIENT POPULATION**
Maxwell Wagner MS2
Eastern Virginia Medical School

6:45am - 6:50am
**P 277. INCIDENCE AND MANAGEMENT OF POST TRAUMATIC HEMOTHRAX AT A LEVEL 1 TRAUMA CENTER**
Nina Cohen MD
Eastern Virginia Medical School

6:50am - 6:55am
**P 278. THE ROLE OF OTOLARYNGOLOGY IN THE ASSESSMENT OF NASAL OBSTRUCTION IN CLP PATIENTS POST-RECONSTRUCTIVE SURGERY**
Sanam Mirza
Atlanta Cancer Research and Education Foundation

6:55am - 7:00am
**P 279. DO PHYSICIANS, NURSES, OR PATIENTS HAVE BETTER INSIGHT ABOUT HEALTHCARE COSTS?**
Jesse Clanton MD
West Virginia University, Charleston

7:00am - 7:05am
**P 280. SOUTH CAROLINA SURGICAL QUALITY COLLABORATIVE COLON SURGERY OUTCOMES VARY BY AGE AND RACE**
Doris Kim MD
Medical University of South Carolina

*Indicates Gold Medal Award Finalist*
6:15am - 7:00am

**Kiosk 8- Basic Science/Hernia**

Florida Ballroom, Salon 1-3 & Foyer

**Moderators:**

Carl Boyd MD, Medical University of South Carolina
Kimberly Bailey MD, West Virginia University

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6:15am - 6:20am

**P 281. THE USE OF DEHYDRATED HUMAN AMNION-CHORION MEMBRANE (DHACM) ALLOGRAFT IN THE TREATMENT OF LARGE FACIAL SOFT TISSUE DEFECTS**

Brett Melnikoff MD
University of Alabama at Birmingham

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6:20am - 6:25am

**P 282. INGUINAL HERNIA REPAIR OUTCOMES PREDICTED BY MELD-NA SCORE IN NON-CIRRHOTICS**

Angela Kao MD
Carolinas Medical Center

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6:25am - 6:30am

**P 283. INCARCERATED AMYAND HERNIA WITH ACUTE APPENDICITIS: A CASE REPORT**

Kaitlyn Rountree DO
Henry Ford Macomb Hospital

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6:30am - 6:35am

**P 285. SURGICAL MANAGEMENT OF AN OBTURATOR HERNIA: A CASE REPORT AND REVIEW OF THE LITERATURE**

Alexandra Vagasi SMS
Augusta University

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6:35am - 6:40am

**P 286. MANAGEMENT OF AN INCARCERATED LUMBAR INCISIONAL HERNIA**

Hugo Bonatti MD
Easton Hospital

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*Indicates Gold Medal Award Finalist*
6:40am - 6:45am  
P 287. OBSTRUCTIVE UROPATHY SECONDARY TO AN INDIRECT EXTRAPERITONEAL URETERAL INGUINAL HERNIA  
Ahkeel Allen MD  
Mercer University/Navicent Health  

6:45am - 6:50am  
P 288. OUTCOMES OF HERNIA REPAIR IN PREGNANCY  
Angela Kao MD  
Carolinas Medical Center  

6:50am - 6:55am  
P 289. ENDOTHELIAL INFLAMMATION AND LOSS OF BONE MORPHOGENETIC PROTEIN RECEPTOR 2 IN OSCILLATORY SHEAR STRESS MODEL  
Collins Ezeuka MD  
University of Mississippi Medical Center  

6:55am - 7:00am  
P 290. IDIOPATHIC DEVELOPMENT OF VULNERABLE CORONARY PLAQUES IN A PORCINE MODEL OF ATHEROSCLEROSIS  
Collins Ezeuka MD  
University of Mississippi Medical Center  

6:15am - 7:00am  
Kiosk 9-Education and Systems based practice  
Florida Ballroom, Salon 1-3 & Foyer  
Moderators:  
Pamela Rowland MD, University of Tennessee, Knoxville  
E. Sheilds Frey MD, Brookwood Baptist Health System  

6:15am - 6:20am  
P 291. RESIDENTS BEHAVING BADLY: SURGICAL TRAINEES GOING ROGUE AND MAKING MEDICAL HISTORY  
Brendan Lovasik MD  
Emory University  

6:20am - 6:25am  
P 293. JOURNAL CLUB IN US PLASTIC SURGERY TRAINING PROGRAMS: ARE WE DOING IT RIGHT?  
Apoorve Nayyar MD  
University of North Carolina  

*Indicates Gold Medal Award Finalist
6:25am - 6:30am  
**P 294. REVIEW OF SIMULATION TRAINING IN SURGICAL RESIDENCY: APPLICATION AND IMPLEMENTATION OF SIMULATION TRAINING**  
Kathryn Cameron MD  
Providence Hospital

6:30am - 6:35am  
**P 295. USE OF CLOUD STORAGE TO IMPROVE RESIDENT AWARENESS AND UNDERSTANDING OF TRAUMA PROTOCOLS**  
Katherine Kelley MD  
Eastern Virginia Medical School

6:35am - 6:40am  
**P 296. THE RELATIONSHIP BETWEEN PHYSICIAN EMPLOYMENT AND JOY IN THE WORKPLACE**  
Paul Dale MD  
Mercer University/Navicent Health

6:40am - 6:45am  
**P 297. WHAT IS YOUR PIECE OF THE PIE? A SURVEY OF SURGEONS’ PERCEPTIONS ON SCOPE OF PRACTICE**  
Apoorve Nayyar MD  
University of North Carolina

6:45am - 6:50am  
**P 298. UNDERLYING ANGER IMPACTS DECISION-MAKING IN THE ICU**  
Isadora Botwinick MD  
University of Maryland School of Medicine

6:50am - 6:55am  
**P 300. MYCOBACTERIUM ABSCESSUS POST ABDOMINOPLASTY: CHALLENGE OF DIAGNOSIS AND TREATMENT**  
Mohamed El Zaeedi MD  
Bronx Lebanon Hospital Center

*Indicates Gold Medal Award Finalist*
6:15am - 7:00am  
**Kiosk 10 - Pediatric**  
Florida Ballroom, Salon 1-3 & Foyer  
**Moderators:**  
Nicole Chandler MD, Johns Hopkins All Children’s Hospital

6:15am - 6:20am  
P 301. CONTRALATERAL CHYLOTHORAX FOLLOWING CONGENITAL DIAPHRAGMATIC HERNIA REPAIR  
Yamuna Krishna MD  
Greenville Health System

6:20am - 6:25am  
P 302. OUTCOMES OF PECTUS EXCAVATUM REPAIR PERFORMED BY PEDIATRIC VERSUS NON-PEDIATRIC SURGICAL SPECIALISTS: A NSQIP-PEDIATRIC ANALYSIS  
Jeremy Kauffman MD  
John’s Hopkins All Children’s Hospital

6:25am - 6:30am  
P 303. TRANSITIONING TUBE FEEDING FORMULA TO REAL FOOD INGREDIENTS IN A PATIENT UNDER THE AGE OF 1  
Jessica Simpson MS  
Wake Forest University School of Medicine

6:30am - 6:35am  
P 304. ANOMALOUS CYSTIC DUCT INSERTION CAUSING COMMON BILE DUCT OBSTRUCTION IN A CHILD SUSPECTED OF HAVING PRIMARY SCLEROSING CHOLANGITIS  
Jenny Held MD  
Naval Medical Center Portsmouth

6:35am - 6:40am  
P 305. GALLBLADDER TORSION IN ADOLESCENT PATIENT  
Christopher Jean DO, MPH  
Mercer University/Navicent Health

6:40am - 6:45am  
P 306. PEDIATRIC OPEN TRAUMATIC TESTICULAR DISLOCATION: A RARE COMPLICATION OF BICYCLING  
Ryan Landis MS, MD  
Marshall University

*Indicates Gold Medal Award Finalist
6:45am - 6:50am
P 307. TRAUMATIC PEDIATRIC HEMOTHORAX FROM HIGH-PRESSURE WATER INJECTION
Ryan Landis MS, MD
Marshall University

6:50am - 6:55am
P 308. BLUNT TRAUMATIC THORACIC AORTIC TRANSECTION IN A PEDIATRIC PATIENT: CASE REPORT AND REVIEW OF THE LITERATURE
Lori Gurien MD, MPH
University of Florida College of Medicine

6:55am - 7:00am
P 309. INTERPOSITION BOVINE HETEROGRAFT FOR REPAIR OF PEDIATRIC VASCULAR INJURY
Lori Gurien MD, MPH
University of Florida College of Medicine

*Indicates Gold Medal Award Finalist
*Indicates Gold Medal Award Finalist
SCIENTIFIC SESSION

RESIDENT FORUM

ABSTRACTS
Resident Forum Session

1. EPIPHRENIC DIVERTICULUM: 20-YEAR SINGLE INSTITUTION EXPERIENCE

MR Arnold, SL Siddiqui, T Prasad, PD Colavita, BT Heniford
Carolinas Medical Center

Background: Epiphrenic diverticulum are pulsion-type outpouchings of the distal esophagus that are associated with motility disorders and can often present with chronic symptoms of dysphagia, regurgitation, reflux, and aspiration. Surgical resection of the diverticulum with myotomy and fundoplication remains a common treatment for these patients.

Methods: A prospectively collected surgical outcomes database was queried for patients who underwent surgical treatment of epiphrenic esophageal diverticulum at a single institution between August 1997 and 2017. Patient demographics, presenting clinical symptoms, and perioperative data was retrospectively reviewed.

Results: Twenty-seven patients with symptomatic epiphrenic diverticulum underwent surgical treatment. The mean age was 62.44 ± 2.6 years, and 63% were female. Dysphagia was the primary complaint in 85.2%. Other reported symptoms included heartburn (74.1%), regurgitation (70.4%), chest pain (25.9%), and recurrent aspiration (14.3%). Preoperative evaluation identified an epiphrenic diverticulum <7 cm diameter in all patients. A hiatal hernia was also identified in 69.6% of patients. Achalasia was the most common motility disorder and was present in 29.6% of patients with epiphrenic diverticula. Other motility disorders included nutcracker esophagus in 7.4% of patients and nonspecific esophageal dysmotility in 33.3%. Twenty-seven patients (96.5%) underwent a laparoscopic diverticulectomy; a thoracoscopic approach was used for one patient. Twenty-five (92.6%) patients underwent a myotomy, and 85.2% of patients also received a fundoplication (95.7% Toupet, 4.3% Dor). Median estimated blood loss was 50mL (10-200mL), and there were no intraoperative complications, 30 day mortality, or esophageal leaks. Postoperative complications included a pulmonary embolism and readmission in two (9.1%) patients. Median length of stay was 4.9 days. Eighteen (81.8%) patients started a diet on the day after surgery. Symptom resolution was achieved in 85.1% of patients with overall mean follow-up of 35.75±39.9 months. Dysphagia was the most common persistent symptom after surgery; it occurred in 2 of 25 patients (8%) who underwent concurrent myotomy vs 1 of the 2 patients (50%) having diverticulectomy alone.

Conclusion: As minimally invasive techniques have advanced, laparoscopic diverticulectomy appears to be an excellent surgical approach for symptomatic epiphrenic diverticula. Long term resolution of symptoms was achieved in the majority of patients with a very low complication rate.
2. 17 YEAR REVIEW OF METHODS USED AND OUTCOMES FOR PEDIATRIC ESOPHAGEAL FOREIGN BODY REMOVAL AT A STATE SUPPORTED CHILDREN’S HOSPITAL

PB Ham MD, M Ellis MD, ES Mabes DO, N Walsh MD, MB Young DO, RM Hatley MD, CG Howell MD, CA Hughes MD
Augusta University

Background: Esophageal foreign bodies are a common problem in the pediatric population, which can lead to particular complications and be challenging to remove depending on the foreign body. There are also multiple different procedure options to remove them. Consequently, an analysis of epidemiologic factors, symptoms, diagnostic methodology, comorbidities, operative procedures, and outcomes for pediatric esophageal foreign bodies was performed.

Methods: An IRB approved, state supported Children’s Hospital retrospective review of pediatric patients who had esophageal foreign bodies removed from 1997-2014 was performed.

Results: Balloon extraction with fluoroscopy was most commonly performed initially (173), and had 88% primary success. Flexible endoscopy had 77% primary success in 102 patients. Rigid esophagoscopy had 95% primary success in 38 patients. A magnetic tip nasogastric tube had 100% primary success in 5 patients, and had 100% percent success after other methods had initially failed. Additional methods were used in 16 patients. There was no statistically significant difference in primary success rates. There was no significant difference in primary procedure time in minutes (mean±SEM = 18.1±1.4 for balloon extraction with fluoroscopy, 18.94±1.8 for flexible endoscopy, 29.14±7.8 for rigid endoscopy, and 10.84±2.5 for the magnetic tip nasogastric tube. Power analysis suggested 20 patients in the magnetic tip nasogastric tube group would be needed to demonstrate significant time savings compared to balloon extraction with fluoroscopy. There were no procedural complications. 32% of all foreign bodies and 95% of batteries had complications (p=0.002). Overall, 2% had severe complications (perforation/stricture/fistula), while 10% of batteries had severe complications (p=0.04).

Conclusion: Balloon extraction with fluoroscopy, flexible endoscopy, rigid endoscopy, and magnetic tip nasogastric tubes are reasonable options for esophageal foreign body removal. Magnetic tip nasogastric tubes had the shortest procedure time and highest success rate, although it was not statistically significant due to inadequate power associated with a low sample size. Disc batteries require emergent removal and have a significant complication rate.
Resident Forum Session

3. MELANOMA IN SITU AT THE MARGIN: RE-EXCISE OR NOT?
Oh G BS, C Farley MD, MC Russell MD, KA Delman MD, MC Lowe MD MA
Emory University

Background: Despite appropriate wide excision, specimens may have melanoma in situ (MIS) at the margin. Management of MIS varies, and the significance of MIS at a margin has not been investigated.

Methods: Patients at Emory University undergoing definitive wide local excision (WLE) between January 1, 2000, and January 31, 2016, with MIS at a margin were identified from a prospectively maintained database. A cohort without MIS at the margin after excision matched for age, sex, location of the primary lesion, and Breslow depth was identified. Patient demographics, clinicopathologic characteristics, and outcomes were reviewed.

Results: Thirty-two patients with 33 cases of residual MIS at the margin were identified. One patient presented with two separate primary lesions (on the scalp and arm), each with residual MIS. Median age at surgery was 67 years (range 25-92). Primary melanoma was located on the head/neck in 22 cases (66.7%), extremities in 8 (24.2%), and trunk in 3 (9.1%). Median Breslow depth was 1.0 mm (range 0.25-10.80); 17 (51.5%) were \(<u><u>1.0 \text{ mm. Seven (21.2\%) lesions were ulcerated. Residual MIS was treated with re-excision in 15 cases, re-excision plus imiquimod in 1, and imiquimod alone in 3. Two patients received interferon for a high-risk primary. Eleven patients underwent observation alone. At a median follow-up of 76 months (range 28-116) after excision of the primary, 5 patients (15.2\%) developed locally recurrent invasive melanoma. Median Breslow depth of the primary lesions of these patients was 4.75 mm (range 1.10-6.70). Three underwent re-excision of the original positive MIS margin while 2 underwent observation. Undergoing intervention for residual MIS did not decrease the risk of local recurrence compared to observation (p=0.86). Comparatively, the matched cohort had 2 local recurrences (6.1\%); Breslow depth of the primary in these two patients was 1.35 and 1.55 mm. Of the 32 patients with MIS at the margin, 28 patients (87.5\%) were alive at last follow-up. All 5 patients with local recurrence were alive with no evidence of disease. In the matched cohort, 30 patients (90.9\%) were alive, including both patients with local recurrence.

Conclusion: MIS at the margin does not appear to impact survival, though there is a difference in the frequency of local recurrence. This study is not powered to determine the statistical significance of this observed difference. However, this data encourages that the question be studied on a larger scale since local recurrence does not impact survival and most patients with MIS at the margin do not recur. These studies would help elucidate factors predictive of local recurrence, including which interventions for positive margins may decrease this risk.
Resident Forum Session

4. MOBILE MAMMOGRAPHY AND DIGITAL TECHNOLOGY IN A LARGE-SCALE, APPALACHIAN SCREENING POPULATION
EA Pospiech MD, JL Bell MD, M King
University of Tennessee Medical Center, Knoxville

Background: The Appalachian region remains medically underserved and has disproportionately poor health. Tennessee females have the 12th highest cancer mortality rate in the U.S. with breast cancer mortality rates at 25.7 per 100,000 compared with 24.4 nationally.1 Studies have revealed barriers to care lead to diagnoses of late stage cancer and subsequently higher mortality.2 The University of Tennessee Medical Center Cancer Institute developed the Breast Health Outreach Program (BHOP) in 1996 to serve minority Appalachian women in 21 East Tennessee counties, giving women 40 and older access to didactic education with free or reduced cost annual screening mammograms. The BHOP program upgraded from an analogue system to digital mammography in 2009. Since the introduction of digital technology, studies have compared results of analogue technique to digital including diagnostic and technical recalls, as well as cancer detection rates. These studies showed no difference or non-inferiority of digital compared to analogue technology. However, as the number of screening studies using digital technology has increased, higher cancer detection rates for women of all ages have been noted, even in women < 50 years of age.3 Our data represents a unique opportunity to examine the benefits of digital compared to analogue techniques in a large population of underserved women.

Methods: A retrospective analysis of a prospectively maintained database that includes women screened between 2004-2008 using analogue technology and 2009-2013 using digital mammography was performed. From this data, we compared 1) number of patients who underwent diagnostic evaluation including diagnostic mammogram, ultrasound and biopsy, 2) technical recalls, and 3) the number of breast cancers diagnosed.

Results: Based on our results (Table 1), there was an 87.7% decrease in the number of technical recalls with the transition from analogue to digital technology (95% CI 82.1-91.5%, p<0.001). However, there was an increase in women who underwent further diagnostic evaluation for abnormalities identified on screening mammography, including diagnostic mammogram (OR 1.4; 95% CI 1.26 – 1.55) and diagnostic ultrasound (OR 1.32; 95% CI 1.17 – 1.48). There was no difference in the total number of breast biopsies performed or breast cancers diagnosed between these two time periods.

Conclusion: The results of our study demonstrate that digital mammography has a greater ability to detect breast imaging abnormalities leading to fewer technical recalls. Total number of breast cancers diagnosed did not decline when using digital mammography technology when compared to analogue technology. As such, the transition to digital mammography highlights the BHOP program’s goal to provide ease and accessibility to breast cancer screening.
Table 1: Comparison of Analogue vs. Digital Mammography

<table>
<thead>
<tr>
<th></th>
<th>Analogue</th>
<th>Digital</th>
<th>% Odds Ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # Patients Screened</td>
<td>12,548</td>
<td>17,408</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Diagnostic Mammogram</td>
<td>575</td>
<td>1097</td>
<td>1.4 (95% CI 1.26 – 1.55)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Diagnostic Ultrasound</td>
<td>470</td>
<td>848</td>
<td>1.32 (95% CI 1.17 – 1.48)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Breast Biopsy Technical Recalls</td>
<td>68</td>
<td>129</td>
<td>1.37 (95% CI 1.02 – 1.84)</td>
<td>0.06</td>
</tr>
<tr>
<td>Diagnosis of Breast Cancer</td>
<td>185</td>
<td>24</td>
<td>87.7% (95% CI 82.1-91.5%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>43</td>
<td>1.24 (95% CI 0.76 – 2.03)</td>
<td>0.39</td>
</tr>
</tbody>
</table>
Resident Forum Session

5. NATIONALLY REPRESENTATIVE READMISSION FACTORS ASSOCIATED WITH ENDOVASCULAR VS OPEN REPAIR OF ABDOMINAL AORTIC ANEURYSM

RM Martinez MD, LG Gaffney BS, JP Parreco MD, ME Eby MD, ED Donath MD, MB Bathaii MD, MF FInch MD, MS Shnyder BS, RK Kazol MD
University of Miami

Background: Currently hospital readmissions are tied to financial penalties, thus, influencing discussions on healthcare policy. Many of the current studies on readmissions lack national representation by not tracking readmissions across different hospitals or states. The recently released Nationwide Readmission Database (NRD) does just that using multiple patient identifiers and, thus, is one of the most comprehensive national source of readmission data available, making it an invaluable resource to understand this critically important health policy issue.

Methods: The NRD for 2013 and 2014 was queried for adult patients with abdominal aortic aneurysm (AAA) undergoing endovascular aneurysm repair (EVAR) or open surgical repair (OSR) (ruptured AAA excluded). Outcomes examined were overall/initial admission mortality and overall/30-day readmissions. Univariate and multivariate logistic regression for these outcomes was also performed on multiple readmission factors. Most common readmission related group and individual readmission diagnosis were also evaluated.

Results: 53417 patients underwent AAA repair (47431 (EVAR) vs 5986 (OSR)). Significant differences were found for EVAR vs OSR respectively on 30-day/Any readmissions (p<0.001), initial admission cost (p<0.001), readmission cost (p<0.001), length of stay (LOS) (p<0.001), days to readmission (p<0.001), and overall/initial admission mortality (p<0.001). Table 1 shows the univariate logistic regression analysis which found that repair type, LOS>30 days, Charlson Comorbidity Index (CCI)>3, discharge disposition, age, primary expected payer, and female sex were all significant predictors of 30-day readmission. Similar results obtained when multivariate regression analysis was performed. The most common diagnosis related groups included septicemia, postoperative infection, AKI, PNA, complications due to vascular device, implants or graft.

Conclusion: There are significant differences in readmission rates, mortality and costs for EVAR vs OSR. Based on our findings “acceptable” readmission rates for EVAR and OSR should be tailored based on the patient population (male vs female), discharge disposition, preoperative status of patient, LOS and type of repair.
**Univariate Regression 30-day Readmission**

<table>
<thead>
<tr>
<th></th>
<th>Sig</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOS</td>
<td>&lt;0.001</td>
<td>3.06</td>
<td>2.26-4.13</td>
</tr>
<tr>
<td>Female</td>
<td>&lt;0.001</td>
<td>1.60</td>
<td>1.48-1.72</td>
</tr>
<tr>
<td>CCI</td>
<td>&lt;0.001</td>
<td>3.27</td>
<td>1.76-6.08</td>
</tr>
<tr>
<td>Repair type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSR</td>
<td>&lt;0.001</td>
<td>1.24</td>
<td>0.12-1.37</td>
</tr>
<tr>
<td>Exp. Payer (Comp Medicare)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>0.026</td>
<td>0.73</td>
<td>0.55-0.96</td>
</tr>
<tr>
<td>Private Insurance</td>
<td>&lt;0.001</td>
<td>0.71</td>
<td>0.64-0.79</td>
</tr>
<tr>
<td>Age</td>
<td>&lt;0.001</td>
<td>1.21</td>
<td>1.10-1.34</td>
</tr>
<tr>
<td>Dispo (Comp to Routine)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SNF</td>
<td>&lt;0.001</td>
<td>2.77</td>
<td>2.49-3.07</td>
</tr>
<tr>
<td>Home Health</td>
<td>&lt;0.001</td>
<td>2.02</td>
<td>1.85-2.21</td>
</tr>
<tr>
<td>AMA</td>
<td>0.001</td>
<td>3.78</td>
<td>1.67-8.52</td>
</tr>
</tbody>
</table>

**Multivariate Regression 30-day Readmission**

<table>
<thead>
<tr>
<th></th>
<th>Sig</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOS</td>
<td>0.001</td>
<td>1.75</td>
<td>1.27-2.39</td>
</tr>
<tr>
<td>Female</td>
<td>&lt;0.001</td>
<td>1.46</td>
<td>1.35-1.57</td>
</tr>
<tr>
<td>CCI</td>
<td>&lt;0.001</td>
<td>3.34</td>
<td>1.78-6.27</td>
</tr>
<tr>
<td>Repair type</td>
<td>0.371</td>
<td>0.95</td>
<td>0.85-1.06</td>
</tr>
<tr>
<td>Exp. Payer (Comp Medicare)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>0.027</td>
<td>0.71</td>
<td>0.53-0.96</td>
</tr>
<tr>
<td>Private Insurance</td>
<td>0.001</td>
<td>0.90</td>
<td>0.70-0.91</td>
</tr>
<tr>
<td>Age</td>
<td>0.069</td>
<td>0.89</td>
<td>0.78-1.01</td>
</tr>
<tr>
<td>Dispo (Comp to Routine)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SNF</td>
<td>&lt;0.001</td>
<td>2.30</td>
<td>2.05-2.57</td>
</tr>
<tr>
<td>Home Health</td>
<td>&lt;0.001</td>
<td>1.85</td>
<td>1.68-2.02</td>
</tr>
<tr>
<td>AMA</td>
<td>0.003</td>
<td>3.53</td>
<td>1.55-8.01</td>
</tr>
</tbody>
</table>
Resident Forum Session

6. COST EFFECTIVENESS OF APPENDICEAL STUMP CLOSURE METHODS DURING LAPAROSCOPIC APPENDECTOMY

SW Kim MD, LJ Weireter MD
Eastern Virginia Medical School

Background: Laparoscopy is commonly the initial approach for an appendectomy, however there is no standard, recommended method for performing the appendectomy. In particular, the various instruments for closure of the appendiceal stump are associated with their own benefits and costs. At our institution, we typically use either endoscopic staplers or endoloop ligature. We hypothesize that while the two methods will have equivalent postoperative outcomes, use of a stapler is associated with shorter operative times and greater cost.

Methods: Patients who underwent laparoscopic appendectomy at Sentara Norfolk General Hospital between 2015 and 2017 were analyzed retrospectively. Data about patient characteristics, operative details, and operative cost were collected and compared between patients who had endoloop ligature or stapler utilized.

Results: There were 325 patients who underwent laparoscopic appendectomy. 75 (23%) underwent endoloop ligature. Both groups were equivalent in terms of sex, age, and BMI. Majority of cases using endoloop or stapler were emergent (90.7% vs 88%) and were performed with a senior resident (92% vs 96%). Cases utilizing stapler were longer in terms of procedure time (42.4 min vs 38.5 min, p = 0.018) and time spent in the operating room (71.6 min vs 65.1 min, p = 0.001). Postoperative complications by post-operative day #30 were equivalent between endoloop or stapler use, in terms of surgical site infection (14% vs 6.7%, p = 1), intraabdominal abscess (7.1%, 26.7% p = 0.118), ER return (50% vs 40%), and re-admission (28.6% vs 26.7%, p = 1). Cases utilizing stapler were more expensive than those utilizing endoloop (operative cost $2,222.10 vs $1,862.92, p < 0.001). Operative cost was not correlated with procedure duration (R2 = 0.009) or with time spent in the operating room (R2 = 0.016).

Conclusion: While postoperative outcomes were similar between both groups, laparoscopic appendectomy was faster when performed with endoloop ligature by 6.5 minutes and less costly by $359.18. This price difference is unlikely to be explained by time saved in the operating room and more likely explained by the price difference between endoloop and stapler.
<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>EndoLoop</th>
<th>Stapler</th>
</tr>
</thead>
<tbody>
<tr>
<td>All patients, n (%)</td>
<td>325 (100)</td>
<td>75 (23)</td>
<td>250 (77)</td>
</tr>
<tr>
<td>Male, n (%)</td>
<td>166 (51)</td>
<td>40 (53)</td>
<td>126 (5)</td>
</tr>
<tr>
<td>Age, mean ± sd</td>
<td>38.29 ± 15.6</td>
<td>38.49 ± 15.3</td>
<td>38.2 ± 15.8</td>
</tr>
<tr>
<td>BMI, mean ± sd</td>
<td>28.4 ± 6.7</td>
<td>29 ± 7.0</td>
<td>28.2 ± 6.6</td>
</tr>
<tr>
<td>Emergent, n (%)</td>
<td>228 (86)</td>
<td>68 (90.7)</td>
<td>220 (88)</td>
</tr>
<tr>
<td>Procedure duration (min, mean ± sd)</td>
<td>41.5 ± 16.4</td>
<td>38.52 ± 13.1</td>
<td>42.39 ± 17.7</td>
</tr>
<tr>
<td>Room time (min, mean ± sd)</td>
<td>70.1 ± 18.3</td>
<td>65.12 ± 13.5</td>
<td>71.59 ± 19.3</td>
</tr>
<tr>
<td>Assistant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior (R3 and above), n (%)</td>
<td>308 (94.8)</td>
<td>69 (92)</td>
<td>239 (95.6)</td>
</tr>
<tr>
<td>Complications, n (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surgical site infection</td>
<td>6 (8.1)</td>
<td>2 (14.3)</td>
<td>4 (15.7)</td>
</tr>
<tr>
<td>Intraabdominal abscess</td>
<td>17 (23)</td>
<td>1 (7.1)</td>
<td>16 (26.7)</td>
</tr>
<tr>
<td>ER return</td>
<td>31 (41.9)</td>
<td>7 (50)</td>
<td>24 (40)</td>
</tr>
<tr>
<td>Re-admission</td>
<td>20 (27)</td>
<td>4 (26.6)</td>
<td>16 (26.7)</td>
</tr>
<tr>
<td>Cost supply, median (range)</td>
<td>$2,130.29, $633.48 to $5,386.60</td>
<td>$1,862.32, $846.99 to $3,806.00</td>
<td>$2,222.10, $633.48 to $5,386.60</td>
</tr>
</tbody>
</table>
Resident Forum Session

7. ANTIBIOTIC IRRIGATION OF THE SURGICAL SITE DECREASES INCIDENCE OF SURGICAL SITE INFECTION AFTER OPEN VENTRAL HERNIA REPAIR

B Knoedler BS, H Abbad BS, BH Hancock BS, JA Ewing PhD, WS Cobb MD, AM Carbonell MD, JA Warren MD
Greenville Health System

**Background:** Surgical site infections (SSI) are common complications following open ventral hernia repair (OVHR), potentially requiring procedural intervention and repeat operations, particularly if prosthetic mesh infection is present. Antibiotic lavage of the surgical field before abdominal wall closure has been shown to lower the incidence both intraabdominal and soft tissue SSI. We hypothesize this combination decreases incidence of SSI after OVHR.

**Methods:** Retrospective review of OVHR with mesh at a single high-volume center (Greenville Health System Hernia Center) between 2008 and 2017. Patient demographics, comorbidities, hernia characteristics, surgical technique, and outcomes were collected. All patients were repaired in an open fashion with mesh, primarily in the retromuscular space. The use of irrigation after mesh placement was reviewed, and we identified patients receiving no irrigation (Group 1), Gentamicin (G) alone (Group 2) or G+Clindamycin (C) irrigation (Group 3). In all cases receiving irrigation, this was performed after completion of the dissection and mesh placement, and irrigant left to dwell for 3 minutes. Differences in categorical variables among the three groups were tested using Chi-square or Fischer’s Exact test (for n<5). Analysis of continuous variables was done using ANOVA, or Kruskal-Wallis test for differences in median length of stay (LOS). Logistic regression was performed using all clinically relevant variables to determine the effects of irrigation on SSI.

**Results:** We identified 852 patients undergoing OVHR. No irrigation was used in 260 patients, Gentamicin alone was used in 266 patients, and G+C was used in 299 patients; 27 patients were excluded due to use of different antibiotic regimen. Patient demographics were similar between groups. A greater percentage of patients receiving G+C had HTN, contaminated or dirty wounds, had an existing ostomy or parastomal hernia, and had larger hernia defects. There were fewer smokers and patients with COPD in patients receiving G+C. Hospital LOS and hospital readmission were no different between groups. Incidence of surgical site occurrence (SSO) was significantly lower after G+C irrigation, but not Gentamycin alone (Grp 1, 28.1%; Grp 2, 35.7%; Grp 3, 19.1%; p<0.001). Incidence of SSI was also significantly lower after G+C irrigation, but not Gentamicin alone (Grp 1, 16.5%; Grp 2, 15.4%; Grp 3, 5.0%; p<0.001). Multivariate logistic regression demonstrated significantly increased SSI with contaminated wounds (OR 4; 95% CI 2.0-8.2), dirty wounds (OR 6.3; 95% CI 2.9-13.4), and COPD (OR 4.1; 95% CI 2.4-6.9), as expected. Use of G+C was an independent predictor of decreased SSI (OR 0.29; 95% CI 0.14-0.58).

**Conclusion:** Irrigation with a combined Gentamicin + Clindamycin antibiotic irrigation significantly reduces the incidence of surgical site infection following open ventral hernia repair with mesh.
Resident Forum Session
8. SEVERITY OF INJURY AND OTHER FACTORS ASSOCIATED WITH EMERGENCY DEPARTMENT LENGTH OF STAY: FIVE-YEAR EXPERIENCE OF A LEVEL 1 TRAUMA CENTER
R Latifi MD, A Haider MD, D Samson MS, E Tilley PhD, A El-Menyar MD
Westchester Medical Center

Background: Various emergency department (ED) time intervals have been recommended as performance measures of quality and effective resource allocation. Trauma patients with more severe injuries, such as those with Injury Severity Scores (ISS) of 25 or higher, may require more efficient use of time. Evidence is lacking on optimal ED length of stay (LOS).

Methods: We conducted a review of experience at our level 1 trauma center. Prospectively collected trauma registry data were analyzed between 2012 and 2016. We performed analyses of descriptive information, examined correlations between continuous variables and compared ED LOS means across classes of categorical variables.

Results: We analyzed a total 11,447 patient visits recorded in our trauma registry; of them, 65.7% were males and 92.8% experienced blunt trauma. The mean age was 42.8(±26.3) years. The mean ISS was 10.2(±8.9) and 966 patients (8.5%) had ISS ≥25. The mean ED LOS for the entire set was 5.7(±4.2) hours. Death occurred in 386 patients (3.4%) and 3.7% experienced infections. Significantly higher ISS scores were seen in males, Whites, non-Hispanics and those with blunt trauma. Mean ED LOS, in hours, for ISS <25 was 6.0(44.2), compared with a mean for ISS ≥25 of 3.5(43.2, p<0.001). Patients with ISS scores of ≥25 had significantly longer ICU LOS, longer hospital LOS and more ventilator days. ED LOS was significantly shorter in: higher ISS (assessed as a continuous variable); males; Blacks; penetrating trauma; younger individuals; lower TRISS; lower calculated GCS; lower systolic blood pressure; and higher maximum AIS. Absolute values of correlations, even when significant, between ED LOS and continuous patient characteristics, were generally of weak strength. The following complications were significantly more frequent in patients with ISS ≥25: all infection, pneumonia, surgical site infection, cardiac arrest with CPR, deep vein thrombosis, decubitus ulcer, unplanned admission to ICU, unplanned intubation and death. When we focused only on patients with ISS ≥25, we found ED LOS to be significantly shorter in: males, Blacks, other race, penetrating trauma, younger individuals, lower TRISS, lower GCS, lower systolic blood pressure and lower diastolic blood pressure.

Conclusion: ED LOS among severely injured (ISS ≥25) trauma patients was about three and a half hours, but varied according to age, sex, race, trauma mechanism, TRISS, GCS and maximum AIS. Patients with higher ISS were more likely to experience death and other complications. This trauma registry study focused on patient-level characteristics associated with ED LOS. This large set of prospectively collected data provides valid estimates of patient characteristics, time variables and outcomes. Evidence from this and other studies may support policy changes regarding the optimal duration of time that trauma patients spend in the ED. While individual patient characteristics may influence ED LOS, factors external to the individual that we did not study may also play an important role, such as patient volume, facility staffing levels, bed availability and season.
Resident Forum Session
9. BEING NARROW-MINDED ISN’T ALWAYS BAD: FOCUSING ON EMERGENT INTERVENTIONS IN UNDERTRIAGE INITIATIVES IMPROVES MORTALITY PREDICTION FOR MAJOR TRAUMA PATIENTS
FB Fernandez MD, AP Martin BSN, SC Klepner DO, T Wasser PhD, EF Reilly MD, A Muller MSPH, AW Ong MD
Philadelphia College of Osteopathic Medicine

Background: The American College of Surgeons Committee on Trauma Resources for the Optimal Care of the Injured Patient defines undertriage (UT) as any major trauma patient (ISS ≥16) not undergoing evaluation and treatment by a Level 1 or 2 trauma team activation (TTA) pathway. This definition may underestimate mortality risk for certain patients requiring “high-risk” emergent treatment interventions and may overestimate the mortality benefit of TTA for patients that do not. The authors hypothesize that focusing only on major trauma patients requiring high-risk time-dependent treatment interventions within the Emergency Department (ED) phase of care will improve outcome prediction and better identify which patients are most likely to benefit from formal TTA.

Methods: The Pennsylvania Trauma Systems Foundation state trauma registry was reviewed retrospectively for patients with Injury Severity Score (ISS) ≥ 16 presenting between January 2013 and December 2016. The following treatment interventions were abstracted: Pre-hospital (PH) crystalloid infusion > 2 liters (L); PH cardiopulmonary resuscitation (CPR), PH or ED intubation, PH or ED packed red blood cell (PRBC) transfusion, ED fresh frozen plasma transfusion, ED platelet transfusion, ED CPR, ED central venous line insertion, ED tube thoracostomy insertion; emergent surgical intervention direct from the ED, and emergent angiographic procedure direct from the ED. Transfers-in and deaths-on-arrival were excluded. UT was defined as any patient not triaged to Level 1 or 2 activation. Mortality rates for all patients and intervention subgroups were compiled. Odds ratios for mortality were constructed for treatment intervention subgroups using those without the intervention as the referent. High-risk interventions were defined as those interventions associated with a statistically significant increase in mortality.

Results: 25,433 patients met inclusion criteria. Overall UT rate was 27.7%, ranging from 2.4% to 31.7% by intervention subgroup. 47% of the study cohort had no measured treatment intervention. Overall mortality was 16.1%. High-risk interventions included: PH CPR (OR 55.56 [41.24-74.86]); PH crystalloid infusion >2L (OR 2.58 [2.15-3.10]); PH or ED intubation (OR 1.86 [1.72-2.00]); PH or ED PRBC transfusion (OR 1.82 [1.64-2.02]); and emergent operative intervention (OR 1.59 [1.47-1.72]). Patients receiving any of the above five interventions had a significantly increased overall risk when compared with those without (Any high-risk: 22.0 % vs. none: 9.5%, p<0.05, OR 2.54 [2.37-2.72]).

Conclusion: UT defined by the presence of ISS≥16 alone underestimates the mortality risk in major trauma patients requiring high-risk treatment interventions. Patients not requiring high-risk interventions are likely to have reduced mortality benefit from TTA and thus should not be the focus of UT initiatives. The authors propose including only major trauma patients requiring PH crystalloid infusion >2 liters, PH CPR, PH or ED intubation, PH or ED PRBC transfusion, or those requiring emergent surgical intervention in future definitions of UT. Further research is warranted to determine if other “high-risk” treatment interventions exist.
Resident Forum Session
10. USE OF TELEMEDICINE IN SURGICAL EDUCATION: SEVEN-YEAR EXPERIENCE
MF Juca-Moscardi MD, A Marttos MD, CJ Mentzer MD, N Namias MD
University of Miami

**Background:** Ensuring uniformity of education in surgery is challenging. This heterogeneity is due to varying experiences often based upon scheduling and rotation assignments. With the advent of work hour restrictions, the likelihood of a resident being exposed to a rare case has diminished over the past years. Telemedicine is an avenue in which gaps in exposure and knowledge overcome and an established telemedicine program may be the tool to create a learning pattern in the overall educational experience.

**Methods:** A retrospective review of 7 years experience (2010-2016) with weekly teleconference involving trauma centers around the world was completed. In them, a trauma case is discussed among surgeons with all kind of expertise. Descriptive data was revised including types of cases, anatomical injury patterns, location of hospitals, number of participating centers and viewers per lecture. Participating hospitals spanned a range of experience and included centers from underdeveloped to first world nations.

**Results:** 276 weekly lectures were presented with 27 countries, 64 cities, and 73 hospitals being involved with an average of 10 hospitals and 52 viewers per lecture. Cases presented included penetrating (47%), blunt (42%) and blast (4%) trauma, etc. Anatomic regions were thorax (28%), abdominal (26%), thoracoabdominal (13%), neck (7%) and pelvis (6%). Most presented lesions were vascular (18%), followed by lung, liver, diaphragm, heart, spleen, pancreas, etc. Among the vascular lesions, the most common were aorta (18%), iliac vessels (8%), vena cava (7%), etc.

**Conclusion:** Telemedicine is a viable adjunct surgical education tool allowing dissemination of diverse experiences regardless of the educational setting. In this study, it is remarkable how the discussions are mostly about lesions of rare location or of complex approach, which coincidentally are lesions rarely seen on trauma sites. Learning different managements of several trauma types make surgeons become more prepared to deal with these cases in real situations.
SCIENTIFIC SESSION

ORAL ABSTRACTS
1. PREDICTING MORTALITY IN THE SURGICAL INTENSIVE CARE UNIT USING ARTIFICIAL INTELLIGENCE AND NATURAL LANGUAGE PROCESSING OF PHYSICIAN DOCUMENTATION

J Parreco MD, JL Buicko MD, R Martinez MD, K Baker MD, R Kozol MD, R Rattan MD
University of Miami

Background: Artificial intelligence and machine learning has demonstrated to be useful in predicting a wide range of medical outcomes. The purpose of this study was to predict mortality in surgical intensive care unit (ICU) patients using machine learning classifiers trained with physiologic patient variables as well as natural language processing of physician documentation.

Methods: The Multiparameter Intelligent Monitoring in Intensive Care III (MIMIC-III) database contains the medical records of intensive care unit admissions at Beth Israel Deaconess Medical Center from 2001 to 2012. For this study, the MIMIC-III database was queried for the text from the first note written by a physician for each surgical ICU admission. Natural language processing was performed on the text and word counts were obtained. Additionally, six different severity of illness scores were calculated using the physiologic parameters of each patient on the first day of ICU admission. Three different machine learning classifiers were trained to predict mortality in the ICU using gradient boosted decision trees. One with severity of illness scores alone, one with physician notes alone, and one with severity of illness scores plus physician notes. Cross validation of the classifiers was done with ten groups with equal proportions of patients who died. Nine groups were used for training and one for validation. This process was repeated using each group for validation once. The receiver operating characteristic curves (ROC) were plotted for each validation and the mean areas under the curve (AUC) were calculated.

Results: There were 3,838 surgical ICU stays identified during the study period and 5.4% ended with mortality. The median length of stay for patients who survived was shorter than patients who died (2 [IQR 1-3] versus 3 days [IQR 1-6], p<0.01). The classifier trained with severity of illness scores plus physician notes performed with the highest AUC of 0.88 40.05 and an accuracy of 94.6 41.1%. The most important variables were Oxford Acute Severity of Illness Score (16.0%) and Acute Physiology Score III (5.6%). The next most important variables were from the physician notes, the words “dilated” (4.3%) and “hemorrhage” (3.7%). The classifier trained with scores alone performed with an AUC of 0.85 40.04 and an accuracy of 93.1 41.0% and notes alone had an AUC of 0.84 40.05 and an accuracy of 94.1 41.0%.

Conclusion: This study demonstrates the novel use of artificial intelligence to process physician documentation in order to predict mortality in the surgical ICU. The classifiers were able to detect the subtle nuances in physician vernacular that predict mortality. These nuances provided improved performance in predicting mortality over physiologic parameters alone.
Scientific Session 1
2. CLINICALLY SUSPECTED SEPSIS AND BLOOD CULTURES IN POSTOPERATIVE PATIENTS
LR Copeland-Halperin MD, E Emery MS, C Liu MS PhD, J Dort MD
Inova Fairfax Medical Campus

Background: Practice guidelines recommend obtaining blood cultures (BCx) in patients with suspected sepsis, but limited data support this in postoperative patients. We previously reported that postoperative BCx generally have a low yield and identified predictors of positive cultures. Here we describe culture yield in relation to those with a diagnosis of sepsis.

Methods: We reviewed records of non-pregnant adults with BCx collected within 10 postoperative days at a tertiary care hospital in 2013 and using logistic regression explored the relationship between a diagnosis of sepsis in the problem list and bacteremia on the day of culture.

Results: Of 13,652 blood cultures, 1,804 from 747 patients (mean age 59.6 years) met inclusion criteria. Of these, 148 cultures from 103 patients had sepsis concurrently listed. There was no association between sepsis and BCx yield (unadjusted OR 1.169, p=0.644; adjusted OR 0.862, p=0.682), but cultures were more often positive in patients with sepsis as the interval after surgery increased (unadjusted OR 1.283; 1.021-1.614, p=0.033). Hypotension was a significant predictor of positive BCx (adjusted OR 2.295, p=0.004) (Table 1).

Conclusion: In this dataset, the largest of its kind, clinically suspected sepsis was not associated with positive blood cultures, but in patients with sepsis positive blood cultures were more likely as the interval after surgery approached 10 days. Further analyses may yield additional implications for use of blood cultures in this setting and guide more appropriate use of this diagnostic test.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Levels</th>
<th>Negative Blood Culture (BCx)</th>
<th>Positive BCx</th>
<th>Adjusted Odds Ratio</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sepsis</td>
<td>no</td>
<td>946</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>yes</td>
<td>137</td>
<td>11</td>
<td>0.862</td>
<td>(0.422, 1.759)</td>
<td>0.682</td>
</tr>
<tr>
<td>Postoperative Day (POD)</td>
<td>0-1</td>
<td>362</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2-3</td>
<td>351</td>
<td>16</td>
<td>5.753</td>
<td>(0.798, 3.849)</td>
<td>0.162</td>
</tr>
<tr>
<td></td>
<td>4-5</td>
<td>140</td>
<td>17</td>
<td>2.999</td>
<td>(1.25, 7.195)</td>
<td>0.014</td>
</tr>
<tr>
<td></td>
<td>6+</td>
<td>267</td>
<td>31</td>
<td>4.105</td>
<td>(1.942, 8.676)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Maximum Temperature within 24 hours of BCx (°F)</td>
<td></td>
<td>100.28 ± 1.7</td>
<td>100.94 ± 1.68</td>
<td>1.376</td>
<td>(1.153, 1.643)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>Leukocyte Count (10⁹/mm³)</td>
<td>4-12</td>
<td>967</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt; 4</td>
<td>32</td>
<td>2</td>
<td>0.441</td>
<td>(0.062, 3.124)</td>
<td>0.412</td>
</tr>
<tr>
<td></td>
<td>&gt; 12</td>
<td>510</td>
<td>39</td>
<td>1.081</td>
<td>(0.65, 1.799)</td>
<td>0.765</td>
</tr>
<tr>
<td>Lactic Acidosis</td>
<td>no</td>
<td>1043</td>
<td>71</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>yes</td>
<td>40</td>
<td>5</td>
<td>1.515</td>
<td>(0.546, 4.055)</td>
<td>0.408</td>
</tr>
<tr>
<td>Hypotension</td>
<td>no</td>
<td>768</td>
<td>46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>yes</td>
<td>295</td>
<td>30</td>
<td>2.295</td>
<td>(1.102, 4.048)</td>
<td>0.004</td>
</tr>
<tr>
<td>Heart Rate (bpm)</td>
<td>≤ 90</td>
<td>295</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; 90</td>
<td>650</td>
<td>47</td>
<td>0.852</td>
<td>(0.488, 1.488)</td>
<td>0.574</td>
</tr>
</tbody>
</table>
3. DISCREPANCY IN POSTOPERATIVE OUTCOMES BETWEEN AUDITING DATABASES: A NSQIP COMPARISON

WB Lyman MD, M Passeri MD, M Fruscione MD, A Cochran MSPH, DA Iannitti MD, JB Martinie MD, EH Baker MD, D Vrochides MD PhD
Carolinas Medical Center

**Background:** Accurate capture of postoperative outcomes is vital to identify areas of concern or targets for improvement. In 2014 a procedure-specific user guide was created within ACS National Surgical Quality Improvement Program (NSQIP) to address deficiencies for monitoring postoperative outcomes specific to pancreatic resection. Concurrently, our department began collecting data prospectively in the ERAS Interactive Audit System (EIAS) database for the implementation of ERAS (Enhanced Recovery After Surgery). The goal of this study is to compare reported outcomes between the two databases for patients undergoing pancreaticoduodenectomy (PD) and left pancreatectomy (LP).

**Methods:** We retrospectively examined two prospectively collected databases, NSQIP and EIAS, for all patients who underwent PD or LP at our institution between September 2014 and February 2017. We chose pancreatectomy for our target procedure as all pancreatectomies were being audited by NSQIP during this time period (as opposed to the typical sample from other procedures). Out of the 214 patients recorded in EIAS and 216 recorded in NSQIP, 171 patients were recorded in both databases. Reported demographics and outcomes were then compared between the two databases using a combination of Wilcoxon rank-sum test and Pearson’s chi-squared test.

**Results:** No significant difference in captured demographics was noted between the two databases. Statistically significant differences in outcomes are highlighted in Table 1. Rates of postoperative renal dysfunction (12.9% vs 1.2%), return to OR (17.5% vs 7.0%), and UTI (5.3% vs 1.2%) were significantly different from EIAS to NSQIP (p<0.001, p=0.003, and p=0.032 respectively). Variables specific to pancreatic resection also showed significant variation with rate of clinically relevant pancreatic fistula (18.1% vs 5.9%) and delayed gastric emptying (5.9% vs 13.5%) in EIAS and NSQIP (p<0.001 and p=0.017 respectively).

**Conclusion:** Overall, we found a wide variation in reported outcomes between EIAS and NSQIP for the same 171 patients. While many of the discrepancies were unexpected, upon further review we were able to justify much of the variation by differences in outcome definitions. For example, pneumonia was recorded in EIAS if there was unequivocal clinical evidence of pneumonia with initiation of antibiotics. Pneumonia was recorded in NSQIP only if radiology (2 chest films), laboratory (positive sputum culture), and clinical thresholds (initiation of antibiotics) were met. As surgeons, we are increasingly being judged by our outcomes and perceived “quality.” This comparison of NSQIP and EIAS demonstrates that variable definitions between databases can lead to wide variation in reported outcomes. Understanding specific outcome definitions is vital to determine whether the listed complication rate is a concern or within acceptable limits.
<table>
<thead>
<tr>
<th>Postoperative Complications*</th>
<th>EIAS (N=171)</th>
<th>NSQIP (N=171)*</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renal Dysfunction</td>
<td>22 (12.9%)</td>
<td>2 (1.2%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Clinically Relevant Postoperative Pancreatic Fistula</td>
<td>31 (18.1%)</td>
<td>10 (5.9%)</td>
<td>0.001</td>
</tr>
<tr>
<td>Return to OR</td>
<td>30 (17.5%)</td>
<td>12 (7.0%)</td>
<td>0.003</td>
</tr>
<tr>
<td>Clinically Relevant Delayed Gastric Emptying</td>
<td>10 (5.9%)</td>
<td>23 (13.5%)</td>
<td>0.017</td>
</tr>
<tr>
<td>UTI</td>
<td>9 (5.3%)</td>
<td>2 (1.2%)</td>
<td>0.032</td>
</tr>
<tr>
<td>Sepsis</td>
<td>7 (4.1%)</td>
<td>16 (9.4%)</td>
<td>0.052</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>9 (5.3%)</td>
<td>3 (1.8%)</td>
<td>0.078</td>
</tr>
</tbody>
</table>

Table 1: Postoperative complications with a statistically significant difference or approaching statistical significance in capture between EIAS and NSQIP. *definitions do not correlate exactly between data sets. **Two outcomes listed as unknown in NSQIP for pancreatic fistula.
Scientific Session 1
5. PREDICTORS OF SURGICAL OUTCOMES IN YOUNGER COLON CANCER PATIENTS
J Swinarska BS, L Willcox MEng, F Hsu PhD, C Clark MD
Wake Forest University School of Medicine

Background: Colon cancer has steadily decreased in older adults; however, in younger adults (< 50 years old), colon cancer continues to rise. Although we know that younger patients with colon cancer often present with advanced disease, we have limited understanding of surgical outcomes in this population. The aim of the current study was to characterize the surgical management and postoperative outcomes for younger patients with colon cancer.

Methods: We evaluated 11,924 patients in the 2012-2015 NSQIP targeted colon cancer PUF who underwent elective colon resection for cancer. The study excludes patients missing cancer stage, early stage cancer (Tis, T0), and emergency operations. Postoperative outcomes were evaluated using univariate and multivariate analysis.

Results: We identified 1,424 patients (11.9%) under the age of 50 years (45% female) with colon cancer. Younger patients were more likely to smoke (16.9% vs. 12.8%, p<0.001), were more likely to present with metastatic disease (17.1% vs. 11.2%, p<0.001), and had a higher frequency of positive nodes (53% vs. 40.5%, p<0.001) compared with patients over 50 years old. Comorbidities including COPD, CHF, diabetes, and bleeding disorders were significantly more common in older patients (all p<0.05). 30-day mortality in younger colon cancer was 0.1% (n<11), major complications occurred in 10.5% (n=149), and median length of stay was 4 days (IQR 3-6). In younger patients, major complications were associated with open surgical approach (OR 1.8, 95% CI 1.3-2.6, P 0.001), high ASA classification (OR 1.6, 95% CI 1.1-2.2, P 0.010), pathologic T4b stage (OR 4.0, 95% CI 1.6-10.3, P 0.004), metastatic disease (OR 2.3, 95% CI 1.5-3.3, P<0.001), and positive nodes (OR 1.5, 95% CI 1.1-2.2, P 0.016). Prolonged length of stay (>5 days) for younger patients was associated with pathologic T3 or T4 stages (OR 1.7, 95% CI 1.3-2.2, P 0.001), metastatic disease (OR 2.6, 95% CI 2.0-3.5, P<0.001), and high ASA classification (OR 1.8, 95% CI 1.4-2.3, P<0.001). On multivariable analysis, metastatic disease at time of surgery was an independent predictor of postoperative major complications and prolonged length of stay (OR 1.9, 95% CI 1.2-2.9) and (OR 1.7, 95% CI 1.3-2.4), respectively.

Conclusion: While previous studies indicate that older age, frailty, and comorbidities predict postoperative outcomes in colon cancer patients, advanced cancer stage is an important predictor of postoperative outcomes in younger patients with colon cancer.
Scientific Session 1

6. FEASIBILITY AND SAFETY OF INTRAOPERATIVE COLONOSCOPY AFTER SEGMENTAL COLECTOMY AND PRIMARY ANASTOMOSIS

R King MD PhD, E Simmerman DO, C Dahlhausen MD, P Ham MD, Z Klaassen MD, V Hooks MD
Augusta University

Background: Patients presenting with near-obstructing colon lesions requiring segmental colectomy may benefit from intraoperative colonoscopy (IOC) after primary anastomosis for a more timely and accurate diagnosis of synchronous lesions. The clinical benefits and safety of this technique have not been investigated in large-scale studies. The aim of this study is to demonstrate the feasibility and safety of IOC after primary anastomosis following segmental colectomy in the management of patients who are unable to receive preoperative colonoscopy secondary to obstructive symptoms.

Methods: This was a retrospective cohort study of patients undergoing single-stage segmental colectomy and anastomosis at a single tertiary care institution from 2011 to 2013. 168 consecutive patients underwent segmental colectomy and primary anastomosis and 78 patients (46%) unable to receive preoperative colonoscopy due to obstructive symptoms received IOC after the anastomosis. Main outcome measures included detection of proximal synchronous lesions, post-operative anastomotic leak and complications, operative time, and length of hospital stay.

Results: IOC detected synchronous adenomatous polyps in 19 patients (24.4%), diverticular disease in 15 patients (19%), and colitis/proctitis in 2 patients (2.5%). Overall morbidity in the IOC group was 12.8%, with anastomotic leakage in 1 patient, wound infection in 4 patients, and postoperative ileus in 5 patients. The risk of these complications was not significantly increased when compared to those patients who did not undergo IOC after segmental colectomy and primary anastomosis. (Intraoperative: 29% vs. Preoperative: 37% p= 0.01). Operation time was 19 minutes longer in the intraoperative group, but overall length of hospital stay was not significantly different between the groups (Intraoperative: 6.442.9 days vs. Preoperative: 7.344.6 days).

Conclusion: In patients unable to receive preoperative colonoscopy due to obstructive symptoms, IOC after segmental resection and primary anastomosis is both a feasible and safe strategy for detecting proximal synchronous lesions.
8. REDO OR NOT TO REDO: COMPARISON OF INITIAL AND REOPERATIVE PARAESOPHAGEAL HERNIA REPAIR (PEHR)

J Otero, K Schlosser, JE Marx, T Prasad, PD Colavita, BT Heniford
Carolinas Medical Center

Background: The incidence and causes of failed paraesophageal hernia repairs are poorly understood. Anatomic recurrence is largely underestimated due to lack of routine follow-up and imaging in asymptomatic patients. In symptomatic patients, especially those with poor quality of life, revision of a previous PEHR is indicated. This study aims to evaluate patterns leading to repair failure and revision.

Methods: A prospectively collected, institutional hernia-specific database was queried for all PEHR performed from 2008 to 2017. Patients referred for gastric diversion or bypass after failed paraesophageal hernia repair were excluded, as were failed antireflux operations that were not associated with a PEH. Perioperative and surgical data, and long-term outcomes were compared using standard statistical tests.

Results: 264 patients (74.2% female, mean age 66±11.5 years, mean BMI 29.1±5.1kg/cm²), with mean follow-up of 35.5 months, underwent PEHR. 34 patients(12.8%) had history of prior failed PEHR; of these patients, 2 (0.75%) had more than one prior failed repairs. There was no difference in demographics or comorbidities between primary and recurrent PEHR cohorts. All operations were attempted laparoscopically with one RPEH converted to open. Of recurrent PEH, previous repairs included 70.6% Nissen, 5.9% Toupet, and 3.0% Dor fundoplication; mean time from initial repair to symptom recurrence was 62.1 months. Preoperative nausea/vomiting (58.8% vs. 30.4%, p<0.001) and weight loss (29.4% vs. 14.8%, p<0.03) were more prevalent in RPEH patients. Patients underwent Nissen or Toupet fundoplications but RPEHs had more Nissens (62.5% vs. 27.3% primary PEH, p<0.0001), more Collis gastroplasties (8.8% vs. 1.7%, p<0.05), and tended to have less common mesh augmentations of the crus (52.9% vs. 67.0%, p=0.10). Failed PEHRs were most commonly due to herniated intrathoracic wrap (55.9%), loose/slipped wrap (41.2%), and wide crural defects or mesh failure (23.5%). 14.7% of PEHRs were due to a poorly placed fundoplication on the body of the stomach. Recurrent PEH had longer mean operative time (256±89 vs 189.4±54.6 min, p<0.0001) and length of stay (4.342.4 vs 3.442.5 days, p<0.02); however, no difference was noted in postop complications, return to OR, or hernia recurrence between cohorts. In multivariate analysis to control for confounding factors, only hernia grade was statistically significant; type 4 hiatal hernia was protective and 92% less likely to recur than type 2 (CI 0.013-0.563). In patients who presented with nausea/vomiting, 1.3% of primary PEHR had persistent nausea at 1 year compared to 8.8% of recurrent PEHR (p<0.001). Resolution of heartburn (2.9% vs. 7.8%), dysphagia (2.9% vs. 5.2%), regurgitation (0.0% vs. 1.3%), and other symptoms (0.0% vs. 4.8%) was achieved with similar rates in both cohorts (all p>0.05). Need for reoperative PEHR was not statistically different in patients who had failed prior repair (0.0% vs. 4.8% primary PEHR, p=0.37).

Conclusion: Laparoscopic revision of prior PEHR in symptomatic patients can be safely performed with favorable outcomes compared to initial PEHR. Conversion to laparotomy is rare. Symptoms of nausea may persist following revision of PEHR, however overall symptom resolution and good long-term quality of life are achieved in the majority of patients.
Scientific Session 1

9. USE OF BIO-ABSORBABLE TISSUE REINFORCEMENT REDUCES INCIDENCE OF INTERNAL HERNIA IN ROUX-EN-Y GASTRIC BYPASS PATIENTS

MW Love MD, R Mansour MD, AL Hale BA, ES Bour MD, I Shenouda MD, JA Ewing PhD, S McDermott, JD Scott MD
Greenville Health System

Background: Internal hernias are one of the most devastating late post-surgical complications associated with laparoscopic Roux-en-Y gastric bypass (LRYGB). The objective of this study was to determine whether placement of a bio absorbable tissue matrix in potential hernia spaces resulted in a lower incidence of internal hernia development post-LRYGB compared with simple primary closure.

Methods: A prospective database was used to identify all patients who underwent LRYGB at our institution between January 2002 and January 2016 (N=2771). Prior to September, 2009, the retro-Roux defect was left open during the primary operation and the defect at the jejuno-jejunostomy was closed with sutures or staples. Beginning in September 2009, all hernia spaces were primarily closed and subsequently reinforced with an 8 cm x 8 cm piece of bio absorbable matrix in an effort to generate scar tissue in this location. All patients were divided into two groups based on use of the bio absorbable tissue matrix: group 1 included patients in which no bio absorbable matrix was used (n=1215), and group 2 included patients in which bio absorbable matrix was used (n=1556). Primary endpoints included total number of internal hernias and time to presentation with hernia. Analysis included patients with asymptomatic hernias, as many were discovered incidentally during routine subsequent operations. Secondary endpoints included complications sustained as a result of herniation, including conversion to open surgery and bowel resection.

Results: Patient characteristics, including preoperative comorbidities, were similar between groups. Postoperative weight loss and incidence of complications in patients following their second operation was also similar between groups. A total of 275 patients (9.9%) developed an internal hernia post-LRYGB. Patients in group 1, however, were associated with a significantly higher internal hernia rate than group 2 (group 1, 18.5% vs. group 2, 3.1%; p<0.005). Median time to hernia development was also significantly longer in group 1 (2.4 years vs.1.6 years; p=0.004). Incidence of complications in patients following their second operation was comparable between groups (p=0.524).

Conclusion: This study demonstrates a statistically significant reduction in internal hernia formation in all LRYGB cases performed since the addition of bio absorbable tissue matrix. Although prospective studies are needed, early evidence suggests that reinforcement of the internal hernia spaces with bio absorbable tissue scaffold is an effective method for minimizing internal hernias and their potential complications following LRYGB.
Internal Hernias After Gastric Bypass

Number of Internal Hernias

---

All Internal Hernias

No BioA

BioA

Year of Internal Hernia

Background: Component separation technique (CST) has expanded the scope of abdominal wall reconstruction and significantly improved outcomes in complex ventral hernia repair (VHR). CST permits repair of previously inoperable defects, however, hernia recurrence and wound complications remain common sources of perioperative morbidity and increased cost. A recent consensus statement identified the current need for further investigation into choice of mesh material in complex VHR. Our group recently reported low recurrence rates utilizing a biologic mesh onlay technique in VHR with CST. Bioabsorbable mesh in theory offers similar biologic activity and repair strength to biologics. We hypothesized that synthetic bioabsorbable mesh offers noninferior outcomes in hernia recurrence and wound complications to biologic mesh in this procedure.

Methods: Retrospective cohort study of patients undergoing VHR with CST utilizing a mesh onlay with biologic (Bio) vs bioabsorbable (BA) mesh performed by two surgeons at one institution over eight years. Standard anterior component separation with midline fascial closure and mesh onlay was used in all patients. Biologic mesh were allomax type (Bard Davol, Murray Hill, NJ) and synthetic absorbable mesh were phasix(Bard). The primary endpoint was hernia recurrence; secondary endpoints were wound complications including infection, seroma and skin necrosis. Follow up took place in the clinical setting and recurrence was determined on history and physical exam or CT scan. Statistical significance was determined using student’s t-test and two proportion z-test where applicable.

Results: 188 patients were identified (103 Bio, 75 SA). Average BMI was 36.2 Bio vs 37.2 SA, p=0.45. Percent female was 60.2% Bio vs 60.0% SA, p=1. Average age was 56.1 Bio vs 53.5 SA, p=0.11. 16.0% of Bio patients underwent concomitant panniculecomy versus 59.1% of SA patients, p<.001. Mean follow up was 65.1 months Bio vs 35.2 months SA. Overall recurrence at the end of the study period was 6.91% (13/188); recurrence using Bio was 6.80% (7/103) versus 8.00% (6/75) using SA, p=0.63. In the biologic group, 0 recurrences took place within 30 days of surgery, 2 occurred between 31 and 365 days and 5 occurred beyond 365 days with a median time to recurrence of 23.9 months. In the SA group, all recurrences occurred after 365 days with a median time to recurrence of 15.0 months. Overall rate of wound complications was 43.7% (45/103) Bio vs 46.7% (35/75) SA, p=0.67.

Conclusion: Our data demonstrate similar rates of hernia recurrence and wound complications between the two mesh types studied. Patients who received synthetic absorbable mesh were less likely to suffer a recurrence in the first year after surgery. The incidence of wound complications was high in both groups; we attribute this to the known risk of raising large lipocutaneous flaps in anterior CST. However, the overwhelming majority of complications were treated with minor debridement in the office or short course antibiotics. Biologic and bioabsorbable mesh appear to represent clinically equivalent options for surgeons and patients undergoing complex VHR in the elective setting. Thus, cost, availability of materials and surgeon preference are appropriate determinations of mesh choice in this procedure.
Scientific Session 2

11. LONG-TERM SURVIVAL AFTER TOTAL PANCREATECTOMY WITH ISLET-AUTO-TRANSPLANTATION (TPIAT) FOR CHRONIC PANCREATEITIS
CW Chung MD, S Owczarski PA, H Wang PHD, K Morgan MD, DB Adams MD
Medical University of South Carolina

Background: Historically, long-term mortality in patient undergoing operative management of chronic pancreatitis with traditional resection and drainage procedures approaches 25 percent. Operative management of chronic pancreatitis now includes total pancreatectomy with intra-portal islet-auto-transplantation. The purpose of this study was to evaluate long-term survival in chronic pancreatitis patients who underwent TPIAT.

Methods: Consecutive cases of TPIAT (n=160) were reviewed at a single institution over a 7-year period (March 2009- March 2016). Thirty-day and 90-day outcomes were monitored through a prospectively maintained database with IRB approval. A retrospective analysis was conducted to determine perioperative morbidity and long-term survival rate, assessed through clinic follow-up and patient survey.

Results: Perioperative morbidity was identified in 78 of 160 patients (48.8%); including: 20 delayed gastric emptying (12.5%), 23 pneumonia (14.4%), 10 intraabdominal abscess (6.25%), 9 unplanned reintubation (5.6%), 8 acute renal failure (5.0%), 6 wound infection (3.8%), and 6 septic shock (3.8%). Of these complications, 32 patients (20.0%) were Clavien-Dindo grade III through IV. Post-operative hospital length of stay was 12.4±1.0 days, reoperation occurred in 17 patients (10.6%), readmission in 46 patients (28.8%). Thirty-day mortality was observed in 2 patients (1.25%) and 90-day mortality in 4 patients (2.5%). One hundred and sixty patients were available for long-term follow-up, in which, 13 patients died (8.1%). The median duration of follow-up was 4.8±0.2 years.

Conclusion: TPIAT management of chronic pancreatitis has substantial early post-operative morbidity but shows better long-term survival compared to traditional surgical options.
Scientific Session 2

12. LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA OUTFITPERFORM OTHER POPULATIONS IN THE NEW HEPATITIS C ERA

AE Alsina MD, A Athienitis PhD, J Trendowski BS, A Delgado BS, J Buggs MD, B Evans RN, E Franco MD, C Albers MD, N Kemmer MD
Tampa General Hospital

Background: Long term results of HCC liver transplants (LTx) in the recent era of direct-acting antivirals (DAA) against hepatitis C (HCV) are not available. We aimed to examine the access, treatments and cure rates with DAA's utilized in HCC LTx with HCV. Secondarily, we aimed to determine the long term impact of the Liver Cancer Program and DAA therapies on survival of HCC LTx.

Methods: A retrospective analysis of 4 eras of transplantation for HCC/HCV LTx at a single center: Era 1 (’97-2001), 2 (2002-06), 3 (2007-10), and Era 4 (2011-15). In 2011, utilization of first generation DAA’s began, as well as a fully revamped liver cancer program. By 2012, second generation DAA’s were used. All eras were examined for patients that died prior to reaching DAA’s (Era 4). Era 1 to 4 had 2, 20, 47 and 67 HCC/HCV patients, respectively. All DAA treatments in this study were post liver Tx. Kaplan Meier methodology, Log rank and Chi-square was utilized.

Results: There were 136 HCC/HCV liver Tx out of 233 liver Tx for HCC during entire time period. More patients Era 3 (41/47=87%) vs. Era 1 and 2 (10/22= 45%) were able to reach the DAA era ( p= 0.0002). More patients in Era 4 (22/67=32.8%) were treated with DAA’s than in Era 3 (8/47=17.7%) and in Era 2 (2/20= 10%, p= 0.04). [Era 3 vs 4, p=0.059]. More patients were cured in Era 4 (22/67 = 32.8%) vs. Era 3 (7/47 =14.8, p=0.03). Improvement across the 4 eras of liver Tx for HCC was statistically significant (Log Rank 0.0018). The 3-year survival of 89 patients in Era 4 was 87.3% compared to 68% for Era 3. Forty-nine patients have already reached that endpoint.

Conclusion: Conclusions: The superiority of Era 4 HCC liver Tx is impressive, with a 19% survival improvement. Decay after the first year was only 3.8% / year. This era coincides with the beginning of DAA’s and the revamped liver cancer program, both significantly improving survival. Contributions from Hepatitis C therapies on overall survival of HCC LTx are unquestionable. One third of HCV infected HCC patients were treated and cured. All (100%) were cured since 2011. However, other factors in the liver cancer program also contributed: better bridge therapies, adjuvant therapies, patient selection, among others. Hepatocellular carcinoma liver Tx recipients are outperforming other liver Tx recipients, and are comparable to HCV alone.
Scientific Session 2

13. PROGNOSTIC VALUE OF HEPATOCELLULAR CARCINOMA STAGING SYSTEMS: A COMPARISON

S Bergstresser BS, K Vines BS, P Li PhD, B Comeaux CNP, J Zarzour MD, D Dubay MD, S Gray MD, D Eckhoff MD, J White MD

University of Alabama School of Medicine

Background: The incidence of hepatocellular carcinoma (HCC) in the United States has nearly tripled in the last three decades. Although rates of Hepatitis C related HCC are predicted to downtrend after 2020, the number of patients with non-alcoholic steatohepatitis (NASH), a known risk factor for HCC, is projected to rise through 2030. As the incidence of HCC continues to climb, it is imperative to have validated staging systems to guide treatment selection and predict survival. The purpose of this investigation was to compare 11 staging systems in their ability to predict survival in a cohort of patients diagnosed with HCC.

Methods: This is a prospectively controlled chart review study of 1,178 patients diagnosed with HCC between January 2007 and December 2017 at a large, single-center hospital. Lab values, patient demographics, and tumor characteristics were used to stage patients and calculate Model for End Stage Liver Disease (MELD) and Child-Pugh scores. Kaplan-Meier method and log-rank test were used to identify the risk factors of overall survival. Cox regression model was used to calculate linear trend $\chi^2$ and likelihood ratio $\chi^2$ to determine linear trend and homogeneity of the staging systems, respectively.

Results: In all patients, ITA.LI.CA demonstrated the largest linear trend $\chi^2$ (240.3) and likelihood ratio $\chi^2$ (287.6) in the Cox model when compared to other staging systems. In this same group, the Barcelona Clinic Liver Cancer (BCLC) system had intermediate performance with a linear trend of 103.2 and likelihood ratio of 106.2. GRETH had the weakest performance in all patients with a linear trend of 36.2 and likelihood ratio of 91.5. In patients receiving liver transplants, Cancer of the Liver Italian Program (CLIP) demonstrated the largest linear trend $\chi^2$ (11.3) and homogeneity $\chi^2$ (17).

Conclusion: Based on our statistical analysis, ITA.LI.CA demonstrates the best monotonicity, homogeneity, and discriminatory ability of all staging systems. ITA.LI.CA is the first system to use two separate measures, a tumor stage and a prognostic score, to create one overall system to stage patients. This novel approach may be what allows ITA.LI.CA to better stratify intermediate stage patients when compared to other staging systems. Superior performance of this new system could present an opportunity to revisit AASLD guidelines on staging of HCC.
Scientific Session 2
15. A NOVEL RISK SCORE PREDICTS POST-TRAUMA MORTALITY AMONG NONOGENARIANS
P Smit MD, F Diroma DO, K Kopatsis, C Wagner MS
New York University

Background: The term “elderly” typically encompasses patients 65 years of age and older, but this age group encompasses a wide range of physiologies. With an aging population, compounding comorbidities, and increased admissions to our level one trauma center of patients of extreme age, we looked at our nonagenarian population (age 90 and above) and tried to discover what admitting characteristics, or hospital complications, could predict mortality. The result was a scoring system with percentage risk assigned to an easily calculable score with an acceptable level of sensitivity and specificity.

Methods: We took 442 nonagenarian trauma patients admitted to our level one trauma center in Brooklyn New York over a two year period (2014-15) and stratified their diagnosis’ with organ system complications or comorbidities. Statistical analysis was performed using logistic regression and a machine learning model, which uses concepts from both computer science and statistics, to calculate statistically significant variables and then assign a percentage risks that correlates with a scoring system based on the previously calculated diagnosis’ and organ system complications.

Results: The significant variables (diagnosis’ and complications) we defined were cardiac comorbidity, neuro-concussion, NISS 16+, striking sharp object, ISS 25 - 75, pulmonary complications, and cardiac complications. The variable was assigned a score of 1,1,2,2,4, or 5,5, respectively. A score of 1+ had an 8.5% risk of mortality with 100% sensitivity and low specificity. A score of 2+ carried a 17.9% risk of mortality with a 93% sensitivity and 67% specificity. A score of 3+ carried a 25.3% risk of mortality with an 86% sensitivity and 80% specificity. A score of 4+ had a 32.9% risk of mortality with an 83% specificity and 87% sensitivity. A score of 5+ carried a 41.1% risks of mortality with a 79% sensitivity and 91% specificity. Plots the relationship between lambda and AUC. The value of lambda that maximized the AUC in cross-validation was 0.007, selected from the range (0, 0.102), the latter being the maximum shrinkage parameter. Results of the model with lambda=0.007 fit to the full training dataset are presented in figure 2. This model contained coefficients for pulmonary complication (β=2.0), cardiac complication (β=1.7), cardiac comorbidity (β=0.2), neuro-concussion (β=0.1), iss 25-75 (β=1.3), niss 16+ (β=0.4) and striking sharp object (β=0.6), and dropped all other variables. The full model had an area under curve (AUC) [95% confidence interval] of 0.89 [0.8-0.99] when applied to the training dataset and 0.93 [0.88-0.98] when applied to the test dataset.

Conclusion: Our nonagenarian trauma population had seven factors we identified that can be reliable predictors of mortality and are listed in the results section. This score can easily be calculated from admissions criteria, injury severity score, and comorbidities discovered during medical history taking. As the score increases so does the percentage risk of mortality. As the score increases the sensitivity drops slightly, but the specificity increases dramatically, which makes this scoring system another tool in the armamentarium of the trauma surgeon when discussing possible outcomes after trauma in the nonagenarian population.
Full model coefficients

- Unspecified fall
- Striking sharp object
- SBP > 119.5
- Pulse > 118
- Pulmonary complication
- Psychiatric/dementia
- Proximal orthopaedic procedure
- Proximal orthopaedic diagnosis
- Orthopaedic procedure
- No. complications
- No. comorbidities
- NISS 16+
- Neurosurgical diagnosis
- Neuro-spinal diagnosis
- Neuro-head diagnosis
- Neuro-concussion
- ISS 9-15
- ISS 4-8
- ISS 25-75
- ISS 16-24
- Infection
- GCS > 119.5
- Fall from standing
- Distal orthopaedic procedure
- Distal orthopaedic diagnosis
- Cardiac complication
- Cardiac comorbidity
- Intercept

Coefficient

Variable
Scientific Session 2
16. THE IMPACT OF HEMODYNAMIC TRANSESOPHAGEAL ECHOCARDIOGRAPHY ON ACUTE KIDNEY INJURY MANAGEMENT AND USE OF CONTINUOUS RENAL REPLACEMENT THERAPY IN TRAUMA
MG Griffin MD, DB Christie MD
Mercer University/Navicent Health

Background: Fluid resuscitation in critically ill trauma patients is an often precarious task that is fraught with complications. One of the many consequences of imprecise fluid management is acute renal injury (AKI) after underestimating or overestimating resuscitation needs. When AKI progresses to where renal insufficiency is deemed deleterious to patient survival, Continuous renal replacement therapy (CRRT) is implanted as a salvage maneuver but it is not without risks, complications and expense. Hemodynamic transesophageal echocardiography (hTEE) is a valuable resource that can provide objective data to aid decisions in resuscitation. We hypothesize that the risk of AKI progressing to the need for CRRT can be decreased with the use of hTEE.

Methods: We retrospectively reviewed 2,413 patients that were admitted to a level 1 trauma ICU and placed on CRRT and/or were evaluated with hTEE between 2009 and 2015. There were 23 trauma patients that were placed on CRRT prior to hTEE initiation in 2013. This was deemed the “CRRT group.” 11 trauma patients were placed on CRRT after the initiation of hTEE. This was deemed the “CRRT/hTEE group.” We compared these two groups by the average change in creatinine, average serum creatinine, and average AKIN score prior to starting CRRT. The final group of 83 patients was evaluated with hTEE, and their AKI was managed without the use of CRRT. This was deemed the “hTEE group.” This group was then compared to the CRRT group with respect to the average of highest serum creatinine, average change in creatine, and average AKIN. We then compared the three groups with respect to their age, gender, # of days on the ventilator, injury severity score (ISS), ICU length of stay (LOS), hospital LOS, and mortality. We also compared these groups with respect to hospital charges related to these variables.

Results: Patients in the CRRT group were started on CRRT at a lower AKIN score (1.6) compared to the CRRT/hTEE group (2.9) (p=0.0003). The hTEE group had an AKIN score (2.1) higher than the CRRT group (1.6) (p=0.0387), and was managed without the use of CRRT. The CRRT group also had an increased number of ventilator days (24.5) compared to the CRRT/hTEE group (17.2), and the hTEE group (14.0) (p=0.0127). The CRRT group accrued a charge of $198,695.81 per patient, the CRRT/hTEE charged $167,534.19 per patient, and the hTEE group charged $53,929.01 per patient.

Conclusion: hTEE as an imaging modality to guide complex resuscitations is a valuable tool to allow for more tailored fluid delivery. The use of hTEE at our institution has decreased the use of CRRT by reserving its use for patients with worse AKIs. The decreased use of CRRT has also resulted in decreased hospital charges to the patient.
<table>
<thead>
<tr>
<th></th>
<th>Midface Fractures</th>
<th>No Midface Fractures</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Blunt Trauma (n=20971)</td>
<td>752 (3.6%)</td>
<td>20219 (96.1%)</td>
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### Demographics/Hospital Data

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<tr>
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<tbody>
<tr>
<td>Age (median)</td>
<td>42</td>
<td>45</td>
<td>0.0668</td>
</tr>
<tr>
<td>Male Gender</td>
<td>573 (76.2%)</td>
<td>13252 (65.6%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>ISS (median)</td>
<td>13</td>
<td>9</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Arrival GCS (mean)</td>
<td>12.8</td>
<td>13.8</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>ICU Admission</td>
<td>301 (40.0%)</td>
<td>5494 (27.2%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Ventilated</td>
<td>104 (13.8%)</td>
<td>1741 (8.6%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>HLOS (mean)</td>
<td>8.4</td>
<td>6.8</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>In Hospital Mortality</td>
<td>38 (5.0%)</td>
<td>1117 (5.5%)</td>
<td>0.5780</td>
</tr>
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### Brain Injuries

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<tbody>
<tr>
<td>Any Hemorrhagic TBI</td>
<td>92 (12.2%)</td>
<td>2900 (14.3%)</td>
<td>0.1045</td>
</tr>
<tr>
<td>Concussive TBI</td>
<td>102 (13.6%)</td>
<td>2766 (13.7%)</td>
<td>0.9273</td>
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<tr>
<td>Subdural Hematoma</td>
<td>36 (4.8%)</td>
<td>1340 (6.6%)</td>
<td>0.0454</td>
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<tr>
<td>Subarachnoid Hemorrhage</td>
<td>28 (3.7%)</td>
<td>1086 (5.4%)</td>
<td>0.0479</td>
</tr>
</tbody>
</table>

### Spine Fractures and Spinal Cord Injuries

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<tbody>
<tr>
<td>Cervical SCI</td>
<td>3 (0.4%)</td>
<td>202 (1.0%)</td>
<td>0.1273</td>
</tr>
<tr>
<td>Barel Thoracic SCI</td>
<td>1 (0.1%)</td>
<td>82 (0.4%)</td>
<td>0.3739</td>
</tr>
<tr>
<td>Lumbar SCI</td>
<td>0 (0%)</td>
<td>45 (0.2%)</td>
<td>0.4112</td>
</tr>
<tr>
<td>Cervical Fractures</td>
<td>49 (6.5%)</td>
<td>1911 (9.4%)</td>
<td>0.0066</td>
</tr>
<tr>
<td>Thoracic Fractures</td>
<td>25 (3.3%)</td>
<td>1574 (7.8%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Lumbar Fractures</td>
<td>22 (2.9%)</td>
<td>1765 (8.7%)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

### Other Associated Injuries

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<thead>
<tr>
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<tbody>
<tr>
<td>Ocular Trauma</td>
<td>110 (14.6%)</td>
<td>950 (4.7%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Pneumothorax</td>
<td>49 (6.5%)</td>
<td>2215 (11.0%)</td>
<td>0.0001</td>
</tr>
<tr>
<td>Overall Abdominal Injury</td>
<td>45 (6.0%)</td>
<td>2510 (12.4%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Liver Injury</td>
<td>13 (1.7%)</td>
<td>547 (2.7%)</td>
<td>0.1028</td>
</tr>
<tr>
<td>Splenic Injury</td>
<td>16 (2.1%)</td>
<td>799 (4.0%)</td>
<td>0.0110</td>
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<tr>
<td>Pancreatic Injury</td>
<td>1 (0.1%)</td>
<td>59 (0.3%)</td>
<td>0.7259</td>
</tr>
<tr>
<td>Pelvic and Urogenital Injury</td>
<td>38 (5.0%)</td>
<td>1800 (8.9%)</td>
<td>0.0002</td>
</tr>
<tr>
<td>Shoulder and Upper Arm Injury</td>
<td>77 (10.2%)</td>
<td>2965 (14.66%)</td>
<td>0.0007</td>
</tr>
<tr>
<td>Forearm and Elbow Injury</td>
<td>52 (6.9%)</td>
<td>1688 (8.2%)</td>
<td>0.1903</td>
</tr>
<tr>
<td>Wrist/Hand/Finger Injury</td>
<td>47 (6.2%)</td>
<td>1537 (7.6%)</td>
<td>0.1684</td>
</tr>
<tr>
<td>Hip Injury</td>
<td>22 (2.9%)</td>
<td>692 (3.4%)</td>
<td>0.4606</td>
</tr>
<tr>
<td>Barell Upper Leg and Thigh</td>
<td>35 (4.6%)</td>
<td>890 (4.4%)</td>
<td>0.7406</td>
</tr>
<tr>
<td>Knee Injury</td>
<td>12 (1.6%)</td>
<td>494 (2.4%)</td>
<td>0.1370</td>
</tr>
<tr>
<td>Lower Leg and Ankle Injury</td>
<td>54 (7.2%)</td>
<td>1822 (9.0%)</td>
<td>0.0842</td>
</tr>
</tbody>
</table>

### Procedures

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Thoracotomy</td>
<td>11 (1.5%)</td>
<td>383 (1.9%)</td>
<td>0.3922</td>
</tr>
<tr>
<td>Laratotomy</td>
<td>17 (2.3%)</td>
<td>685 (3.39%)</td>
<td>0.0915</td>
</tr>
<tr>
<td>Splenectomy</td>
<td>8 (1.1%)</td>
<td>327 (1.6%)</td>
<td>0.2346</td>
</tr>
<tr>
<td>Hepatotteraphy</td>
<td>2 (0.3%)</td>
<td>78 (0.4%)</td>
<td>1.0000</td>
</tr>
<tr>
<td>Tracheostomy</td>
<td>70 (9.3%)</td>
<td>348 (1.7%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Blood Transfusion</td>
<td>70 (9.31%)</td>
<td>1477 (7.3%)</td>
<td>0.0390</td>
</tr>
<tr>
<td>Craniotomy</td>
<td>17 (2.3%)</td>
<td>244 (1.2%)</td>
<td>0.0105</td>
</tr>
<tr>
<td>Ventriculostomy</td>
<td>6 (0.8%)</td>
<td>150 (0.7%)</td>
<td>0.8607</td>
</tr>
</tbody>
</table>
Scientific Session 2

17. IS THE FACE AN AIR BAG FOR THE BRAIN AND TORSO? – THE POTENTIAL PROTECTIVE EFFECTS OF SEVERE MIDFACE FRACTURES

HE Worix MD, ME Hamill MD, CM Gilbert MD, CR Reed MD, ER Faulks MD, KM Love MD, DI Lollar MD, BR Collier DO
Virginia Tech Carilion School of Medicine

Background: Conventional wisdom relative to severe facial trauma is that the energy dissipated to the face during traumatic events decreases the likelihood of intracranial injuries. We investigated the patterns of injury associated with major facial trauma. Our hypothesis is that midface injuries are associated with a decrease in certain traumatic brain injuries as well as major torso injuries.

Methods: The trauma registry of our state and ACS verified level one trauma center was queried for all adult patients treated over a twenty-five year period from 1989 to 2013. Patients with midface fractures were identified based on ICD 9 code. Demographics, mechanism, and injury characteristics as well as information regarding hospitalization were collected. Associated injuries were defined based both on individual ICD 9 codes as well as the Barell injury matrix. Injury causation was defined based on e-codes. Univariate analysis was using chi-square and fisher’s exact tests, as well as wilcoxon tests.

Results: A total of 29,152 patients were identified over the twenty-five year study period. Excluding pediatric patients (<18 years old), those with exclusively penetrating trauma, and patients with incomplete data, 20,971 patients were included for subsequent analysis. Midface fractures were identified in 752 patients. Group characteristics are listed in Table 1. Compared to those without severe midface injuries – those with Lefort fractures were significantly more likely to be male, with a higher ISS, a lower arrival GCS, more likely to require ICU admission and mechanical ventilation, and had a longer hospital length of stay. Examining specific injury patterns – patients with midface fractures had significantly fewer subdural hematomas, fewer subarachnoid hemorrhages, fewer spine fractures, were less likely to have associated abdominal and pelvic injuries, and had lower rates of shoulder and proximal upper arm injuries. Patients with midface fractures were more likely to require tracheostomy placement as well as craniotomy. Overall mortality, rates of concussive brain injury, more distal upper extremity and lower extremity injuries were not statistically different.

Conclusion: Patients presenting with midface fractures after blunt trauma have a distinctly different pattern of injuries than those without similar facial trauma. Midface fractures are associated with lower rates of some hemorrhagic brain injuries, as well as lower rates of spine fractures, pneumothorax, abdominal and pelvic injuries. One potential mechanism for these differences is a deceleration effect, where midface impact and resulting fractures dissipate some of the energy from the traumatic mechanism, with a resultant decrease in brain, neck and torso trauma. Further research is planned to investigate and define this mechanism.
Scientific Session 3

18. HURRICANE IRMA IMPACT ON THE INPATIENT POPULATION AT A TERTIARY CHILDREN’S HOSPITAL IN FLORIDA

A Hebra MD, A Casas-Melley MD, J Wei MD
Nemours Children's Hospital

Background: Hurricane Irma was the strongest Atlantic basin hurricane ever recorded outside the Gulf of Mexico and it resulted in the evacuation of 6.3 million people in the state of Florida from September 9-11 of 2017. By the time it made landfall in Florida it had a diameter of 600 miles and top wind speeds of 135 mph (Category 4). Hospitals in the region prepared for the storm using Federal Emergency Management Agency (FEMA) protocols and local hospital management by incident command centers (ICC). Our tertiary Children’s Hospital activated our ICC 24 hours before the storm’s landfall. Despite discontinuation of elective admissions and procedures 48 hours before, the hospital was at 71% capacity. Preparations were made to accommodate vulnerable pediatric patients (VPP) characterized by their dependency on technology but not critical to require hospital admission. Such patients included children with tracheostomy and patients that require life support from external devices such as ventilators and feeding pumps.

Methods: We proactively identified 60 patients in our immediate region that met criteria for VPP. Our ICC identified physical space and staff to potentially provide care to at least 50% of such patients. Before curfew was implemented, 15 patients and their families came to our facility and they were housed at our hospital in an improvised patient care unit that utilized bed space from our rehabilitation and post anesthesia care units. In addition, hospital occupancy was at 71% capacity and the pediatric and neonatal intensive care units were almost full.

Results: Our ICC was active for 92 hours and the hospital was staffed with 467 associate members and 40 physician providers from Team A. Eight urgent operative and five interventional radiology procedures were performed during ICC activation, none related to storm damage. Fourteen patients were transferred to our facility during that time. Team A personnel were deployed to critical areas of need in the hospital independent of their base unit assignments. There were no adverse outcomes or complications identified despite the need to mobilize critical patients away from windows due to the threat of storm related tornadoes.

Conclusion: Timely activation of ICC and deployment of Team A personnel at least 24 hours before predicted storm hit is important to allow for safe hospital operations of a tertiary Children’s Hospital. Planning for the possible inflow of patients to the hospital is imperative in order to allow for preemptive deployment of staff and resources that will assure proper care of all the inpatients, transfers, emergency room admissions and overall care of vulnerable patients. The overall number of VPP should be monitored regionally by the hospital as the number of medically complex patients continues to grow. Even if hospital admission is not necessary for such patients, planning for their care is important as they will consume hospital resources during natural disasters like hurricane Irma. Activation of the appropriate number of staff and providers must take into account such variables in order to allow for safe & effective delivery of care.
Scientific Session 3

19. PEDIATRIC BILIARY DYSKINESIA: EVALUATING PREDICTIVE FACTORS FOR SUCCESSFUL TREATMENT OF BILIARY DYSKINESIA WITH LAPAROSCOPIC CHOLECYSTECTOMY

YT Krishna MD, K Griffin MD, J Warren MD, A Hale BA, A Ewing PhD, RL Gates MD
Greenville Health System

Background: Biliary dyskinesia (BD) is a motility disorder of the gallbladder that can result in right upper quadrant (RUQ) pain, nausea, vomiting, diarrhea, and acute cholecystitis. As there is no well-defined nonsurgical management, laparoscopic cholecystectomy is considered the standard of care for BD. However, according to the literature, up to 23% of pediatric patients who undergo surgery for BD have persistent symptoms postoperatively. The aim of this study was to identify any preoperative factors significantly associated with symptom resolution following laparoscopic cholecystectomy.

Methods: We performed a retrospective review of pediatric patients (age 10-17 years) diagnosed with BD who underwent laparoscopic cholecystectomy between January 2006 and December 2016 (N=236). These patients were divided into two groups based on postoperative outcomes. Group 1 included those who experienced symptom resolution, and Group 2 included those who did not. Data collection included patient demographics, preoperative symptoms, symptom duration prior to surgery, HIDA scan results, and postoperative outcomes. Postoperative symptom resolution was the primary outcome. Chi-square and student t-tests were used to describe the patients and to compare patient groups.

Results: From these 236 patients, the average patient was Caucasian (92.8%), female (72.0%), 14.8 years old, and had a mean BMI of 26.7. The most common preoperative symptoms included RUQ pain (80.1%), nausea (54.2%), post-prandial pain (44.5%), vomiting (32.6%), epigastric pain (19.9%), diarrhea (19.9%), and headache (14.4%). Approximately 88% (n=208) of patients underwent a preoperative HIDA scan. The rate of postoperative symptom resolution was 68.6% (n=162). Patient demographics were similar between Groups in terms of age, gender, race and BMI. Median duration of preoperative symptoms was also similar in both Groups (4 months; range, 2-12 months). Comparative analysis showed patients who presented with RUQ pain, nausea, post-prandial pain, or constipation experienced significantly higher rates of symptom resolution post-operatively. Additionally, patients with ejection fraction <35% or pain reproducible with CCK were found to have significantly higher rates of symptom resolution as well (Fig. 1).

Conclusion: To date, it remains difficult to predict successful outcomes for pediatric patients undergoing laparoscopic cholecystectomy for BD. However, based on our findings, patient demographics and duration of symptoms did not affect postoperative outcomes. Additionally, pediatric patients who presented with RUQ pain, nausea, post-prandial pain, constipation, an EF <35% on HIDA or pain reproducible with CCK injection, were found to have significantly higher rates of symptom resolution.
**Figure 1.** Comparison of patient groups by symptom type.

<table>
<thead>
<tr>
<th>Preoperative Symptoms (Sx)</th>
<th>Total No. (%)</th>
<th>Group 1 Sx Resolved</th>
<th>Group 2 Sx Persisted</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>236</td>
<td>162 (68.6)</td>
<td>74 (31.4)</td>
<td></td>
</tr>
<tr>
<td>RUQ pain</td>
<td>189 (80.1)</td>
<td>128 (67.7)</td>
<td>61 (32.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Nausea</td>
<td>128 (54.2)</td>
<td>74 (57.8)</td>
<td>31 (24.2)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Post-prandial pain</td>
<td>105 (44.5)</td>
<td>74 (70.4)</td>
<td>31 (29.5)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Vomiting</td>
<td>77 (32.6)</td>
<td>47 (61.0)</td>
<td>30 (39.0)</td>
<td>0.010</td>
</tr>
<tr>
<td>Epigastric Pain</td>
<td>47 (19.9)</td>
<td>24 (51.1)</td>
<td>23 (48.9)</td>
<td>1.000</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>47 (19.9)</td>
<td>24 (51.1)</td>
<td>23 (48.9)</td>
<td>1.000</td>
</tr>
<tr>
<td>Constipation</td>
<td>30 (12.7)</td>
<td>18 (60.0)</td>
<td>12 (40.0)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Other abdominal pain</td>
<td>21 (8.9)</td>
<td>10 (47.6)</td>
<td>11 (52.4)</td>
<td>1.000</td>
</tr>
<tr>
<td>Heartburn</td>
<td>20 (8.5)</td>
<td>14 (70.0)</td>
<td>6 (30.0)</td>
<td>0.027</td>
</tr>
<tr>
<td>Bloating</td>
<td>10 (4.2)</td>
<td>8 (80.0)</td>
<td>2 (20.0)</td>
<td>0.025</td>
</tr>
</tbody>
</table>
Scientific Session 3
20. A TWO DECADE LONG TERM SURVIVAL ANALYSIS OF LIVER TRANSPLANTATION: IMPACT OF SPECIALIZED PROGRAMS
Tampa General Hospital

Background: Very few studies have examined long term outcomes of liver transplantation (OLT). This report analyzes two decades by a single center, with emphasis on survival and impact of specific programs. We aimed to compare survival patterns of different populations over time, the impact of specific programs, and to provide areas where improvement has to be made. We hypothesized that hepatitis C and hepatocellular carcinoma patients improved, while patients with alcoholic liver disease (ALD) and acute hepatic necrosis (AHN) did not.

Methods: Retrospective analysis of 1,368 recipients from December 1996 to July 2015 was performed utilizing OTTR database and Kaplan Meier methodology. Log rank and Wilcoxon tests were used. Results were subdivided by etiologies, decades and 5 year eras of transplants. Era 1, n= 241 (1996-2001); Era 2, n= 378 (2002-2006); Era 3, n= 357 (2007-2010; and Era 4, n= 392 (2011-2015). Cohorts of specialized programs for Hepatitis C and liver cancer were analyzed.

Results: The overall 5-year patient survival was 75.5% and the 10-year was 61.5%. The decay after year 1 was 4.75%/year. Results improved by eras (Era 4 best, 85.3%, p=0.001) and by decades (Decade 2 = 79.2% vs. Decade 1 = 71.9%, p=0.002). Decay in decade 2 was 3%/year. Forty-nine patients with AHN had a 19% 1-year mortality. Five-year survival was 70%. Across eras or decades, no significant improvement was made. Era 4 was best, with a 79% 5-year survival (p=0.87). One year survival was 19% higher in second decade but advantage was lost long term (p=0.65). The ALD group 5-year survival was 80.6% when other etiologies co-existed, and 84.2% ALD alone. Hep C /ALD had inferior survival at 72.3% (p=0.01). No improvement was made in ALD but was made in Hep C / ALD. Hep C made significant improvement in Eras 3 and 4 (80% and 81.9%) and in last decade. In the era of direct acting antivirals, the 3 year survival for Hep C was 86% vs. 77.3% prior. Patients with hepatocellular carcinoma (HCC) had a 5-year survival of 65.7%. It was 87.3% in Era 4 vs 63% prior, an impressive superiority corresponding to creation of the Liver Cancer Program (p=0.001).

Conclusion: The long term benefit of liver transplantation was greatest in certain populations. Hepatitis C and HCC appear to be gaining the most benefit over the last 5 years. The latest three-year survival rates are impressive. The benefit coincides with establishment of formal programs: specialized HCV clinics and the Liver Cancer Program, both with resources to treat these conditions in large scale. Patients with ALD and acute hepatic necrosis have not improved. Further studies and resources need to be given to populations that impact transplant programs the most, such as NASH or those that are difficult to treat, like AHN. The study confirms how investing in certain areas correlated with improved long term outcomes.
Scientific Session 3

22. DECREASING RESOURCE UTILIZATION WITHOUT COMPROMISING CARE THROUGH MINIMIZING PREOPERATIVE LABS

D Buddenhagen RN, B Moore PhD, J Phillips MPH, D Davenport MD, TM Duane MD
John Peter Smith Hospital

Background: Approximately 18 billion dollars is spent annually on preoperative testing. Many of these tests have no impact on patient outcomes. Our institution implemented an algorithm aimed at minimizing preoperative tests across multiple surgical specialties. The purpose of this study was to determine if strict implementation of this pathway resulted in decreased costs without compromising care.

Methods: We performed a before/after trial comparing 1/16-4/16 to 5/16-7/17. In May 2016 an algorithm was instituted in which nurses in the preoperative anesthesia clinic were empowered to limit labs based on a risk stratification system that incorporated patient and procedural factors. Total number of clinic patients undergoing orthopedic, urology or general surgery were documented as were the number of patients who had labs cancelled and the tests cancelled. During the same time frame case cancellations were recorded to determine the incidence related to pre op lab cancellation.

Results: There were 22,175 labs during the study time frame with an average of 1145 per month. The table demonstrates a 2.4% decrease in expected labs in the post intervention group which was significant for each service. The most common lab cancelled was PT (41.6%) with the overall cost savings of $33,032.00. The percent of patients who were seen in PAT and still needed medical optimization decreased after the algorithm was implemented (3.3% vs 2.1% p <0.01). Cancellations were largest in the first two months of the study period. After this cancellations tended to decrease monthly. No cases got cancelled the day of surgery for lack of lab information.

Conclusion: The implementation of an algorithm for selective preoperative laboratory testing provides overall cost savings. Lab cancellation decreased over time suggesting that providers learned to stop ordering unnecessary labs. By decreasing the number of unnecessary labs ordered the number of case cancellations for failure to optimize patients also went down. Instituting an algorithm for preoperative laboratory testing is cost effective without compromising care.
Expected and actual mean number lab tests ordered per month for pre and post intervention periods, N= 19 months (pre = 4, post = 15).

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th></th>
<th>Post</th>
<th></th>
<th>Difference Actual—Expected Post</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Expected</td>
<td>Actual</td>
<td>Expected</td>
<td>Actual</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Surgery</td>
<td>495</td>
<td>495</td>
<td>545</td>
<td>540</td>
<td>-5</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Orthopedic</td>
<td>423</td>
<td>423</td>
<td>462</td>
<td>445</td>
<td>-17</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Urology</td>
<td>213</td>
<td>213</td>
<td>169</td>
<td>163</td>
<td>-6</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>
23. CAN AXILLARY ULTRASOUND CHARACTERISTICS PREDICT \( \geq 3 \) POSITIVE LYMPH NODES IN PATIENTS MANAGED BY ACOSOG Z0011 CRITERIA

EG Rooney MD, MM Fleming MD, JG Patel MD, K Clifford MD, CA Arciero MD, PD Subhedar MD
Emory University

**Background:** The practice changing ACOSOG Z0011 trial has allowed patients with early stage invasive breast cancer undergoing breast conserving therapy (BCT) to safely avoid axillary lymph node dissection (ALND) if 2 or fewer sentinel lymph nodes (SLN) are positive after sentinel lymph node biopsy (SLNB).1 Patients often receive an axillary ultrasound with biopsy (AUS-B) prior to surgical evaluation, or present for surgical consideration after already having received an AUS showing a suspicious node. The preoperative finding of a biopsy-proven positive axillary lymph node in the absence of clinically suspicious nodes eliminates patients from being managed by Z0011 criteria, even though the volume of axillary disease may be low. Axillary ultrasound has a place in the diagnostic workup of patients in whom knowledge of significant axillary disease would direct patients to receiving neoadjuvant chemotherapy. In order to stratify which patients would truly benefit from upfront AUS-B versus management according to Z0011 criteria, we sought to determine if certain lymph node characteristics on AUS were associated with the presence of \( \geq 3 \) positive nodes on final pathology.

**Methods:** A retrospective review of a prospectively maintained database identified 207 patients who met Z0011 criteria and underwent AUS-B at two institutions. All AUS were re-reviewed by breast-specific radiologists. Clinicopathologic and ultrasound characteristics on AUS were compared between patients with \( \leq 2 \) and \( \geq 3 \) positive LNs. Receiver operating characteristic (ROC) curve analysis was performed to determine which combination of LN characteristics was best able to predict the presence of \( \geq 3 \) positive lymph nodes.

**Results:** From 2010-2015, 207 patients with cT1-2N0 breast cancer underwent preoperative AUS and BCT. Median age was 63 years. 74.9% of tumors were T1, 88.9% had ductal histology, and 80.7% were estrogen positive. Among the three main abnormal characteristics on AUS, a test combining abnormal lymph node shape with cortical thickness (>4mm) showed the lowest p value (0.0155) as well as highest AUC (0.7648). The combination of lymph node shape with cortical thickness had the maximum sum of sensitivity and specificity (1.5144) and showed the best specificity (0.8477) compared to other combination of other characteristics. The combination of abnormal LN seen and cortical thickness >4mm had the best sensitivity (0.7143).

**Conclusion:** The combination of round lymph node shape and cortical thickness >4mm had the highest association with \( \geq 3 \) positive LNs on final surgical pathology. Patients with this combination of characteristics on AUS may benefit from a lymph node biopsy, as neoadjuvant chemotherapy would be indicated. Patients with one abnormal characteristic on AUS should be spared a biopsy and managed according to Z0011 criteria, as these patients have a low likelihood of needing an axillary lymph node dissection. Further prospective studies are needed to confirm the above findings.
<table>
<thead>
<tr>
<th>Lymph Node (LN) Characteristic</th>
<th>Area under the curve (AUC)</th>
<th>95% Confidence Interval</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormal LN seen</td>
<td>0.7296</td>
<td>(0.5464, 0.9129)</td>
<td>0.0140</td>
</tr>
<tr>
<td>Abnormal LN seen + Cortical Thickening &gt; 4 mm</td>
<td>0.7597</td>
<td>(0.5597, 0.9598)</td>
<td>0.0109</td>
</tr>
<tr>
<td>Abnormal LN Seen + Cortical Thickening &gt; 4 mm + Round Shape</td>
<td>0.7475</td>
<td>(0.5124, 0.9825)</td>
<td>0.0390</td>
</tr>
<tr>
<td>Round Shape + Cortical Thickening &gt; 4 mm</td>
<td>0.7648</td>
<td>(0.5503, 0.9793)</td>
<td>0.0155</td>
</tr>
<tr>
<td>Round Shape + LoFH</td>
<td>0.6949</td>
<td>(0.4625, 0.9273)</td>
<td>0.1003</td>
</tr>
<tr>
<td>Cortical Thickening &gt; 4 mm + LoFH</td>
<td>0.7534</td>
<td>(0.5380, 0.9688)</td>
<td>0.0211</td>
</tr>
<tr>
<td>Round Shape + Cortical Thickening &gt; 4 mm + LoFH</td>
<td>0.7579</td>
<td>(0.5378, 0.9811)</td>
<td>0.0218</td>
</tr>
</tbody>
</table>

LoFH = Loss of Fatty Hilum.
Scientific Session 3

24. ACCURACY OF CLINICAL EXAMINATION AND ULTRASONOGRAPHY IN PREDICTING AXILLARY LYMPH NODE METASTASES IN OPERABLE BREAST CANCER PATIENTS
S Gogna, A Raj, J Con
Westchester Medical Center

Background: Axillary lymph node status is the single most important prognostic factor in breast cancer. Sentinel lymph node biopsy (SLNB) represents the standard of care to accurately stage the axilla. If we can find alternative non-invasive methods to stage axilla then patients can be spared of staged procedures of SLNB. We determined the accuracy of clinical examination & ultrasonography in predicting axillary lymph node metastases pre-operatively by correlating them with histopathological results in breast cancer patients undergoing Modified Radical Mastectomy.

Methods: In this prospective study, 100 patients with operable breast cancer underwent Modified Radical Mastectomy (MRM) between Jan 2015 and Dec 2015. Patients of proven breast cancer underwent clinical assessment (CE) of ipsilateral axilla followed by sonographic assessment. CE was considered positive if a node was palpable. Sonography labelled a node as metastatic or non-metastatic based on certain morphological features. Patient subsequently underwent MRM with level III Axillary lymph node dissection and the histopathology was noted and correlated with CE and sonographic assessment of the axilla. The sensitivity, specificity, positive predictive value (ppv) and negative predictive value (npv) were calculated for CE and USG. Sensitivity and npv were also determined for CE+USG together. To evaluated the effect of age, sensitivity and npv of two age groups viz. premenopausal [<50 years] and postmenopausal [≥50 years] were also calculated. The statistical analyses were carried out using chi-square test.

Results: USG had a higher sensitivity, specificity, positive predictive value and negative predictive value as compared to clinical exam alone. CE+USG had a 100% sensitivity and negative predictive value (NPV). False negative rate in our study was 2.5%.

Conclusion: USG and CE were significantly helpful in predicting metastatic axillary lymph nodes pre-operatively in breast cancer patients. The results can be further improved by adding USG-guided FNAC of axillary lymph nodes. Thus High resolution USG with USG-guided FNAC could obviate the need for SLNB as a tool for axillary staging in breast cancer patients with no palpable axillary lymphadenopathy.
Scientific Session 8
25. NEGATIVE SESTAMIBI SCANS PREDICT LOWER LIKELIHOOD OF SURGICAL REFERRAL IN PATIENTS WITH PRIMARY HYPERPARATHYROIDISM
JQ Lloyd MD, A Rackley, BS, R Tanner MD, WH Giles MD
University of Tennessee College of Medicine, Chattanooga

Background: The estimated incidence of clinical hypercalcemia in the general population is 0.1 - 0.5%. Of these individuals 0.05 - .1% will ultimately be diagnosed with primary hyperparathyroidism (PHPT). Surgeons often utilize preoperative localization studies, including 99m-technetium sestamibi (MIBI) scintigraphy, in order to simplify the operative approach to patients with PHPT. MIBI scans, however, may provide negative or inaccurate results in patients with clear biochemical primary hyperparathyroidism. Reliance on a MIBI scan as a diagnostic modality rather than as a localization tool can lead to an inaccurate treatment algorithm resulting in delayed or inappropriate care. The aim of this study was to determine the impact of a negative MIBI scans on referral patterns and ultimate surgical intervention.

Methods: Hospital and ambulatory records of all adult patients undergoing MIBI scans at our institution from 1/2011 - 5/2017 were reviewed. The following data was collected: date and result of imaging study, ordering physician specialty, preoperative and postoperative laboratory values, operative and final pathologic diagnosis. In addition, patient demographic data was also collected. Statistical analysis was performed using SPSS v24 software. Patients with incomplete data or a diagnosis of secondary or tertiary hyperparathyroidism were excluded.

Results: 357 patients underwent a MIBI scan. 350 patients were included in our analysis. 7 were excluded secondary to incomplete data. Mean age 62 +/- 13 years. 249 (69.7%) patients were female. 153 (43.7%) scans were read as positive, 156 (45.4%) negative and 38 (10.9%) inconclusive. Of the 156 patients with negative scans, 53 (34%) underwent surgery. Of the 153 patients with a positive scan, 101 (66%) underwent surgery. This difference was statistically significant (p<0.001). 22 (58%) patients with inconclusive scan results underwent surgery. The majority of scans were ordered by endocrinologists (59.7%). 27 (23%) patients with a negative MIBI ordered by non-surgeons underwent surgery compared to 26 (67%) patients with a negative MIBI ordered by a surgeon. This was also statistically significant (p<0.001).

Conclusion: Non-surgeon physicians are more likely to utilize MIBI scans as diagnostic tools to assist with clinical decision making. From our data we can infer that patients who are seen by a non-surgeon and have a negative MIBI scan are significantly less likely to be referred to an experienced surgeon and thus less likely to undergo curative parathyroidectomy. Patients with biochemical evidence of primary hyperparathyroidism should be referred to an experienced parathyroid surgeon for further evaluation regardless of the outcome of the preoperative localization scan. Imaging should be reserved for surgical planning rather than to assist with diagnosis. Using this data, we plan to develop a standardized institutional protocol for patients with biochemical evidence of PHPT to streamline diagnosis and work-up, lower costs, and improve patient satisfaction and care.
Background: We have recently introduced laparoscopic Magnetic Sphincter Augmentation (MSA) combined with hiatal hernia repair for treatment of patients with medically refractory GERD. MSA is a novel surgical approach to the treatment of severe GERD, in which magnetic beads are secured around the lower esophageal sphincter, augmenting the LES function as an anti-reflux barrier. We hypothesize that patients undergoing MSA will achieve GERD relief, equal to that obtained after Laparoscopic Nissen fundoplication (LNF).

Methods: The GERD Health Related Quality of Life Questionnaire (GERD HRQL) is a validated clinical tool that was used to quantify patient outcomes in terms of GERD related symptoms both on and off PPIs as well as after ARS. We retrospectively reviewed data from patients at our institution enrolled in a prospective IRB approved database “Registry Outcomes Anti-Reflux Surgery” that applies objective and subjective information about patients undergoing anti-reflux surgery. Information from both the database and patient HRLQ scores were used to compare the effectiveness of medical intervention with ARS (LNF and MSA) in decreasing GERD related symptoms in patients. Results are expressed as a Mean± SEM, and single-factor ANOVA test was used to compare groups.

Results: The average HRLQ score of surveyed pre-operative patients who were on PPI and other reflux medications was 27.7 ± 10.3. There was a significant decrease in postoperative GERD HRQL scores after LNF (9.4 ± 16.7) and MSA (7.5 ± 8.8) compared to the pre-op GERD HRQL on maximum medical therapy (F > Fcrit ANOVA, F=24.7, Fcrit=2.7). Early post-operative (3-12 months) GERD HRLQ surveys indicate that compared to medical treatment alone (92% dissatisfied), surgical intervention for the treatment of GERD greatly increases patient satisfaction in regards to reflux symptoms. LNF was shown to lead to 86% patient satisfaction, while MSA produced 89% of patients who were either Satisfied or Neutral with their outcomes and 11% of patients who were dissatisfied. 95% of patients receiving medical intervention alone for the treatment of GERD reported being able to belch, with 5% reporting that they were unsure of their ability to belch. 100% of patients undergo LNF Nissen Fundoplication as a surgical intervention for the treatment of GERD reported being able to belch. Patients who underwent MSA 93% reported being able to belch and 7% reported being unsure of their ability to belch.

Conclusion: The data above indicates that compared to medical intervention alone, anti-reflux surgery demonstrates a much larger decrease in the GERD associated symptoms in patients surveyed. The data gathered also suggests that when compared to LNF, MSA produces a similar decrease in HRQL score, indicating similar efficacy in relieving GERD related symptoms. The data also suggests that both LNF and MSA lead to similar patient outcomes in terms of both patient satisfaction and ability to belch post-operatively.
<table>
<thead>
<tr>
<th>Intervention</th>
<th>GERD HRLQ Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-OP On PPI (N=36)</td>
<td>27.7 ± 10.3</td>
</tr>
<tr>
<td>Nissen (N=7)</td>
<td>9.4 ± 16.7*</td>
</tr>
<tr>
<td>MSA (N=29)</td>
<td>7.5 ± 8.8*</td>
</tr>
</tbody>
</table>

*Statistically significant single-factor ANOVA (F=24.7, Fcrit=2.7)
Scientific Session 8
27. AN ACUTE CARE SURGEON’S VIEW OF BARIATRIC EMERGENCIES: ABDOMINAL OPERATIONS CARRY HIGH MORTALITY
CW Katona MD, BW Carr MD, R Rodriguez MD, JJ Coleman MD, JL Hartwell MD, SA Savage MD, GS Rozycki MD, DV Feliciano MD
Indiana University, Methodist Hospital

Background: With the increased volume of surgery for obesity, acute care surgeons in tertiary care centers are now increasingly called upon to treat early and late postoperative complications such as internal hernia, anastomotic leak, and perforation of the stomach. The purpose of this study was to identify the most common presentations and assess outcomes of patients with bariatric surgical emergencies.

Methods: Retrospective review of the emergency general surgery registry to identify patients >17 years of age with prior gastric bypass surgery for morbid obesity who then presented with an acute abdomen (nausea, vomiting, abdominal pain). Data collected included demographics, admission vital signs, results of pertinent laboratory tests and x-rays, need for reoperation, and outcome. Factors associated with outcome on bivariate analysis were included in multivariable models to further assess effect on outcome.

Results: From 2016-2017, 35 patients with mean age of 50.6 years old were admitted to the emergency general surgery service (1,500 admits/year) at a Level I Trauma and Acute Care Surgery Center. 18/35 patients were managed non-operatively. Of these, the most common diagnoses treated were esophagitis or ulcer disease (5/18), and small bowel obstruction (5/18). In the group of 17 operatively managed patients, pre-operative diagnoses were incarcerated ventral hernia (5/17), perforated marginal ulcer (3/17), and internal hernia (2/17). These prompted emergent or urgent open (14/17) or laparoscopic (3/17) exploration with 7 patients requiring resection of the small bowel. 3 patients managed operatively died (mortality = 3/17 or 17.6%; overall mortality 3/35 or 8.6%), including 2 who had post-operative gastrointestinal leaks, and 1 with unrelenting septic shock. Both patients with SBP <90 mmHg at time of admission died.

Conclusion: Acute Care Surgeons, rather than bariatric surgeons, now evaluate many post-bariatric surgery patients with abdominal symptoms. In this review, 50% of such patients required a reoperation for well-known late complications including incarcerated ventral hernias (from prior open operations), perforated marginal ulcers, internal hernias, and other causes, and 40% of these required a bowel resection. In contrast to the near nil mortality of elective bariatric operations, the re-operated group had a >15% mortality related to sepsis, septic shock or postoperative gastrointestinal leaks. Patients who have undergone bariatric operations should be counselled extensively about early return to medical care with new-onset abdominal symptoms.
Background: There is a growing movement in today’s health care environment to not only tie reimbursements for patient care to outcomes, but to publicly report these results. Hospitals are looking for effective, simple methods to not only track patient outcomes, but to track outcomes that are risk-adjusted for patient population characteristics. This is especially relevant for safety net institutions servicing low-income, uninsured, high-risk populations. One such program with the above goals is the American College of Surgeons National Surgical Quality Improvement Program® (ACS NSQIP®). NSQIP data powers a preoperative risk calculator tool that allows clinicians to input an individual patient’s risk factors into a statistical model that calculates the likelihood of various outcomes. This is an institution-based, retrospective quality audit whereby we determined the presence and consistency of charted data required to compute perioperative risk in the ACS NSQIP risk calculator.

Methods: A retrospective chart review of a total of 30 randomly selected, elective major colorectal procedures performed at an academic safety net hospital between January 1st, 2015 and December 31st, 2015. For each case it was determined in a yes/no format whether or not the required NSQIP variables were readily presented via pre-operative documentation. The collected data was then analyzed to determine the presence and consistency of charted data required to compute perioperative risk in the ACS NSQIP risk calculator.

Results: Of the 30 reviewed patient charts, none (n=0) had all pre-operative risk documentation required to complete an ACS NSQIP risk analysis. Only 23.3% (n=7) of charts had ≥ 50% of required data, while 96.6% of charts (n=29) had ≤ 55% of required data to complete a NSQIP pre-operative risk assessment. It was noted that pre-operative risk variable documentation was widely scattered throughout patients’ charts in a largely unorganized fashion, performed in varying degrees by multiple providers, and often lacked definitive documentation of pre-operative interventions to modulate risk based on patient risk factors.

Conclusion: Pre-operative risk assessment and charting practices at the safety net hospital reviewed was disorganized and lacking the data needed to properly risk-assess patients in the pre-operative period. Even if risk was being assessed, there was lack of proper documentation required for outcomes assessments under current reimbursement models such as the MACRA Quality Payment Program. At safety net hospitals especially, where there are low-income, uninsured, high-risk patients with often multiple comorbidities and socioeconomic barriers, we must implement means to consistently risk-stratify patients so that outcomes occurring correlate with pre-operative risks. Future research should be geared towards applicability and possible deficiencies of NSQIP in predicting postoperative complications in these safety net institutions.
**Scientific Session 8**

**29. THE IMPACT OF TRAUMA CENTER PATIENT VOLUME ON OBSERVED/EXPECTED MORTALITY: DOES SIZE MATTER?**

OM Morejon MD, AE Elkbuli MD MPH, SH Hai MD, MM McKenney MD MBA
Kendall Regional Medical Center

**Background:** The relationship between trauma center patient volume (TCV) and mortality remains inconclusive. This is the first study to determine the relationship between TCV and all-cause observed/expected mortality (O/E) for patients with blunt and penetrating injuries across the United States using the National Sample Program (NSP) for 2013 from the National Trauma Data Bank (NTDB) with no exclusion criteria.

**Methods:** Our study is a review of prospectively collected data from 94 U.S. trauma centers (TCs) using the National Sample Program for 2013 from the National Trauma Data Bank. All patients with blunt and penetrating trauma injuries were included. Demographic variables included: age, gender, race and Injury Severity Score (ISS). TCs were stratified into 5 study groups based on TCV: <701, 701-1200, 1201-1700, 1701-2200 and >2200 yearly patient encounters. Chi-square and coefficient of determination were used for data analysis with statistical significance defined as p-value <0.05.

**Results:** A total of 139,324 trauma patients with blunt and penetrating injuries were identified, of which 63.6% were male, 70.6% white, and the average age was 41 years old. The average ISS was 10.9. The average O/E mortality for the 5 study groups ranged from 0.69 to 0.86 with a p-value > 0.05 (Table 1). The coefficient of determination between TCV and O/E was $r = 0.14$ and $r^2 = 0.02$ (Figure 1). The group with the lowest average volumes (Group 1) had statistically significant worse outcomes than the group with next higher volumes (Group 2, p=0.03) and worse than the group with the highest volumes (Group 5, p=0.04).

**Conclusion:** Higher trauma center patient volumes correlated with lower patient mortality and lower trauma center volumes correlated with higher mortality. There is a modest correlation between increasing trauma center volumes and improved clinical outcomes, as measured by O/E mortality across U.S. trauma centers.

<table>
<thead>
<tr>
<th>Study group number</th>
<th>Trauma center volume</th>
<th>Number of centers</th>
<th>O/E mortality ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>&lt;701</td>
<td>14</td>
<td>0.86</td>
</tr>
<tr>
<td>2</td>
<td>701-1200</td>
<td>28</td>
<td>0.69</td>
</tr>
<tr>
<td>3</td>
<td>1201-1700</td>
<td>25</td>
<td>0.76</td>
</tr>
<tr>
<td>4</td>
<td>1701-2200</td>
<td>11</td>
<td>0.75</td>
</tr>
<tr>
<td>5</td>
<td>&gt;2200</td>
<td>16</td>
<td>0.69</td>
</tr>
</tbody>
</table>

Table 1. Trauma center patient volumes and O/E mortality ratios
Scientific Session 8
30. DEFINING OUTCOMES AFTER COLON RESECTION IN BLUNT TRAUMA: IS DIVERSION OR PRIMARY ANASTOMOSIS MORE FAVORABLE?
AM Lasinski MD, L Gil MS, AN Kothari MD, M Anstadt MD, R Gonzalez MD
Loyola University Medical Center

Background: Previous literature demonstrates the safety of performing a primary repair in the setting of penetrating colon injury requiring resection, without necessitating the creation of a diverting ostomy. It is unknown if a similar approach can be applied to patients with colon injury from blunt trauma. The aim of this study was to measure outcomes in patients who underwent colon resection with and without ostomy creation following blunt trauma injury in order to help direct future management.

Methods: Using the National Trauma Data Bank (NTDB) for years 2008-2012, we identified patients with blunt trauma mechanisms who underwent colectomy. Patients were stratified into two groups: (1) primary anastomosis and (2) diversion with ostomy. Primary outcome was inpatient mortality. Secondary outcomes included length of stay (LOS) and perioperative complications. All risk-adjusted analyses were performed using logistic regression with consideration of interactions.

Results: 580 observations met our inclusion criteria. Baseline characteristics between patients who underwent primary anastomosis versus ostomy were similar with the exception of age (37.3 v. 42.2 years, P<0.001) and admission GCS (13.1 v. 12.2, P=0.01). Risk-adjusted mortality for the two groups was not statistically significant (2.3% v. 3.0%, P= .62); however, patients with primary anastomosis had a shorter LOS (18.2 v. 28.1 days, P<0.001), fewer days in the ICU (10.9 v. 16.3, P<0.001), and fewer ventilator days (10.5 v. 14.6, P=0.01).

Conclusion: In patients requiring colon resection following blunt trauma, mortality is not different for those who receive a primary anastomosis versus ostomy. In addition, patients without diversion had shorter hospital stays, ICU days, and ventilator days. These data support that primary anastomosis is safe in this patient population.
Scientific Session 8
31. A CALL FROM THE DESERT: A FIVE-YEAR EXPERIENCE WITH IN CONFLICT TRAUMA TELEMEDICINE
MF Juca-Moscardi MD, A Marttos MD, CJ Mentzer MD, N Namias MD
University of Miami

Background: Given the geopolitical climate of the past decade many conflict areas do not have access to adequate medical specialty resources. Options for in-conflict providers include continued patient management, transfer if possible or utilization of telemedical resources. Our center developed a robust telemedicine program in which teleconsults were provided for in-conflict zones.

Methods: A retrospective review of 5 years of telementoring and teleconsults with our multiple in conflict hospitals in Iraq was undertaken. Data regarding the nature of the consults, including patient outcomes were recorded.

Results: From 2012 to 2016, we performed 309 telemedical consultations. Only 130 consultations involved exclusively a trauma/critical care surgeon. An average of 61.8 consults were completed each year. A total of 179 cases required further consultation with additional medical sub specialists, also via telementoring, including dermatology (14%), cardiology (13%), orthopedics (12%) infectious disease (11%), ophthalmology (10%) and neurology/neurosurgery (9%). Further consults involved pulmonology, urology, nephrology, psychiatry, radiology, pediatric surgery, otolaryngology, endocrinology, gastroenterology, gynecology/obstetrics, hematology, oral maxillofacial surgery, plastic surgery in descending prevalence. This consultations avoided several complex transfers to another hospitals out of Iraq.

Conclusion: Telemedicine is essential to improve trauma and emergency services outcomes for in conflict providers. Our experience shows that a telemedical network provides a reliable and reproducible alternative to transfer for providers caring for complex patients in resource scarce environments.
Scientific Session 8
32. PROPOFOL INFUSION SYNDROME: EFFICACY OF A PROSPECTIVE SCREENING PROTOCOL
TJ Schroeppel MD, D Barnard MD, M Ferguson MD, LP Clement PharmD, JP Sharpe MD, W Guerrero, MA Croce MD, LJ Magnotti MD, TC Fabian MD
Memorial Hospital, University of Colorado Health

Background: Propofol Infusion Syndrome (PIS) is a potentially lethal complication of propofol marked by rhabdomyolysis, metabolic acidosis, and cardiac arrhythmias. Commonly used in patients with Traumatic Brain Injury due to beneficial properties of the drug, these patients are at risk for PIS. The objective of this study was to determine the effectiveness of a prospective screening protocol to prevent PIS.

Methods: All trauma patients admitted to an urban level-1 trauma center receiving propofol as a continuous infusion were prospectively screened from 11/1/13 to 12/31/15. Variables studied included demographics, mechanism, injury severity, labs, infusion rates, and mortality. Serum cpk and lactate were drawn daily. Propofol was stopped for a positive screen defined as an increase in cpk to >5000 IU/L or a lactate increase to greater than 4 mmol/L. Positive and negative cohorts were compared.

Results: 225 patients met inclusion criteria for the study. 12 patients (5%) had propofol stopped due to cpk and none due to lactate. No differences were identified in age, gender, mechanism, transfusions, injury severity, or hospital LOS between positive and negative screened groups. The positive screened group had longer ICU LOS (20 versus 13 days; p = 0.002) and increased vent days (15 versus 10 days; p = 0.008). No differences were identified in propofol infusion rates. Maximum serum osmolality (334 versus 305 mmol/kg; p = 0.049) and maximum serum cpk (6782 versus 1058 IU/L; p < 0.0001) were higher in the positive cohort. No cases of PIS occurred and mortality (16.7 versus 15.5%, p = 1.0) was not different between the cohorts.

Conclusion: The screening protocol was effective in eliminating PIS. Patients that screened positive required longer ICU LOS and increased days on mechanical ventilation, but did not have increased mortality. No clinical characteristics distinguishing positive and negative cohorts were identified. Serial cpk evaluations provided an effective screening tool and serum lactate can be eliminated from screening algorithms.
SCIENTIFIC SESSION

QUICK SHOT ABSTRACTS
PARALLEL SCIENTIFIC SESSION 4
ABSTRACTS

Parallel Scientific Session 4
1. A DECISION TOOL FOR PREDICTING OUTCOMES IN GERIATRIC ACUTE MESENTERIC ISCHEMIA
D Kay MD, K Muphy BS, DL Davenport PhD, AC Bernard MD
University of Kentucky

Background: Acute mesenteric ischemia is a highly morbid disease process that is most commonly seen in elderly patients. Given that many of these patients have multiple medical comorbidities, intervention in these patients can often progress to costly and futile care. The goal of this study was to develop a tool that practitioners can use to counsel patients and their family members after receiving a diagnosis of acute mesenteric ischemia.

Methods: Patients treated at our institution over the past 10 yrs with a diagnosis of acute mesenteric ischemia were identified by ICD-9 or ICD-10 code. Patients < 65 years old were excluded. Retrospective chart review was then performed and pertinent data was collected. Univariate analysis was used to identify significant risk factors for death. CART analysis with CHAID method for growth and significance was then used to generate a prediction tree.

Results: 150 patients that met inclusion criteria were identified. Univariate analysis demonstrated that lactate on both the day of surgery (p ≤ 0.001) and at 24 hours (p = 0.004) was predictive of death. Pressor requirement was another statistically significant predictor of death (p= 0.001). Intra-operative predictors of death included resection of both small and large bowel at the index operation (p= 0.014). CART analysis showed that 79% of patients with day of surgery lactate ≥ 5.4 died post-operatively. 70% of patients with day of surgery lactate < 5.4 progressed to death if they required pressors and had a creatinine > 1.18. Conversely, only 6.1% patients with a day of surgery lactate < 5.4, creatinine < 1.54 and no pressor requirement progressed to death.

Conclusion: Acute mesenteric ischemia in the elderly population is a highly morbid disease process. Prior studies have identified variables associated with poor outcomes. We identified several variables associated with progression to death in our study, and developed a model that correctly classified 82% of our study population. This model can be used to counsel families and guide decision making for elderly patients diagnosed with acute mesenteric ischemia.
2. OPTIMIZATION OF RESOURCE ALLOCATION AFTER IMPLEMENTATION OF MILD TRAUMATIC BRAIN INJURY TREATMENT PROTOCOL

MT Martyak MD, JN Collins MD, JR Burgess MD
Eastern Virginia Medical School

Background: The purpose of this study was to assess the affect on resource utilization and safety after implementation of a mild traumatic brain injury (TBI) treatment protocol.

Methods: A retrospective review was conducted of patients admitted to the trauma service with isolated mild TBI before and after implementation of a mild TBI treatment protocol. Patients admitted from June 2014 to February 2017 with age 18-89 years presenting with GCS of 13-15, isolated intracerebral hemorrhage measuring < 1cm on computed tomography (CT), without midline shift, and not coagulopathic with exception of aspirin use were evaluated. The mild TBI protocol was initiated in May 2015 under which patients were to be admitted to a non-ICU ward, without neurosurgical consultation, and without the need for routine follow-up head CT unless clinically indicated. Data including length of stay (LOS), intensive care unit (ICU) length of stay, rate of neurosurgical consultation, rate of repeat head CT within 24 hours of admission, and associated costs were evaluated to determine resource utilization for each group.

Results: 46 patients were identified in the pre-protocol group and 97 patients in the protocol group. Both groups were similar in age, admission Glasgow Coma Score, and percentage of patients on aspirin. The protocol group was found to have a shorter hospital LOS (1.46 vs 2.04 days, p=0.0034), shorter ICU LOS (0.02 vs 0.37 days, p<0.0001), lower rate of repeat head CT within 24 hours of admission (2.06% vs 39.13%, p<0.0001), and lower rate neurosurgical consultation (1.03% vs 28.26%, p<0.0001). A decrease in charges derived from repeat head CT and neurosurgical consultations was also identified between the groups from $43.98 to $844.04 per patient per admission. There were no inpatient mortalities and no progressions of injury requiring unplanned admission to the ICU or operative neurosurgical intervention.

Conclusion: Efficient delivery of care is paramount in modern medicine and this study demonstrates that the implementation of our mild traumatic brain injury treatment protocol significantly decreased resource utilization without jeopardizing patient safety.
<table>
<thead>
<tr>
<th></th>
<th>Total</th>
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<th>eGOS&lt;5</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( n=13 )</td>
<td>( n=8 )</td>
<td>( n=5 )</td>
<td></td>
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<tr>
<td>Age</td>
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<td>23 (19.5, 43.5)</td>
<td>30 (28.47)</td>
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<td>ISS</td>
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<td>23.5 (16.5, 31.0)</td>
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<td>GCS</td>
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<td>4.5 (3.0, 12.0)</td>
<td>7.0 (7.0, 8.0)</td>
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<tr>
<td>Time to Craniectomy</td>
<td>4 (2.5, 18)</td>
<td>3.5 (2.8, 12.0)</td>
<td>12.0 (2.0, 21.5)</td>
<td>0.720</td>
</tr>
<tr>
<td>Female</td>
<td>30.8%</td>
<td>50%</td>
<td>0%</td>
<td>0.105</td>
</tr>
<tr>
<td>Blunt</td>
<td>76.9%</td>
<td>100%</td>
<td>40%</td>
<td>0.035</td>
</tr>
<tr>
<td>Follow-up (Days)</td>
<td>1009 (518, 1157)</td>
<td>1056 (657, 1185)</td>
<td>1009 (442, 1088)</td>
<td>0.523</td>
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</tbody>
</table>
Parallel Scientific Session 4

3. THE LONG TERM EFFECTS OF DECOMPRESSIVE CRANIECTOMY ON FUNCTIONAL OUTCOMES FOLLOWING TRAUMATIC BRAIN INJURY: A MULTICENTER STUDY

EE Moskowitz MD, AD Khan MD, SC Liebscher MS, CI Melendez, JA Dunn MD, RP Gonzalez MD, TJ Schroeppep MD
University of Colorado Health- Memorial Hospital

Background: The management of elevated intracranial pressure (ICP) secondary to traumatic brain injury (TBI) employs a combination of medical and surgical modalities to decrease ICP. One surgical modality utilized is decompressive craniectomy (DC). Several recent publications call into question the effectiveness of DC in the management of severe TBI. Particularly, questions remain as to the long-term benefits of the procedure. The Extended Glasgow Outcome Scale (eGOS) allows for the consistent and reproducible measurement of functional outcomes after injury. The purpose of this study was to determine the eGOS of post-craniectomy patients after hospital discharge and to stratify the survivors based on functional outcome.

Methods: A retrospective multicenter review of patients who underwent DC from 1/1/14 to 12/31/16 was performed at three American College of Surgeons Verified Trauma Centers. Variables reviewed included demographics, mechanism of injury, time to craniectomy, and eGOS at discharge. Patients who survived to discharge underwent a phone survey at which time their eGOS was evaluated and calculated. Evaluation entailed the use of a validated structured interview format, in order to facilitate consistency in scoring. Patients with an eGOS of $>5$ were considered to have a good functional outcome.

Results: During the 36-month, multi-institutional study, 54 patients underwent DC. 72% of the patients were male with 89% injured by blunt mechanism. Patients who survived were significantly younger (28 vs. 34 years; $p=0.039$) and had a higher GCS at presentation (8 vs. 4; $p=0.003$). Multivariable analysis showed that age (OR 1.038; CI 1.003-1.074) and admission GCS (OR 0.677; CI 0.527-0.870) were predictors of mortality. 27 of the 54 (50%) patients who underwent DC survived to discharge and 13 of the 27 (48%) survivors were available for eGOS survey with a median follow-up of 1009 days. Age, admission GCS, or time to craniectomy were not predictors of good functional outcome at survey. Patients with a good functional outcome were more likely to have been injured by a blunt mechanism. The median follow up time of survey respondents was over 3 years. Patients who were available to take the follow-up survey had a poor functional outcome at discharge (eGOS=3), however they improved to have a good functional outcome at the time of the follow-up survey (eGOS=5) ($p=0.005$).

Conclusion: DC is still a controversial operation with an uncertain benefit. Amongst the patients who were available for follow-up survey, eGOS was significantly higher at follow-up than it was at discharge. Although mortality for DC is high, the majority of those that survived to discharge had a good functional outcome at follow-up.
4. INTRAOPERATIVE BLOOD PRODUCT ADMINISTRATION BY SPECIALIZED TRAUMA NURSE CLINICIANS IMPROVES ADHERENCE TO MASSIVE TRANSFUSION PROTOCOL

CM Bell MD, DE Barker MD, A Basham-Saif BSN, RA Maxwell MD
University of Tennessee Medical Center, Knoxville

Background: Uncontrolled hemorrhage frequently leads to death in trauma patients. Recent studies have shown that optimal resuscitation is obtained when packed red blood cells (pRBC), plasma (P), and platelets (Plts) are administered in a 1:1:1 ratio. The urgent need for resuscitation with immediate access to a large quantity of blood products (BP) in the proper ratio has prompted development of massive transfusion protocols (MTP). A MTP was implemented at a Level I Trauma Center in 2007 with oversight of blood product administration provided by trauma nurse clinicians (TNC) in the Operating Room (OR). We hypothesized that incorporating the TNC in the OR to continue BP administration would lead to an improved resuscitation, better adherence to 1:1:1 resuscitation.

Methods: A retrospective review of data from a prospectively-maintained database of all adult trauma patients requiring MTP and trauma surgery operative intervention within the first 24 hours of hospitalization was performed. Data from patients who died in the ER and those < 15 years of age were excluded. Two groups of patients were identified: 1) those who underwent BP administration by anesthesia in the OR (ANES) from 7/2007 to 5/2015 and 2) those who underwent BP administration by the TNC in the OR (TNC) from June 2015 to January 2017. Demographic data including Injury Severity Score (ISS), mechanism of injury, ratios of pRBC:P and pRBC:Plt were compared between the 2 groups. Mean ratios and standard deviations of the pRBC:P and pRBC:Plt were calculated as well as pRBC:P and pRBC:Plt ratios greater than 2.

Results: Ninety-seven patients were included in the study (ANES = 53; TNC = 44). There were 74 males (ANES = 38; TNC =36), 23 females (ANES = 15; TNC = 8). Mean age was 37 <u>+</u> 16 for the entire group (ANES = 36 <u>+</u>16; TNC = 39 <u>+</u>17). Mechanism of injury was blunt in 75 (ANES = 45; TNC = 30, p = .05). Mean ISS in overall group was 32 <u>+</u>14 (ANES = 34 <u>+</u>15; TNC = 29 <u>+</u>14.). No statistical differences were noted between the groups other than mechanism of injury. Intraoperative blood product unit administration results are depicted in Table 1. Transfusion ratios were closer to 1:1 in the TNC group as compared to the ANES group. pRBCs were given in excess of P and Plts more often in the ANES group than the TNC group.

Conclusion: The addition of a specialized trauma nurse clinician during massive transfusion in the operating room improves adherence to massive transfusion protocol and decreases variability in achieving a 1:1:1 ratio compared to resuscitation by Anesthesia alone.

Table 1: Intraoperative Blood Product Administration

<table>
<thead>
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<th>ANES</th>
<th>TNC</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pRBC:P (2 ± 0)</td>
<td>1.8 ± 2.4</td>
<td>1.2 ± 0.6</td>
<td>0.11</td>
</tr>
<tr>
<td>pRBC:Plt (2 ± 0)</td>
<td>1.2 ± 0.6</td>
<td>0.9 ± 0.4</td>
<td>0.004</td>
</tr>
<tr>
<td>pRBC:P (≥ 2:1 units)</td>
<td>15.7%</td>
<td>4.5%</td>
<td>0.17</td>
</tr>
<tr>
<td>pRBC:Plt (≥ 2:1 units)</td>
<td>7.3%</td>
<td>0%</td>
<td>0.24</td>
</tr>
</tbody>
</table>
Parallel Scientific Session 4
5. DELAYED CLOSURE IS ASSOCIATED WITH DECREASED INFECTION RATE IN AMPUTATIONS AFTER TRAUMA
YM Ali MD, R Dorrell, AM Nunn MD, JJ Halvorson MD, PR Miller MD
Wake Forest University School of Medicine

Background: Amputations associated with trauma carry significant morbidity due to tissue damage, contamination and risk of infection. Timing of formal amputation closure in this situation varies among surgeons with some allowing the wound to remain open for some time while others perform formal amputation and closure at the index operation. The presence of infection after closure of an amputation has the potential to result in a higher amputation (i.e. a below knee amputation to an above knee amputation). Our goal was to examine the relationship of timing of closure to stump infection and eventual level of amputation.

Methods: A review was performed of all patients admitted to a Level I trauma center over a 5-year period with amputations during the initial admission after trauma. Amputation of either an arm (above or below the elbow) or a leg (above or below the knee) were included. The number of days to closure of the amputation and whether there was an infection after closure were evaluated. Also investigated was the relationship between infection after closure and a higher level of amputation.

Results: Between 1/1/2010 and 12/31/2015, 63 patients (ages 15-81, mean age 45.1 ± 18.4) underwent an amputation of a leg or arm. Fifty-four were male, 9 were female, mean injury severity score was 20.9 ± 10.4 and mean lactate at admission was 3.4 ± 1.7. Of the 63 patients, 53 patients had an amputation of a leg and 10 had an amputation of an arm. The overall infection rate was 32% and the mean time until closure was 6.7 ± 11.1 days. Comparing closure times in those with and without infection, the mean intervals were 3.1 ± 9.7 and 8.4 ± 11.4 days respectively (p=0.01) The receiver operating characteristic curve c statistic was 0.69 (p=0.04). Sensitivity of various times to closure for avoiding infection was examined and was optimized at 5 days with infection rates above 5 days of 5.3% versus at or below 5 days to closure of 43.2% (p=0.0029). Infection resulted in a higher level of amputation in 35% of those who had an infection.

Conclusion: Based on these data, delay in closure of an amputation was associated with a lower rate of infection and presence of infection resulted in a higher amputation level in over a third of studied patients. Delay of formal amputation closure for at least 5 days is associated with a significantly reduced rate of infection.
6. POST DISCHARGE MORTALITY AFTER GERIATRIC LOW LEVEL FALLS: A FIVE YEAR ANALYSIS

AW Gerrish MD, ME Hamill MD, KM Love MD, DI Lollar MD, TM Locklear PhD, N Dhiman MD, MS Nussbaum MD, BR Colliar DO
Virginia Tech Carilion School of Medicine

Background: Geriatric trauma patients with low level falls often have multiple comorbidities and limited physiologic reserve. Our aim was to investigate post discharge mortality in this population. We hypothesized that 5-year mortality would be higher relative to other blunt mechanisms.

Methods: The trauma registry of our level 1 trauma center was queried for patients evaluated between July 2008 and December 2012. Adult patients identified were then matched with mortality data from 2008-2013 from the National Death Index. Low level falls were identified by E-Code; other types of Blunt Trauma were based on registry classification. Patients with multiple admissions were excluded. Univariate analysis was performed using Fisher’s Exact and Wilcoxon tests. Kaplan-Meier Curves were plotted to compare mortality up to 5 years after hospital discharge.

Results: A total of 7916 meeting criteria were evaluated, with 2777 (35.1%) females. Excluding patients with age less than 65 or with penetrating trauma yielded 1997 (25.2%) geriatric patients for further analysis. Mechanism of injury analysis revealed 1272 (63.7%) patients with low level falls versus 725 (36.3%) patients with other blunt trauma. Patients sustaining low level falls were older (81 vs 73, p<0.0001). These patients were more likely to be female (61.7% vs 37.9%, p<0.0001), and had higher mortality during their hospital admission (11.2% vs 7.7%, p=0.0128). The overall injury severity score, median hospital length of stay and ICU length of stay were similar and not statistically different. Patients surviving to hospital discharge after low level falls were less likely to return home at discharge (37.2% vs 50.8%, p<0.0001) and more likely to require admission to a skilled nursing facility (45.2% vs 29.1%, p<0.0001). Survival analysis using Kaplan-Meier curves demonstrates a significantly increased post discharge mortality in the low level fall group (p<0.0001) (Figure 1). In the geriatric falls group - 25% mortality is predicted at 120 days after discharge (95% CI 91-161) with 50% mortality at 1149 days (95% CI 1001-1296). Geriatric patients with other forms of blunt trauma have a significantly lower expected post-discharge mortality - with 25% mortality not predicted until 1115 days (95% CI 857-1466).

Conclusion: Geriatric patients injured in low level falls have a higher in hospital mortality, are more likely to be functionally dependent on discharge and have a high post discharge mortality. This suggests a significant difference between the physiologic reserve of the groups. Opportunities exist for injury prevention, consideration of palliative care and post discharge rehabilitation.
Survival Analysis for Geriatric Patients

With 95% Confidence Limits

Geriatric Low Level Falls = 1; Other Geriatric Blunt Trauma = 2
Parallel Scientific Session 4  
7. SINGLE WORST INJURY ADEQUATE PREDICTOR OF MORTALITY OUTSIDE OF BLUNT TRAUMA  
EA Eklund BS, JS Young MD MBA  
University of Virginia Health System

**Background:** The Relative Mortality Metric (RMM) is an institutionally-developed tool used to characterize observed versus expected mortality performance. The metric allows for comparison between populations at a single center based on time frame, patient clinical data, or any characteristics that differ between patients. Other trauma mortality predictors such as the Trauma Score-Injury Severity Score (TRISS) utilize multiple sites of injury to generate a probability of survival value for a patient or group of patients [Boyd et al. J Trauma. 1987]. We examined whether traditional trauma metrics' use of distinct sites of injury provide greater patient outcomes predictive ability relative to a patient's single worst injury. Head and penetrating injuries were also separated for additional subpopulation analysis to determine whether injury type was driving changes in relative mortality.

**Methods:** We examined patient encounters from January 2003 to January 2015 from our institutional trauma registry and patients with incomplete data were removed, resulting in a final n of 18000. Patient probability of survival as calculated by TRISS was recalculated for each patient with multiple system injury using only their single worst injury to generate a new single injury probability of survival group. Patients were additionally subdivided based on presence of penetrating or head injury. RMM analysis was performed for each group, describing subpopulation observed mortality relative to a calculated benchmark TRISS threshold mortality, giving a final RMM value and plot with associated 95% confidence intervals (CI).

**Results:** For all subpopulations except blunt injury, statistically-significant difference in RMM value between baseline POS calculated for all injuries and recalculated POS based on single worst injury was not apparent (p<0.05) as shown by non-overlapping CI. The same result was observed upon examination of head injuries. For blunt injury, the single worst injury group RMM value was 0.2099 (0.1396, 0.2804), whereas the RMM value considering all injuries was 0.4179 (0.357, 0.4788), a nontrivial difference. W scores were additionally calculated for comparison.

**Conclusion:** For trauma patients at our institution, our results demonstrate that single worst injury acts as the primary determining factor influencing relative mortality under most circumstances. However, this does not hold when examining blunt injury patients where consideration of multiple sites of injury demonstrate increased patient mortality. This result provides actionable information for the stratification of care for differing acuity patients inside the trauma bay as well as the generation of models for predictors of trauma outcomes.
Background: Antithrombotic (anticoagulant [AC] and antiplatelet [AP]) drug use is associated with increased mortality in geriatric trauma patients. The National Expert Panel on Field Triage has recommended preferential transport of patients with antithrombotic agents who have evidence of head injury to hospitals capable of expedited evaluation and treatment, given the potential for rapid deterioration. Although antithrombotic drug use has been incorporated into the triage guidelines of this institution for trauma team activation (TTA), it is unclear if this has impacted outcome. We hypothesized that for awake geriatric patients with intracranial hemorrhage (ICH) on antithrombotic drugs, TTA provides timely care which would reduce mortality.

Methods: We performed a retrospective review of patients ≥65 years with Glasgow Coma Scale (GCS) of ≥13, with ICH after falls from 2013-2016. Patients were divided into three groups according to type of antithrombotic drug: Group 1, AC with or without AP; Group 2, AP only and Group 3, no AC or AP. The Rotterdam score was used to characterize the severity of computed tomographic (CT) findings. The primary outcome was 30-day mortality. The secondary outcome was need for neurosurgical intervention within 30 days of admission. Age, GCS (15 or <15), TTA, antithrombotic drug use, CT Rotterdam score and Injury Severity Score (ISS) were entered into a binary logistic regression model to evaluate for predictors of the outcome. A p value of 0.05 was considered statistically significant.

Results: Three hundred and ninety five patients met inclusion criteria (group 1, n=85 [21%]; group 2, n=196 [50%]; group 3, n=114 [29%]). TTA occurred in 38%, 19% and 31% respectively for the groups. Time to head CT was shorter for TTAs than non-TTAs (median [interquartile range], 20 [13-33] minutes vs 80 [56-131] minutes). Median head Abbreviated Injury Scores and Rotterdam scores were similar for TTA vs. non-TTA within each of the three groups. Thirty-day mortality rates for TTA vs. non-TTA were similar within each group (group 1, 9% vs 8%, p=0.9; group 2, 5% vs 5%, p=0.9; group 3, 9% vs 4%, p=0.3). Logistic regression analysis found that age (odds ratio [OR] 1.1, 95% confidence interval [CI] 1.04-1.1), ISS (OR 1.10, 95% CI 1.03-1.13) and the Rotterdam score (OR 2.0, 95% CI 1.2-3.4) were independent predictors of mortality, while TTA, AC and AP use and GCS were not. All groups had similar rates of neurosurgical intervention (group 1, 5%; group 2, 7%; group 3, 6%, p=0.8). Only the Rotterdam score (OR 3.9, 95% CI 2.3-6.4) and age (OR 0.9, 95% CI 0.85-0.97) were predictive of neurosurgical intervention, while TTA, AC and AP use and GCS were not.

Conclusion: In awake elderly patients on antithrombotic drugs found to have intracranial hemorrhage, trauma team activation provided rapid evaluation but was not associated with reduced 30-day mortality. Antithrombotic drug use did not predict need for neurosurgical intervention. Antithrombotic drug use as the sole criterion for trauma activation should be reexamined.
PARALLEL SCIENTIFIC SESSION 5 ABSTRACTS

Parallel Scientific Session 5
9. IMPROVING INFORMATION TRANSFER DURING TRANSITIONS OF CARE VIA STANDARDIZED HANDOFFS
KE Friend MD, LA Hook MS, ART Joshi MD
Albert Einstein Medical Center

Background: Multiple studies have shown the detrimental effect of miscommunication during transitions of care. Recent duty hour restrictions have caused many surgical programs to increase the number of resident teams taking care of a single patient leading to increased transitions. The aim of this study is to determine if a certain method of “sign-out” can improve information transmission and thereby reduce medical errors.

Methods: Twenty-eight surgical interns underwent a 90-minute training session prior to starting residency in five previously verified methods of sign-out. They were randomly assigned to six groups (five methods taught and a control group). They were then given seven simulated patient charts with varying levels of medical complexity. They were then instructed to “sign-out” the patients to randomly selected colleagues. The control group did not use any of the previously taught methods and passed on information in a manner of their choosing. This study was conducted over 2 years with 17 residents in the first group and 11 residents in the second based on the size of the incoming resident cohort.

Results: None of the methods consistently resulted in excellent transitions of care. Patient information values ranged from 26-40 (depending on complexity). Major points were consistently missed by all methods but this may have been a component of the time constraint placed on this study. The “SIGNOUT?” resulted in superior data transmission when compared to the control group (p=0.0401). The only method that appeared to be significantly inferior was the “9Ds” method (p=0.0610). There was no statistically significant variance in the data points transmitted by method on a year to year basis.

Conclusion: The “SIGNOUT?” method leads to the largest amount of relevant information transmitted to the incoming team. There was no statistically significant difference in the other methods though the 9 Ds model was close to significantly inferior. There was little variation in information transmission per year the study was performed. Improvement in “sign-out” modalities and training may improve transmission of relevant patient information but larger studies are needed to verify the data seen in this small, single site study.
PARALLEL SCIENTIFIC SESSION 5
ABSTRACTS CONTINUED

![Diagram showing information transmitted by method for different methods: 9 Ds, SBAR, ANTICipate, Control, IPASS, SIGNOUT?](image)

- Data points available per patient
- Points per patient

FEBRUARY 10 - 13, 2018 | TAMPA, FLORIDA
Parallel Scientific Session 5
10. INTERPRETATION OF BASIC CLINICAL IMAGING: ARE SURGICAL RESIDENTS SUPERIOR TO OTHER TRAINEES?
JJ Eid MD, AL Miciura BS, FI Macedo MD, E Negussie MD, VK Mittal MD
Providence Hospital

**Background:** During medical training, students, residents and fellows are expected to learn how to accurately interpret images from various radiographic modalities. This skill is mostly utilized by physicians in the acute and critical care settings. It is unclear whether surgical residents’ interpretation skills differ from that of other trainees.

**Methods:** A 30-question online quiz was developed to evaluate residents’ skills in interpreting images using different radiologic modalities. The participating cohort included (1) medical students (MS), (2) general surgery residents (GSR), internal medicine residents and fellows (IMT), and radiology trainees (RT). The impact of residency specialty and level of training on performance was evaluated.

**Results:** A total of 69 postgraduate trainees and 19 MS enrolled in the online quiz. The average score was 67.6% (416.6). GSR scored higher than IMT (74.2% ± 10.7 vs. 67.9% ± 11.3, p= 0.038), however they were equally proficient to their radiology colleagues. MS had the lowest interpretation accuracy rates compared to postgraduate trainees [57.4% ± 16.8, p<0.001]. On different radiology modalities, junior GSR (JR-GSR) performance was comparable to MS, JR-IMT, JR-RT. Overall, GSR (83.1% ± 15.7) scored higher than IMT (70.3% ± 17.7, p= 0.026) and MS (61.7% ± 23.4, p<0.001) on CT body. Similar findings were demonstrated on ultrasound modality. A difference in performance could not be seen for X-rays, CT head, and tubes/lines localization images.

**Conclusion:** GSR were able to correctly interpret 74.2% of basic clinical images. Although superior in the evaluation of pathologies seen on CT body and ultrasound, GSR have comparable performance to other trainees in x-rays, tube/line localization images, and CT head. Integration of radiology education in surgical training may enhance performance and potentially improve patient care.
95% Confidence Intervals (Tukey)
11. BUILDING UPON FLS: AN ADVANCED LAPAROSCOPIC SKILLS CURRICULUM WITH VIDEO-BASED COACHING
VL Wang MD, MT Santore MD, KA Delman MD, E Lin DO, SS Davis MD, JL Stetler MD, AD Patel MD, JM Hinman MPH, JF Sweeney MD, JK Srinivasan MD
Emory University

Background: General surgery residents are required to pass Fundamentals of Laparoscopic Surgery, a course designed to ensure basic laparoscopic skills. More complex simulation tasks exist but advanced skills training is left to individual programs. We designed a longitudinal laparoscopic curriculum to build upon FLS.

Methods: Laparoscopic simulation tasks by increasing complexity were assigned by PGY level to all general surgery residents: PEG transfer (PGY1), intracorporeal suturing (PGY3), consecutive suturing on angled platform (PGY4), running stitch on angled platform (PGY5). PGY2 residents were exempted to undergo certified FLS testing. Residents video-recorded assigned tasks on a FLS trainer and uploaded them to a file-sharing database. Videos were reviewed by faculty advisors (of any surgical specialty) and a peer of the same PGY level using 5-point Likert scales and open feedback. Residents received feedback and were given 6 weeks to practice and submit post-test videos. The post-test videos were reviewed by the same peers and faculty advisors. Videos were then graded in a blinded fashion by two faculty deemed proficient in complex laparoscopy. Residents were surveyed regarding amount of time spent practicing and whether or not the exercise was valuable.

Results: 100% (15/15) of PGY1s, 45% (9/20) of PGY3s, 50% (5/10) of PGY4s, and 38% (3/8) of PGY5s passed their respective skills. All residents trended toward improved rating scores between pre- and post-tests: 16.5 to 17.4 (by faculty) and 16.5 to 19 (by peers). All who failed (21/53) were automatically failed for technique (grabbing needle rigidly out of view); however, only 28% of the 21 had received pre-test feedback against doing so. Of pre-test faculty advisors, 35% were considered laparoscopically proficient. Open feedback ranged from general statements to more actionable items (which were predominantly from laparoscopic faculty). 85% of residents practiced more due to this course, and 59% felt that they gained knowledge or skills they would not have otherwise gained in their standard clinical training.

Conclusion: A longitudinal laparoscopic curriculum is valuable for ensuring that residents are safe laparoscopic surgeons and that they practice advanced skills beyond FLS during residency. Video-based coaching can be easily implemented to allow peers and laparoscopically skilled faculty provide feedback to residents remotely.
Background: The development of Emergency General Surgery (EGS) as a surgical subspecialty is a new occurrence in the surgical profession. EGS is defined as the urgent assessment and treatment of non-trauma acute surgical diseases. While much of this care involves workup and triage of patients who ultimately require operative intervention, surgeons also manage many patients non-operatively. Evidence-based guidelines and quality benchmarking are lacking for the delivery of non-operative care. We hypothesized that a significant proportion of care delivered by EGS surgeons was non-operative management of various disease processes. Using a newly established Emergency General Surgery Registry, we sought to determine the overall percentage of non-operative care and most common disease processes that were managed without operation.

Methods: This was a retrospective analysis of prospectively collected data from patients entered into the Duke Emergency General Surgery Registry between July 2016 and August 2017. The Duke Emergency General Surgery Registry data are housed in a Research Electronic Data Capture (REDCap) database maintained by the Division of Trauma registry staff at Duke University Medical Center. Operative or non-operative management was determined based on the hospital admission associated with the index EGS patient encounter. Patients were further categorized by ICD-10 codes associated with the primary reason for Emergency General Surgery consultation.

Results: There were a total of 1,377 EGS consult encounters captured over the 13 month study period, excluding consultations for tracheostomy and percutaneous endoscopic gastrostomy tube placements. The majority of these encounters resulted in non-operative management (n=771; 56%). The remaining patients were managed operatively (n=606; 44%). Out of the 771 non-operative patients, the four most common disease types were bowel obstructions (n=201; 26%), gallbladder/pancreas/spleen disorders (n=91; 12%), intestinal disorders (n=66; 9%), and skin/soft tissue disorders (n=64; 8%). The disease types with the highest percentage of non-operative as compared to operative management were abdominal pain (100%), hematemesis/GI hemorrhage (92%), post-procedural complication/infection/fever (85%), and diverticular disease (84%).

Conclusion: Emergency general surgeons provide more non-operative than operative care. These findings have important implications for quality improvement, physician reimbursement, surgical staffing models, and training surgical residents. Prospective data collection through EGS registries will allow for development of evidence-based guidelines and quality metrics to improve patient care.
<table>
<thead>
<tr>
<th>Disease Type</th>
<th>Operative Patients (n=377; 100%)</th>
<th>Non-Operative Patients (n=771; 56%)</th>
<th>Non-Operative vs Operative Patients: Percentage by Disease Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowel obstructions (257; 19%)</td>
<td>201 (26%)</td>
<td>78%</td>
<td>22%</td>
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<tr>
<td>Gallbladder/Pancreas/Spleen Disorder (277; 20%)</td>
<td>91 (12%)</td>
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<td>67%</td>
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<td>Intestinal Disorder (86; 6%)</td>
<td>66 (9%)</td>
<td>77%</td>
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<td>Skin/Soft Tissue Disorder (111; 8%)</td>
<td>64 (8%)</td>
<td>58%</td>
<td>42%</td>
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<tr>
<td>Diverticular Disease (63; 5%)</td>
<td>53 (7%)</td>
<td>84%</td>
<td>16%</td>
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<tr>
<td>Abdominal Pain (51; 4%)</td>
<td>51 (7%)</td>
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<td>0%</td>
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<tr>
<td>Post-procedural Complication/Infection/Fever (60; 4%)</td>
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<td>Peritoneal Abscess/Disorder (61; 4%)</td>
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<td>Appendicitis (186; 14%)</td>
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<td>Ischemic Bowel (57; 4%)</td>
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<td>Hematemesis/GI hemorrhage (12; 1%)</td>
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<tr>
<td>Other (26; 2%)</td>
<td>21 (3%)</td>
<td>81%</td>
<td>19%</td>
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Table 1. Emergency General Surgery: Non-Operative versus Operative Patients by Disease-type.
Parallel Scientific Session 5
13. IMPROVED OUTCOMES WITH PERI-OPERATIVE GLUCOSE MANAGEMENT
A Salous MD, R Rivero-Soto MD, D Naanaa BS, J Coleman PhD, V Ahuja MD
Sinai Hospital

Background: Our community hospital operative 30-day outcome report revealed a concerning trend in morbidity for postoperative general and vascular surgery patients. Data analysis identified peri-operative hyperglycemia as the common preoperative risk factor for increased post-operative morbidity in these patients with diabetes mellitus (DM). The goal of our study was to improve blood glucose control in elective surgery patients and its association with decreased morbidity.

Methods: A multidisciplinary team with representatives from infection control, anesthesia, pharmacy, surgical residents, and nursing was assembled to determine corrective action and plan for implementation of the action. Educational seminars were conducted to promote awareness about hyperglycemia and postoperative morbidity in DM patients to anesthesia, surgeons, residents and nurses. A standardized protocol was created for management of preoperative patients with DM. The management started with optimizing glucose control at the preoperative visit by a nurse practitioner followed by optimal control on the nursing unit with oversight by a diabetic nurse specialist. An electronic medical record order set of the protocol was implemented and used for documentation.

Results: Data was captured using ACS National Surgical Quality Improvement Program (NSQIP) prospectively. Data review for July-Dec 2016 showed that there were a total of 83 patients with DM having elective general and vascular surgery with a morbidity of 19.27%. Metrics for adherence were measured by usage of the order set and monitoring postoperative morbidity outcomes in DM patients. Morbidity was defined as a patient having 1 or more of the specific NSQIP post-operative complications. Since implementation there have been 93 patients with decrease in overall morbidity to 8% and with overall improvement at our center in post-operative morbidity by 11.2%.

Conclusion: The goal of this (QI) project is to decrease post-operative morbidity in patients with DM by implementation of perioperative blood glucose level monitoring and treatment. Our preliminary data strongly suggests that process change with incorporating electronic tools into daily work flow may improve outcomes.
Morbidity in Elective Surgery General-Vascular Diabetic Patients

Our Hospital

National

7/1/16-12/31/16
3/1/17-6/30/17
Parallel Scientific Session 5
14. IMAGING-ASSOCIATED RADIATION TRENDS IN A PUERTO RICAN PEDIATRIC SURGICAL POPULATION. IS OVER RADIATION AN ISSUE IN OUR EMERGENCY DEPARTMENTS?
K Diaz MD, S Marcano BS, C Sanchez-Ganville MD, E Santiago MSc, J Zequeira MD
University of Puerto Rico

Background: The increased use of CT scans has raised concerns regarding the risks of early radiation exposure in the pediatric population. Available literature sustains that repeated exposure to imaging-related radiation in the pediatric population is associated to a threefold increase in the risk of developing pediatric hematogenous and central nervous system malignancies. It is for this reason that international effort known as the Image Gently Campaign was created, mostly based on the “As Low Radiation As Possible” ALARA principle described by the Center of Disease Control. Our aim is to identify if there are any discrepancies in imaging tendencies outside our pediatric academic center and whether our patients are at increased risk of over radiation

Methods: We performed a retrospective analysis of patients younger than 18 years who required surgical intervention for appendicitis at the Pediatric University Hospital (PUH) between October 2014 and March 2017. The sample was divided into two groups. The first group consists of patients who received their initial evaluation at PUH. The second group consists of patients who were initially evaluated at non-tertiary hospitals and were subsequently transferred to PUH for definite management. Demographics, clinical parameters, imaging modalities, and intra-operative data were reviewed for each patient. Pearson’s chi square test and odds ratio calculations were used as part of the statistical analysis.

Results: There were 181 patients; 5 were excluded due to incomplete data. A total of 206 imaging studies were performed; 133 CT scans and 73 ultrasounds. There were no differences in demographics or clinical characteristics between groups. The first study of choice for patients initially evaluated in a non-tertiary center was a CT scan (93% OR 4.054; 95%CI: 2.6-6.4), while in PUH a CT scan was performed as initial study in 23% of the patients (OR 0.09; 95%CI: 0.05-0.18) favoring ultrasound as the diagnostic modality of choice.

Conclusion: Our results show that children with appendicitis who are evaluated at non-tertiary centers are more likely to have a CT scan performed as opposed to a non-radiating imaging study. Our concern is that if this trend does not change, our pediatric population might have an increased risk of developing associated malignancies. We believe a local effort towards educational strategies should be implemented in order to prevent radiation overexposure in our pediatric patients. This study serves as preliminary evidence that will be used to submit a grant application for an island wide educational campaign on the Image Softly Campaign and ALARA principles.
Background: Regardless of path of transformation of the American healthcare system, cost containment, especially in terms of the physical, psychological, social, and financial burden of avoidable post-operative adverse events (AE) will remain the primary responsibility of the clinician. To enhance identification of the highest priority targets for improvement, we developed a surgical performance dashboard generated by our National Surgical Quality Improvement Program (NSQIP) data. We monitored population characteristics via concomitant occurrence of comorbidities (CM) with AE, incidence of AE in the absence of CM, AE cost as represented by Clavien-Dindo (C-D) metrics, and provider ratio of proportion of AE to case volume. The objective of this analysis was determination of the frequency and type of most costly AE over a four-year period. We hypothesized that the most costly AE were consistently present across time.

Methods: Our NSQIP sampled general and vascular cases performed from 2014 through 2017 were stratified into four 6-month intervals. Using C-D severity classification of AE, each interval was queried to identify Grade 4 events, the most costly in terms of necessary intervention and patient morbidity. The proportion of these AE was then compared across time intervals, and incidence for each interval assessed using two-way ANOVA with alpha set at 0.05.

Results: The study population consisted of 1,528 patients stratified into 4 six-month intervals (Table). Overall incidence of any AE was 23%. Incidence of the ten Grade 4 AE did not significantly vary across time (p=0.28, two factor ANOVA without replication). Although frequency of individual Grade 4 AE per interval did vary (p<0.0001), overall assessment of the incidence of all AE across time demonstrates the primacy of sepsis and associated mechanical ventilation (italics).

Conclusion: Data from this surgical quality dashboard clearly illustrates the primary effort for amelioration of the cost of AE must focus on preemptive pulmonary management. Preoperative risk assessment, and optimization through programs like the ACS “Strong for Surgery” are essential for effective cost control and avoidance of unnecessary patient suffering.
### PARALLEL SCIENTIFIC SESSION 5

#### ABSTRACTS CONTINUED

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<th>Six Month Interval</th>
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<td>14</td>
<td>7</td>
<td>9</td>
<td>38</td>
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<tr>
<td>AE INTERVAL</td>
<td>57</td>
<td>61</td>
<td>53</td>
<td>69</td>
<td></td>
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<td>C-D grade 4 Incidence</td>
<td>8.7%</td>
<td>8.2%</td>
<td>8.5%</td>
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Parallel Scientific Session 5
16. ACUTE FULMINANT HEPATIC FAILURE: THE NEMESIS OF LIVER TRANSPLANTATION. A TWO DECADE LONG TERM OUTCOMES AND PSYCHO-SOCIAL STUDY
AE Alsina MD, AM Athienitis PhD, AA Alsina, J Buggs MD, S Franco MD, S Aslam MD, B Evans RN, K Barber RN, R Apple, M Rumbak MD, N Kemmer MD
Tampa General Hospital

Background: Factors affecting early post-transplant survival in liver transplantation (LTx) for acute liver failure (ALF) are well elucidated but psychosocial aspects affecting survival and adherence long term are poorly described. Aims: 1) To determine pre-op psycho-social characteristics, ability to participate in decisions of transplant, and life-stressors that can affect adherence and outcomes. 2) To examine long term outcomes over two decades.

Methods: A retrospective review of ALF LTx between 1997 and 2017 (n=47) was performed, from 1,447 LTx (3.2%). Inclusion criteria was verified by review of transplant databases, flow carts, outpatient medical records, UNOS database, hospital charts, and EMR. Psychological evaluations were reviewed and coordinators interviewed for adherence data. Pre-transplant demographics, socio-economic and psychologic variables, transplant support, specific stressors (divorce, foreclosures, separation, financial), ability to participate in decision, knowledge about transplantation and family motivation were recorded. Outcomes variables included adherence, cause of death and survival. Statistical analysis (SAS 9.4) used Kaplan-Meir (KM), Fisher’s test, Mantel-Haenszel and Wilcoxon’s tests.

Results: Twelve patients where adherence could not be assessed due to early deaths (< 3 months) were excluded from adherence study. The remaining 35 were classified as poor (n =11, 31.5%), fair (n=13, 37%), and good (n=11, 31.5%). Non-adherence rate was 24/35, 68%. Of 11 patients with poor adherence, 7 are still alive, and 4 died, all 4 as consequence of poor adherence. None were offered re-transplantation. Of the remaining 24 patients (13 fair, 11 good adherence), only 2 died, not adherence related. Major life stressors impacted adherence long-term (p=0.01). KM survival of patients with poor adherence post-LTx at 5 and 10 year survival was 78% and 54%, vs. fair and good adherence (5 year, 83% and 100%, respectively, p=0.3). Those participating in the decision to receive a transplant had improved survival (5 year, 80% vs. not, 61%, p=0.03, Log Rank). Five patients were re-transplanted early for primary non-function (5/47 = 10.6%), none late. Eighteen of 47 patients expired (38%) at time of last follow up. Early deaths were: 3 neurologic, 6 sepsis/multi-organ failure, and 3 unexpected: massive aspiration, gastric necrosis, and intraoperative cardiovascular thrombosis. Overall, one and five-year survival was 78% and 70%. No improvement over two decades of ALF LTx was observed.

Conclusion: ALF represents the nemesis of LTx programs with high early mortality and subsequent decay associated to poor adherence. Our study is the first to identify pre-transplant characteristics and stressors that portend poor outcomes. Despite our highly selective criteria for accepting patients with ALF, only one third of the patients adhered to transplant regimens long term. No improvement over two decades of LTx for ALF was observed. This could be improved by fine tuning patient selection and management on the front end. The psycho-social factors and stressors that we identified could be used to deselect patients. The ethical principles, urgency and fairness applied to these patients will continue to haunt transplant programs.
Background: As part of a recurring humanitarian assistance mission designated Continuing Promise 2015 (CP15), the United States Navy hospital ship USNS Comfort (T-AH 20) deployed to a total of eleven Caribbean and Latin American countries over a six-month deployment. U.S. Navy medical personnel and surgeons, in addition to those from non-governmental organizations, collaborated to offer humanitarian surgical and medical care at each mission stop. We describe the collective surgical experience while aboard during CP15.

Methods: The data analyzed included all patients evaluated and treated by the Directorate of Surgical Services (DSS) of the USNS Comfort between 11 April 2015 and 17 September 2015. A medical chart was created for each patient screened for surgery and these records were utilized for this analysis. Comparative and descriptive statistics were performed to analyze patient demographics, surgical subspecialty performing the procedures, types of General and Pediatric surgical procedures performed, operative times, and complication rates.

Results: Of the 1,256 surgical cases performed aboard USNS Comfort during CP15, 24.8% were General Surgery cases, followed by 16% Ophthalmology, 10.6% Pediatric Surgery, 10% Plastic Surgery, and eight additional specialties with <10% of the cases each (Figure 1). Total operative time was 1253 hours with a total room time of 1896.5 hours. The identified complication rate was very low at 1.99% across all specialties.

Conclusion: The USNS Comfort platform offers a unique capability to provide vital humanitarian surgical assistance in the Caribbean and Latin American region. Over a six month deployment during Operation Continuing Promise 2015, surgeons aboard the Comfort delivered a wide variety of surgical care to patients in a safe and effective manner, greatly enhancing the lives of those that received this world-class care.
Parallel Scientific Session 6

18. GASTRODUODENAL SURGERY: A PERSISTENT AND CONTINUING CHALLENGE

P Melmer MD, T Banks, S Holmes RN BSN, JD Sciarretta MD, JM Davis MD
Grand Strand Medical Center

**Background:** The number of patients being treated surgically for gastroduodenal disease has decreased over the past five decades. This has occurred primarily for elective operations as a result of dietary change and the advent of the H\(_2\) antagonists, protein pump inhibitors (PPI) and antibiotic therapy for H. pylori. However, we have observed that in our institution perforated and bleeding peptic ulcer disease (PUD) represent a significantly high percentage of patients who require emergency surgery. The aim of this study is to investigate the incidence of surgically treated gastroduodenal disease in our hospital.

**Methods:** A retrospective, single-center, consecutive cohort study of all patients who were admitted to our institution requiring emergent surgical intervention over the past 2 years. Patients were identified from the hospital NSQIP database.

**Results:** Since October 2015, 423 patients have been admitted to our institution for disease processes requiring emergency surgical intervention, excluding trauma. Thirty-one (7.3%) of these patients had operative procedures for complications of peptic ulcer disease of which 19 patients (57.6%) had perforation [10 (52.6%) in the duodenum and 9 (47.3%) in the stomach]; 9 patients (27.3%) had hemorrhage [6 (66.7%) in the duodenum and 3 (33.3%) in the stomach]; 1 patient (3.0%) had both perforation and hemorrhage in the duodenum; 2 patients (6.1%) had distal gastrectomies for ulcers refractory to medical management alone, one in the duodenum and the one in the stomach requiring vagotomy; and 2 patients (6.1%) had gastrectomies, one total and one partial respectively, for malignant gastric neoplasms. Twenty-two men and 11 women were included with a mean age of 63.7 ± 16.3 years (range 28-91). Risk factors included hypertension (60%), obesity (40%), smoking (36%), COPD (18%), and bleeding disorders (18%). The patient distribution according to the American Society of Anesthesiology’s classification was 18 patients at class 4, 11 patients at class 3, 2 patients at class 2, and 1 patient at class 1, with an overall mean (X ± SD) of 3.4 ± 0.7. Four deaths occurred (12.9%) among older patients (76.8 ± 3.6 years) all of whom where ASA class 4.

**Conclusion:** This data shows that there a significant population of patients who present with life threatening complications of PUD, in spite of the decline in PUD worldwide. A silent peptic ulcer which initially presents as a perforation or a bleed, has a continued presence on our surgical service. These patients are critically ill and require careful and diligent management for good outcomes.
Gastroduodenal Surgery

![Graph showing data on gastroduodenal surgery complications.](image-url)
19. SAFETY OF OPTICAL TROCAR ACCESS TO THE ABDOMINAL CAVITY IN A LARGE SERIES OF PATIENTS
MF Yarbrough MD, D Stefanidis MD
Indiana University School of Medicine

Background: Controversy still exists about the optimal entry method in the peritoneal cavity during laparoscopy. While access related complications are rare closed techniques are associated with more vascular injuries while open techniques with bowel injuries. Efficient entry with minimal wound morbidity especially in obese patients make closed techniques appealing. Our aim was to determine the safety of optical access trocar entry in a large series of patients.

Methods: IRB-approved retrospective review of single surgeon’s experience with the optical entry technique over a 10-year period. Trocar entry position, type of procedure, prior procedures, and complications related to trocar entry were recorded. In 30 cases the entry time for the optical trocar was measured.

Results: 2,500 patients underwent optical trocar entry during the study period. A 5mm optical access trocar was used without a Veress needle in all cases. Access site was in 66% the right upper quadrant, in 30% the left upper quadrant and in 4% other. 27% were laparoscopic cholecystectomies, 24% bariatric procedures, 21% ventral and inguinal hernias, 10% foregut procedures, 7% colectomies, and 11% other. 24% of patients had prior operations. Complications included 2 enterotomies that were repaired, 9 minor liver injuries, 5 mesenteric vessel injuries, 1 nerve injury, and 20 retroperitoneal insufflations without any further sequelae. No major vascular injuries occurred. Most of the complications occurred early in the learning curve. The mean optical trocar insertion time was 8 +/- 3 seconds.

Conclusion: Direct optical trocar entry intraabdominally is efficient and associated with minimal morbidity when access location is chosen off the midline and remote to prior scars. The safety of this approach is similar to other access techniques. Surgeons need to be very vigilant during the early learning curve.
20. MODERATE SEDATION OR MONITORED ANESTHESIA CARE FOR COLONOSCOPIES; IS THERE A DIFFERENCE?
M Ng MD, R Dhanani MS, H Galadima PhD, J Burgess MD
Eastern Virginia Medical School

Background: The United States Preventative Task Force recommends screening for colorectal cancer with colonoscopy starting at the age of 50. Traditionally, a colonoscopy is performed with moderate sedation (MOD), administered by the surgeon. Recently, with the growing trend for painless procedures, monitored anesthesia care (MAC) has been introduced. This entails an independent operator trained in anesthesia to provide deep sedation, usually with propofol. The study aims to determine if monitored anesthesia care provides a better procedure for the patient and if it is worth the extra cost.

Methods: A retrospective chart review was performed on all patients seen by the Eastern Virginia Medical School Department of Surgery who underwent a screening or diagnostic colonoscopy at Sentara Norfolk General Hospital from December 2015 to July 2017. The primary endpoint is procedure time, with secondary endpoints of sedation time. Data was abstracted from chart reviews of patients who underwent colonoscopy. The major variables were: age, time to cecum, difficulty of procedure as documented by surgeon (no difficulty, some difficulty, extremely difficult) and American Society of Anesthesiologist (ASA) score.

Results: There were 361 colonoscopies performed, 200 were performed with MAC and 161 were performed with MOD. There was a statistically significant difference in time to cecum between MAC and MOD (17 vs 21 min, p = 0.002). Difficulty of the procedure as perceived by the operating surgeon was statistically associated with increased procedure time (p < 0.0001). There was no statistically significant difference in time to cecum based upon ASA (p = 0.3515) or BMI (p = 0.5029). Time to cecum was significantly shorter in the MAC group when the surgeon perceived the colonoscopy as not difficult (17.3 vs 21.4 min, p < 0.05). There was no significant difference in time in the procedures described as somewhat or extremely difficult, although there was a trend to shorter times in the extremely difficult group (32.6 vs 39.8 min, p = 0.07). There was also a significantly longer period of time between start of procedure and insertion of scope in the MOD group (5 vs 2.95 min, p < 0.05).

Conclusion: Our data shows that overall the procedure and sedation time is faster in MAC than MOD. With the rising costs of healthcare, it is important to be cognizant of extra expenditures on procedures while maximizing patient safety. However, MAC results in shorter procedure time which is a benefit to both the surgeon and to the patient. There was also a difference in time for the induction of anesthesia which may relate to cost savings. Not surprisingly, the only predictive variable of procedure time was difficulty. The decrease in time was not significant in difficult procedures however this may be subject to surgeon bias as surgeons may be more likely to choose MAC for procedures which they believe will be difficult. Additional research is needed to look at overall cost analysis and patient satisfaction.
### Time to cecum between MAC and MOD across difficulty levels

<table>
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<tr>
<th>Sedation</th>
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<th>Difficulty = 1</th>
<th>Difficulty = 2</th>
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<td>Mean</td>
<td>P-value</td>
<td>Mean</td>
</tr>
<tr>
<td>MAC</td>
<td>17.299</td>
<td>0.0012*</td>
<td>24.788</td>
</tr>
<tr>
<td>MOD</td>
<td>21.431</td>
<td></td>
<td>25.371</td>
</tr>
<tr>
<td>Difference (MAC - MOD)</td>
<td>-4.133</td>
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Background: Routine antibiotics with nonoperative management of uncomplicated acute appendicitis (UA) in adults remains controversial. Unfortunately, nonoperative management puts the patient at risk for having a carcinoid tumor go undetected. Appendiceal carcinoid (AC) accounts for 50% of all appendiceal tumors (AT) and 5% of all gastrointestinal carcinoids. The aim of our study is to identify the rate of AC and highlight the importance of surgical management of acute appendicitis using the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) data.

Methods: ACS-NSQIP database was queried from 2009-2015 for all UA cases who underwent surgery. Complicated appendicitis was excluded including perforation, empyema or abscess formation, and fecal peritonitis. ICD-9 codes were used to identify NSQIP data reporting AT pathology as benign or malignant carcinoid of the appendix. Analysis included age, sex, race, type of AM and surgical procedure performed.

Results: We identified 163,844 patients at >600 participating ACS-NSQIP hospitals who received surgical intervention for appendicitis from 2009-2015. Of those, 2,021 (1.2%) patients were identified with AT, including 236 with benign (11.7%) and 439 with malignant (21.7%) carcinoid tumors. Both populations were predominantly Caucasian (82.6%, 83.8%), with females accounting for 61.9% and 58.5% respectively. Patients with malignant carcinoid tumors were significantly older with a mean age of 48.1 ± 16.5 years (range, 18-89) compared to patients with benign carcinoid tumors with a mean age of 43.6 ± 16.2 years (range, 18-88). Commonly, patients were identified as non-emergent (benign carcinoid 81.4%, malignant carcinoid 83.4%).

Conclusion: Our study reiterates the importance of traditional surgical management of acute appendicitis as antibiotics alone will presumably lead to progression of a curable disease.
ACS NSQIP Surgical Intervention for Appendicitis with Incidental Carcinoid Findings, 2009-2015

<table>
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<th>Malignant Carcinoid (n= 439)</th>
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<td>White, n (%)</td>
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<td>368 (83.8)</td>
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<td>Age, mean ± SD (range)</td>
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<td>48.1 ± 16.5 (18-89)</td>
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<td>Non-emergent, n (%)</td>
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<td>366 (83.4)</td>
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<td>BMI, mean ± SD (range)</td>
<td>28.1 ±7.5 (8.6-71.6)</td>
<td>27.7 ±6.5 (9.3-84.8)</td>
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Parallel Scientific Session 6
22. IMPACT OF ADMITTING SERVICE ON OUTCOMES OF PATIENTS WITH MECHANICAL BOWEL OBSTRUCTION: A COMMUNITY TERTIARY HOSPITAL EXPERIENCE
JJ Eid MD, MN Jimenez MD, FI Macedo MD, C Rios-Bedoya PhD, VK Mittal MD, and R Pearlman MD
Providence Hospital

Background: Mechanical bowel obstruction MBO is a surgical disease. Nevertheless, patients with MBO are often admitted to a medical service in community hospitals. This may lead to delay in operative intervention, increased costs, and affect quality outcomes.

Methods: Between January 2010 and January 2016, 570 consecutive patients were admitted from the emergency department with a diagnosis of MBO. Evaluated outcomes included length of stay, intensive care unit (ICU) admission rate, hospital costs, time to operative intervention, postoperative complications, readmission rate, and mortality rate.

Results: A total of 181 (31.3%) patients were admitted to the surgical service (SS) and 389 (68.7%) patients were admitted to the medical service (MS). Patients on the SS were significantly younger (60.7 years ±16.1 vs. 67.7 years ±16, p<0.001). On univariate and multivariate logistic regression analysis controlling for patient’s characteristics, patients under the MS had a longer length of stay (12 days ± 7.7 vs. 7.2 days ± 6.1, p<0.001), more ICU admissions (45.6% vs. 21% p<0.001), delay in operative intervention (2.7 days ± 3.5 vs. 1.2 days ± 1.8, p<0.001), higher hospital costs ($12809 ± 10169 vs. $7456 ± 5870, p<0.001), more postoperative urinary tract infections (12.6% vs. 6.1%, p=0.019), and mortality rate (2.8% vs. 0%, p=0.014). No difference in other postoperative quality metrics and readmission rate was seen between both cohorts.

Conclusion: Patients with MBO admitted to the MS that required surgical therapy had increased LOS, delay in operative intervention, ICU admission rate, hospital costs, postoperative urinary tract infection rate, and mortality rate. After the diagnoses of MBO in the emergency department, admission to a SS needs to be encouraged to improve patient care, quality outcomes, and hospital expenditure.
23. ROBOTIC CONVERSION OF BILLROTH-I TO ROUX-EN-Y GASTROJEJUNOSTOMY WITH PARTIAL GASTRECTOMY AND VAGOTOMY

Dimitrios Stefanidis MD, PhD
Indiana University School of Medicine

Background: Partial gastrectomy and Roux-en-Y gastrojejunostomy is an effective rescue procedure for recurrent marginal ulcerations after a Billroth-I operation. In this video we present a robotic partial gastrectomy and Roux-en-Y gastrojejunostomy and vagotomy on a 44-year old female with history of peptic ulcer disease for which she had undergone a Billroth-I operation 10 years prior. Her preoperative assessment included an assessment of chronic abdominal pain, nausea, and vomiting, an EGD that revealed recurrent marginal ulcers at her anastomosis without any evidence for malignancy, and an UGI and CT abdomen/pelvis that revealed no other abnormalities. Treatment with PPI and carafate as well as smoking cessation for 3 months did not improve her symptoms nor heal the ulcer. We therefore decided to proceed with partial gastrectomy and Roux-en-Y reconstruction.

Methods: For her operation 4 robotic arms and an additional 5 mm laparoscopic port were used. The esophagus was first dissected off the crura using a right to left approach and the small hiatal hernia was exposed. The anterior and posterior vagus nerves were dissected off the esophagus and divided. The small hiatal hernia was repaired loosely around the esophagus with one 0 Ethibond suture posteriorly using a slip-knot technique. After the duodenum had been dissected free distal to the the prior Billroth-I anastomosis, a green linear staple load was fired and the duodenum was divided. A partial gastrectomy was performed leaving the fundus intact. The small bowel was divided and 75 cm Roux limb was measured. A stapled jejunojejunostomy was created and the Roux was anastomosed to the gastric pouch using a robotic hand sewn technique. Both mesenteric defects were sutured closed to prevent internal hernias.

Results: The procedure lasted approximately 3 hours, blood loss was minimal, and no intraoperative complications were encountered. The patient had a hospital stay of one night and was discharged home the next day after she was able to eat without difficulty. At three months post-op, the patient’s preoperative symptoms (abdominal pain, reflux, nausea, vomiting) had all completely resolved. Her energy level was back to normal and she had lost seventeen pounds from her baseline. The patient was very pleased with her outcome and remained smoke free.

Conclusion: The enhanced 3D visualization, platform stability, and improved precision make the use of robotic surgery for complex foregut procedures appealing.
Background: Although diverticulitis is a common disease, the pathophysiology and etiology is not completely understood. The initial focus was on dietary intake implicating high consumption of nuts and seeds, however, recent data from the Health Professionals Follow-up Study revealed no increase in diverticulitis with consumption of these items. Epidemiologic studies have identified a significantly higher admission rate in the summer months as compared to the winter months. However, the pathophysiology behind this seasonal variation remains to be defined. The purpose of this study was to determine if admission for acute diverticulitis was significantly higher during the summer months and if dehydration played a role.

Methods: The records of patients admitted with acute diverticulitis to a single Florida institution from 2005 through 2014 were retrospectively reviewed. Patients discharged from the emergency department were excluded. The remaining patients were divided in two groups based on admission month: Summer Group (SG) (May-October) and Winter Group (WG) (November-April). Admission serum osmolality (SOsm) greater than 295 miliosmoles per kilogram (mmol/Kg) was used to define dehydration. Demographics, Hinchey classification, and laboratory studies were recorded. The admission rate per month for acute diverticulitis and SOsm were compared for the two groups to determine if there was a seasonal variation and if dehydration played a role. Categorical data was analyzed using Fisher’s exact test. Mann-Whitney U test was used to compare and Pearson product-moment correlation coefficient to determine the strength of the association between the two groups. Data was reported as median with interquartile range (IQR) or percentage. Significance was defined as a p<0.05

Results: A total of 884 adult patients (age>17) with 998 admissions for acute diverticulitis were identified over the 10 year period. Of these, 448 admissions were in the WG and 550 in the SG. The two groups were well matched, except the WG group was significantly older (WG vs. SG: 59 [48-70] vs. 55 [45-67] years; p=0.005). Admission Hinchey classification was similar for the two groups, (WG vs. SG) I (48% vs. 46%, p=0.3), II (38% vs. 39%, p=0.2), III (9% vs.10%, p=0.5), and IV (6% vs. 5%, p=0.5). There was no significant difference in hospital length of stay (WG vs. SG: 4 [3-6] vs. 4 [3-6] days; p=0.8), or the percent of patients that required emergent surgery (WG vs. SG: 9% vs. 10%, p=0.7). The median high environmental temperature (WG vs. SG: 76° [71°-79°] vs. 90° [87°-92°] F, p=0.005) was significantly higher for the SG and correlated with a significantly higher median admission rate during the summer months (WG vs. SG: 77/month (67-83) vs. 92/month (86-98) admissions, p=0.01) (Figure 1). There was a high positive association between median admissions per month and peak environmental temperature (r² = 0.73, p<0.001). The number of patient admitted with dehydration (SOsm>295 mmol/Kg) was also significantly higher in the summer months (WG vs. SG: 9/month vs. 20/month admissions, p=0.04).

Conclusion: Seasonal variation for acute diverticulitis does exist with dehydration contributing to the significantly higher admission rates in the summer months.
Seasonal Variation of Diverticulitis Admissions as a Function of Peak Temperature

Figure 1.
Parallel Scientific Session 6
25. LATER STAGE DISEASE AND EARLIER ONSET OF RECTAL CANCER: EPIDEMIOLOGY AND OUTCOMES COMPARISON OF RECTAL CANCER IN A RURAL APPALACHIAN AREA TO STATE AND NATIONAL RATES
T Wolbert MD, R Barry MD, N Lee MD, EC Thompson MD FCCM, T Gress MD MPH, A Ajmera MD, AK Arrington MD
Marshall University

Background: While the overall rate of colorectal cancer has remained stable, multiple studies have shown an alarming increase in the rate of colorectal cancer in young patients (age <50) nationwide. We hypothesize that the rate of rectal cancer (RC) in young people has increased at a higher rate in rural Appalachia. The goal of this study is to provide insight into the future of rectal cancer epidemiology in an underserved population.

Methods: This IRB-approved retrospective study evaluated RC patients diagnosed 2003-2016 from the Cabell Huntington Hospital Cancer Registry, and compare the ratio of young onset rectal cancer to the state and national ratios using the WV State Cancer Registry, the NACCR, and the SEER Database. Demographics evaluated include age, gender, ethnicity and county. We also evaluated cancer stage, family history of cancer and comorbidity including body mass index (BMI), smoking history, and alcohol history.

Results: The rate of early onset RC in our area is 1.5 times higher than the national rates. In our population, 100% of patients were Caucasian with an equal gender distribution. Young patients with RC were noted to be more overweight than national rates with a mean BMI of 29.5kg/m2. Young RC patients are more likely to have a first- or second-degree relative with a cancer diagnosis (62.5%). Smoking was strongly associated with young RC, with a 20 pack-year smoking history. Compared to national statistics, a higher proportion of our young patients (48%) had Stage 1 or 2 disease which correlated with better survival (81.8% 5-year survival). Of note, 93.9% patients were symptomatic at diagnosis.

Conclusion: The rate of early-onset RC in the Tristate Appalachian area in West Virginia is higher than the national rate with risk factors including Caucasian ethnicity, obesity, diabetes mellitus, smoking, family history of cancer, and history of pelvic surgeries. It warrants further investigation and discussion of the current colorectal cancer screening guidelines that begin at age 50.
**Background:** A multimodality approach to enhance recovery after bowel surgery has been demonstrated to reduce complications and decrease patient length of stay. This study evaluates the factors that influence patient length of stay within a formal enhanced recovery program.

**Methods:** From January 2014–December 2016, consecutive patients admitted to one ward who had undergone elective bowel resection were enrolled in a comprehensive enhanced recovery program. Clinical data was collected prospectively. Statistical analysis of clinical factors, patient participation and outcomes compared to the overall length of stay was performed.

**Results:** A total of 127 patients were analyzed for mean age, breakdown of lap/open procedures/ pre-surgery ambulation status, co-morbidities, and participation in enhanced recovery protocols. The median length of stay (mLOS) for all patients was 4.2 days (range of 2.1 - 25.3 days). Factors influencing mLOS included lap vs. open surgery (4.1 days vs. 6.3 days, p = 0.01), ambulation completion percentage (rho = -.54, p < 0.001), missing 24 hours of ambulation (3.6 days with no missed days vs. 6.6 with missed days, p < 0.001), increasing use of morphine equivalents(r = .55, p < 0.001), diagnosis of DM type 1(r = .16, p = 0.041), and COPD (r = .25, p = 0.003). Pre-operative narcotic use, mobility disorders, post-operative pain scores, psychiatric disorders, or obesity did not impact mLOS. A refusal of ambulation percentage greater than 30% was a statistical identifier of the development of a complication within 90 days (p = 0.009).

**Conclusion:** A multi-modality approach to enhance surgical recovery after bowel surgery is critical to decrease length of stay. The approach to surgery, narcotic use, participation in ambulation and management of complications influenced overall length of stay. Optimal outcomes after bowel resection should focus on pursuing a laparoscopic approach if possible, encouraging ambulation participation, providing alternatives to narcotic pain control and optimizing patient factors especially with insulin dependent diabetes and COPD. Refusal to ambulate should be investigated for possible underlying complication.
Parallel Scientific Session 6
27. FECAL MICROBIAL TRANSPLANT IN ULCERATIVE COLITIS PATIENTS WITH ILEAL-POUCH ANAL ANASTOMOSIS POUCHITIS
NJ Klingensmith MD, CS Kraft MD, S Fang, JK Srinivasan MD, T Dhure MD, DH Weinstein MD, VO Shaffer MD
Emory University

Background: Proctocolectomy with ileal-pouch anal anastomosis (IPAA) is the standard surgical intervention for severe, chronic ulcerative colitis (UC) that have failed medical management. Unfortunately, pouchitis, and its associated inflammatory symptoms, is the most common long-term complication of this operation which has been theorized to be a result of pouch bacterial dysbiosis. Here, we present a case series of UC patients with chronic pouchitis where we attempted to alter pouch microbial composition via fecal microbial transplantation (FMT) and followed patient reported clinical symptoms.

Methods: Five UC patients with chronic pouchitis following IPAA (without biochemical evidence of C. diff infection) were identified and had pre-FMT stool samples taken. They then underwent FMT via pouchoscopy. Patients had stool samples taken at 2, 4, and 12 weeks post-FMT. Patients were also assessed by pouchitis disease activity index (PDAI), short inflammatory bowel disease questionnaire (SIBDQ) and Cleveland global quality of life index (CGQI) scores. All stool samples underwent 16s rRNA pyrosequencing and resultant sequences were analyzed with QIIME and PICRUSt software packages.

Results: Bacterial diversity of all donor stools were not different (p>0.05) with a relative abundance of classically “good” bacteria of 44.1% Bacteriodetes and 51.8% Firmicutes and only 0.4% of the genera containing more pathogenic bacteria Proteobacteria. Conversely, pre-FMT patient samples had a relative abundance of 17.0% Bacteriodetes and 37.2% Firmicutes with an increase in Proteobacteria at 44.1%. Additionally, Shannon diversity index scores were significantly higher in donor samples compared to pre-FMT patient samples (p = 0.006). FMT induced microbial changes moved each patient sample closer toward the donor samples on a 3D PCoA plot. Relative abundance of the 12 week post-FMT patient samples had more commensal Bacteriodetes and Firmicutes and less pathogenic Proteobacteria compared to baseline. Furthermore, host metagenomic functional inferences were made based on stool bacterial composition and relative abundance. There was a decreased host ability for environmental adaptation (in the KEGG ortholog pathway) in pre-FMT samples compared to donors (p<0.01), while post-FMT samples were not different compared to donors (p>0.05). In terms of self-reported clinical assessment, PDAI (overall pouchitis symptoms) scores decreased from a baseline of 3.8 to 2 over the span of 3 months. Measuring quality of life, SIBDQ and CGQI scores improved from 44.2 to 49.3 and 0.64 to 0.76, respectively, suggesting an improvement in quality of life following FMT in these patients. Though the average scores improved, 2/5 patients did not see improvement in self-reported symptoms.

Conclusion: Pouchitis in UC patients is a common problem following proctocolectomy with IPAA that can be refractory to antibiotics. Here we show pouch stool bacterial dysbiosis in these patients that can be altered with FMT to help improve pouchitis symptoms and quality of life. Though more work needs to be done to identify specific patient populations that will benefit most from FMT, this case series suggests that FMT works to quickly normalize stool bacterial composition and provide these patients with a viable treatment option.
**Background:** Although there is good evidence to support a running closure using a slowly absorbing suture for laparotomy closure, how to close the fascia during hernia repair remains unknown. The purpose of this project was to evaluate fascial closure techniques in a large hernia database and their effects on outcomes.

**Methods:** All patients undergoing open repair of ventral hernias were queried using the Americas Hernia Society Quality Collaborative (AHSQC) database. Fascial closure techniques were divided based on suture type (absorbable, permanent) and technique (figure of eight, running, interrupted). Outcome measures included Surgical Site Infection (SSI), Surgical Site Occurrence (SSO), SSO requiring intervention (SSOPI), recurrence rates, and quality of life. Descriptive statistics were performed. Binary outcomes were compared by fascial closure suture and techniques using logistic regression and continuous outcomes using linear regression followed by associations test using analysis of variance table. A p-value less than 0.05 was considered statistically significant.

**Results:** A total of 6,544 patients met inclusion criteria. The types of closure performed included absorbable figure of eight (1,165), absorbable running (3,014), absorbable interrupted (262), permanent figure of eight (872), permanent running (215), and permanent interrupted (716). The association between SSI and fascial closure technique (p=0.4), or fascial closure suture type (p=0.8) was not significant. Surgical site occurrence did not significantly associate with fascial closure technique (p=0.2), but there was a significant association for SSO and fascial closure suture (p<0.001), with the odds of SSO for fascial closure with absorbable suture being 61.7% higher than the odds of permanent. The associations between SSOPI and fascial closure technique (p=0.5) or fascial closure suture (p=0.5) were not significant. Hernia recurrence was not significantly associated with fascial closure technique (p=0.4), or fascial closure suture (p=0.8). HerQLes standard scores at 30-day and 6-month survey did not have significant associations with fascial closure technique (p>0.5), or fascial closure suture (p>0.05). NIH promis 3a scaled scores at 30-day and 6-month survey did not significantly associate with fascial closure technique (p>0.05), or fascial closure suture (p>0.05).

**Conclusion:** Type of closure technique or suture material does not appear to have a major impact on outcomes in open repair of ventral hernia. Although there was a significantly higher rate of SSO for absorbable sutures compared to permanent, this did not increase the rate of interventions. Further study is needed to see if small bite suture techniques will affect outcomes.
29. INCARCERATED DIAPHRAGMATIC HIATAL HERNIA: A CASE STUDY
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A diaphragmatic hernia is due to either a congenital or acquired defect. Those that are acquired are classified as hiatal, traumatic, or iatrogenic. Postoperative iatrogenic diaphragmatic hernias have been reported sparingly following several thoracic and abdominal surgeries, including fundoplication, oesophagectomy, gastrectomy, laparoscopic cholecystectomy, gastric banding, thoracotomy, splenectomy, and nephrectomy. While these cases are rare, a delay in diagnosis can lead to life-threatening cases of strangulation or perforation, as well as cardiovascular and respiratory insufficiency.

A retrospective chart review was performed on a single patient for data collection purposes.

The patient is a 78-year-old African-American female who presented to the emergency department with severe left chest pain and epigastric pain with associated nausea and vomiting. The patient had a history of hiatal hernia with gastroesophageal reflux disease status post laparoscopic Nissen fundoplication one year ago at an outside facility. Admission computed tomography scans of the abdomen demonstrated an incarcerated diaphragmatic hernia containing portions of distended gastric fundus and gastric body, in addition to a separate hiatal hernia repair at the gastroesophageal junction with the proximal stomach remaining below the diaphragm. The hernia was unable to be reduced endoscopically and due to worsening of pain and leukocytosis, urgent laparoscopy was done. Intraoperatively, the patient was noted to have a large portion of the fundus of the stomach herniated into her left pleural cavity through a separate posterior lateral diaphragmatic defect in the central tendon. The esophageal hiatus was intact following previous repair. The hernia was successfully decompressed laparoscopically with the stomach having ischemic changes along the greater curvature necessitating gastric wedge resection. The diaphragmatic defect, which was originally about 3 cm in diameter and then lengthened to about 5 cm in order to reduce the edematous incarcerated stomach, was repaired primarily. The patient did well postoperatively and was discharged home on postoperative day seven.

This is an unusual case of an incarcerated hiatal hernia through a defect in the central tendon of the diaphragm which appears to be iatrogenically acquired following Nissen fundoplication. A laparoscopic surgery was performed to repair the hernia and diaphragmatic defect with an uneventful postoperative course. The hernia is presumed to be iatrogenic as the patient never had any trauma to her chest or abdomen and had no history suggestive of a congenital nature for the diaphragmatic hernia. Additionally, the Nissen fundoplication was done at an outside facility, so the treatment team was unable to acquire an extensive past surgical history on the patient. The delay in presentation may possibly be due to the gradual enlargement of small tears or attenuation in the diaphragm not noticed at the time of the original surgery which developed over time with increases in intra-abdominal pressure, especially on the left side where there is no barrier protection from the liver. Late diagnosis of iatrogenic diaphragmatic hernias is frequent, and surgery is indicated at the time of diagnosis.
Parallel Scientific Session 6
30. NATIONAL OUTCOMES AND RISK FACTORS FOR READMISSION AFTER DIAPHRAGMATIC HERNIA REPAIR

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Background: Previous studies of readmission after diaphragmatic hernia repair have been limited to individual hospitals. The purpose of this study was to evaluate the outcomes and risk factors associated with non-elective, 30-day readmissions in patients nationwide undergoing diaphragmatic hernia repair via laparoscopic, open abdominal, or thoracic approach.

Methods: The Nationwide Readmissions Database for 2010-2014 was queried for all admissions with a principal diagnosis of a diaphragmatic hernia and undergoing repair. The outcomes of interest were a prolonged (>7 days) length of stay (LOS), mortality, readmission within 30-days, and recurrence within one year. Univariable analysis was performed for these outcomes using eleven patient and hospital characteristics along with thirty comorbidities. Multivariable logistic regression was performed for the outcomes using the variables with a p-value <0.05 on univariable analysis. Results were weighted for national estimates.

Results: There were 60,170 patients admitted for diaphragmatic hernia repair in the US during the study period. A prolonged LOS was found in 11.5% of patients and there was a mortality rate of 0.7% during the initial admission. From the survivors, 8.7% were readmitted within 30 days and the one-year recurrence rate was 0.7%. A laparoscopic approach was associated with a decreased risk for prolonged LOS (OR 0.27, p<0.01), mortality (OR 0.61, p<0.01), and readmission within 30-days (OR 0.91, p=0.01). There was no significant difference in recurrence rates for the laparoscopic approach (p=0.06). A thoracic approach was associated with an increased risk for prolonged LOS (OR 1.47, p<0.01) and readmission within 30 days (OR 1.21, p<0.01) with no difference in mortality (p=0.05) or recurrence rates (p=0.84). Low volume hospitals were associated with an increased risk for a prolonged LOS (OR 1.52, p<0.01).

Conclusion: The vast majority of diaphragmatic hernia repairs are performed through a laparoscopic approach. Laparoscopic repairs have lower readmission rates, are associated with decreased length of stay, and have the lowest mortality when compared to open abdominal or thoracic approaches.
PARALLEL SCIENTIFIC SESSION 7
ABSTRACTS

Parallel Scientific Session 7
31. EFFICACY AND SAFETY OF ROUX-EN-Y GASTRIC BYPASS WITH RECURRENT PARAESOPHAGEAL HERNIA REPAIR
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Background: Symptomatic paraesophageal hernias (PEH) pose challenges to patient and physician alike. While the mainstay of treatment begins with medical management of the disease, many will require surgical repair due to refractory symptoms. Despite numerous techniques and advances in minimally invasive procedures over recent years, recurrence rates are frequently reported at 50 to 80%. Revisional PEH repair is technically challenging with limited durability. Obesity is one of the biggest risk factors associated with recurrence of both primary and revisional PEH repairs. Roux-en-Y gastric bypass (RYGB) along with revisional PEH repair has been suggested for patients suffering from both a recurrent PEH and morbid obesity. Our aim is to explore the safety and outcomes of revisional PEH repair with RYGB.

Methods: Patients were identified retrospectively by CPT codes for both PEH repair (43281, 43282) and RYGB (43644, 43645, 43846, 43847, 43848) through administrative data from 2011-2017. Chart review was then performed to review each operative note to determine if the PEH repair was a revisional repair. Data reflecting patient demographics, operative characteristics, and follow-up results and complications were obtained.

Results: Out of 1,093 patients undergoing bariatric surgery, 140 were identified with PEH repair at the time of operation. Fourteen were identified as having a revisional PEH repair. All 14 patients underwent laparoscopic repair of the recurrent PEH along with RYGB. The vast majority (86%) were female. These patients were followed postoperatively for an average of over two years. The average operative time was 242 minutes with an average hospital length of stay of 2.6 days. Patients lost an average percent excess body weight loss (%EBWL) of 68% and 70% at 12 and 24 months respectively. The average BMI decreased from 43.4 to 29.1 postoperatively. After 6 months, most patients (91%) decreased or discontinued antacid use. There were two postoperative complications which included anastomotic bleeding requiring endoscopic clip application and one gastrojejunal anastomotic leak requiring operative intervention. No anastomotic ulcers were observed.

Conclusion: Concurrent revisional PEH repair with RYGB is a safe and effective option with an acceptable complication rate comparable to reported rates following revisional foregut procedures. Additionally, patients experience successful long-term management of morbid obesity. Additional information through continued follow-up and post-operative imaging to further assess for PEH recurrence.
Parallel Scientific Session 7

32. EPIDURAL CATHETER USE FOLLOWING DISTAL PANCREATECTOMY
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Background: There has been an increasing interest in enhanced recovery protocols for abdominal operations in recent years, including the use of indwelling epidural catheters for post-operative pain control. The aim of this study was to determine if epidural pain control is associated with improved post-operative recovery, as measured by a reduction in morbidity and length of stay (LOS), for patients undergoing distal pancreatectomy.

Methods: We retrospectively reviewed our institutional pancreatectomy database for adult patients undergoing distal pancreatectomy from 2014 - 2016. Patients undergoing multivisceral resections or resections were excluded. Patients receiving post-operative epidural pain control were compared to those without epidural placement with regard to perioperative outcomes including days to diet initiation, post-operative morbidity, and LOS.

Results: Sixty patients undergoing distal pancreatectomy were identified including 19 (28.8%) that received an indwelling epidural catheter preoperatively. Between the two groups, no significant differences were observed regarding age (median 65 vs 63), race, gender, BMI, or insurance status. A greater proportion of patients without an epidural were noted to have baseline chronic kidney disease (19.1% vs 0%, p = 0.040). Otherwise no differences were found between the groups regarding comorbidities, ASA classification, or previous abdominal operation. Most procedures were performed via an open approach in both groups but a greater number of patients with an epidural underwent a minimally-invasive resection (26.3% vs. 6.4%, p = 0.025). Malignant tumors were the most common indication for operation in both groups. Patients undergoing epidural placement were noted to require significantly longer general anesthesia time (median 276 vs 234 mins, p = 0.001), greater procedure time (median 222 vs 184 mins, p = 0.002), along with greater total operating room time (median 291 vs 234 mins, p < 0.001). Median time to epidural removal was 4 days (IQR 3 – 5). No difference was seen with time to initiation of a liquid or regular diet, however, patients receiving an epidural were found to have significantly longer time to Foley catheter (median 2 vs 1 day, p = 0.015) and nasogastric tube removal (median 1 vs 0 days, p = 0.001). There were no differences in the rates of postoperative morbidity including clinically relevant pancreatic fistula, delayed gastric emptying, pneumonia, reintubation, acute kidney injury, or VTE between the two groups. Patients with an epidural required a significantly greater LOS (median 8 vs 6 days, p = 0.042) compared to those patients without an epidural.

Conclusion: Despite similar baseline characteristics, time to diet initiation, and rates of post-operative complications, patients receiving an indwelling epidural pain catheter for pain control following distal pancreatectomy were found to have significantly longer LOS in this series. Further prospective comparisons, including randomized trials should be pursued to determine the overall benefit of epidural pain control following distal pancreatectomy.
Parallel Scientific Session 7
33. PERIOPERATIVE OUTCOMES ASSOCIATED WITH THE USE OF ANESTHETIC ADJUNCTS DURING PANCREATODUODENECTOMY
ZE Stiles DO, BR Zambetti MD, ES Glazer MD PhD, JL Deneve DO, PV Dickson MD, SW Behrman MD
University of Tennessee Health Science Center

Background: The use of multimodality postoperative pain control regimens for major abdominal operations often includes the use of transversus abdominis plane (TAP) blocks or epidural catheters as adjuncts to general anesthesia and traditional narcotics. The purpose of this study was to determine if adjuncts such as TAP or indwelling epidural catheters reduced postoperative morbidity and length of stay (LOS) for patients undergoing pancreateoduodenectomy.

Methods: We queried our prospectively collected institutional pancreatectomy database for patients ≥ 18 years of age undergoing pancreateoduodenectomy from 2014 - 2016. To limit confounding factors, patients undergoing concomitant multivisceral or vascular resections were excluded. Those receiving post-operative TAP or epidural pain control were compared to each other along with patients not receiving either modality with regard to days to diet initiation, post-operative complications, and LOS.

Results: In total, 121 patients underwent pancreateoduodenectomy. 36 (29.8%) underwent TAP block and 49 (40.5%) received an epidural, with the remaining 36 (29.8%) receiving neither. Groups were similar with regard to age, race, gender, and insurance status. Patients receiving an epidural had a higher BMI (median 28) compared to those receiving a TAP (24.7) and those without either modality (27.8), but this did not achieve statistical significance (p = 0.060). Those receiving a TAP were more often smokers (50.0%) compared to the other two groups (25.0% and 28.6%, p = 0.048). No other significant differences were observed between the groups relative to pre-existing comorbidities, ASA classification, or previous abdominal operation. The most common indication for resection amongst all groups was pancreatic adenocarcinoma. The time for placement of an epidural catheter was greater than that for TAP (median 15 vs 9.5 mins, p <0.001). Receiving an epidural was associated with significantly greater procedure times (median 424 vs 376 [TAP] vs 379 [none] mins, p =0.037) and total operating room times (median 504 vs 445 [TAP] vs 449 [none] mins, p =0.003). Epidural use was associated with significantly shorter time to initiation of PO liquid intake (5 days vs 6 days, p <0.001) and a decreased time to regular diet initiation (7 days vs 8 days) but this was not significant (p =0.287). Time until foley catheter and nasogastric tube removal was shortest for those in the epidural group (both p:<0.05). The median time to epidural removal was 5 days (IQR 4 - 5). No significant differences were observed with regard to postoperative complications, including clinically-relevant pancreatic fistula, delayed gastric emptying, pneumonia, reintubation, AKI, or VTE between the groups. Median LOS was greatest among patients receiving an epidural (13 days vs 11 days [TAP] vs 12 days [none]) however this was not statistically significant (p =0.867).

Conclusion: Despite decreased time to diet initiation and equivalent postoperative complication rates, epidural or TAP were not associated with decreased LOS following pancreateoduodenectomy in this series. Overall, perioperative outcomes other than operative times were similar among anesthetic adjuncts. Prospective studies assessing analgesic modalities for pancreateoduodenectomy are needed.
Parallel Scientific Session 7
34. SINGLE INSTITUTION EXPERIENCE AND LEARNING CURVE WITH ROBOTIC MINOR AND MAJOR LIVER RESECTIONS
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Florida Hospital Tampa

Background: Adoption of minimally invasive surgical techniques in liver surgery has been slow because of the technical complexity of the operations, concerns for intraoperative complications, and fears of inferior oncologic results. Over the past decade, laparoscopic liver resection has gained acceptance in few select centers where it has been shown to be as safe and as effectual as the traditional ‘open’ approach with the added benefits of minimally invasive surgery. Now, robotic liver resection is being introduced and promoted because of its potential to overcome the limitations of laparoscopic liver resection. This study was undertaken to document our early experience and our learning curve with robotic liver resection.

Methods: With IRB approval, patients undergoing robotic liver resections at our institution since 2013 have been prospectively followed. For illustrative purposes, patients were divided into three consecutive tertiles (cohort I-III). Patient demographic data, clinico-pathological data, and outcomes, including conversions to ‘open’ resection, operative time, estimated blood loss (EBL), perioperative complications, length of stay (LOS), and 30-day readmission rate were collected and analyzed. Data are presented as median (mean ± SD).

Results: 33 patients underwent robotic liver resections. Indications for resection included malignant lesions in 22 patients (67%) and symptomatic benign pathology in 11 patients (33%); 24% of patients underwent formal right or left hemihepatectomy, 21% underwent formal sectionectomy, 6% underwent central hepatectomy and 48% underwent non-anatomical liver resections. Hemihepatectomies and right posterosuperior segment resections were undertaken in 18% patients in cohort I, 36% in cohort II, and 36% in cohort III. Only 2 robotic resections were converted to traditional ‘open’ operations. Operative time was 163 (178.6±68.5) minutes in cohort I, 216 (193.2±118.2) minutes in cohort II and 280 (285.7±124) minutes in cohort III. Estimated blood loss decreased significantly throughout the cohorts, being 400ml, 200ml and 125ml in cohorts I through III respectively. While major intraoperative complications were not seen, 2 patients (6%) experienced post-operative complications, resulting in a single mortality. Length of hospital stay was only 3 days with a 9% 30-day readmission rate (due to pleural effusion, pneumonia, and surgical site infection).

Conclusion: Our initial experience indicates that the robotic approach for liver resection is feasible, safe, and offers salutary clinical outcomes (e.g., short LOS with low readmission rate) even in patients undergoing major liver resections. As we moved through the tertiles of patients, more complex and technically challenging liver resections were undertaken with decreasing blood loss and decreasing morbidity because of increased proficiency with the robot and technique standardization. Robotic liver surgery is the future and the future is now.
Parallel Scientific Session 7
35. ROBOTIC VS LAPAROSCOPIC DISTAL PANCREATECTOMY WITH SPLENECTOMY: A “TAIL” OF TWO TECHNIQUES
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Background: The journey from the conventional ‘open’ approach to the use of minimally invasive surgery has improved outcomes after distal pancreatectomy. Robotic surgery is evolving, as are its applications, including those for distal pancreatectomy with splenectomy. This study was undertaken to examine the operative course and outcomes with robotic distal pancreatectomy and splenectomy and compare them to those with a laparoscopic approach.

Methods: With IRB approval, 61 patients undergoing robotic distal pancreatectomy with splenectomy (RDP) and 57 patients undergoing laparoscopic distal pancreatectomy and splenectomy (LDP) have been prospectively followed since 2012. Patient demographic data and perioperative outcomes (e.g., intraoperative complications, operative times, conversions to ‘open’ operations, estimated blood loss (EBL), postoperative complications, length of stay, in-hospital mortality, tumor pathology) were analyzed. Data are presented as median (mean ± SD). Significance was accepted with 95% probability.

Results: 61 patients underwent RDP: 49% were men, age 67 (63 ± 14) years, and BMI of 28 (28 ± 6) kg/m2. 57 patients underwent LDP: 51% were men, age 67 (65 ± 16) years, and BMI of 28 (28 ± 5) kg/m2. The operative time for the robotic approach was 244 (265 ± 120.6) minutes, while for the laparoscopic approach it was 225 (221 ± 52.9) minutes (p=0.02). 13 RDP operations were converted to ‘open’ vs. 19 LDP operations. EBL with RDP was 175 (306 ± 348.6) mL; with LDP it was 250 (318.3 ± 248.3) mL. After RDP, 8 patients experienced complications, none major, while after LDP 3 patients experienced complications. Length of stay for patients who underwent RDP was 5 (6 ± 2.4) days; after LDP length of stay was 7 (9.2 ± 8.8) days (P=0.01).

Conclusion: Robotic distal pancreatectomy with splenectomy is safe and efficacious when compared to laparoscopic distal pancreatectomy and splenectomy. While RDP takes a little longer, it leads to a shorter in-hospital length of stay with promises of fewer conversions to an ‘open’ approach, less blood loss, and fewer serious complications. The transition from conventional ‘open’ distal pancreatectomy and splenectomy to robotic distal pancreatectomy and splenectomy seems warranted and is encouraged.
Parallel Scientific Session 7

36. LAPAROSCOPIC TOTAL GASTRECTOMY WITH ROUX-EN-Y RECONSTRUCTION

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Background: The patient is a 35-year-old female with CDH1 mutation and a strong family history of gastric cancer. She was offered prophylactic total gastrectomy in the setting of prohibitively high risk of development of gastric cancer.

Methods: Laparoscopic video was edited for the required specifications. English narration is provided, along with education about hereditary diffuse gastric cancer.

Results: The patient was noted to be progressing well when seen in clinic for follow up after discharge.

Conclusion: The video reveals a clear depiction of the anatomy and steps for performing a laparoscopic total gastrectomy with roux-en-y reconstruction.
Background: Multiple studies have shown benefit from combined modality therapy for gastric cancer. However, timing of each modality is controversial. This study aims to examine trends in the use of systemic therapy in gastric cancer, identify predictive factors for perioperative chemotherapy versus adjuvant chemoradiation and examine overall survival (OS) benefit from multimodal therapy compared with surgery alone.

Methods: Patients with gastric cancers staged IB-III from 2005-2013 were identified using the National Cancer Database and were categorized into three groups: (1) surgery alone, (2) perioperative chemotherapy plus surgery, and (3) surgery with adjuvant chemoradiation therapy. Univariate and multivariate analyses were performed to identify predictors of perioperative therapy. OS was analyzed using propensity matched Kaplan-Meier estimator plots.

Results: A total of 9243 gastric cancer patients were identified for analysis with the majority of patients receiving a combination of surgery and systemic therapy (57%). Of the patients who received multimodality therapy, those that received perioperative chemotherapy rose dramatically from 7.5% in 2006 (the year the MAGIC trial was published) to 46% in 2013. There was no significant difference among cancer treatment facility types for those receiving systemic therapy with surgery versus those receiving surgery alone, although treatment at an academic center was a strong predictor of perioperative chemotherapy over surgery with adjuvant therapy (p<0.001). An OS advantage was clearly seen in those receiving systemic therapy versus surgery alone (p<0.0001). Perioperative therapy was associated with improved lymph node yield when compared to surgery with adjuvant therapy (p=0.0002), however, there was no OS advantage observed between these two groups.

Conclusion: Treatment of gastric cancer with systemic therapy in addition to surgery has risen dramatically since 2005, largely due to the increased use of perioperative chemotherapy. As perioperative therapy becomes more prevalent it is offering more patients the opportunity to have multimodality therapy for gastric cancer which improves patients’ overall survival.
38. THE TREATMENT OF TRIPLE NEGATIVE BREAST CANCER, DOES INSURANCE STATUS MATTER?
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Background: Health care disparities continue to exist throughout the United States, perhaps even more so in the more rural regions. Disparities in screening and treatment for breast cancer remains a health care issue. Triple negative breast cancer (TNBC), specifically, lacks estrogen receptor, progesterone receptor, and HER-2 protein. TNBC is often more aggressive than other forms of breast cancer in terms of metastatic potential and 5-year survival rates, and tends to be more prevalent in the African American population. Women without insurance often have limited access to healthcare and often forgo screening studies and treatment for breast cancer due to expense. This study investigates the relationship of insurance status and the treatment of TNBC in rural Georgia.

Methods: The cancer registry data base of a large tertiary cancer center in rural Georgia was reviewed to identify all women with TNBC. A 6-year retrospective chart review was then performed to determine if insurance status at the time of diagnosis was associated with method of diagnosis stage at diagnosis and treatment course.

Results: The cancer registry database was reviewed from 2010-2016 to identify all women treated with TNBC. There were 142 female patients identified with TNBC and the majority were African American 87/142 (61%) vs Caucasian 55/142 (39%). Of the 142 women: 129 were insured and 13 were uninsured at the time of diagnosis. The age at diagnosis for the insured group was slightly higher than the uninsured (insured women age range 28-85 years, median=62 years; uninsured women age range 32-75 years, median = 43 years). Of the 129 insured patients, 45 (35%) were diagnosed due to an abnormal mammography and 84 (65%) were diagnosed due to symptoms of the cancer, palpable mass, pain, changes of the breast etc. Of the 13 uninsured, 1 (8%) woman was diagnosed via mammography and 12 (92%) women were diagnosed by symptoms. There is a statistically significant difference in the method of diagnosis between the insured versus uninsured groups (c2(1)=3.99, p=0.46). The uninsured group also presented with a higher stage than their insured counterparts. After diagnosis, there was not a significant difference regarding the treatment insured and uninsured women were offered. This included utilization of neoadjuvant chemotherapy, mastectomy and reconstruction.

Conclusion: Health care disparities contribute significantly to health care outcomes in the United States. Underinsured women often forgo screening for breast cancer as was seen in our study. This delay, or lack of screening resulted in higher stage at presentation even in insured women who did not undergo screening. While insurance status was associated with screening and method of diagnosis it did not impact subsequent treatment options for these women. Improving screening education and access could have a significant impact on women with all types of cancer including TNBC.
Background: Accelerated partial breast irradiation (APBI) using the implanted brachytherapy device MammoSite® was approved for routine use by the FDA in 2002. The American Society of Breast Surgeons MammoSite® Breast Brachytherapy Registry served as a guideline at our institution to begin offering this treatment in 2005. This report reviews our available data to provide an extended analysis of patient outcomes over 12 years of use at a single institution.

Methods: A retrospective review was conducted of 150 patient records who underwent APBI or attempted APBI following breast sparing surgeries dating from 2006-2017. These charts were analyzed for documentation of patient age, cancer stage, incidence of recurrence, and post-treatment complications.

Results: Of the patients evaluated, 99% (149/150) completed treatment. The median time since treatment completion is now 8.9 years. One hundred eleven patients 74% are now greater than 5 years post-treatment. Ipsilateral breast recurrence was found in 2.7% of patients (4/149), and 1.3% of patients (2/149) developed new primary breast tumors. Acute complications, mostly skin erythema (21%), were uncommon and self-limited. Sub-acute effects were generally fibrosis (13%) and mild local pain (9.4%).

Conclusion: APBI for breast cancer after breast conserving surgery continues to be used at our institution for select patients with good outcomes. Local control and toxicity is similar to that reported in the literature. Five year local recurrence rates compare favorably to national trials. Occasional complications included fibrosis, persistent pain, and skin irritation.
Parallel Scientific Session 7

40. AN INSTITUTIONAL REVIEW OF THE MANAGEMENT OF FDG-PET AVID THYROID INCIDENTALOMAS: ARE WE DOING ENOUGH?
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Background: Thyroid incidentalomas found during 18F-fluorodeoxy-glucose positron emission tomography (FDG-PET) are associated with a high risk of malignancy. The purpose of this paper was to identify our institutions’ malignancy risk for FDG-PET avid thyroid incidentalomas and to evaluate our subsequent management of these patients.

Methods: FDG-PET scans performed at our institution for nonthyroid malignancy work up from 2012 to 2016 were analyzed. 189 patients were identified with incidental focal FDG uptake in the thyroid. These charts were retrospectively reviewed.

Results: Out of 189 FDG-PET avid nodules, 57 went on to biopsy by fine needle aspiration (FNA), core or surgery. 10/57 (17.5%) were positive for malignancy. 7 had thyroid cancers (6 papillary, 1 Hurthle) and 3 had metastasis from their primary (melanoma, small cell lung, squamous cell). 39/57 (68.4%) were benign. 8/57 had Bethesda 1 or 3 categories that did not undergo repeat biopsy or surgical resection. While 148/189 (78.3%) of all patients with FDG-PET avid nodules had a recent TSH, only 94/189 (49.7%) patients had a recent ultrasound.

Conclusion: The malignancy rate of FDG-PET avid thyroid incidentalomas remains high. This high risk finding should prompt further evaluation, however many patients do not undergo any further testing to rule out cancer.
Parallel Scientific Session 7
41. FACTORS PREDICTING THYROID MALIGNANCY IN FINE NEEDLE ASPIRATION BIOPSY SPECIMENS CLASSIFIED AS ATYPIA OF UNCERTAIN SIGNIFICANCE/ FOLLICULAR LESION OF UNCERTAIN SIGNIFICANCE
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Charleston Area Medical Center

Background: The atypia of uncertain significance/follicular lesion of uncertain significance (AUS/FLUS) category of the Bethesda system for reporting thyroid cytopathology (BSRTC) for fine needle aspiration biopsy (FNAB) predicts an incidence of malignancy from 5-15%. The American Thyroid Association guidelines recommend repeating the FNAB in cases classified as AUS/FLUS. Following the repeat biopsy, it is then recommended that nodules receiving a benign reclassification be followed, and those receiving a diagnosis of malignancy, suspicious for follicular neoplasm (SFN), suspicious for malignancy (SFM), or a second diagnosis of AUS/FLUS be removed surgically. Identification of nodule characteristics that increase the risk of malignancy within the AUS/FLUS category of FNAB would be useful in assisting clinicians with patient management. Previously published literature has reported that ultrasound (US) characteristics can assist in predicting malignancy in the benign, SFN, SFM and AUS/FLUS categories, though the reported data on this is conflicting. We hypothesized that the identification of suspicious US findings would be useful in predicting malignancy in the AUS/FLUS category of thyroid FNAB. In addition, previously published literature has suggested that further subdivision of the AUS/FLUS category be considered, with classification into atypia predominant and follicular predominant- due to a higher reported rate of malignancy in the atypia predominant category. Therefore, we further hypothesized that rates of malignancy in the atypia predominant FNAB subset would be higher than that in the follicular predominant subset, which might further aid in risk stratification.

Methods: We performed a 4-year retrospective analysis of patients who underwent FNAB classified as AUS/FLUS and who subsequently underwent thyroidectomy from 10/2008-10/2012. Data collected included symptoms, imaging findings, FNAB results, and surgical pathology results, all obtained via chart review. Findings were compared between patients with and without a diagnosis of thyroid malignancy. Statistical significance was set at p < 0.05.

Results: A total of 3839 thyroid FNAB were performed over the 4-year period, of which 342 received AUS/FLUS classification. Of these, we identified 119 patients who underwent thyroidectomy, of which 27 (23%) malignancies were identified. Reported cytology (atypia predominant vs. follicular predominant) did not differ between patients with and without carcinomas (p = 0.33). Suspicious US appearance failed to be significantly associated with an underlying carcinoma (p = 0.14); although, the results trended toward significance, with 69.9% of malignancies displaying suspicious US findings compared to 49.4% within the benign group. Further, hypervascularity was the most common suspicious US finding in malignant nodules (43.8%).

Conclusion: In contrast to the benign, SFM, and SFN categories, US appears to have no additional value in predicting of malignancy in the AUS/FLUS categorization. Furthermore, no differences were significant in FNAB specimens that were atypia versus follicular predominant. This may suggest an expanded role for ancillary technologies such as molecular markers in this challenging BSRTC class. Further prospective study of these findings is warranted.
Background: Diabetes is a well-known risk for post-transplant complications following kidney transplant. The impact of glycemic control on post-operative outcomes in those with new onset diabetes after transplant (NODAT) is unknown.

Methods: This was a longitudinal cohort study of kidney recipients transplanted between 2005 and 2015. Patients were excluded if they had diabetes prior to transplant, were <18 yo or received a non-renal transplant. NODAT was defined as having a single, random glucose value of >200 mg/dL within the first 30 days of transplant. Multivariable Cox regression was utilized to evaluate impact of early glycemic control on outcomes, including readmissions, acute rejection, graft loss and mortality.

Results: 1,590 patients were evaluated for inclusion; of these 1,057 (66%) patients met criteria and were included in the analysis. Cohorts were compared based on the development of NODAT using over 190,000 serum glucose levels. NODAT patients (n=269) had 31,768 glucoses measured during the first 30 days post-transplant versus the non-NODAT group (n=788) which had 68,319. The average glucose in the non-NODAT group was 112±12 versus the NODAT group 141±22 (p<0.0001). Patients in the non-NODAT group experienced an average glucose CV of 18% while the NODAT group experienced significantly more glucose variability, with an average glucose CV of 30% (p<0.0001) within the first 30 days post-transplant. Patients with NODAT were more frequently female, African American and experienced less years on dialysis (Table 1). Patients with NODAT experienced higher rates of delayed graft function, 30 day readmissions and death within 1 year post-transplant regardless of baseline demographics or glucose variability. NODAT patients also had a higher rate of long-term allograft loss and decreased overall patient survival. Cox regression revealed that NODAT patients had a 60% higher risk of death (aHR 1.6, p<0.007). The only other significant factors were donor (HR 1.016, p<0.008) and recipient age (HR 1.044, p<0.0001).

Conclusion: These results demonstrate that those with early NODAT had significantly higher rates of readmission and early and late death. Targeted interventions in patients who develop early NODAT are needed to mitigate early and long-term patient and allograft outcomes.
### Table 1: Patient and Transplant Characteristics and Outcomes

<table>
<thead>
<tr>
<th>Baseline Patient and Transplant Characteristics</th>
<th>Non-NODAT n=788</th>
<th>NODAT n=269</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>306 (39%)</td>
<td>139 (52%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>African American</td>
<td>404 (51%)</td>
<td>119 (44%)</td>
<td>0.048</td>
</tr>
<tr>
<td>Age (average years ± SD)</td>
<td>46±14</td>
<td>53±14</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Weight at transplant (average kg ± SD)</td>
<td>81.6±18.9</td>
<td>81±19.8</td>
<td>0.651</td>
</tr>
<tr>
<td>ESRD secondary to HTN</td>
<td>282 (36%)</td>
<td>107 (40%)</td>
<td>0.242</td>
</tr>
<tr>
<td>Previous Transplant</td>
<td>94 (12%)</td>
<td>32 (12%)</td>
<td>1</td>
</tr>
<tr>
<td>Preemptive Transplant</td>
<td>142 (18%)</td>
<td>63 (23%)</td>
<td>0.061</td>
</tr>
<tr>
<td>Years on Dialysis (average ± SD)</td>
<td>2.96±1</td>
<td>2.58±2.88</td>
<td>0.07</td>
</tr>
<tr>
<td>Current PRA</td>
<td>20.5±3.2</td>
<td>26.7±3.4</td>
<td>&lt;0.008</td>
</tr>
<tr>
<td>KDPI (average % ± SD)</td>
<td>44.6±26.4</td>
<td>46.5±26.6</td>
<td>0.355</td>
</tr>
<tr>
<td>Cold ischemia time (average hours ± SD)</td>
<td>17.6±11</td>
<td>18±11.2</td>
<td>0.656</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Non-NODAT n=788</th>
<th>NODAT n=269</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tacrolimus</td>
<td>764 (97%)</td>
<td>264 (98%)</td>
<td>0.39</td>
</tr>
<tr>
<td>Cytolytic induction</td>
<td>325 (41%)</td>
<td>118 (44%)</td>
<td>0.473</td>
</tr>
<tr>
<td>DGF</td>
<td>81 (10%)</td>
<td>41 (15%)</td>
<td>0.035</td>
</tr>
<tr>
<td>Readmission in first 30 days</td>
<td>114 (14%)</td>
<td>63 (23%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>One year peak eGFR (average 15D)</td>
<td>65.8±19</td>
<td>64±21</td>
<td>0.221</td>
</tr>
<tr>
<td>Acute Rejection at 1 year</td>
<td>121 (15%)</td>
<td>40 (15%)</td>
<td>0.922</td>
</tr>
<tr>
<td>Death</td>
<td>85 (11%)</td>
<td>52 (19%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Years to death ± SD</td>
<td>5.76±2.98</td>
<td>5.04±2.93</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Graft failure</td>
<td>188 (24%)</td>
<td>73 (27%)</td>
<td>0.288</td>
</tr>
<tr>
<td>Years to graft failure ± SD</td>
<td>5.11±3</td>
<td>4.86±3</td>
<td>0.033</td>
</tr>
</tbody>
</table>
43. IMPROVING SURVEILLANCE OF TRAUMATIC THORACIC AORTIC INJURIES REPAIRED WITH THORACIC ENDOVASCULAR GRAFT PLACEMENT
NA Ludwig MD, N Bhutiani MD, PL Linsky MD, BG Harbrecht MD, JW Smith MD PhD, AJ Dwivedi MD, MC Bozeman MD
University of Louisville

Background: Since the popularization of endovascular methods, thoracic endovascular aortic repair (TEVAR) has become an increasingly common method for treatment of traumatic thoracic aortic injury. While multiple studies have demonstrated the safety and efficacy of this approach, the optimal follow-up protocol for these patients remains unclear. The objective of this study was to assess follow-up patterns of patients undergoing TEVAR for traumatic thoracic aortic injury and present an approach to improve long term follow up for these patients.

Methods: The University of Louisville Trauma Registry was queried for patients who underwent TEVAR for traumatic thoracic aortic injuries between 2006 and 2016. Demographic, injury-specific (including injury etiology and mechanism), peri-operative (including ventilator days, intensive care unit length of stay (ICU LOS), and total length of stay (LOS)), and outcome measures were recorded for each patient. Follow up evaluation, if any, was recorded along with duration of follow-up and whether any imaging was obtained at the patient’s last follow-up. Follow-up imaging was reviewed for any evidence of vascular complications.

Results: A total of 56 patients underwent TEVAR for traumatic thoracic aortic injury during the study period. Median age was 48 (18-86), and the majority of patients were male (46 (82%)). Injury mechanism was largely blunt trauma (55 (98%)), with motor vehicle collision (36 (64%)) and motorcycle collision (5 (9%)) being the most common etiologies of injury. Median abbreviated injury severity score (AIS) was 5 (range 1-5) and median injury severity score (ISS) was 34 (range 17-43). Median intensive care unit length of stay was 7 days (range 0-37 days), median length of mechanical ventilator requirement was 3 days (range 0-37 days), and median overall length of stay was 12.5 days (range 1-40 days). A total of 51 patients (91%) survived to discharge. Of those that survived 30 (54%) made at least one follow up appointment, and 21 of those 30 (70%) received a follow-up CT scan. Median time to last follow up was one month (range 0-48 months), with 12 patients (21%) having follow-up beyond two months. No patients demonstrated any evidence of vascular complications on imaging at their last follow-up.

Conclusion: Despite the increased use of TEVAR to treat traumatic aortic injuries, limited follow up data exists to predict the long term outcomes of such interventions, particularly in younger patients who have yet to undergo significant atherosclerotic and aneurismatic changes to their arteries. Despite a local database and attempts at encouraging ongoing regular office visits, follow up in this patient population was poor, suggesting the need for statewide or regional development of databases to better track outcomes and identification of late complications.
Background: Mitral valve repair (MVR) is associated with lower perioperative mortality than mitral valve replacement (MVR). However, MVR provides better long-term correction with a lower risk of recurrence. Despite this difference, it is uncertain if either procedure provides a benefit with regards to long-term survival. Therefore, it is not surprising that substantial variation exists in the surgical management of mitral regurgitation. Our aim was to evaluate the differences in outcomes between these two groups.

Methods: This is a 5 year retrospective study of 762 patients who underwent mitral valve procedures performed between April 2012 and July 2017. Our study group includes patients with both ischemic and non-ischemic disease, receiving concomitant left or right-sided atrial Cryo-Maze, CABG re-vascularization, and/or other associated valvular repairs or replacements. Mitral valve repair procedures included minimally invasive, robotic approach using the DaVinci® telesurgical system, full sternotomy, and transcatheter-based based procedures using the E-valve Mitraclip® system. Replacements were performed using conventional minimally invasive and full sternotomy approaches. Outcome data collected up to 1 year post-operative includes post-operative length of stay, intensive care unit (ICU) length of stay, post-operative complications (including prolonged ventilation labelled as >24 hours), 30 day readmission rates, and discharge location.

Results: A total of 762 mitral valve procedures were performed of which 437 underwent MVR (57.3%) and 325 (42.7%) patients underwent MVR. The average age in years of the MVR and MVR groups were 64.9 ± 12.7 and 65.6 ± 13.2 respectively, p=0.5. The average post-operative length of stay for the MVR group was 8.7 days vs. 11.4 days for the MVR group; p=0.001, 95%CI: 9.3 – 10.4. The average post-operative ICU hours for the MVR group were 110.2 hours vs. 162 hours for the MVR group; p=0.001, 95%CI: 120.3 – 144.7. Post-operative event rates for the MVR and MVR groups were 46.5% (203/437) and 62.6 % (202/325) respectively, p=0.001. Complication rates for the following outcomes were identified and compared between type of procedure performed: atrial fibrillation (MVR 30.7% vs MVR 32.6%, p=0.57), prolonged ventilation (MVR 14.7% vs MVR 33.2%, p=0.001), acute kidney injury ( MVR 2.5% vs MVR 6.5%, p=0.007), death within 30 days of discharge (MVR 2.1% vs MVR 8.0%, p=0.001). Discharge to a long term acute care facility was seen in 31.3% of patients in the MVR group vs. 16.1% in the MVR group. Readmission rates for MVR and MVR were 7.6% vs 10.8% respectively, p=0.30.

Conclusion: Mitral valve repair was associated with shorter hospitalizations as well as number of hours in the ICU. The incidence of post-operative atrial-fibrillation and mechanical ventilation of >24 hours comprised the majority of the post-operative events observed for both groups. MVR is associated with higher complications rates including AKI and death. The vast majority of patients undergoing mitral valve procedures are discharged home. Although the rate of readmission was higher in the MVR group, this was not statistically significant.
SCIENTIFIC SESSION

ePOSTERS
Kiosk 1- Breast

1. PROPHYLACTIC ANTIBIOTICS IN IMPLANT-BASED BREAST RECONSTRUCTION

KM Kelley MD, LK Viennas MD
Eastern Virginia Medical School

Despite the Surgical Care Improvement Project (SCIP) evidence based guidelines for the safe and effective use of prophylactic antibiotics administered within the 24 hour perioperative period, many plastic surgeons continue to prescribe postoperative antibiotics in implant-based breast reconstruction (IBBR) to reduce the risk of surgical site infections (SSI). Considering that there is a higher risk of infection with IBBR (10-30%), which may be attributed to multiple factors such as patient co-morbidities, surgical technique, presence of a prosthetic breast implant, use of acellular dermal matrix and drains, it is understandable how the practice of prolonged prophylactic antibiotic use persists. However, there is emerging clinical evidence, specifically pertaining to IBBR, that has shown no significant difference in SSI with antibiotics administered according to the SCIP guidelines versus prolonged prophylactic antibiotics. This study evaluates the SSI outcomes of changing one surgeon’s policy regarding prophylactic antibiotics after discharge following IBBR.

This study was a retrospective review of a consecutive series of patients who underwent IBBR surgery by one surgeon from April 2013 until September 2016. In April 2015, it became standard practice for patients to be discharged without antibiotics after receiving SCIP protocol prophylactic antibiotics. The rates of infection requiring tissue expander removal in patients who were discharged with and without antibiotics were compared using Fisher’s exact test.

The group of patients discharged with antibiotics (control) contained 26 patients with 49 breasts undergoing reconstruction, while the group of patients discharged without antibiotics (study) had 22 patients with 37 breasts undergoing reconstruction. In the control group there were 4 patients (15%) with 5 tissue expanders (10%) that required removal while the study group had 6 patients (27%) and 8 tissue expanders (22%) that had to be removed. While this shows a trend towards increased rate of infection in patients discharged without antibiotics with p-values of 0.266 (patients) and 0.094 (tissue expanders) there was no statistically significant difference before or after the change in antibiotic policy.

This preliminary study adds to the growing body of literature regarding discontinuing antibiotics at time of discharge from the hospital after IBBR however there remains a need for further study.
2. DOES THE DAY OF THE WEEK A MASTECTOMY IS DONE INFLUENCE LENGTH OF STAY?

J Huang AB, AB Chagpar MD MSc MPH MA MBA
Yale University

Length of hospital stay after major surgery is becoming of increasing importance as hospitals consider cost and quality metrics. While the day of the week surgery is performed has been shown to impact length of stay (LOS) for various surgical procedures, this has not been well studied in mastectomy patients.

Medical records of all patients who had a mastectomy at a large academic institution between July 2013 and July 2016 were reviewed. Factors associated with LOS, including the day of the week surgery was performed, were analyzed using non-parametric statistical analyses.

A total of 576 patients were included in this study. The median patient age at the time of surgery was 52 (range, 22-90). There was a fairly even distribution of cases throughout the week, with 62.8% occurring early in the week (Monday through Wednesday) and 37.2% occurring later (Thursday and Friday). There were no significant differences in patient age (p=0.729), race (p=0.580), insurance type (p=0.536), body mass index (BMI) (p=0.404), smoking status (p=0.430), history of diabetes (p=0.880), invasive tumor size (p=0.986), receipt of neoadjuvant chemotherapy (p=0.197), number of sides on which surgery was performed (unilateral versus bilateral mastectomy) (p=1.000), and type of reconstruction (p=0.674) between patients having surgery early versus later in the week. Median LOS for the entire cohort was 2 days. Patients who had surgery early in the week were no more likely to have LOS 2 days than patients who had surgery later in the week (76.8% vs. 73.8%, p=0.423). Other factors associated with LOS 2 days are shown in the table below. Smoking status (p=0.688), history of diabetes (p=1.000), and invasive tumor size (p=0.171) were not correlated with length of stay. On multivariate analysis, factors correlated with LOS 2 days included bilateral mastectomy, higher BMI, and reconstructive surgery (see table).

Unlike some studies which have evaluated this question in other surgical procedures, we did not find a correlation between the day of the week surgery was performed and LOS for patients undergoing mastectomy. Rather, longer LOS was driven by higher BMI, bilateral mastectomy, and immediate reconstruction, particularly with autologous flaps.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Median for LOS ≥ 2 (vs. LOS &lt; 2)</th>
<th>Bivariate p-value</th>
<th>OR (95% CI)</th>
<th>Multivariate p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Patient age</td>
<td>51.0 (vs. 58.0)</td>
<td>&lt;0.001</td>
<td>1.025 (1.000-1.052)</td>
<td>0.054</td>
</tr>
<tr>
<td>Median BMI</td>
<td>27.5 (vs. 24.7)</td>
<td>&lt;0.001</td>
<td>1.056 (1.011-1.103)</td>
<td>0.015</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>75.2%</td>
<td>0.006</td>
<td></td>
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</tr>
<tr>
<td>Black</td>
<td>90.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>54.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>76.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insurance Type</td>
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</tr>
<tr>
<td>Private</td>
<td>78.1%</td>
<td>&lt;0.001</td>
<td>2.263 (0.654-7.833)</td>
<td>0.988</td>
</tr>
<tr>
<td>Uninsured</td>
<td>100.0%</td>
<td></td>
<td>0.903 (0.225-2.505)</td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>81.9%</td>
<td></td>
<td>0.680 (0.245-1.904)</td>
<td></td>
</tr>
<tr>
<td>Medicare</td>
<td>52.6%</td>
<td></td>
<td></td>
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<tr>
<td>Military</td>
<td>100.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neoadjuvant therapy</td>
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</tr>
<tr>
<td>No</td>
<td>73.5%</td>
<td>0.032</td>
<td>1.623 (0.863-3.050)</td>
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</tr>
<tr>
<td>Yes</td>
<td>82.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># of sides of surgery</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unilateral</td>
<td>60.1%</td>
<td>&lt;0.001</td>
<td>1.850 (1.034-3.309)</td>
<td>0.038</td>
</tr>
<tr>
<td>Bilateral</td>
<td>84.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reconstruction type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>33.0%</td>
<td>&lt;0.001</td>
<td>9.170 (4.479-18.808)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Implant</td>
<td>73.0%</td>
<td></td>
<td>185.865 (51.391-672.233)</td>
<td>240</td>
</tr>
</tbody>
</table>

SOUTHEASTERN SURGICAL CONGRESS | 86TH ANNUAL MEETING
Kiosk 1- Breast

3. USE OF ONLAY AND LAPAROSCOPICALLY-PLACED PREPERITONEAL MESH FOR FASCIAL REINFORCEMENT IN A PATIENT WITH A RECURRENT ABDOMINAL BULGE AFTER TRANSVERSE RECTUS ABDOMINIS MYOCUTANEOUS FLAP BREAST RECONSTRUCTION, A CASE REPORT

BC Hill, JP Ulm, KO Delaney
Medical University of South Carolina

Abdominal asymmetry from fascial laxity is a common occurrence after harvesting the rectus abdominis muscle for use in pedicled and free flap breast reconstruction. Many techniques have been described to prevent or eliminate these abdominal bulges but recurrences are still seen.

We present a unique option for eliminating an abdominal bulge after transverse rectus abdominis myocutaneous (TRAM) flap breast reconstruction. Our technique involves two separate layers of mesh, one placed in an onlay fashion over the anterior rectus sheath, after fascial imbrication, and the second mesh placed laparoscopically in the preperitoneal space.

The patient we present previously developed a recurrent abdominal bulge after a TRAM. Our repair has prevented a recurrence at 12 months post-op.

Abdominal asymmetry from fascial laxity after TRAM flap breast reconstruction causes aesthetic concerns for patients and often causes abdominal wall discomfort. Traditional repair involves fascial imbrication and reinforcement with an onlay mesh. Despite this repair some patients develop a recurrence in the bulge. Our technique of eliminating this bulge and reinforcing the repair with two layers of the mesh, one onlay and the second placed laparoscopically in the preperitoneal space, is novel and has proven successful against recurrence in our patient.
Kiosk 1- Breast

4. SURGICAL MANAGEMENT OF TRAUMATIC BALLISTIC INJURY TO THE BREAST

ME Polcz MD, RS Sweeting MD
Vanderbilt University Medical Center

There are few reports of ballistic penetrating injuries to the breast and their surgical and reconstructive management. Traditional trauma teaching supports mastectomy in the setting of significant soft tissue injury to the breast, but literature is sparse as these injuries are usually quite morbid due to associated damage to major underlying organs. We present the course, management and cosmetic results of a patient treated at our tertiary care, level-one urban trauma center for a rifle injury to the breast.

The patient was 42 year old female with obesity and poorly controlled diabetes who presented after an accidental rifle wound to the right breast in a medial to lateral trajectory. She had obvious ballistic injuries to the medial and lateral aspects of the breast, as well as multiple wounds and palpable bullet fragments in the right arm. CT imaging of the chest was remarkable for a blast-associated right pulmonary contusion without pneumothorax. Right upper extremity radiographs revealed numerous bullet fragments and soft tissue injury. Her hospital course was unremarkable and she was discharged to an inpatient psychiatric facility with instructions for daily wound packing with iodoform gauze. Approximately two weeks from the date of injury, she was readmitted with increased drainage and malodor from her progressively enlarging lateral breast wound (Figure 1A). She denied fevers and did not have a leukocytosis on laboratory evaluation. On exam, her lateral wound measured 8 x 7 cm with necrosis of the skin edges and wound bed. A large soft tissue defect tracking to the posterior aspect of the nipple was noted with overlying skin discoloration and induration. The medial wound appeared clean and viable.

The patient was taken to the operating room for local debridement. She completed a ten day course of antibiotics. Wound cultures grew Enterococcus faecalis, Group B and viridans streptococci, and methicillin-resistant staphylococcus aureus. Over ten days four total operative debridelements were performed during which necrotic skin and breast tissue was removed sharply and with Versajet (Figure 1B). Ultimately the nipple areola complex was sacrificed due to poor viability. Wound care initially consisted of packing with Dakin's soaked gauze which was exchanged for a negative pressure dressing prior to discharge. She continues to be followed as an outpatient and has been healing well, with satisfactory cleavage and breast shape two months post injury (Figure 1C).

This patient suffered significant soft tissue damage to the breast after her rifle injury. This is not unexpected given the high-velocity nature of rifles leading to larger zones of injury and cavitation than handguns and shotguns which are low-velocity ballistics. We demonstrate that in certain cases based on patient preference, breast size, and extent of damage, local debridement may be an acceptable management option over total mastectomy.
Figure 1. Right breast ballistic wound at the time of (A) initial presentation, lateral (left) and medial (right), (B) initial (left) and final (right) operative debridements, and (C) follow up appointment eight weeks later.
Kiosk 1- Breast

5. BREAST NECROSIS AFTER CARDIAC BYPASS SURGERY

L Ozuna DO, L Samiian MD, J Pirris MD, M Wasserman MD, B Jasra MBBS
University of Florida College of Medicine

Breast necrosis is an unusual complication of internal mammary artery manipulation which is done at the time of cardiac bypass surgery. We report a case of left breast necrosis presenting as a large painful breast lump two months after cardiac bypass surgery.

A 68-year-old female with known history of diabetes and coronary artery disease presented with atypical chest pain for which she had triple coronary artery bypass grafting done. At the time of this surgery, the left internal mammary artery was harvested and used to perfuse the left anterior descending artery. As she was recovering from surgery she noticed bruising with underlying tender nodule in the left breast. Over next two months, the small tender nodule grew into a large painful lump in her left breast. She was started on a ten-day course of cephalexin for suspected mastitis. The diagnostic mammogram demonstrated vague increased density in the left breast and the targeted ultrasound showed no fluid collection or mass. Breast MRI showed a large tissue signal abnormality with predominantly peripheral enhancement of the left mid inner breast measuring 9.7 by 5.0 by 5.2 cm, consistent with fat necrosis. See Figure 1. As there was no clinical improvement after a course of antibiotics she was referred for a surgical evaluation. At this time, on physical examination she had a 7 by 5 cm erythematous, warm, tender, well defined, firm left breast mass in the upper inner quadrant at 11 o’clock and 5 cm from the nipple with an eschar on the overlying skin, see Figure 2. A skin punch biopsy and core needle biopsy was performed in clinic. Her core needle biopsy returned positive for fat necrosis and the tissue culture showed Pseudomonas aeruginosa. The entire area of fat necrosis measuring 10 by 5 cm was excised followed by a negative pressure wound dressing. She was treated initially with levofloxacin to cover pseudomonas and two weeks of metronidazole was subsequently added when final wound culture returned positive for Peptostreptococcus. At six week follow up visit, see Figure 3, the wound had completely healed and she continued to do well at six month follow up.

Breast necrosis is a rare complication of cardiac bypass surgery in which the internal mammary artery is utilized for grafting, which is most likely secondary to disrupted arterial blood flow to the ipsilateral breast. Few case studies have been previously reported involving delayed diagnosis and treatment with mastectomy. Breast fat necrosis should be considered as a possible etiology of a painful mass after recent manipulation of the ipsilateral internal mammary artery. And if superimposed infection is present, then treatment with early excision and appropriate antibiotics will prevent future breast deformity or need for a mastectomy.
Male breast cancer represents approximately 1% of breast cancers and ductal carcinoma in-situ (DCIS) represents about 7% of those diagnoses.

The patient is a 77 year-old African American male with medical history significant for hypertension, hyperlipidemia, atrial fibrillation (on Coumadin), pulmonary embolus, and coronary artery bypass surgery for coronary artery disease (on Plavix) who presented with a four to six week history of bloody left nipple discharge in March 2017. On examination, the nipple was normal in appearance with expressible bloody nipple discharge. The breast was normal in color, size, and without apparent mass. No axillary lymphadenopathy was appreciated. His family history is significant for multiple women having breast cancer including his mother (diagnosed age 70, deceased age 72), sister (diagnosed in sixties, deceased age 72) and three nieces (two diagnosed in forties and one in sixties). He also has family members with lung cancer including his sister (deceased age 58) and his brother (deceased age 56). Another brother had kidney cancer (type unknown, deceased age 61). Genetic testing was completed without any mutations identified. His primary care doctor ordered a mammogram which revealed a bilobed mass with solid components between cystic structures concerning for malignancy (BI-RADS 4). Ultrasound revealed debris in the cystic structures. He underwent excisional biopsy of one of the masses in April 2017 at an outside facility. Pathology revealed DCIS with close deep margin (< 1 mm). He was referred to our institution and underwent a left simple mastectomy without sentinel lymph node biopsy. His final pathology revealed estrogen and progesterone receptor positive DCIS, cribriform type, with focal comedonecrosis and microcalcifications. His margins were negative.

We report a case of DCIS in a male patient. DCIS and breast cancer in general, is rare in men. Men with DCIS typically present with symptom duration of two months or less (as opposed to invasive cancer when patients have symptoms for approximately six months prior to presentation). This case is unique as our patient was older than most men with DCIS (typical age of diagnosis is 60-70 years) and presented with bloody nipple discharge. Palpable DCIS typically presents as a firm, painless, retroareolar mass.

Management and prognosis for men with DCIS parallels management and prognosis in women, underscoring the importance of thorough evaluation of men with breast complaints such as bloody nipple discharge.
Kiosk 1- Breast

7. NECROTIZING FASCIITIS OF THE BREAST; CASE REPORT OF A RARE INFECTION

LA Griffin Ray MD, S Mckinney MD, WS Orr MD
University of Mississippi Medical Center

Necrotizing fasciitis (NF) is rapidly progressing soft tissue infection that most commonly affects the extremities as well as genital and perianal regions. Primary idiopathic NF of the breast is a rare entity.

Here we report the case of a 53 year old female who presented with primary NF of the breast, associated with systemic toxicity. She was admitted to the surgical intensive care unit and treated with broad spectrum antibiotics, aggressive resuscitation and underwent multiple extensive surgical debridement including mastectomy for source control of the infection.

A 53 year old female with a history of HIV, morbid obesity, hyperlipidemia, hypertension, and active cigarette use presented to the emergency department at the University of Mississippi with a 5 week history of progressive breast pain and swelling. She had been previously treated with oral antibiotics. At presentation the patient was noted to be tachycardic, hypotensive, Labs revealed hyponatremia, AKI, and leukocytosis of 39K. On physical exam the patient was noted to have a warm, swollen, indurated, erythematous breast with skin changes including large bullae and sloughing. The breast was exquisitely tender to palpation, but no crepitus or fluctuant areas were appreciated. The patient denied any trauma to the breast and reported she was compliant with HAART therapy for HIV. Breast surgery was consulted for evaluation. Bedside ultrasound revealed multiple large, loculated fluid collections. The patient was started on broad spectrum antibiotics, fluid resuscitation, and taken emergently to the operating room for I&D/debridement of the breast. Extensive soft tissue infection was noted with purulent, malodorous drainage and necrotizing skin, fat and muscle. All grossly necrotic tissue was excised. The wound was packed with Betadine soaked Kerlix. The patient was admitted to the SICU. The following day the patient was taken back to the operating room with extensive necrotic tissue again noted. The breast was unable to be salvaged. The wound was again packed with betadine soaked Kerlix and the patient was taken to the SICU for continued care. Over the next several days, the patient improved clinically. AKI resolved, pressor requirement ceased and the patient was extubated. Daily dressing changes were performed. Wound vac therapy was applied on POD 5 five. Wound cultures revealed Peptoniphilus asaccharolyticus, an anaerobic Gram positive cocci. Infectious disease recommendations included three additional weeks of treatment with meropenem at discharge. PICC line was placed for outpatient IV antibiotics. On POD 10 the patient was able to be discharged on IV antibiotics and home wound vac with home health.

Previously described cases of NF of the breast have reported polymicrobial, Staphylococcus or Streptococcus infections and have been reported outside of the United States. To our knowledge, this is the first case of primary NF of the breast has been caused by Peptoniphilus asaccharolyticus as well as the first case reported in the US.
Kiosk 1- Breast

8. PREDICTING PATHOLOGIC COMPLETE RESPONSE TO NEOADJUVANT CHEMOTHERAPY IN TRIPLE NEGATIVE BREAST CANCER
PD Subhedar MD, JL Kramer MD, C Zhang PhD
Emory University

Though triple negative breast cancer (TNBC) has a worse prognosis than any other subtype of breast cancer, having a pathologic complete response (pCR) to neoadjuvant chemotherapy is associated with excellent survival. We conducted this study to determine if there were significant clinical or pathologic variables that are associated with pCR, so those who are unlikely to achieve pCR could be identified earlier.

An institutional database identified 206 patients diagnosed with TNBC who received neoadjuvant chemotherapy at the Emory University hospitals and Grady Memorial Hospital over 5 years. 176 patients met inclusion criteria, and their charts were reviewed for clinicopathologic variables such as Race, Age, BMI, Family History, BRCA status, Clinical Stage, T size, node status, etc, as well as their final pathology and current survival. Univariable and multivariate analysis was carried out to determine the association between the clinicopathologic variables and complete, partial, or no pathologic response to neoadjuvant therapy. Kaplan-Meyer analysis was used to evaluate the effect of these variables on survival.

Close to thirty five percent of patients achieved pCR. Clinical stage, node status, and tumor size on initial mammography were all associated with increased risk of recurrence in the entire study population (p<0.001, p<0.05, p<0.05, respectively). Among those without pCR, higher clinical stage at presentation was associated with worse overall survival (log rank p<0.05). There was no significant association between any of the clinicopathologic variables we analyzed and pathologic complete response to neoadjuvant therapy on univariate analysis, nor was there an association between the clinicopathologic variables and overall survival, with the exception of treatment institution. Those treated at Emory had better overall survival than those treated at Grady (p<0.05).

Over a third of patients treated with neoadjuvant chemotherapy achieved a complete pathologic response, which is associated with survival close to that of other breast cancer subtypes. However, there is no significant association between the clinical or pathologic variables we studied with pCR, making it more difficult to identify patients who are likely to have a poor response to neoadjuvant therapy. Those in this population with higher clinical stage and larger tumors at presentation are more likely to have recurrence, and those with higher clinical stage at presentation and who do not achieve pCR have worse overall survival. There is a difference in survival between those treated at Emory and Grady, which should be further investigated.
### Continued ePOSTERS MONDAY, FEBRUARY 12, 2018 — KIOSK # 1

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Kiosk 1- Breast
9. THE EFFECT OF CONSENSUS 2014 MARGIN GUIDELINES ON RE-EXCISION: A MULTI-INSTITUTION RETROSPECTIVE STUDY
S Aubry MD, A Kuritzky MD, C Reyna MD, W Sun, SM DeSnyder MD, A Nayyar MD, C Moses, KK Hunt MD, P Strassle MS, JM Zhou MS, MC Lee MD, K McGuire MD
University of North Carolina

The 2014 consensus statement from the Society of Surgical Oncology and American Society for Radiation Oncology supported the use of “no tumor on ink” as an adequate margin for breast conserving therapy (BCT). The purpose of this study is to evaluate the effect of this statement on surgical practices and outcomes nationally. We aimed to determine the effect on rates of reoperation in a multi-institution cohort based on the change in margin status and to identify factors predictive of re-excision.

A multi-institutional retrospective review of women treated with BCT at 3 geographically separate comprehensive cancer centers was performed. All cases were identified via database query; further data was obtained by detailed chart review. Women age >18 receiving BCT for T1-2 breast cancer from 2008-2011 were included. Prior to the no tumor on ink guideline, 2mm was considered a negative margin at all sites. Estimated change in reoperation rate with 2014 guidelines was calculated and factors predictive of re-excision were analyzed. The difference between no re-excision and re-excision group was measured using Wilcoxon signed rank sum test for continuous variables and Fisher’s exact test for categorical variables.

A total of 430 patients were identified with 436 lumpectomies that met eligibility criteria. Mean patient age was 60 years (range 31-88); mean follow-up time was 58 months (range 1-99). Seventy-seven percent had invasive ductal carcinoma, 9% invasive lobular carcinoma, and 11% mixed invasive ductal and lobular carcinoma. Using a ≥2 mm margin standard, 33% of lumpectomies had positive margins compared to 13% using 2014 guidelines (p < 0.0001). Both tumor size as a continuous variable (p= 0.002) and T stage (p = 0.005) were predictive of re-excision. Number of close margins (p=0.048) and histology of tumor at or near the margin were predictive of re-excision with DCIS at the close margin (p=0.042) correlating with a higher rate of re-excision. Patients who had additional intraoperative margins obtained were less likely to need re-excision (p=0.014). Notably, hormone receptor status was not predictive of re-excision. Twenty-three (5%) patients had completion mastectomy due to positive margins.

Use of 2014 margin guidelines would have reduced re-excision rates by 40%. Factors predicting re-excision were larger tumor size/higher T stage, greater number of close margins, and DCIS at the close margin. These factors were identified in a large cohort of patients originating from multiple large institutions, suggesting that these contributing factors transcend institutional or practice biases. Further study in this cohort will help identify risk of additional disease and refine criteria for risk of positive margins that can be used to counsel patients regarding their risk of re-excision after lumpectomy.
Kiosk 1- Breast
10. NIPPLE-SPARING MASTECTOMY: OUTCOMES, SAFETY, AND IMPROVEMENTS OVER TIME AT AN ACADEMIC BREAST CENTER
C Velazquez MD, A Chiba MD, E Levine MD, M Howard-McNatt MD
Wake Forest University School of Medicine

Despite its oncologic benefits, mastectomy results in chest deformities and women who undergo breast reconstruction can demonstrate psychosocial benefits. Superior aesthetic outcomes can be achieved through conservation of the nipple-areola complex (NAC) on the reconstructed breast. This has served as the impetus for the recent increase in performance of the nipple-sparing mastectomy (NSM). The NSM is a challenging procedure with primary concerns relating to ischemia of the skin flap/NAC and incomplete oncologic resection. Literature supports the use of NSM in the setting of both invasive cancer and risk reduction. This study aimed to review our experience with NSM, and to evaluate the outcomes, safety of the procedure, and any improvements over time.

After obtaining Institutional Review Board approval, the study identified and retrospectively reviewed patients who underwent nipple-sparing mastectomy for cancer and risk reduction surgery between 2012 and 2017.

Thirty-six patients who underwent a total of 62 nipple-sparing mastectomies (25 bilateral, 10 unilateral) were performed at Wake Forest Baptist Medical Center. Indications for surgery included invasive cancer (n = 24), ductal carcinoma in situ (n = 23), atypical ductal hyperplasia (n = 2), and risk reduction for genetic carriers (n = 13). The mean age of patients was 51.1 years, and mean BMI was 25 kg/m2. Two out of 4 patients with history of radiation to the chest experienced mastectomy flap or NAC necrosis requiring debridment. Two nipples (3.23%) were removed for atypia at nipple base on pathology review and five nipples (8.1%) required delayed debridement for ischemia. The overall complication rate during the immediate post-operative period (< 30 days) including mastectomy flap loss and complete loss of the nipple-areola complex (NAC) decreased over time (36.65% in 2012-2013, 28% in 2014-2015, and 24.89% in 2016-2017). At a mean follow-up period of 33 months, no local or systemic recurrences were found. Most patients (86.11%) have successfully completed breast reconstruction.

Acceptable outcomes at our institution indicate that the NSM is a safe and reasonable procedure in the setting of risk reduction and breast cancer. Most patients will successfully complete the breast reconstruction process, and NSM is a viable alternative to the skin-sparing mastectomy in appropriately selected patients.
In select patients who have undergone breast conservation surgery with sentinel node positive disease, omission of completion axillary dissection (CALND) has been shown to be safe and acceptable. Management of clinically negative lymph nodes but positive sentinel nodes in patients undergoing total mastectomy (TM) is not as well-defined.

We reviewed the records of all women undergoing TM and sentinel lymph node biopsy at our institution from 2000-10. Among patients who had a positive sentinel lymph node, we compared the demographics and outcomes of those who underwent CALND versus those who did not.

170 patients underwent TM and had a positive sentinel node. 39 (22%) did not have a CALND. Patients in both groups had similar age, tumor size, histiotype, and hormonal status. Patients who did not have a CALND were more likely to be Stage 1, (23% vs. .8%, p<0.001); they had a higher incidence of micrometastasis (79.5% vs. 9%, p<0.001); and a lower incidence of extranodal extension (5% vs. 44%, <0.001). The receipt of adjuvant therapy did not differ between the 2 groups. No differences were observed in recurrence free or overall survival (89.7% vs. 84.7, p = 0.430) at a mean follow up of 5 years.

Omission of CALND was observed primarily among those with early-stage breast cancer and micrometastasis, and it did not result in worse oncologic outcomes.
The utility of MarginProbe in dense breast tissue during partial mastectomy

E Weiss MD, J Krupp MD, J Simmons MD, L Jablon MD, K Friend MD
Albert Einstein Medical Center

While breast conservation surgery potentially permits improved cosmetic results and few perioperative complications, it relies on negative margins to decrease recurrence and carries a 10-40% rate of re-excision to achieve negative margins. As frozen sections are impractical for routine partial mastectomy, various modalities have been developed to reduce the risk of a positive margin. Recent literature suggests MarginProbe (Dune Medical Devices Ltd, Caesarea, Israel) may reduce the rate of re-excision while maintaining low volume resections. Recognition of appropriate patient populations and characteristics for use of the device is paramount to optimizing outcomes. The purpose of this study is to determine the impact of breast density on margin probe utility.

A retrospective review of patients undergoing partial mastectomy from January 2016 to July 2017 with use of MarginProbe was conducted. Charts were reviewed to obtain radiographic, intraoperative, and histologic information. Intraoperatively, six-sided assessment of all partial mastectomy specimens for invasive carcinoma or carcinoma in-situ was performed with MarginProbe. Margin assessments were recorded intraoperatively and compared to pathology reports. When encountered, positive margins were excised. The primary outcome of this study is evaluating the risk of false negative probe reading in dense breast tissue (DB) compared to non-dense breast tissue (NDB). Secondary outcomes include false positive results and re-excision rates.

Forty-eight patients were captured in the study period and included in the study. Twelve patients were characterized as having dense breast tissue on diagnostic mammogram according to the attending radiologist. Of the 12 patients with dense breasts, 8 patients (66%) had at least one false negative margin and 12 had a false positive (100%). This compares to 7 of 36 patients with false negatives (19.4%) in the NDB group (RR 3.43, 95% CI 1.58-7.45; p<0.01) and 31 of 36 patients with false positives (86.1%) in the NDB group (RR 1.16, 95% CI 1.02-1.32; p=0.03). When examined on a per margin level with each patient having 6 margins assessed, the average number of false negative margins was 0.76 per patient in DB compared to 0.19 per patient in NDB (p<0.001). False positive rate for DB was 2.83 per patient compared to 2.25 in NDB (p=0.12). Overall rate of repeat surgery was 20.8% (8 patients had a repeat lumpectomy and 2 had a mastectomy). However, repeat surgery rates in DB was 50% compared to 11% in NDB (RR 4.5, 95% CI 1.52-13.3; p<0.01).

Overall rate of repeat partial mastectomy with use of MarginProbe compared favorably to historical re-excision rates of 36%. However, there was a significantly higher rate of false negative results in the dense breast population as well as a significantly higher rate of re-excisions in this cohort. False positive rates were also higher in the dense breast group, which trended towards significance. Further research is needed to determine if the additional margins taken due to false positive margins results in a statistically significant increase in tissue volume resection. Caution should be used when the MarginProbe is utilized in patients with very dense breasts due to the high false negative rate.
Kiosk 1- Breast

13. DETERMINANTS OF QUALITY OF LIFE IN YOUNG BREAST CANCER SURVIVORS

S Roh BS, DE Bennett BS, EC Feliberti MD
Eastern Virginia Medical School

Compared to the general breast cancer survivor (BCS) population, young breast cancer survivors (YBCS) have an increased risk of tumor recurrence, problems regarding sexual health such as infertility, premature menopause, or sexual dysfunction, and negative psychological health. These factors can increase concerns about quality of life after treatment for new breast cancer patients and can impact treatment options as well as results and recovery from treatment itself. The study aims to examine the quality of life in YBCS to identify specific challenges and needs that are unique to YBCS so that current treatment can be modified to be better tailored for young breast cancer patients.

A cross-sectional study was performed on BCS from local breast cancer support groups through an anonymous questionnaire [SF-12, CARES, MBSRQ-34] that analyzed the participants’ physical, emotional, psychological, and sexual health. The results of the questionnaires were compared between participants under the age of 50 (YBCS) and those over the age of 50. Finally, the results of the questionnaires were compared to the general population.

A total of 58 anonymous entries were submitted with 24 participants under 50 years old and 34 over 50 years old. Breast cancer survivors as a group experienced higher rates of appearance and body problems (dissatisfaction with appearance including discrete aspects of appearance and appearance as a whole, increased investment on appearance, and increased self-assessment of weight) compared to the general population. Both YBCS and older BCS displayed higher dysfunction regarding appearance with YBCS consistently displaying higher dysfunction compared to older BCS. BCS also had higher rates of marital and sexual problems compared to the general population, although when broken down into individual groups, only YBCS displayed increased rates of marital and sexual dysfunction while older BCS was comparable to the general population. Overall, YBCS consistently scored lower compared to the general BCS in terms of their physical, emotional, psychological, and sexual well-being.

YBCS possess unique challenges in survivorship after breast cancer treatment. YBCS were more prone to give a negative self-evaluation in their physical health as well as marital and sexual well-being compared to the general population and other BCS.
Kiosk 1- Breast
14. A RARE CASE OF INVASIVE DUCTILE CARCINOMA PRESENTING IN ACCESSORY BREAST TISSUE
W Shearon MD, J Holloway MD, D Mendoza MD, P Ramsay MD
Atlanta Medical Center

We report a case of a 67 year old female who presented to clinic with signs and symptoms of a cyst in her left axilla. She was found to have invasive ductile carcinoma after excision of the mass.

A 67 year old female presented to our clinic with a one year history of swelling in her left axilla. The area had become increasingly painful. On physical exam, she had a 1cm mass in the superior portion in her left axilla right. The mass was minimally tender to palpation, smooth and mobile with no drainage or erythema noted. Her prior mammograms had identified the structure 5 years prior but showed benign fibroglandular tissue, confirmed by ultrasound. The year prior meeting her, her mammogram revealed the nodule to be larger and more distinctly seen but was not well visualized on ultrasound. Presumed to be a left axillary cyst, the patient was scheduled for elective cystectomy. The cyst was located beyond the tail of Spence in the axilla. The procedure went smoothly without complications and the excised specimen was sent to pathology. Pathology report showed invasive ductile carcinoma that was ER positive, PR positive, and Her-2 negative. The patient then had repeat mammography and ultrasound along with MRI, all of which failed to show any enhancement or enhancing mass in either breast. Pt was taken back to operating theater after pathology revealed positive margins for re-excision of left axillary mass with sentinel lymph node biopsy. Pathology report showed no evidence of residual tumor with clean margins; lymph nodes were also negative. The patient received adjuvant chemotherapy, local radiation, and hormonal therapy.

Primary accessory breast carcinoma is a rare disease, often with a delay in diagnosis. Ectopic breast tissue can be categorized as supernumerary or aberrant, with aberrant tissue most often occurring in the axilla. The incidence of ectopic breast tissue ranges from 0.2-6%. Accessory breast carcinoma is equally as rare, with incidence reported to be 0.3-6% of all breast cancer. Invasive ductal carcinoma is the most common type of primary accessory breast cancer occurring in the axilla. A major issue in managing patients with ectopic breast cancer is no current guidelines exist for the treatment of these patients. Historically, either a local tumorectomy or prophylactic ipsilateral mastectomy was performed. In recent years, similar cases have been managed with a local excision, sentinel node biopsy, and local radiation. Adjuvant therapies, known to be effected in managing breast cancer, have also been implemented involving chemotherapy, radiation, and hormonal therapy.

Survival from breast cancer has markedly improved over the past five decades. However, despite advances in detection and treatment, African American women are diagnosed at a more advanced stage and are more likely to die than white women. Women of African ancestry are also more likely to present with an aggressive breast cancer tumor subtype lacking expression of estrogen, progesterone, and HER-2/neu receptors (Triple Negative Breast Cancer – TNBC). Disparities in breast cancer survival appear to be multifactorial and variables such as obesity, lack of breast feeding and low socioeconomic status have been cited as potential cofounders. It is not clear if poor outcomes in African American women are due to a genetic predisposition for developing triple negative breast cancer, or if socioeconomic deprivation promotes the formation of aggressive tumor subtypes, and thereby negatively impacts survival. Breast cancer subtype information, including HER-2/neu receptor status, has not been available in large registry studies. In addition, larger administrative data sets typically contain fewer than 20% African American patients, which is very different from our community. In this exploratory study, we sought to determine if low-income status as demonstrated by insurance type has any association with race, aggressive tumor biology, and breast cancer outcomes within an urban inner city safety-net hospital.

We performed a retrospective review of all patients with a new diagnosis of breast cancer at a single institution in the southeast between January 2009 and March 2013. Age, race, insurance status, and tumor biology were used as covariates for defining disparities in stage at diagnosis, time from diagnosis to treatment, and rate of recurrent disease. As breast cancer treatment regimens are standardized protocols, we did not include treatment regimens as a covariate. Tumor profiles were determined by immunohistochemistry of core biopsies; HER-2/neu was tested by fluorescence in situ hybridization (FISH) and confirmed by the university hospital central laboratory. Univariate and multivariate regression analyses were performed to investigate associations between covariates and outcomes. Cox proportional hazards models were used to assess differences in recurrence times.

There was no significant association between race and stage at diagnosis in our cohort. Women with Medicaid/Charity coverage were diagnosed at more advanced stages, more likely to have triple negative breast cancer (TNBC), and had longer time to treatment. [Figure 1] Rate of TNBC was higher in black women and younger patients. There was no significant difference in breast cancer recurrence or survival by race, insurance type, age, or tumor biology. In multivariable analysis only black race (p=0.003) and Medicaid/Charity insurance (p=0.0008) were the most significant predictors of TNBC.

Presentation of aggressive tumor biology, as measured by TNBC, and advanced stage is strongly associated with socioeconomic factors as reflected by Medicaid funding and lack of insurance.
Figure 1: Multivariable analysis for tumor biology by race and insurance.
We report on a 47 yr old female who presented with hip pain and inguinal lymphadenopathy and after a delay in diagnosis was found to have metastatic breast cancer, first identified in an inguinal node. At age 39 she was diagnosed with infiltrating ductal carcinoma of the left breast, stage IIIC, ER (+), PR (+), HER2(-). She completed appropriate treatment. Eight years after her initial diagnosis, diffusely metastatic disease was identified after biopsy of the inguinal node demonstrated metastasis from the primary breast cancer. Unfortunately, despite further chemotherapy adjustments, the cancer continues to progress. It is critical to maintain a high index of suspicion for metastatic disease in any patient with a history of breast cancer.

We report on the unusual distribution of metastatic breast cancer to the inguinal and retroperitoneal lymph nodes, eight years after initial breast cancer diagnosis and treatment. The information is gathered from the patient’s electronic medical record.

The patient is a 47 year old female with a history of infiltrating ductal carcinoma of the left breast, stage IIIC (T2 N3a M0); ER(+), PR(+), HER2(-), diagnosed at age 39 years. Treatment involved a mastectomy, followed by chemotherapy, radiation and hormone therapy. Eight years after diagnosis (age 47), she developed hip pain. For a three month time period she was evaluated by primary care providers, orthopedics, physical therapy and a chiropractor. She then presented to her gynecologist with complaints of a right groin bulge. A right inguinal node biopsy, performed by a general surgeon, was completed and pathology returned as consistent with metastasis from the primary breast cancer. Subsequent CT revealed bulky retroperitoneal lymphadenopathy with enlargement of the right common iliac chain nodes, bilateral external iliac chain, and redemonstration of the known right inguinal adenopathy. A bone scan demonstrated diffuse osseous metastatic disease. She was started on chemotherapy and had progression of the inguinal nodal disease by CT imaging with stability of osseous metastatic disease. 24 months after presentation of the inguinal adenopathy, she continues to have progression of disease.

Breast cancer metastases to the inguinal lymph nodes and retroperitoneal lymph nodes is extremely rare. A review of the literature demonstrates a paucity of data (1) and while this clearly represents advanced disease, the prognosis once inguinal nodal metastases are identified is unclear due to this lack of reported data. While our patient did demonstrate symptoms of bony pain concerning for osseous metastatic disease, metastasis to the inguinal and retroperitoneal nodes may occur in the absence of osseous metastatic disease. (1,2,3) It should also be noted that this patient had ER/PR (+) status, while cases reviewed demonstrated ER/PR (-) status. (1,2,3). Inguinal lymphadenopathy as the presenting sign for breast cancer metastasis is not well reported in the literature and this case report serves to add to this growing body of data. In any patient with a history of breast cancer, despite appropriate treatment and prolonged disease-free period, a high index of suspicion should be maintained for metastatic disease.
Kiosk 1- Breast

17. ALVEOLAR Rhabdomyosarcoma of the Breast in Adolescent Female

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Rhabdomyosarcoma (RMS) is an aggressive form of malignant soft tissue tumor. Thought to originate from immature cells destined to develop into striated skeletal muscle. They account for roughly 4% of all pediatric malignancies with reported 4.3 cases/million children, 350 new cases diagnosed annually. Three histological subtypes currently exist; Embryonal (most common, accounting for 65% of cases), alveolar (most aggressive & account for 20% of RMS), and pleomorphic. We present a case of a 16 year old female with 1 year history of enlarging right breast mass and found to have alveolar rhabdomyosarcoma

The patient did have an ultrasound which returned back as Bi-rads IV. An incisional biopsy was completed which confirmed Alveolar Rhabdomyosarcoma. A multi-disciplinary group was assembled consisting of pediatrician, pediatric oncologist, and surgical oncologist. The patient underwent a PET scan which did show hypermetabolic activity in the right axilla and right breast at location of mass. Definitive surgical intervention consisted of a right modified radical mastectomy along with a peripheral blood smear, and bone marrow biopsy. The mass measured 8.2 x 6 x 4.7 cm, margins were negative, and 2 out 9 nodes were positive for metastatic disease in axilla. Additionally, small sections of the specimen were sent for molecular/genetic studies and returned back positive for PAX3/FOXO1 fusion transcript

Based on pathological findings, the patient was classified as intermediate risk, stage III. The bone marrow biopsy and peripheral smear were negative for rhabdomyosarcoma cells. Patient recovered well post operatively with well healed surgical sites. Currently the patient is in ARST 1431 trial, undergoing chemotherapy and radiation therapy, which consists specifically of vincristine, dactomycin, and cyclophosphamide. Secondary to aggressive for which the patient was required to under 42-44 weeks of chemotherapy.

Though extremely rare, several previous cases have been reported of RMS of the breast. Lesions of the breast are usually metastatic from a different sites, which makes a primary breast RMS even more unique. Secondary to primary RMS of the breast being so rare, there is no definitive data regarding outcome. But outcomes overall for RMS in children is more than 60 at 5 years.
Kiosk 1- Breast

18. IS BREAST DENSITY A PROGNOSTIC FACTOR FOR BREAST CANCER?
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Breast cancer is the most commonly diagnosed, and the second most common cause of death from cancer in females, in the US. Breast density has been isolated as a risk factor for breast cancer but the current literature is now asking the question, is breast density a prognostic factor for breast cancer?

A data base was created for all patients who underwent breast cancer resection between 2009 and 2013 at STMH. EMR was reviewed. Patients’ breast cancer stage and receptor status was compared against pre-treatment Breast Density Score (BDS).

For BDS1, 60% has stage I breast cancer and 40% had stage II breast cancer. For BDS2, 38.89%, 37.04%, 20.37%, and 3.7% had stage I, II, III and IV breast cancer. For BDS3, 48.08%, 28.85%, 21.15%, and 1.92% had stage I, II, III, and IV breast cancer. For BDS4, 40%, 20%, 40%, and 0% had stage I, II, III and IV breast cancer. For BDS1, 0% of patients had unknown PR status, 40% had a negative PR status, and 60% had a positive PR status. For BDS2, 1.85% of patients had unknown PR status, 31.48% had a negative PR status, and 66.67% had a positive PR status. For BDS3, 1.92% of patients had unknown PR status, 32.69% had a negative PR status, and 65.38% had a positive PR status. For BDS4, 0% of patients had unknown PR status, 0% had a negative PR status, and 100% had a positive PR status. For BDS1, 0% of patients had unknown ER status, 20% had a negative ER status, and 80% had a positive ER status. For BDS2, 3.70% of patients had unknown ER status, 20.37% had a negative ER status, and 75.93% had a positive ER status. For BDS3, 1.92% of patients had unknown ER status, 25% had a negative ER status, and 73.08% had a positive ER status. For BDS4, 0% of patients had unknown ER status, 0% had a negative ER status, and 100% had a positive ER status.

For BDS1, 0% of patients had unknown Her2 status, 80% had a negative Her2 status, and 20% had a positive Her2 status. For BDS2, 11.11% of patients had an unknown HER2 status, 70.37% had a negative HER2 status, and 18.52% had a positive HER2 status. For BDS3, 11.54% of patients had unknown HER2 status, 65.38% had a negative HER2 status, and 23.08% had a positive HER2 status. For BDS4, 0% of patients had unknown HER2 status, 100% had a negative-HER2 status, and 0% had a positive HER2 status.

Our study notes a trend with early stage breast cancer for BDS1 which may due to early detection. BDS4 patients were not seen to have stage IV breast cancer which may be due to bias of additional imaging and closer follow up. Our study noted a trend of higher percent of PR/ER and lower percent of Her2 positive receptor status with BDS4 patients which could be of prognostic value. More studies are needed to determine BDS as a prognostic factor for breast cancer.
Kiosk 1- Cancer Soft Tissue
19. BASALOID SQUAMOUS CELL CARCINOMA - A LITERATURE REVIEW
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Basaloid Squamous Cell Carcinoma, (BSCC) first described as a distinct entity in 1986 is a rare variant of squamous cell carcinoma which occurs predominantly in men in their 60 and 70s. When these cells grow out of control, they form tumors that often develop in the oral and nasal areas like the tongue, larynx, nasal cavity, esophagus, tonsils, and can sometimes develop in the lungs and the anus. Basaloid Squamous Cell Carcinoma mainly arises in the upper aero-digestive tract. During a 32-year period, a total of 40 BSCCs have been diagnosed in the head and neck. Basaloid carcinoma of the lung is a rare, highly malignant and aggressive lung tumor with a high rate of metastasis and death. In 1999, the World Health Organization (WHO) and International Association for the Study of Lung Cancer (IASLC) defined basaloid carcinoma as a variant of either squamous cell carcinoma or large cell carcinoma.

Retrospective literature reviews.

Basaloid Squamous Cell Carcinoma begins in squamous cells and basaloid cells. This research is aimed to understand the etiology, symptoms, diagnosis, clinical features, pathogenesis, treatment and prognosis of basaloid squamous cell carcinoma of the head, neck larynx, hypopharynx, oropharynx, oral cavity and the lungs. This research will also provide clinical pathological findings in 22 basaloid squamous cell carcinomas of the larynx and hypopharynx, oropharynx and oral cavity. This paper will also compare Basaloid Squamous and Basal Squamous Carcinoma.

Basaloid squamous cell carcinoma is quite uncommon and because it is hard to diagnose and can spread throughout the body, it becomes life threatening. If untreated, the cancer may spread to other parts of the body. BSCC has clear histological features that can be diagnosed with hematoxylin-eosin stained sections. - It is more frequent in males and it has supra-glottic predominance. - It can be infra diagnosed because of the low grade of suspicion from the clinician and the pathologist. - It is an histologically aggressive tumor with a high mitotic index. - When it is diagnosed at an early stage, partial surgery can be used.
Kiosk 1- Cancer Soft Tissue
20. TALIMOGENE LAHERPAREPVEC (T-VEC) TREATMENT SHOWS CONTINUED SYSTEMIC RESPONSE IN METASTATIC MELANOMA WHEN TRANSITIONING FROM SUBCUTANEOUS LESIONS TO LYMPHATIC METASESES

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T-VEC is an injectable oncolytic viral therapy used to treat stage IIIB, IIIC and stage IV unresectable melanoma. Pilot studies have shown durable response (>6 months) in 1/3 of patients.

We present a case of 58-year-old female with metastatic melanoma who was unable to tolerate systemic treatment modalities. She was treated with T-VEC in subcutaneous lesions and then in metastatic lymph nodes. With this transition in injections sites, she has continued to show a systemic response PET/CT scan for greater than 20 months.

A healthy 58-year-old female was initially diagnosed with melanoma of the left foot. At that time she underwent wide local excision and sentinel lymph node biopsy that was negative. Later a PET/CT scan showed findings concerning for nodal metastasis. She underwent completion lymphadenectomy. She was placed on interferon A for one year. Over the next 5 years she had multiple PET scans that were clear of recurrent disease. She then developed a recurrence, manifested as a lesion of the left anterior thigh. This was excised and pathology revealed a 1-2 mm melanoma. She was then treated with ipilimumab. While she initially tolerated the therapy, she later developed adrenal insufficiency and hypothyroidism and treatment was stopped. She was started on the dabrafenib/trametinib. Unfortunately during treatment she developed multi-system organ failure with hypotension, fever, renal failure that required temporary dialysis, and elevated liver enzymes. Systemic organ failure resolved and she was restarted on 50% reduction therapy and her organ failure recurred. Re-staging revealed recurrent disease manifesting as multiple subcutaneous lesions as well as iliac, inguinal, and popliteal nodes noted to be PET avid on imaging. She was then treated with subcutaneous T-VEC injections in left thigh biweekly for a total of 12 months. Her response was excellent with resolution of subcutaneous lesions and no development of new lesions. Repeat staging PET showed a positive response in her iliac, inguinal, popliteal lymph nodes. She was then transitioned to nodal injections. For the past 8 months, she has undergone injections in her iliac, inguinal nodes and popliteal lymph nodes. PET scans show decrease in size of diseased nodes and no new skin lesions, demonstrating a durable systemic response.

The use of T-VEC injections in both subcutaneous lesions and lymph nodes has shown a prolonged durable systemic response. The durable response is maintained when transitioning from subcutaneous to lymph node injections.
Kiosk 1- Cancer Soft Tissue

21. NEOADJUVANT TALIMOGENE LAHERPAREPVEC IN THE TREATMENT OF IN TRANSIT MELANOMA OF THE CHEST WALL

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Malignant melanoma is fatal in patients with unresectable disease due to limited treatment options. Talimogene laherparepvec (T-VEC) is an intral esional oncolytic herpes virus therapy currently approved for use in treatment of stage IIIB and IV melanoma.

We present a case of a 49-year-old male who developed in transit disease of his left chest wall following axillary lymph node dissection and ipilimumab therapy. He was subsequently treated with T-VEC and underwent resection of his chest wall lesions.

A healthy 49-year-old male underwent a biopsy of a pigmented chest lesion. The biopsy revealed malignant melanoma, and he underwent a wide local excision with sentinel lymph node biopsy. The sentinel lymph node was positive for malignancy and a completion axillary dissection was performed. After recovery, he was started on ipilimumab. He subsequently developed in transit lesions on his left chest, which consisted of greater than 25 hyperpigmented lesions. T-VEC was administered every 2 weeks for 12 cycles. During treatment, his lesions stopped enlarging and PET/CT revealed no other distant disease development. Due to his excellent response to therapy, he underwent resection of the disease with primary closure. No complications occurred in the post-operative course. His pathology revealed malignant melanoma with multiple nodules ranging in size from 2-7mm in widest diameter; resection margins were negative. PET scan done 8 months after operation showed no evidence of disease.

T-VEC has demonstrated efficacy for treatment of unresectable disease. Its use in the neoadjuvant setting may allow more patients to undergo surgical resection.
post operative chyle leak due to thoracic duct injury is an uncommon complication of esophagectomy but is important to surgeon owing to its life threatening potential. The concern for the same increases further because its management is still controversial. We, thus, discuss our experiences of strategy of early thoracic duct ligation for post esophagectomy chyle leak in carcinoma esophagus patients.

500 cases of carcinoma esophagus who underwent esophagectomy in last 10 years from 2004 to 2015 at our centre were included in the study.

of all 500 cases of esophagectomy 6 patients had post op chyle leak. Among these, one was treated conservatively and five were taken for early ligation. It was found that 5 patient who were treated surgically by thoracic duct ligation, recovered from the condition whereas the one managed conservatively succumbed to death despite aggressive intervention with TPN and other measures.

Chyle leak after esophagectomy for carcinoma esophagus is a rare but life threatening complication. Mortality rate of up to 50% have been reported. Management of chyle leak is controversial. Conservative treatment with thoracic drainage and total parenteral nutrition is possible but little chances of success if daily output of chyle exceeds 500-1000 ml. Ligation of Thoracic duct with Pledgeted prolene suture offers quick and reasonable solution to the problem.
Kiosk 2- Cancer

23. SUCCESSFUL TREATMENT OF SPLENIC OLIGOMETASTASIS FROM SQUAMOUS CELL CARCINOMAL OF THE CERVICAL ESOPHAGUS

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A 68-year-old African American female presented in Nov 2016 with a 1-month history of worsening dysphagia, chest pain, cough and 5-pound weight loss. Her dysphagia to solids had progressed to liquids. She disclosed a 1-year history of reflux symptoms treated with omeprazole. She admitted an 8-pack-year-history of tobacco abuse, with cessation 30 years prior, and distant alcohol abuse. Past medical history was notable for esophageal stricture at 20cm requiring dilatation in 2015, and reflux treated with omeprazole. Surgical history included hysterectomy, open appendectomy, and spine surgery. Family history was negative for malignancy or gastrointestinal disease.

Physical exam revealed neck fullness and a left supraclavicular mass. EGD revealed an upper esophageal stricture from 15-20cm, and biopsies showed moderately differentiated keratinizing squamous cell carcinoma (SCC) with p16 staining negative. Staging Computerized Tomogrophy and Positron Emission Tomography (CT/PET) revealed a 3.9 x 4.3cm proximal esophagus mass suspicious for neoplasm. Her Stage IIIA, T3N1M0 Grade 2 SCC of the cervical and upper thoracic esophagus was treated with definitive Carboplatin/Taxol and radiation therapy (60.4 Gy) from Jan-Feb 2017. A feeding gastrostomy was placed for nutrition. Surveillance imaging 6 months post-treatment revealed complete radiographic response, however, there was an isolated enlarging PET-avid splenic lesion. She was presented at multi-disciplinary tumor board. Repeat EGD was confirmed complete clinical response. Therefore, she underwent laparoscopic splenectomy in July 2016. Pathology confirmed 4.3 x 3.3 x 2.6 cm metastatic squamous cell carcinoma involving the spleen. CT scan at 3 months postoperatively revealed no evidence of disease.
Kiosk 2- Cancer

24. DISCREPANCIES IN CARE: IMPACT OF SOCIOECONOMIC STATUS ON ESOPHAGECTOMIES BEING COMPLETED AT ACADEMIC PROGRAMS

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Esophagectomy (EG) remains the cornerstone of treatment in early-stage and locally-advanced esophageal cancers. Despite multiple different surgical approaches being utilized, improved outcomes for EG have been shown in high volume centers, patients with less comorbidities and higher socioeconomic status (SES). Higher SES is also associated with less comorbidities, but its impact on treatment facility type performing EG has not been evaluated. We hypothesize that patients of higher SES were more likely to undergo EG at larger academic research facilities rather than community based institutions.

A retrospective review (2004-2014) of the National Cancer Database was performed of patients who underwent EG for esophageal cancer. Community programs (CP) included Community Cancer and Comprehensive Community Cancer Programs while Academic Programs (AP) included Academic Research and Integrated Network Cancer Programs. Socioeconomic factors evaluated were income, insurance and percentage of patients with high school diploma (HSD). Other demographics evaluated included patient age, Charlson Deyo score, race, sex, distance from the treating facility and population of place of residence. Chi-squared tests for categorical data, t-test for continuous data and Mann-Whitney U test for non-normal data were all used for univariate analyses. Multiple imputation was used for variables with missing data. Logistic regression was used to identify factors associated with being treated at an AP.

20,957 patients underwent EG at a CP (3,519 at Community Cancer Programs and 17,438 at Comprehensive Community Programs) while 31,466 underwent EG at an AP (26,020 at Academic/Research Programs and 5,446 at Integrated Network Cancer Programs). 17.9% of patients treated at CP were treated in a high-volume center whereas 82.1% were treated at a high-volume AP (p<0.001). Distance of residence from treating facility was a median of 9.5 miles for CP vs. 20.9 miles for AP (<0.001). On multivariate analysis, patients were more likely to undergo EG at AP if they were younger (OR 0.99, CI 0.99-0.99), male (OR 1.08, CI 1.03-1.13), had lower Charlson Deyo Scores (2 vs. 0 OR 0.86, CI 0.80-0.93) and were not Spanish/Hispanic (OR 1.10, CI 1.01-1.21). For SES, insured patients and patients with high-school diplomas were more likely to undergo EG at AP (uninsured vs. private, OR 1.24, CI 1.10-1.40; vs. Medicaid, OR 1.36, CI 1.18-1.57; vs. Medicare, OR 1.20, CI 1.06-1.36; vs. other, OR 1.67, CI 1.34-2.03) (<7% with HSD vs 13-20% with HSD, OR 0.91, CI 0.85-0.96; vs >21% with HSD, OR 0.80, CI 0.74-0.86). However, patients with incomes of >$63,000 were more likely to undergo EG at CP (> $63,000 vs. $38,000-$47,999; vs. < $38,000, OR 1.19, CI 1.10-1.28).

While higher income was not found to be positively associated with EG at AP, patients undergoing EG at AP appear to have less risk factors for major complications. Since higher risk patients of lower SES tend to undergo EG at CP, it is especially important these patients undergo EG at high-volume centers.
VIPomas are rare hormonally active pancreatic neuroendocrine neoplasms with a commonly reported incidence of 1 in 10 million per year. They often present as a diagnostic dilemma with nonspecific symptoms. Here we present a case of VIPoma with hepatic metastases. A 34-year-old woman, previously healthy, presented with 3 weeks of profuse diarrhea as well as facial flushing. She was hemodynamically stable, hypokalemic to 2.5mg/dL and acidotic with a bicarbonate of 17.2mg/dL. CT imaging showed a 5.7x6.4cm complex cystic and solid mass in the tail of the pancreas and a solitary 2cm right hepatic lobe lesion was also noted. Her Vasoactive Intestinal Peptide was significantly elevated at 337pg/mL. She was started on octreotide which effectively managed her diarrhea. A biopsy of her liver lesion was obtained which demonstrated metastatic neuroendocrine tumor. She underwent distal pancreatectomy with radiofrequency ablation of her liver metastases. Her final pathology showed a grade 2 well differentiated neuroendocrine tumor with positive lymphovascular invasion and 1/10 positive lymph nodes. The margins of resection were negative. She underwent adjuvant chemotherapy and was started on monthly lanreotide injections. Surveillance CT scans at two and four months after resection demonstrated multiple new hypodense liver lesions. The patient also had recurrence of flushing symptoms. She underwent a partial liver resection with cholecystectomy approximately one year after her initial surgery. In July 2017, she was found to have a second recurrence of her liver metastases. She is currently undergoing peptide receptor radionuclide therapy (PRRT) as treatment. This case illustrates how even a classic presentation of VIPoma can be difficult to diagnose and treat. Surgical resection is the preferred treatment for localized disease. Resection or ablation therapies can be considered for isolated metastatic disease. Recurrent or disseminated metastasis can be treated via chemotherapy, hormonal therapy, or PRRT. Aggressive treatment, even in the setting of metastasis, can prolong cancer specific survival.
Kiosk 2- Cancer

28. PRIMARY SQUAMOUS CELL CARCINOMA OF THE AMPULLA OF VATER
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Squamous cell carcinoma of the ampulla of Vater is a rare tumor with few cases reported. Periampullary cancers consist of a group of malignant tumors arising in the distal common bile duct, ampulla of Vater, duodenum, and head of the pancreas. Overwhelmingly, these are adenocarcinoma. We report the case of a 66-year-old woman who presented with painless jaundice and weightloss.

Patient initially underwent endoscopy which revealed an ulcerated ampullary mass and pedunculated polyp in the third portion of the duodenum. Initial biopsy returned adenocarcinoma. Endoscopic retrograde cholangiopancreatography was attempted, however a stent could not be passed. CT revealed no radiographic evidence of mass or metastatic disease. The patient subsequently underwent pancreatoduodenectomy which was uneventful.

Histopathological examination of the specimen revealed a 1.1 cm moderately differentiated, invasive squamous cell carcinoma involving the submucosa of the duodenum with some extension into the mucosa. No adenocarcinoma component was discovered. No lympho-vascular invasion or pancreatic involvement was identified, and fourteen lymph nodes were negative. Final pathologic staging T2N0.

Primary squamous cell carcinoma of the ampulla of Vater is a rare type periampullary tumor. In this case, we report an additional case of this extraordinarily uncommon tumor. There is little evidence to guide therapy although surgical resection remains the cornerstone.
29. A RARE DIAGNOSIS OF INTRADUCTAL TUBULOPAPILLARY NEOPLASM OF THE PANCREAS FOLLOWING PANCREATICODUODENECTOMY
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Intraductal tubulopapillary neoplasm (ITPN), formerly known as intraductal tubular neoplasm, was recently classified by the World Health Organization (WHO) as a distinct entity, separate from the more common intraductal papillary mucinous neoplasm (IPMN). This distinction is based on the presence of high grade dysplasia and the absence of mucin production. ITPN is characterized by findings of tubular and/or papillary growth, high grade dysplasia, and ductal differentiation with little or no mucin production. In this report, we discuss a patient who was noted to have a pancreatic head mass upon evaluation for elevated liver enzymes. The patient’s work up included CT scan of the abdomen and pelvis that identified a 5.7cm solid mass. This mass was further evaluated with endoscopic ultrasound that revealed the mass to be highly vascular, with both solid and cystic features. These findings prevented the performance of an endoscopic biopsy. The patient ultimately underwent pancreaticoduodenectomy and pathological results were characteristic for ITPN. This rare case highlights the importance of early evaluation of abnormal serological results in the identification of pancreatic neoplasms.
Incisional metastasis is a known complication of gastric, colon, and ovarian cancer, and is believed to be caused by seeding of the incision with removal of the specimen or instruments carrying cancer cells. We present a case of pancreatic adenocarcinoma occurring at the left subcostal incision of a distal pancreatectomy for pancreatic intraductal papillary mucinous neoplasm (IPMN) three years after the initial surgery.

The patient was an eighty-one year old female at the time of the initial surgery, in generally good health. She had a pancreatic tail cyst identified on a computed tomography (CT) scan for abdominal pain that increased in size during surveillance from 9 mm to 14 mm. Endoscopic ultrasound and fine needle aspiration was performed, and it was consistent with adenocarcinoma. She underwent a robotic distal pancreatectomy and splenectomy which was converted to open via a left subcostal incision due to poor visualization.

The pathology revealed IPMN with high grade dysplasia and carcinoma in situ. The margins of resection were negative for dysplasia or in situ disease. She had immediate postoperative visits but was lost to follow up. Three years following her surgery, she presented complaining of a plum-sized mass just inferior to her left subcostal incision scar that progressively increased in size over a one month period. CT scan demonstrated a 3.7x3.4 cm solid and cystic mass confined to the left anterior abdominal wall. Fine needle aspiration of the mass revealed neoplastic cells. She underwent en bloc resection of the abdominal wall mass, including the posterior rectus sheath and abdominal wall reconstruction with prolene mesh. The pathology revealed invasive adenocarcinoma histologically similar to the specimen from her original resection. She will plan to undergo chemotherapy and radiation.

Cutaneous metastases of pancreatic cancer are rare and usually involve the umbilicus, known as the Sister Mary Joseph's Nodule. Non-umbilical cutaneous metastases are even more rare, and the cases reported in the literature typically have the appearance of common skin lesions. Ours is the first reported case of incisional development of pancreatic adenocarcinoma from IPMN or carcinoma in situ. We postulated that seeding of the left subcostal incision with the premalignant or in situ neoplastic cells at the index operation is the etiology and the implanted tissue followed the natural course seen in the pancreas with continued progression to invasive carcinoma.
Kiosk 2- Cancer
31. MUCINOUS ECCRINE CARCINOMA OF THE SWEAT GLANDS IN THE PERIORBIT: A CASE REPORT AND DISCUSSION
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Sweat glands in the human body are divided into two types, eccrine and apocrine, based on their structure, function, and mode of secretion. Mucinous carcinoma of the sweat glands is a rare malignant cancer. Due to the morphological similarities between the two types of sweat glands, it is difficult to assign the origin of mucinous carcinoma of the sweat glands as either apocrine or eccrine, and this remains a topic of debate in the medical literature. However, there is a consensus in the literature that mucinous carcinoma of the sweat glands most commonly presents as a mass on the eyelids, is asymptomatic and painless, frequently treated solely with local surgical excision, and rarely recurs following surgical excision.

We present the case of a 53 year-old African-American woman who presented with a 4-month history of a progressively enlarging nodule in the left periorbital origin. The nodule was not associated with drainage, bleeding, and cranial nerve dysfunction. The patient denied having systemic symptoms such as fever and chills. There was no antecedent trauma to the area. Plastic surgery was consulted and evaluated the patient. On examination she had a firm, mobile, subcutaneous mass inferolateral to the left orbit, measuring 1.5 cm x 1 cm with a medial accessory lesion measuring 0.5 cm in diameter. There were minimal tenderness and no overlying skin changes. Plastic surgery performed local excision of the two nodular lesions.

Microscopic findings demonstrated that the tumor cells were forming irregular nests and cords and were suspended in large extracellular pools of mucin. There was mild atypia and mitoses and the tumor extended into multiple surgical margins. Diagnosis was consistent with mucinous carcinoma of the sweat glands. The patient presented 1 week postoperatively with no complaints of erythema or drainage over the surgical site. She denied fever, chills, and nausea. On examination, the incision was healing well. The diagnosis based on pathology findings was discussed with the patient. The importance of obtaining a PET scan and other tests to exclude the presence of a gastrointestinal, lung, or breast primary tumor were emphasized to the patient. The patient has yet to follow-up to perform these tests.

Mucinous carcinoma is a malignant tumor originating from the sweat glands with lack of consensus as to the exact origin of the tumor. Sweat glands are divided into two types, eccrine and apocrine, based on their biochemical features and function. Histologically, the two types of sweat glands are difficult to distinguish, with very few markers that will preferentially stain one type of gland and not the other. Although the histological characteristics of this carcinoma have not been widely studied and remain a topic of discussion and debate, interestingly, the physical and clinical features are widely reported in many case reports in the medical literature. By analyzing published case reports, we find that mucinous carcinoma of the sweat glands is interesting in that it most commonly affects the eyelid, presents as an asymptomatic mass most often, and rarely recurs following treatment with surgical excision alone.
Kiosk 2- Cancer

32. ANGIOSARCOMA IN A RENAL TRANSPLANT PATIENT
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Angiosarcoma is a rare smooth-muscle tumor that originates in the lining of the blood vessels. Little is known about the etiology of the tumor, but several associated factors have been identified, including radiation history and lymphedema. We present the case of a 48 year old woman who underwent kidney transplant in 2011 and presented with angiosarcoma.

A 48-year-old woman who underwent a cadaveric renal transplant in 2011 for polycystic kidney disease and subsequent end stage renal disease presented to an outpatient clinic with painful needle-like sensations in her lower abdominal skin with multiple raised skin lesions. Her chronic immunosuppressive regimen at the time of presentation consisted of prograf and mycophenolate mofetil. An ultrasound exam in the clinic revealed hypoechoic areas suggestive of thrombosis of subcutaneous veins. A wide local excisional biopsy was initially performed. Initial pathologic exam was complex and therefore the specimen was referred to Mayo Medical Labs for further evaluation. Mayo Medical Labs determined that a high-grade angiosarcoma with epithelioid and spindle cell features was present with multifocal involvement of all margins. Definitive en bloc resection with soft tissue transfer reconstruction was subsequently performed after whole body imaging revealed no evidence of distant metastatic spread. The patient’s immunosuppressive regimen was converted to sirolimus, mycophenolate mofetil, and prednisone. The en bloc resection specimen contained margins that were clear by no less than 4cm on all sides. A plan for post-resection follow up included whole body imaging every 3 months.

One year later, the patient re-presented with similar complaint of worsening abdominal pain and new findings of palpable subcutaneous masses near her prior transverse incision site. Ultrasound-guided biopsy revealed necrosis. Subsequently, resection of these lesions was performed. Fortunately, the pathology report revealed only fat necrosis and no evidence of angiosarcoma. At the time of this presentation, the patient has no evidence of local or distant disease 17 months after her initial excisional biopsy.

Few cases of angiosarcoma in renal transplant patients have been reported in the literature, none so far in the United States. In the majority of cases, the patients diagnosed with angiosarcoma have had disease in arteriovenous fistula sites. The patient presented in this case report had no known previous exposure to radiation, trauma, nor any instance of lymphedema. The diagnosis and management of this rare and aggressive malignancy and the challenges of this management in the context of transplant immunosuppression are key issues of discussion.
Kiosk 2- Cancer
33. MANAGEMENT OF WOLFIANN DUCT CARCINOMA WITH CYTOREDUCTIVE SURGERY AND HYPERTHERMIC INTRAPERITONEAL CHEMOTHERAPY
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Cytoreductive surgery (CRS) and hyperthermic intraperitoneal chemotherapy (HIPEC) has become widely utilized in the treatment of primary or secondary neoplasms of the peritoneal cavity including pseudomyxoma peritonei, peritoneal mesothelioma, and peritoneal carcinomatosis from colorectal origin. Wolfiann duct carcinoma is a rare neoplasia that arises from the remnant of the mesonephric duct. This carcinoma usually has low malignant potential but has been documented to have recurrence in the form of aggressive carcinomatosis.

We describe the treatment and outcome of a patient who underwent CRS and HIPEC for treatment of recurrent wolfiann duct carcinoma.

She is a fifty year old female with recurrent wolfiann duct carcinoma with carcinomatosis. She presented with abdominal pain and a 5 cm complex adnexal mass was found with an elevated CA-125. She underwent total laparoscopic hysterectomy, bilateral salpingooophorectomy, and lymph node dissection. She was initially given no adjuvant therapy. During a follow up visit three years later, her CA-125 was noted to be elevated and a CT scan showed multiple peritoneal metastases. Biopsy was performed which was consistent with recurrence of the primary tumor. She was then treated with chemotherapy for six cycles. In June 2016, she had normalization of her CA-125 and stable residual disease seen on CT scan. She was then started on maintenance chemotherapy. Her CA-125 was noted to increase at a subsequent follow up, and she underwent a repeat CT scan, which showed continued stable peritoneal disease. She underwent a complete CRS and HIPEC. The patient tolerated the procedure well and was discharged home without complication. She subsequently underwent reversal of the loop ileostomy without complication. She is now eight months post- CRS/HIPEC and has no evidence of residual disease.

This case reports demonstrates the opportunity to expand cytoreductive surgery and hyperthermic intraperitoneal chemotherapy to the treatment of recurrent wolfiann duct carcinoma with carcinomatosis.
Kiosk 2- Cancer

34. RECURRENT SMALL BOWEL OBSTRUCTION CAUSED BY METASTATIC CERVICAL CANCER WITH NEGATIVE PAP SCREENING

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According to the NIH, cervical cancer is the fourteenth most common cancer in the United States with an incidence of 8.1 per 100,000 women per year. Precancerous lesions are often detected on PAP screening which are treated prior to becoming cancerous. The incidence of cervical cancer in women has significantly decreased over the last decade as a result of recommended screening guidelines. Cervical cancer, if missed by screening, generally metastasizes to pelvic and para-aortic lymph nodes. The diagnosis of metastatic cervical cancer to the small bowel in combination with a negative PAP smear within the last year is exceedingly rare.

A 53-year old female presented to the emergency department complaining of nausea, vomiting, abdominal pain, distention and constipation for three days. The patient had reported that she had these symptoms once prior but did not come to the hospital. Her only previous abdominal surgery was a bilateral tubal ligation. The patient had a CT of the abdomen and pelvis that showed evidence of a small bowel obstruction, severe right sided hydrouretonephrosis and cholelithiasis. A subsequent HIDA scan showed delayed visualization of the gallbladder. She recovered with conservative measures over the next forty-eight hours and was discharged home. The patient was re-admitted to the hospital before her outpatient surgical follow up for pyelonephritis and worsening hydroureteronephrosis. On hospital day four the patient had a laparoscopic cholecystectomy and was discharged home two days later. Six days later the patient returned to the emergency room with acute renal failure and severe electrolyte derangements secondary to obstructive symptoms. A CT of the abdomen and pelvis was performed which revealed signs of a recurrent bowel obstruction with worsening, now bilateral, hydroureteronephrosis. The patient also mentioned post-menopausal bleeding which prompted a pelvic ultrasound revealing non-specific uterine heterogeneity. After failing conservative measures she was taken to the operating room and underwent ureteral stent placement, cervical, endometrial and vaginal biopsies and a small bowel resection secondary to obstructing mass. Pathology of jejunal, cervical, vaginal and endometrial biopsies revealed poorly differentiated invasive squamous cell carcinoma with positive stain for p16. This marker is strongly suggestive of cervical origin. Oncology was consulted and recommended a PET scan and palliative chemoradiation therapy. The patient’s post-operative course was uncomplicated and she had a mediport placed prior to discharge. Unfortunately, her PET scan revealed extensive metastatic disease.

Although highly effective, cervical cancer screening methods are not always accurate. Despite the likely inaccuracy of this patient’s screening, this case remains unique as there are very few cases reported in published literature about cervical cancer metastasizing to the small bowel. Interestingly, this mass was not visualized on CT and therefore it was not identified until surgical intervention was performed. Unfortunately, because of the extent of this patient’s disease she has a very low estimated five-year survival.
In patients with rectal cancer, Capecitabine is being increasingly used secondary to its oral administration and convenience for the cancer patient as there is no need for a port and continuous infusion pump. Studies have suggested improved short- and long-term outcomes with increasing number nodes harvested. However, it is well known that neo-adjuvant chemoradiation decreases the nodal harvest after resection. The purpose of this study was to examine the effects of Capecitabine and 5-Fluorouracil on total lymph nodes harvested and the number of lymph nodes containing adenocarcinoma after resection in patients with rectal cancer receiving neoadjuvant chemoradiation. Secondarily, recurrence and overall mortality was compared between the two groups.

The tumor registry was queried for patients diagnosed rectal cancer undergoing neoadjuvant chemoradiation from 2008-2016. Demographic data as well as outcome data, including nodal harvest, recurrence rates and mortality was statistically analyzed. Fisher’s exact test was used for categorical variables, and the unpaired t-test was used for continuous variables. SAS version 9.4 was used for all analyses, and a p-value of <0.05 was considered to be statistically significant.

64 total patients were identified that were diagnosed with rectal cancer and underwent neoadjuvant chemoradiation. Of these 64, data was available on neoadjuvant therapy for 50 patients. 30 patients received Capecitabine and 20 patients that received 5-Fluorouracil combined with radiation in the neoadjuvant setting. There was no difference in terms of demographics between the two group (p>0.05). There was no significant different in tumor grade (p=0.35). When total number of lymph nodes harvested was examined, there was no difference between the two groups (12.94 +/- 5.71 vs 12.87 +/- 5.43; p=0.92). However, there was statistically more lymph nodes harvested that contained adenocarcinoma in the Capecitabine group when compared to the 5-Fluorouracil group (mean=2.1 vs 0.95; p=0.012). Overall recurrence was found to be similar between between patients receiving neoadjuvant Capecitabine and 5-Fluorouracil (p=0.20). Overall mortality rates were also similar between the two groups (p=0.39).

Capecitabine is orally administered and more convinent for cancer patients than having a port and receiving a continuous infusion of 5-Fluorouracil. Although Capecitabine resulted in more lymphs nodes harvest that contained adenocarcinoma, overall recurrence and survival did not differ between the two treatment groups.
Leiomyosarcoma of the smooth muscle of the ureter or ureteral pelvis is an extremely rare malignant tumor that has been reported very infrequently in the literature. These two dozen or so case reports identify challenges in diagnosis and management of leiomyosarcoma of the ureteral smooth muscle, including difficulty in identification of the tumor by imaging and the challenges of biopsies in the narrow confines of the retroperitoneal kidney.

We present the case of a 58-year-old woman who was referred for surgical consultation regarding a painful left retroperitoneal mass. Initial CT evaluation revealed enhancement of the mass similar to the pancreatic body to which the mass appeared to emanate. The patient was subsequently referred prior to surgical consultation for endoscopic ultrasound and biopsy. The biopsy was interpreted as “benign-appearing smooth muscle.” Fortuitously, the patient had contrast-enhanced axial imaging 9 months prior for an unrelated back injury. The 6 cm retroperitoneal was not present 9 months prior; the mass was therefore presumed to be a leiomyosarcoma with an aggressive growth rate. The patient subsequently underwent radical en bloc resection of the mass, requiring resection of the mass along with the body and tail of the pancreas, spleen, left kidney and ureter, as well as the crus of the diaphragm. Pathologic examination fortunately revealed a well-circumscribed tumor, consistent with high-grade leiomyosarcoma. The only smooth muscle structure that the leiomyosarcoma appeared to emanate from was the left ureter at the ureteropelvic junction. Margins of the en bloc specimen were fortunately widely uninvolved with tumor. The patient’s postoperative course was briefly complicated by an intestinal volvulus which required reoperation and correction without any further resection as well as a mild pancreatic fistula that eventually resolved without further intervention.

The patient’s pancreatic fistula has resolved and she has regular follow up with her primary medical oncologist and will undergo screening whole body axial imaging at regular 3 month intervals. Referral to a radiation oncologist for consideration of adjuvant radiation therapy has been initiated. The patient, thus far has had no evidence of local recurrence or distant metastatic disease.

This case report serves to illustrate the utility of endoscopic ultrasound as a diagnostic tool for ureteral leiomyosarcoma and reviews the complexities of surgical and medical management required of this rare and aggressive malignancy.
Kiosk 2- Cancer

37. MANAGEMENT OF NEUROENDOCINE CARCINOMATOSIS WITH CYTOREDUCTIVE SURGERY AND HYPERTHERMIC INTRAPERITONEAL CHEMOTHERAPY

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Greater than 15% of patients with neuroendocrine tumors (NET) will present with peritoneal metastases (PM). PM have been showed to be the direct cause of death in approximately 40% with NETs. Management of NET PM is often directed at relieving obstructive symptoms without complete cytoreduction. The management of NET PMs with cytoreductive surgery (CRS) and hyperthermic intraperitoneal chemotherapy (HIPEC) has not been well described and is an area of controversy.

We describe the treatment and outcome of a patient who underwent CRS and HIPEC for PM from NET.

Our patient is a fifty year old African American female with a history of T4N1M1 well-differentiated, Grade 1, neuroendocrine tumor of the jejunum. She underwent exploratory laparotomy with jejunal mass resection, mesenteric lymph node dissection, and peritoneal biopsy. She did not undergo adjuvant therapy. During routine surveillance, she underwent a MRI of the pelvis 3 years later, which showed several enhancing soft tissue masses in her lower abdomen and pelvis concerning for metastatic disease. She then underwent diagnostic laparoscopy where she was found to have PM. She then underwent CRS with HIPEC. She underwent a complete cytoreduction. She tolerated the procedure well and was discharged home with no post-operative complications. At approximately 6 months post-operatively, she underwent a CT/PET scan, which did not demonstrate any evidence of disease.

This case report demonstrates an example of the efficacy of treatment with CRS and HIPEC in the management of neuroendocrine carcinomatosis. We advocate the continued used of this combination therapy in the form of a clinical trial to better define the role of CRS and HIPEC in patients with neuroendocrine carcinomatosis.
Malignancy of the appendix is discovered in approximately 1% of appendectomies. The diagnosis of lymphoma after appendectomy is even more rare. Some lymphomas are associated with amyloid deposits, and generally, malignant lymphoid tissue is seen in the specimen as well. We present an unusual case in which isolated amyloidosis seen on histologic examination after appendectomy lead to the diagnosis of systemic lymphoma.

We performed a review of the literature concerning amyloidosis of the gastrointestinal system as well as malignancy of the appendix. This information was compiled and compared to the patient in our case.

A 63-year-old male presented to the emergency department with three weeks of abdominal pain and a single episode of hematochezia. On computed tomography (CT) of the abdomen and pelvis he was found to have an inflamed appendix, measuring 1.1cm in diameter. Concerned for acute appendicitis, the patient was taken to the operating room for laparoscopic appendectomy. Dense adhesions between the appendix and omentum resulted in the procedure being converted to an open appendectomy. Pathology demonstrated amyloid deposits. Further evaluation determined the presence of amyloid light chain (AL)-type. It was noted that these findings in the appendix are consistent with systemic B-cell lymphoma. Our patient is currently undergoing oncologic evaluation.

Despite extensive literature review, this is the first to describe the diagnosis of lymphoma with the only finding being amyloid deposits within the appendix. Deposits of AL-type amyloid in the gastrointestinal tract have been shown to be associated with Non-Hodgkin’s lymphoma which require additional systemic treatment after removal of the affected organ. Findings of amyloid on surgical pathology of the gastrointestinal tract should prompt further oncologic evaluation.
Renal neoplasms are rare and account for 3–4% of all adult malignancies. Ninety percent of renal neoplasms are renal cell carcinoma and 80% of those are histologically clear cell. The median age of diagnosis is 65 years and it is more common in males than females with a ratio of 2 to 1. Smoking and obesity are by far the most common predisposing factors and a vast majority cases are sporadic. Most are confined to the kidney at the time of diagnosis and more than 50% are found incidentally. Surgery is the mainstay of treatment. We identified that there was a need for a General Surgeon in the management of renal cell carcinoma at our institution. In the summer of 2012, we started a “renal tumor team” which consists a General Surgeon, a Urologist, a Medical Oncologist, a Radiation Oncologist, and an Interventional Radiologist. All cases of renal cell carcinoma are reviewed by the team prior to surgery and they are discussed at our monthly multidisciplinary tumor board conference. Since the summer of 2012, we have performed 30 nephrectomies for renal cell carcinoma. We discuss the initial workup, staging, grading, primary treatment, surgical approaches, and surgical options for renal cell carcinoma. We also discuss the role of the General Surgeon in the management of complex surgical cases. We performed a retrospective review of our 30 cases and discuss demographics and report outcomes, morbidity, and mortality related to surgery.

We performed a literature review and report on the latest recommendations with regard to the initial workup, staging, grading, primary treatment, surgical approaches, and surgical options for renal cell carcinoma. We performed a retrospective review of our 30 nephrectomies performed between July 2012 and September 2017 at a single institution by a single General Surgeon. We discuss our patient demographics and report our outcomes, morbidity, and mortality related to surgery.

There were 30 nephrectomies performed by a single General Surgeon at our institution between July 2012 and September 2017. Our outcomes, morbidity, and mortality are comparable to that reported in the literature.

A General Surgeon can safely and effectively perform nephrectomy for renal cell carcinoma with results comparable to that reported in the literature. A multidisciplinary team approach is preferred in the management of patients with renal cell carcinoma. A General Surgeon is an important member of the team, especially in complex surgical cases.
With an increasing number of indications for antiplatelet and anticoagulant medications, surgeons must become more astute at managing these medications. Interruption can cause stent thrombosis, perioperative myocardial infarction (MI) or cerebrovascular accident (CVA) which provides motive for continuation of medication. [1, 2, 3] However, there are risks with continuation as well, as these medications can lead to life-threatening bleeding with or without operative intervention. [4]

In this study we reviewed a case of a 58-year-old man who developed gastrointestinal bleeding due to a large cecal mass two weeks after insertion of drug-eluting stents while on Eliquis for atrial flutter.

In this case, Aspirin was continued, but Brilinta was held and the patient was transitioned to Integrilin (GP IIb/IIIa) which was held for 6 hours prior to OR. The individual then underwent a laparoscopic ascending colectomy. There were no intraoperative complications. The estimated blood loss for the case was 50 mL. Twelve hours postoperatively he was restarted on Integrilin. Prior to discharge, the patient was transitioned to Brilinta and Eliquis. He was continued on Aspirin throughout his hospitalization and discharge. He is currently doing well and proceeding with chemotherapy.

It is important to note that dual antiplatelet therapy presents elevated hemorrhagic risk even in patients who do not undergo surgical procedures. If an operation is planned prior to percutaneous coronary intervention (PCI), bare metal stents may be utilized, however, the need for surgery is often discovered after drug eluting stents are in place. [1, 3] The literature contains much discussion of this topic, but the need for tailoring is always noted. In this case we first reviewed the literature including the aforementioned (Bannerjee et al’s) algorithm and consulted with the cardiology team. Based on the patient being 4 weeks post-administration of PCI with elevated thrombotic risk as well as continued hemorrhaging and large tumor size, Brilinta therapy was suspended in conjunction with bridging using Integrilin. We found this course of treatment both manageable and to have no increased bleeding intraoperatively.
41. EXTRASKELETAL OSTEOSARCOMA DIAGNOSED FOLLOWING ACUTE TRAUMATIC INJURY: A CASE REPORT AND LITERATURE REVIEW

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Extraskeletal Osteosarcoma (ESOS) is a rare entity accounting for less than 2% of all soft tissue sarcomas. Of the cases reported in current literature, middle aged to elderly patients, and a history of radiation therapy have been defined as clear predisposing factors for development of ESOS, as well as a controversial link to previous trauma at the site. However, a small amount have been diagnosed so acutely following the traumatic event as presented herein, with many taking several years to develop and even fewer with such substantial growth and size. The typical presenting symptoms, if any occur, of an ESOS are described as tenderness and swelling at the affected site. In the setting of trauma, these symptoms can often mask the underlying ESOS diagnosis and may be assumed to be hematoma or other trauma related diagnosis. Thus, easy misinterpretation of what appears to be obvious trauma related pathology, can lead to a delay in accurate diagnosis and subsequently, the appropriate treatment for a pathology with a high fatality rate. For this study, we report one case of a 70 year old female with history of breast malignancy treated with radiation and chemotherapy who initially presented following an acute traumatic event with a small, assumed hematoma of the left medial thigh that rapidly grew over the following five months into a substantially larger, 26 cm mass with positive pathology of ESOS and a complicated post-operative course following surgical excision.

Case report data was collected from patient electronic records and research information and data collected from Pubmed query

Through thorough research of published data, it was found that the patient presented herein had one of the largest ESOS on record (26 cm), as well as one of the fastest growing to obtain that size (5 months)

Through extensive literature review, there is no question that Extraskeletal Osteosarcoma is a rare medical occurrence. With this notion, it has been proven by this case in particular that the diagnosis of ESOS in the acute setting following a traumatic event to the lower extremity, in an elderly patient with a history of radiation, should elicit concern for the diagnosis of ESOS, as the patient has several previously documented risk factors. The case presented here displays the unusually acute and rapid growth of a small, traumatic mass into a 26 cm pathologically diagnosed ESOS over five month course. After literature review, such rapid expansion of ESOS after initial presentation, could not be found. Thus, it is with the occurrence of this report that we implore physicians to practice strict regular follow up visits after traumatic events to the lower extremities, especially in middle aged or elderly patients with past medical histories significant for radiation, if symptoms are not resolving. In addition, we ask that patients be urged to return for evaluation sooner if symptoms remain or even progress, in order to rule out aberrant underlying pathologies. The implementation of this practice in this particular instance allowed for prompt intervention with expedited diagnosis and rapid enactment of appropriate management that not only improved our patient’s quality of life, but may have also improved the length. References available.
Kiosk 2- Cancer

42. A PEDUNCULATED PRETENDER: A CASE OF INVASIVE ANORECTAL MUCOSAL MELANOMA

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Anorectal polyps can present with symptoms of hematochezia, constipation, and rectal prolapse. The vast majority of anorectal polyps are benign and the most common type of malignant polyp is adenocarcinoma. However, additional pathologies may be encountered. Mucosal melanomas are exceedingly rare (<1% of anal malignancies) and are often misdiagnosed as hemorrhoids on examination. This leads to a delay in diagnosis and treatment. At the time of diagnosis, many have already metastasized to distant sites and are thus associated with a poor prognosis. There is no standardized treatment of anorectal mucosal melanoma due to the infrequency with which it is encountered, but options include systemic chemotherapy, local radiation therapy, and further surgical resection. Here, we present a case of a large anorectal polyp with pathology that revealed invasive mucosal melanoma following transanal resection.

A retrospective chart review was performed. Patient demographics and tumor clinicopathologic characteristics were included.

A 57 year old African American male presented with sensation of rectal prolapse and rectal bleeding and was found to have a large anorectal polyp that had previously been diagnosed as a thrombosed hemorrhoid. Past medical history included atrial fibrillation, congestive heart failure, cerebrovascular accident (on Coumadin), and hypertension. The patient underwent transanal resection of the anal polyp with excision of a 4.8 x 4.5 x 3.2 cm mass on a small pedunculated stalk (Figure 1). Final pathology revealed a 40mm invasive mucosal melanoma with ulceration present (T4b), with a positive resection margin. Further staging workup via whole body PET/CT scan and brain MRI revealed no evidence of distant disease. Nodal ultrasound of both inguinal regions showed no morphologically abnormal nodes. The patient was taken back to the operating room for further local resection to achieve a negative margin, as well as for sentinel lymph node biopsy prior to the initiation of adjuvant radiation and systemic immunotherapy.

This is a unique presentation of a rare anorectal mucosal melanoma with a pedunculated appearance generally associated more with adenomatous lesions. The lesion demonstrated localized disease with a positive initial margin. Clinicians must familiarize themselves with the possibility of this diagnosis and maintain a high index of suspicion for local invasion and possible metastasis.
Kiosk 3- Colorectal

43. MANAGEMENT OF SIGMOID VOLVULUS

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As the source of obstruction, sigmoid volvulus accounts for less than 10% of the total cases of bowel obstruction in the U.S. and, thus, it is sometimes not considered during initial evaluation. We recently managed a case of sigmoid volvulus, and we review its presentation and management below.

A 63 year old patient with a past medical history significant for psychiatric disease, chronic constipation and institutionalization presented to the emergency room with a 48-hour history of increasing abdominal pain, distension, vomiting and obstipation. On physical exam, the patient was massively distended with decreased bowel sounds and had a diffusely tender and tympanic abdomen. Full labs were ordered and were unremarkable except for a white blood cell count of 12,000. A CT scan showed sigmoid volvulus with extensive dilatation of the involved segment. The patient was taken directly to the operating room where the volvulus was successfully reduced endoscopically. This was performed under general anesthesia for airway protection. There were no signs of ischemia, and the reduction resulted in a large release of gas and stool, with resolution of his distension. A rectal tube was placed at the end of the procedure.

The patient did well overnight. However, later in the day he again developed distension and abdominal pain. Abdominal films showed a recurrence of the volvulus. The patient was immediately taken to the operating room and underwent sigmoid resection, end colostomy, and Hartman’s pouch. The patient experienced a benign postoperative course and was discharged without event.

Sigmoid volvulus accounts for 10% of cases of intestinal obstruction in the U.S. In other parts of the world, it can be the underlying etiology in as many as 80% of cases. It is important for practitioners to be aware of its pattern of presentation and treatment, as it is not a common occurrence and may not initially be considered in the differential. It occurs most frequently at a mean age of 70 years, oftentimes in patients with comorbid psychiatric or neurologic disease, low fiber diet, and sedentary lifestyle. The risk for torsion of the sigmoid colon is higher in males, particularly in African Americans. Other conditions associated with this condition include increased length of sigmoid colon and/or its mesentery, Crohn’s disease, pregnancy, Chaga’s disease, and chronic constipation. In patients that are stable and without signs of perforation or necrosis, decompression can initially be attempted endoscopically. If this is not successful, or if ischemic changes are noted, the patient should promptly undergo a Hartman’s procedure. Of note, after successful endoscopic treatment, the recurrence rate is reported to be up to 60%. So, if the patient is a reasonable surgical candidate, sigmoid resection with primary anastomosis should be done in a timely fashion, generally after bowel prep. However, a significant number of these patients are quite elderly and infirm, and the risk-benefit ratio of surgery versus recurrence must be considered.
Kiosk 3 - Colorectal

44. INSTITUTIONAL REVIEW OF PATIENT SATISFACTION AND OUTCOMES COMPARING CONVENTIONAL HEMORRHOIDECTOMY AND HEMORRHOID ARTERY LIGATION

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Conventional hemorrhoidectomy (CH) remains the standard of care for hemorrhoid procedures. However, CH is plagued by prolonged wound healing, post-operative pain, and delayed return to work. Contemporary procedures, such as hemorrhoid artery ligation (HAL), attempt to overcome these drawbacks. This study aims to assess patient satisfaction among CH and HAL as well as secondary end points such as intra-operative data, complications, post-operative pain, and recurrence.

We prospectively collected data on eligible patients who underwent CH and HAL with Doppler guidance by board certified colorectal surgeons at a single hospital between July 2013 and June 2015. After final institutional review board approval, patient data was retrospectively reviewed. Eligible patients were contacted for a phone survey. Final analysis of patient satisfaction and secondary endpoints were analyzed using STATA (College Station, TX). Patients that were not reached for a phone survey were excluded.

Of the 29 patients that met inclusion criteria, there were 21 CH patients and 7 HAL patients. The majority of patients in the CH and HAL groups were female (52.4% and 85.7% respectively) with grade III hemorrhoids (42.9% in each group). There was no difference between overall patient satisfaction scores between the two cohorts. In addition, there were no differences in intra-operative fluid administration, estimated blood loss, operative time, post-operative pain, complications, or recurrence. Levator spasm was noted after HAL. Persistent pain and fecal incontinence were noted after CH. While the HAL cohort had no recurrence of symptoms, 14.3% of the patients in the CH cohort had recurrence of symptoms.

While CH has higher trends of post-operative morbidity such as pain, fecal incontinence and recurrence, patient satisfaction was not significantly different between the CH and HAL.
Kiosk 3 - Colorectal

45. ROBOTIC VS LAPAROSCOPIC RESECTION FOR COLORECTAL DISEASE

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The aim of this study is to compare the results of robotic versus laparoscopic colon resection for all causes performed by two high-volume private practice colon and rectal surgeons. This study bears significance as current research shows inconsistent results in comparing the two modalities which could be in part because many of the current literature are meta-analyses incorporating multiple centers, surgeons and disparate patient populations.

Retrospective analysis was performed for all patients who had either robotic or laparoscopic colon resection over a 10 month period. Outpatient records were reviewed to ascertain demographic data such as: age, BMI, tobacco use, comorbidities and prior surgeries. Hospital records were accessed to determine: case length in OR, estimated blood loss (EBL), need for conversion of case, length of postoperative stay and complication rates. Complication rates were defined as: surgical site infections (SSI), need for reoperation and/or loss in quality of life as recorded in follow up office visits. Statistical analysis of data was performed using R software.

The study included 166 patients (109 in the Robotic surgery (RS) and 57 patients in the Laparoscopic surgery (LS) groups). For RS patients: mean age was 57.8 years of age, 57% were female, mean BMI was 29.9 and the most common procedure performed was LAR (67%) and most common indication was diverticulitis (36.7%). For LS patients: mean age was 64.0 years of age, 47.4% were female, mean BMI was 27.5 and the most common procedure performed and indications were also LAR (50.9%) and diverticulitis (36.1%). Mean operative time was longer in RS group (138.3 versus 125.4 minutes, respectively [p=0.0380]). Estimated blood loss was less in RS (59.6 versus 106.3cc, respectively [p=0.0282]). Mean postoperative length of stay was shorter for RS than LS (2.85 versus 4.0 days [p=0.0046]). Complication rates were similar in LS (26.3%) and RS (20.2%) [p=0.3681], and the most common LS complication was SSI (32.3%) and most common complication for RS was SSI (42.1%). Conversion of operative technique was similar in RS and in LS (19.3% versus 13.8%, respectively [p=0.3524]).

Robotic surgery for colon resection had decreased EBL, and significantly shorter postoperative hospital stay. Laparoscopic surgery had shorter operating time. Similar results were found between postoperative complications and conversion rates of surgery. In the hands of 2 surgeons who have performed the reported amount of surgeries needed to become adept with the da Vinci Surgical System, robotic surgery has significant advantages.
Every year in the United States, 300,000 to 500,000 patients who undergo surgery will experience surgical-site infection (SSI). This makes SSI’s the most common hospital-acquired infection among surgical patients. Our aim is to evaluate a protocol that builds upon Enhanced Recovery (ER) by adding other measures to optimize colorectal surgical care. We hypothesize that our protocol will significantly decrease the SSI rate.

Our protocol adds routine wound protectors, glucose control, sterile field management, standard skin prep, and wound management. Efficacy will be evaluated through a cohort study with a comparison of the SSI rates before and after initiation in May 2016. The primary outcome is SSI rates. Secondary outcomes include total complications, mortality, postoperative length of stay and readmissions.

Between 09/2015 and 05/2016, there were 22 SSI’s in 279 procedures. Between 5/2016 and 12/2016 there were 10 SSI’s in 244 procedures. There were no demographic or disease severity differences between groups. A two sample test for proportions using the Adjusted Wald Test showed a statistically significant reduction in the proportion of colon SSIs after implementation of the protocol (P = 0.0385).

Implementation of the protocol induced a significant reduction in SSI rates in colorectal surgical procedures.
Tuboovarian abscesses are generally caused by pelvic inflammatory disease but have also been associated with rarer bacterial infections as well as ovarian torsion. Chronic constipation itself resulting in megarectum has never been described as a direct cause of tuboovarian abscess formation.

Our patient is a 21 year old female with a long history of constipation since age 2. She had been hospitalized on three previous occasions with abdominal pain secondary to constipation requiring medical treatment in addition to manual disimpaction. She had followed with a gastroenterologist and was doing relatively well for the last few years on a regimen of laxatives and stool softeners. Work up for the cause of her chronic constipation was never completed by the patient and in the six months prior to her presentation at our institution she self-discontinued her medications. The patient presented to the emergency room with diffuse abdominal pain and distention. CT imaging demonstrated a severely dilated rectum and sigmoid colon measuring up to 15cm filled with solid stool. Pt claimed that she was having regular bowel movements prior to onset of abdominal pain. On examination, she was tachycardic and mildly hypotensive. The initial plan on admission was for resuscitation, an aggressive bowel regimen and possible manual disimpaction under anesthesia if medical management were to fail. On the evening of hospital day 1, patient became febrile, was progressively more tachycardic and abdominal pain worsened. With concern for peritonitis secondary to perforated viscus, pt was taken to the operating room for exploratory laparotomy. Prior to incision, the patient was manually disimpacted with removal of 15lbs of stool with a paste-like consistency. Patient had nearly no rectal tone so disimpaction was performed easily. Upon entry into the abdomen, the rectum and sigmoid colon was noted to be profoundly dilated. There was no evidence of bowel perforation or ischemia. All proximal colon was normal in size. There was also an ischemic appearing, torsed right ovary with tuboovarian abscess. The ovary was initially untwisted to assess blood flow, and all dilated bowel was resected. The ovary did not appear viable at the end of the case so a right salpingoophorectomy was performed. An end colostomy was then created. Pathology revealed marked dilation of sigmoid and rectum without clear etiology of megarectum formation – myenteric plexus and ganglion cells were present and there were no abnormalities in the muscle fibers of the muscularis layers. The right ovary and fallopian tube demonstrated salpingitis and oophoritis with abscess formation. Pt had denied risky sexual activity and tested negative for sexually transmitted infection this admission.

Her post-operative course was uncomplicated and was discharged home. She has been seen in clinic and is coping well with her new colostomy. She is scheduled to complete medical workup for her constipation including anal manometry and defecography.

This is a unique case of chronic constipation causing megarectum formation which then exerted a mass effect on the right ovary resulting in torsion and tuboovarian abscess formation.
Fecal incontinence is the inability to control bowel movements causing stool and feces to leak from the rectum. Currently, to our knowledge, there is not much literature about diagnosis and treatment of nocturnal fecal incontinence. In someone with the ability to control bowel movements during the day other diagnoses, such as encopresis, should be considered. Colon and rectal surgeons describe encopresis as the chronic fecal impaction which provokes overflow pseudoincontinence. Encopresis can occur without a history of constipation and is usually noted in the daytime. Nocturnal fecal encopresis without constipation poses a challenge to treat.

We reviewed a case of a man with nocturnal fecal encopresis treated by sacral nerve stimulation.

A 28-year-old male was referred to colon and rectal clinic for future work-up after endorsing a new onset history of nocturnal fecal incontinence. During the day he reported sensation of stool in rectal vault and urges to have a bowel movement prompting him to defecate at appropriate times. He denied blood per rectum, diarrhea, constipation, and unexplained weight loss. He denies any psychologic trauma or triggers. Past medical history is significant for Type 1 Diabetes. On digital rectal exam, he had solid stool in the rectal vault and good sphincter tone. Further diagnostic testing showed a normal colonoscopy and anal manometry. No pelvic tumors were found on CT scan. Due to financial reasons, he was unable to obtain a defecography. Clinically without a history of anorectal trauma or prior anorectal procedures to suggest sphincter injury and a normal manometry further structural workup of his anal sphincters with an anal ultrasound and pelvic MRI was not done. He had an unsuccessful six month trail of medical management which included stool bulking agents, fiber, and water. The decision was made to implant a sacral nerve stimulator in an effort to confirm improvement of diagnosis (phase 1) and definitively treat (phase 2) the refractory nocturnal fecal incontinence. The patient underwent phase 1 of the InterStim sacral nerve stimulator (SNS) which involves implanting an electrode in the S3 foramen. The test was confirmatory in that symptoms of fecal incontinence improved by 50% or in this case resolved. He therefore underwent implantation of a permanent SNS device (phase 2). At two month follow-up he continued to have complete resolution of his nocturnal fecal encopresis.

SNS should be considered as a diagnostic and treatment option in patients with atypical presentations of fecal incontinence.
Postoperative infectious complications after elective colorectal surgery have been reported to occur in 20% of patients and include wound infections and anastomotic leak. C-reactive protein (CRP) measured on post-operative days (POD) 2, 3, and 4 has been demonstrated to be predictive of infectious complications and is thought to be useful in enhance recovery after surgery (ERAS) protocols. Here, we explore the predictive ability of CRP measured on POD#3 by including patients who undergo colorectal surgery for elective and emergent indications. We hypothesize that CRP is a more accurate predictor of infectious complications compared with white blood cell (WBC) count.

Adults who underwent colorectal surgery at Sentara Leigh Hospital, Norfolk, VA, between 2016 and 2017 were analyzed retrospectively. Data about patient characteristics, operative details, pathology, and postoperative course were collected and compared between patients who did and did not develop any postoperative infectious complication by POD#30.

There were 61 patients who underwent colorectal surgery and were included for analysis. Overall, 18 (30%) patients developed some infectious complication, including wound infection (28%), anastomotic leak (22%), intraabdominal abscess (22%). Both groups were equivalent in terms of sex, age, BMI, history of diabetes or autoimmune disease. Indications for operation were equivalent across both groups (total 34% for cancer, 66% for benign disease). Both groups were equivalent in terms of operative approach, portion of the colon resected, and anatomical location of anastomosis. CRP and WBC measured on POD#3 were statistically higher in the group that developed an infectious complication (CRP 233 vs 113 mg/L, p = 0.001; WBC 13.4 vs 8.5 k/uL, p = 0.001) or developed an intraabdominal infection (CRP 314 vs 125 mg/L, p < 0.001; WBC 15.8 vs 9.3 k/uL, p = 0.001). POD#3 WBC was more no accurate than POD#3 CRP for any infectious complication (area under the ROC curve, 0.808 vs 0.778, p = 0.76) or intraabdominal infectious complications (area under the ROC curve 0.896 vs 0.917, p = 0.72). For any infectious complications, we identified a CRP cutoff of 189 mg/L (69% sensitive, negative predictive value 83%) and a WBC cutoff of 10.4 (69% sensitive, negative predictive value 85%). For intraabdominal infectious complications, we identified a CRP cutoff of 298 mg/L and WBC cut off of 14.5 (83% sensitive, negative predictive value 83%).

CRP and WBC measured on POD#3 after colorectal surgery were both equally predictive of postoperative infectious complications. More patients are needed to detect any significant difference between the accuracy of either marker. Either CRP or WBC can be used in ERAS pathways to help screen for patients at high risk for postoperative infectious complications.
### Table 1: Comparison of Complications by Various Factors

<table>
<thead>
<tr>
<th></th>
<th>No complication</th>
<th>Any infectious complication</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (male, % (n))</td>
<td>68 (21)</td>
<td>32 (10)</td>
<td>0.63</td>
</tr>
<tr>
<td>Age (median, yrs)</td>
<td>65 (25-84)</td>
<td>66 (40-80)</td>
<td>0.84</td>
</tr>
<tr>
<td>BMI (median, kg/m²)</td>
<td>25 (17-47)</td>
<td>26 (17-47)</td>
<td>0.36</td>
</tr>
<tr>
<td>History of diabetes, % (n)</td>
<td>23 (10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>History of autoimmune disease, % (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malignant vs benign indication, % (n)</td>
<td>35 (15) vs 65 (28)</td>
<td>33 (6) vs 67 (12)</td>
<td>0.91</td>
</tr>
<tr>
<td>Laparotomy, % (n)</td>
<td>40 (17)</td>
<td>50 (9)</td>
<td>0.57</td>
</tr>
<tr>
<td>Anastomosis, % (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ileo-colostomy</td>
<td>37 (16)</td>
<td>44 (8)</td>
<td>0.75</td>
</tr>
<tr>
<td>Colo-colostomy</td>
<td>51 (22)</td>
<td>44 (8)</td>
<td></td>
</tr>
<tr>
<td>End colostomy</td>
<td>9 (4)</td>
<td>11 (2)</td>
<td></td>
</tr>
<tr>
<td>Length of hospital stay (days)</td>
<td>5.1</td>
<td>11.4</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

### Infectious Complications, % (n)

- Anastomotic leak: 22 (4)
- C.diff diarrhea: 11 (2)
- Intraabdominal abscess: 22 (4)
- Pneumonia: 11 (2)
- Wound infection: 28 (5)
- Urinary tract infection: 17 (3)
Kiosk 3 - Colorectal

50. IMPACT OF IMPLEMENTATION OF ENHANCED RECOVERY AFTER SURGERY (ERAS) ON COLORECTAL PATIENTS IN A RURAL HOSPITAL

KS Londe, M Bassante MD
Regional Medical Center in Orangeburg

Implementing an ERAS protocol in a rural hospital can lead to improvement in patient care, patient satisfaction and also reduce length of stay as well as complications such as surgical site infection. Rural hospitals implementing an ERAS protocol can benefit from substantial financial savings.

The Regional Medical Center’s Colorectal Surgery Length-of-Stay (LOS) was discovered to be 11.8 days compared to the national average of 6 days. Extended LOS leads to increased risk of Hospital Acquired Conditions (HAC) as well as increased cost. An action plan using the data obtained from the National Surgical Quality Improvement Project (NSQIP.) was created. The goal of the study was to reduce average Colorectal surgery length of by implementing ERAS. The ERAS protocol was meant to engage multiple services and departments in a multidisciplinary way. Attention was paid to outpatient education that patient received, Same day pre-operative holding area instructions, multimodal analgesia which was started in the pre-operative area and continued throughout the hospital stay. Early ambulation and early feeding were main parts of the ERAS protocol.

The Regional Medical Center saw a reduction in average Colorectal Surgery LOS to 4.9 days over 21 months. There was also an associated reduction in Surgical Site Infections (SSI) for Colorectal Surgery (Colorectal SSI Odds Ratio Pre- ERAS= 1.34; Post-ERAS= 0.91.) Potential cost savings are estimated at $300,000 annually.

Rural Hospitals will benefit from implementing an ERAS protocol for colorectal surgery. It improves patient’s length of stay, decreases SSI and other related complications. All this leads to substantial cost savings.

<table>
<thead>
<tr>
<th>Process Measures</th>
<th>Before ERAS</th>
<th>After ERAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambulation Day of Surgery</td>
<td>17%</td>
<td>88%</td>
</tr>
<tr>
<td>Ambulation BID Post – Op Day 1</td>
<td>15%</td>
<td>100%</td>
</tr>
<tr>
<td>Ambulation BID Post – Op Day 2</td>
<td>52%</td>
<td>75%</td>
</tr>
<tr>
<td>Clear Liquids Day of Surgery</td>
<td>0%</td>
<td>20%</td>
</tr>
<tr>
<td>Date of return of bowel function</td>
<td>2.66</td>
<td>2.40</td>
</tr>
<tr>
<td>Days Until PO Pain Control</td>
<td>3.97 Days</td>
<td>3.2 Days</td>
</tr>
<tr>
<td>Length Of Stay</td>
<td>11.8</td>
<td>4.9</td>
</tr>
</tbody>
</table>
Kiosk 3 - Colorectal
52. THE S.T.A.R.R. PROCEDURE WITH TWO DIFFERENT DEVICES: COMPARATIVE RESULTS
A Bove MD PhD, RM Di Renzo MD, G Palone MD, P Panaro MD, G Bongarzoni MD
University “G. D’Annunzio”

Stapled transanal rectal resection (S.T.A.R.R.) procedure had been proposed for the treatment of degree-IV prolapsed hemorrhoid because of the possibility to resect an adequate portion of rectal prolapse. This surgery was performed using two circular staplers, and, in previous years, through a single, so-called “high volume” stapler. Goal of this study was to compare the results obtain using the two different techniques.

Between January 2014 and June 2017, 210 patients were treated for hemorrhoid; 90 of them presented degree-IV hemorrhoid: 35 (39,56%) women and 55 (60,44%) men. 41 patients underwent S.T.A.R.R using a double stapler (Group A) and 49 using a single stapler (Group B). We compared the length of surgery, resected volume, post-operative complications, (bleeding, pain and fecal urgency) and late recurrences.

The length of surgery shortened significantly utilizing a single stapler rather than the double one. From the average 59,3 minutes (range 30-130 min) for Group A the length dropped to an average 43,2 minutes (range 20-95) for Group B. (P<0.01) The resected volume, post-operative pain and bleeding were similar for the two different groups. Urgency was reported in 6 patients (12,24%) and in 7 patients (17.07%) after 15 days respectively for Group B and Group A. After 30 days, there was a significant difference between the 2 groups: in group A the urgency was present in 4 (9,75%) patients whereas in group B just in 1 patient (2,04%) (p<0.001) The rate of relapse was examined using an average 24-months follow up. There were only two recurrences: one in Group A (2,43%) and one in Group B (2,04%) (P=0,11).

Stapled transanal rectal resection is a recommended treatment of degree-IV hemorrhoids and can be performed with 2 staplers or with a “high volume” stapler. Relapse rate resulted acceptable for both techniques. The “high volume” stapler seems to lead to a decrease of surgery length and late fecal urgency.
Kiosk 3- Colorectal
53. LAPAROSCOPIC MANAGEMENT OF COLONOSCOPY POLYPECTOMY SNARE ENTRAPMENT
RE Martin MD, PR Williamson MD, A Ferrara MD, JT Gallagher MD, S DeJesus MD, RJ Mueller MD, MK Soliman MD, JR Karas MD
Orlando Regional Medical Center

Colonoscopic polypectomy reduces the risk of colon cancer development by interrupting the adenoma to carcinoma progression. A variety of techniques are available to perform polypectomy including the use of forceps or snare device with or without electrocautery. While forceps polypectomy tends to be the procedure of choice for small polyps, snare polypectomy has been found to be the preferred method for removal of polyps 1 cm or greater in size. The two most common post-polypectomy complications are bleeding and perforation. Though rare in the case of polypectomy, any mechanical device used in a procedure has an inherent risk of malfunction. Here we present a case of an attempted snare polypectomy with malfunctioning of the device, failure of endoscopic retrieval and subsequent management with laparoscopic resection of the affected segment.
Kiosk 3- Colorectal

54. RATE OF CONVERSION TO AN OPEN PROCEDURE IS REDUCED IN PATIENTS UNDERGOING COLORECTAL SURGERY IF A ROBOTIC-ASSISTED APPROACH IS UTILIZED

LE Wells MS, NS Kow MD, BE Smith DrPH, Crystal Fancher MD, MD Honaker MD
Mercer University/Navicent Health

Robotic assisted surgery is becoming increasing used in colorectal surgeries. It has many advantages over laparoscopic surgery including 3-dimensional viewing, motion scaling, improved dexterity and ergonomics as well as increased precision. However, there are also disadvantages to robotic surgery such as lack of tactile feedback, cost, as well as limitations on multi-quadrant surgeries. The purpose of this study was to compare the rate of conversion to an open surgery in patients undergoing robotic-assisted colorectal surgery for either carcinoma or unresectable adenomas and compare them to patients undergoing tradition laparoscopic surgery.

Patients undergoing minimally invasive colorectal surgery for carcinoma or unresectable adenomas from 2009-2016 were identified and examined retrospectively. Statistical analysis was performed using JMP Pro vs 13.1.0. Continuous variables were analyzed using ANOVA. Chi-square test was used to analyze categorical variables. A p<0.05 was considered statistically significant.

250 patients were identified that underwent minimally invasive colorectal surgery for carcinoma or unresectable adenomatous disease. 178 of these underwent laparoscopic resection and 72 underwent robotic-assisted resection. There was no statistical difference in gender or race between the two group (both p>0.05). Patients that underwent robotic-assisted resection were slightly younger than patients that underwent laparoscopic resection (61.6 years vs 65.6 years; p=0.02). When examining conversion to an open procedure, patients that underwent robotic-assisted resection had a significantly lower chance of conversion than did the patients undergoing a laparoscopic approach (11.11% vs 29.78%; p=0.0019).

Conversion rates from a minimally invasive procedure to an open procedure appear to be lower with robotic-assisted surgery compared to laparoscopic surgery. Robotic-assistance offers multiple advantages to the surgeon over traditional laparoscopic surgery.
Kiosk 3- Colorectal
55. CECAL VOLVULUS IN WEST VIRGINIA: REVIEW FROM A LARGE ACADEMIC INSTITUTION
KS Bailey MD, DC Borgstrom MD, EW Lundstrom BS
West Virginia University

Cecal volvulus has evolved over the last 80 years from a disease of males in their 20s and 30s with congenital and dietary risk factors to affecting women in their 60s with constipation and adhesions. Treatment has shifted from cecostomy and cepoexy to resection.

Retrospective review was undertaken of all adult volvulus cases treated at West Virginia University over 8 years. Records were reviewed for age, gender, type of volvulus, surgical intervention, history of abdominal surgery, presence of adhesions, history of constipation and year of presentation. Results were compiled using descriptive statistics and the Spearman correlation to review volume trend by year.

Cecal volvulus accounted for 40.5% (n=17) of all colonic volvulus, sigmoid for 57.1% (n=24) and right colon for 2.4% (n=1). A trend towards increased volume per year was not statistically significant. Females accounted for 70.5% of all cecal volvulus. Mean age was 65. There was a history of previous abdominal surgery in 88.2% of patients and adhesions were the cause of volvulus in 35% of cases. Chronic constipation or ileus were present in 52.9% of patients. Treatment was open right hemicolectomy (47%) or open ileocecectomy (52.9%).

Our study supports evidence of an aging demographic for cecal volvulus and shift to female predominance. The presence of hypermobile cecum combined with either obstruction or pseudoobstruction accounts for most cases of cecal volvulus. Cecal volvulus is treated optimally with laparoscopic vs open right hemicolecotomy or ileocecectomy depending on stability of the patient, anatomic considerations and surgeon experience.

Cecal Volvulus: Then and Now

- 75% Male
- Age: 20s-30s
- Risk factors: congenital, dietary
- Treatment: Cacostomy and cecostomy
- 1938

- 70.5% Female
- Age: 65
- Risk factors: adhesions, constipation
- Treatment: Segmental ileectomy
- 2016
Diverticular disease is frequently encountered in the general surgical practice. Common complications can include bleeding and diverticulitis. Diverticulitis is occasionally accompanied by free perforation with local or disseminated peritonitis, and rarely with an abscess of the subcutaneous tissue.

We present a rare case of perforated sigmoid diverticulitis through a Spigelian defect resulting in abscess formation within the subcutaneous tissue of the anterior abdominal wall without peritonitis.

The patient is a 60 year-old male who presented to the emergency department with a two-day history of left lower quadrant abdominal pain, as well as erythema and induration of the skin overlying the abdominal wall. He reported subjective fevers and purulent discharge per rectum at home prior to presentation, however, he was not peritonitic. A CT abdomen/pelvis with intravenous contrast was performed, which showed perforated diverticulitis with an adjacent subcutaneous abscess. The abscess cavity measured 9.5 cm x 9.5 cm, and was noted to extend through the anterior abdominal wall and into the overlying subcutaneous tissue. The patient was taken to the operating room and underwent diagnostic laparoscopy and incision and drainage of subcutaneous abscess. A perforated diverticulum was noted within the abscess cavity after incision and drainage was performed. The procedure was then converted to an open operation. A Spigelian defect was noted at the site of perforation, and this defect was primarily repaired from the peritoneal side. A Hartmann’s procedure was then performed. The patient eventually required ostomy revision during the admission, but he was discharged on postoperative day 11 and noted to be doing well at follow-up with good ostomy function. Pathology of the resected colon showed perforated diverticulitis.

Perforated diverticulitis is frequently encountered in surgical practice, and in rare cases may result in subcutaneous abscess formation. Our report demonstrates a rare case of perforated diverticulitis with resultant subcutaneous abscess formation and an associated Spigelian defect of the anterior abdominal wall. These cases are most accurately diagnosed using CT scan and require urgent operative intervention.
Kiosk 3- Colorectal

58. LIPOSARCOMA OF THE COLON PRESENTING AS INTUSSUSCEPTION

JL Stephens MD, EC Gray MD, JA Ehrenfried MD, JR Lee MD
East Tennessee State University

Primary liposarcoma, which often occurs in patients in the retroperitoneum and extremities, rarely is found in the colon. Standardized treatment guidelines do not currently exist for primary liposarcoma of the colon since literature for primary liposarcoma of the colon is sparse (fewer than six case reports in a recent literature search).

We present the case of a 72-year-old woman with liposarcoma of the colon. The patient presented to the emergency department with obstructive symptoms. A CT scan of the abdomen with contrast was performed and the radiologist on call identified a likely colonic intussusception. A colonoscopy was performed, revealing a near obstructing lesion in the splenic flexure. The patient underwent a partial colectomy which included en bloc resection of the splenic flexure, descending colon, and spleen.

Pathologic examination revealed a poorly differentiated liposarcoma involving the colon. Mucosal resection margins and seven lymph nodes were negative for disease. No metastatic spread was identified in the resected spleen. The patient had an uneventful postoperative course except for a small asymptomatic fluid collection detected on an early postoperative CT scan.

A literature search and perusal of current NCCN guidelines do not reveal a clear prognosis or appropriate long-term treatment options for primary liposarcoma of the colon because of the rarity of this tumor. Presumably, as for other sarcomas, complete surgical resection with negative margins is the treatment of choice for sarcoma when feasible. The benefit of chemotherapy has not yet been established; radiation therapy does appear to improve survival in liposarcomas and was therefore offered to this patient. Continuing to report cases of primary liposarcoma of the colon may help to add to the overall literature for this rare disease and contribute to the development of future treatment guidelines.
Lymph node (LN) retrieval for colorectal cancer (CRC) is an important measure for both quality of cancer care as well as prognosis. The AJCC and College of American Pathologists recommend a minimum of 12 LN for accurate staging. The Geisinger System lymph node counts were found to be lower than national averages. Surgeons and pathologists were educated about this issue and grossing physician assistants (PA) educated with additional measures taken starting in 2016. We aim to determine if these changes improved compliance with guidelines, improved total lymph node counts or decreased the need for addended pathology reports.

Patients diagnosed with CRC undergoing surgical resection between the years of 1/2010 and 1/2017 were retrospectively reviewed from the Cancer Registry Database from Geisinger Medical Center (GMC) and Geisinger Wyoming Valley (GWV). Patient and tumor variables, including perioperative treatments, as well as pathology reports, surgeon specialty, and neoadjuvant chemoradiation (CRT) were all reviewed and compared using Fisher’s calculation, chi squared tests, t-tests, and Mann-Whitney U test. Outcomes measured were total LN counts, quality of dissection (LN > 12 vs. LN < 12), specimens further searched for nodes and pathology reports addended/amended. 780 patients were identified between 2010-2015 while 124 patients were identified after 2015. Patient age, facility of operation, primary cancer site, surgical procedure, pathologist, PA, and surgeon specialty were all not significantly different between the time periods. More patients underwent neoadjuvant chemotherapy (8.0 % vs 21.8%, p <0.001) and radiation (16.3% vs 27.4%, P= 0.003) after 2015. Median lymph node counts were found to be significantly improved after 2015 (14, IQR 11-18 vs. 16, IQR 13-19, p=0.003). Patients were more likely to have greater than 12 nodes harvested after 2015, 73.6% vs. 84.7%, p=0.008, however no significant difference was seen in pathology reports addended for additional nodes (2.1 vs. 0, p= 0.31). When patients with rectal cancer undergoing neoadjuvant CRT were excluded, median lymph node counts remained improved after 2015 (15, IQR 12-18 vs 16, IQR 14-20, p=0.005). These patients were also more likely to have greater than 12 nodes harvested after 2015, 79.7% vs. 91.1%, p=0.009. Similarly, no significant difference was seen in pathology reports addended for additional nodes (2.6% vs. 0, p=0.305), however, there was a significant increase in specimens further searched for nodes after 2015 (2 vs 10, p=0.021).

With education of staff and improvement in the lymph node harvesting process, significant improvement of total lymph node counts and adherence to guidelines was seen after 2015.
60. COLON CANCER IN AN ADULT WITH TRISOMY 13
SW Kim MD, J Collins MD
Eastern Virginia Medical School

A 37-year-old female with 25-40% mosaicism of trisomy 13 presents with a progressively growing right lower quadrant abdominal mass over the past month, associated with a 30-pound weight loss over the prior 6 months. On work up, she was found to have an abdominal wall abscess contiguous with a right colon mass. After incision and drainage of the abscess, she underwent an open right hemicolectomy. On pathology she was found to have a stage IIC colon cancer.

This is a case report with pertinent literature review.

Literature review revealed few reported cases of cancer in patients with trisomy 13.

There is a paucity of case studies documenting the development of cancer in patients with trisomy 13 who live with adulthood. Nevertheless, review of cancer biology suggests a potential role for trisomy 13 in tumorigenesis. First, chromosome 13 is associated with various tumor suppressors and oncogenes that would suggest the potentially tumor-protective and -promoting effect of trisomy 13. Second, while chromosome 13 does not carry genes related to proposed models of colorectal tumorigenesis, gain of chromosome 13 has been observed in cases of colorectal cancer cells.
Adenosquamous carcinoma of the anus is an exceedingly rare malignancy. This unusual carcinoma is characterized by presence of both squamous cell carcinoma and adenocarcinoma within the same tumor, seen either admixed or as separate areas within the tumor. There is only a single population based study published on this malignancy so far in the literature. In this study, from 244,410 colorectal and anal cancers registered in a 20-year period (1973-1992) by Surveillance, Epidemiology, and End Results (SEER), 145 cases were registered as adenosquamous carcinoma of colon, rectum and anus, with only 6 primary anal adenosquamous carcinomas (incidence of 0.002%).

We present a case of adenosquamous carcinoma of the anus which poses a treatment challenge.

A 54 year old female presented with a several month history of increasing anorectal pain associated with bright red blood per rectum. Examination revealed a 3 cm right anal mass concerning for malignancy with palpable inguinal lymphadenopathy. The patient proceeded with an incisional biopsy which revealed adenosquamous carcinoma. PET CT demonstrated metastasis to inguinal and perirectal lymph nodes. Excisional biopsy of right inguinal lymphadenopathy confirmed metastatic adenosquamous carcinoma. The patient was treated with concurrent intravenous 5-fluorouracil and mitomycin-C and external beam radiation therapy (59.4Gy) over a 6 week time course. The patient had clinical regression of the anal component and perirectal lymphadenopathy. However, there was progression of lymph nodes involving the right femoral triangle. Repeat excisional of the right groin lymph nodes confirmed adenosquamous carcinoma. The patient began adjuvant FOLFOX and Erbitux therapy. She developed increased hyperemia, edema, and ulceration of her bilateral labia with increasing pain. The patient underwent labial biopsy which demonstrated atypical glands consistent with cutaneous involvement of previously documented adenosquamous carcinoma.

Our case delineates difficulties encountered in treatment of this locoregional advanced cancer, progression of disease on treatment, and suspected poor prognosis. Our case also points to the need for identification of actionable as well as possible novel molecular targets for drug development in this rare malignancy, the premise of “precision medicine”. Since adenosquamous carcinoma of the anus is an exceedingly rare cancer, the approach to management is challenging. Further studies are needed in order to establish standard therapeutic regimens for this rare malignancy.
51-year-old white male was diagnosed with stage IIIb, T3aN1M0 rectal cancer of the proximal rectum, 10 cm from the anal verge. This was proven with biopsy, CT of the chest/abdomen/pelvis, and local staging MRI of the pelvis. The patient was otherwise healthy and was treated in the past for a left eye choroidal hemangioma with verteporfin photodynamic therapy and intraocular bevacizumab. The patient was identified as a candidate for the PROSPECT trial and agreed to be randomized to neoadjuvant FOLFOX with selective use of combined modality chemoradiation.

While receiving chemotherapy, he developed severe neutropenia and diarrhea. He was found to have a heterozygous mutation of dihydropyrimidine dehydrogenase enzyme making him intolerant of 5-fluorouracil. He was presented at the multidisciplinary tumor board several times regarding the aspects of his care and treating oncologist started him on growth factor support and fluorouracil dose reduction. He did not have to stop treatment at any time. He completed 6 cycles of neoadjuvant FOLFOX and resulted in >20% tumor regression based on restaging MRI, as well as a clinically noted decrease intraluminally visualized with proctoscopy. Therefore, he did not require additional neoadjuvant chemoradiation. The patient underwent a laparoscopic low anterior resection with total mesorectal excision, low colorectal anastomosis and diverting loop ileostomy. His surgical pathology was Stage IIA ypT3N0 and the TME was graded as complete with all negative margins. He then completed an additional 3 months of adjuvant chemotherapy prior to successful loop ileostomy reversal. Three months after completion of his adjuvant chemotherapy, the retinal hemangioma was noted to have increased in size. Subsequent biopsy was consistent with metastatic rectal adenocarcinoma. He is currently being evaluated by ocular oncology but remains without any other evidence of metastatic disease or local recurrence.

As a PROSPECT trial patient, he had a history of stage III rectal cancer treated with neoadjuvant FOLFOX for 3 months followed by laparoscopic low anterior resection with diverting loop ileostomy and then 3 months of adjuvant FOLFOX followed by loop ileostomy closure. Prior to his rectal cancer diagnosis, he was treated for a retinal hemangioma which had grown and biopsied coming back as metastatic rectal cancer with no other evidence of metastasis. The patient’s chemotherapy course was also complicated by an enzyme deficiency making him intolerant of 5-FU. His overall rare diagnosis and treatment was an example of a complex multidisciplinary solution for a unique problem.
Muir-Torre syndrome (MTS) is a rare autosomal dominant condition characterized by sebaceous neoplasms and visceral malignancies. The sebaceous neoplasms that can occur in MTS include sebaceous adenoma, sebaceous carcinoma, sebaceoma, and keratoacanthoma. The most common visceral malignancies include colorectal and genitourinary (i.e. uterine) cancers. This case report describes a 67 year old female with a history of uterine cancer who was diagnosed with a sebaceous adenoma at a routine visit to a dermatologist. The patient was then advised to undergo a colonoscopy which showed the presence of a stage IV colon cancer.

A 67-year-old white woman with a history of uterine cancer presented to her dermatologist with three new skin lesions on her face and neck. The patient stated the lesions had been present for a few months and were growing in size. The lesions were biopsied, found to be sebaceous adenomas, and eventually excised. Given the patient’s history of uterine cancer in addition to her recently diagnosed sebaceous adenomas, it was considered that the patient may have Muir-Torre syndrome and was advised to undergo a screening colonoscopy. The patient’s family history was unremarkable for any first- or second-degree relatives with uterine, colon, or skin cancer. Her last colonoscopy was performed four years prior and showed no evidence of polyps or malignancy. The patient underwent a colonoscopy and was found to have a mass in the proximal ascending colon. Biopsy of the mass demonstrated adenocarcinoma. She also underwent a CT scan of her abdomen and pelvis which showed a mass in the proximal ascending colon in addition to several enlarged mesenteric lymph nodes. The patient elected to undergo right hemicolectomy for removal of the mass and pathological sampling of the enlarged lymph nodes. The patient and her children also underwent genetic testing for mutations in mismatch repair proteins. The patient’s surgery was performed without any complications. Histopathological analysis showed all reactive lymph nodes to be negative for any signs of malignancy. Genetic testing results received after surgery demonstrated mutations in genes coding for mismatch repair proteins, hMSH2 and hMLH1. Results of her children’s genetic testing did not reveal any mutations in these genes.

Newly discovered sebaceous neoplasms should raise concern for the possibility of MTS. This is especially true for patients with a past history of visceral malignancy. Patients in this situation should undergo more aggressive screening for other potential malignancies like colon cancer. Their work up should include a colonoscopy.
Kiosk 4- Trauma/Critical Care
64. EARLY USE OF EXTRACORPOREAL MEMBRANE OXYGENATION FOLLOWING PENETRATING THORACIC TRAUMA
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John H Stroger, Jr. Hospital of Cook County

Post-traumatic respiratory insufficiency is a potentially lethal complication following penetrating chest injury. Extracorporeal membrane oxygenation (ECMO) provides an alternative option for patients who fail both standard and advanced ventilator rescue techniques. However, the use ECMO in trauma patients is often under utilized and applied late in the patient’s care, likely due to concern of worsening blood loss and coagulopathy. Here, we present a case of successful use of ECMO following penetrating chest trauma and subsequent respiratory failure.

An 18 year old male presented to the trauma bay following multiple gunshot wounds to the chest. He arrived hypotensive and was immediately taken to the operating room. He underwent left thoracotomy, left lower lobe tractotomy. The chest was packed and left open due to hemodynamic instability. In total he received 57 units of packed red blood cells. Post operatively, the patient was initially difficult to ventilate and oxygenate, secondary to his chest injuries and large volume resuscitation. The decision was made to cannulate the patient for venous-venous (V-V) ECMO. After 16 days of V-V ECMO and additional operations for chest closure and washout, he was successfully weaned decannulated on hospital day 16.

This case illustrates the usefulness of ECMO early in the treatment course of chest injury patients.
Polypharmacy overdose remains a troubling issue to manage, particularly due to the increasing involvement of cardiovascular medications and the ensuing physiological disturbances. Recent poison control reports state cardiovascular drugs were involved in 3.99% of all exposures and 12.45% of fatalities. The profound derangements in cardiac output and systemic regulation resulting in cardiogenic shock are often refractory to medical management alone. We describe a case where VA-ECMO was used as an effective treatment for polypharmacy-induced cardiogenic shock and respiratory failure after failure of other therapies.

A retrospective chart review was performed to generate this case report. A 38-year-old female presented to the emergency department with polysubstance overdose of amlodipine, amitriptyline, clonazepam, cyproheptadine, promethazine, and montelukast. Patient arrived with a GCS of 3T and was hypotensive and tachycardic prior to cardiac arrest with return of spontaneous circulation in 13 minutes. Typical resuscitative measures as well as sodium bicarbonate, calcium gluconate, naloxone, insulin, charcoal, lipid emulsion, vasopressors, and glucagon were given with minimal improvement. Continued cardiogenic shock and respiratory failure despite maximal medical therapy led to a second code after patient was transferred to the intensive care unit. At that time, cardiothoracic surgery was consulted for placement on VA-ECMO.

Our patient was successfully placed on VA-ECMO with ability to follow commands on hospital day 2. She had a number of other conditions that were treated with the appropriate modalities including continuous renal replacement for renal failure, right above knee amputation for limb ischemia, and bowel resection for mesenteric ischemia. Patient was eventually transferred to a rehabilitation hospital on hospital day 55 with a good neurologic outcome.

VA-ECMO can be used successfully as treatment of polypharmacy induced drug overdose involving cardiovascular medications when other resuscitative and conventional therapies have failed.
66. FACTORS CONTRIBUTING TO MORBIDITY AFTER COMBINED ARTERIAL AND VENOUS LOWER EXTREMITY TRAUMA

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University of Tennessee Medical Center, Memphis

Little data on the appropriate management of concomitant venous and arterial injuries exists. Vein ligation is often faster, although the obstructive outflow may lead to congestion with subsequent muscle ischemia or thrombosis of the arterial repair. The purpose of this study was to evaluate the impact of management of venous injury in patients with combined arterial and venous trauma in the lower extremities.

Patients with common iliac (CIA), external iliac (EIA), common femoral (CFA), superficial femoral (SFA) and popliteal arterial injuries over 10-years were identified. Deaths within 48 hours were excluded. Patients were stratified by age, severity of shock, location and management of injury, and timing/type of anticoagulation. Outcomes including muscle ischemia requiring debridement and necessity for secondary intervention of arterial repair were evaluated to determine risk factors for muscle ischemia and secondary intervention of arterial repair.

70 patients were identified with both arterial and venous injuries: 2 CIA, 5 EIA, 3 CFA, 58 SFA and 2 popliteal. 40 underwent vein ligation and 30 vein repair. Mean age and ISS were 28 and 18, respectively. Patients who required secondary intervention had a greater degree of shock on presentation (PRBCs, 13 vs 6 u, p=0.02) and were more likely to require muscle debridement (50 vs 9%, p=0.02) and amputation (33 vs 3%, p=0.03). There was no difference in ischemic time between patients undergoing vein repair compared to ligation. Vein ligation did not produce a higher incidence of muscle debridement (10 vs 15%, p=0.72), necessity for secondary intervention (10 vs 7.5%, p=0.99) or amputation (3.3 vs 7.5%, p=0.63).

Vein repair did not impact muscle ischemia or arterial repair success in patients with combined venous and arterial trauma. Patient morbidity following extremity vascular trauma is most related to degree of shock.
Kiosk 4- Trauma/Critical Care
67. PREDICTIVE VALUE OF THE INITIAL TRAUMA SURVEY: IS OUR HUNCH GOOD ENOUGH?
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SC Pozo BS, AP Trammel BS, ML Kaiser MD
Greenville Health System

Historically, trauma protocols utilized the initial trauma survey as a guide of when to order further tests such as CT scanning; however, some trauma surgeons propose to pan scan all blunt trauma patients. This study aims to determine the predictive value of the initial trauma survey and the use of CT scans at a level one trauma center.

Between October 1, 2015 and April 30, 2017, we conducted a single institution, prospective study of the work-up for blunt trauma patients. The study population consisted of all nonpregnant adult patients who presented as a level one or level two blunt trauma during designated hours. For each study participant, data surrounding the indications for CT scans was collected from the surgical attending physician after the initial trauma assessment but before the initiation of the CT scan. Additionally, data was collected on patient demographics, mechanism of injury, injuries identified, and patient outcomes.

A total of 529 patients were included; 75% male, 25% female. The average age for the study population was 43 years. Thirteen trauma surgeons participated in the study, 4 were fellowship trained. Fellowship trained trauma surgeons evaluated 38% of the patients (198) while non fellowship trained surgeons evaluated 61% of the patients (323). The trauma surgeons were able to identify significant head trauma using the initial trauma survey with a sensitivity of 62% and specificity of 62% (accuracy of 62%), significant thoracic injuries with a sensitivity of 35% and specificity of 79% (accuracy of 72%), and significant abdominal injuries with a sensitivity of 40% with a specificity of 71% (accuracy of 65%). The majority of patient underwent total body scan (61.8%). Neither experience nor fellowship training was found to significantly affect the accuracy of identifying injury based on the initial trauma survey. There were no missed injuries.

Trauma surgeons’ ability to identify significant injury on the initial survey alone is inadequate. Protocols utilizing observation and/or CT scan are necessary to identify significant injury.
Penetrating injuries to the neck involving both the trachea and esophagus pose several technical challenges even in the most experienced hands. In light of few or dated guidelines for management and low incidence of occurrence, these injuries can have devastating complications or even death. In this case study, we report a complex tracheoesophageal injury in order to expand the literature and shed light on potential updated management guidelines.

This is a case study describing the presentation and management of a complex tracheoesophageal injury from a gunshot wound (GSW).

A 45 yo male presented to the trauma bay with a single GSW to the anterior neck, midline and just below the thyroid cartilage. An endotracheal tube (ETT) was placed through the GSW into the trachea for emergent airway management. An esophagogastroduodenoscopy revealed an esophageal injury which was managed with an esophageal stent. During the formal revision of the tracheostomy in the operating room the trachea appeared to be completely separated at the level of the GSW with two separate distal and proximal segments. The esophageal stent was visualized posterior and to the right of the trachea. This was temporized with an ETT bridging the gap. The patient was brought back to the operating room with plans to perform a tracheoplasty with reconstruction using pectoralis major flap, creation of a salivary fistula via lateral pharyngotomy, and open gastrojejunostomy tube placement. This case was complicated by major bleeding from an esophageal artery branching directly off the aorta which led the patient to asystole with ROSC. The procedure was completed but the patient’s physiological status declined and due to the patient’s family wishes he was compassionately weaned the following day.

Although these injuries have a high rate of morbidity and mortality, this case may have had a different outcome if a definitive operation was performed immediately instead of managing with esophageal stent.
Firearm injuries remain a significant contributor to morbidity and mortality in the United States. Aggregate data from large databases has the potential to misrepresent and de-emphasize the heterogeneity of this patient population. There may be significant differences with regard to outcomes, injury severity, resource utilization, and associated comorbidities dependent on the shooter and accidental v. intentional nature of the event.

We evaluated firearm injuries at our Level 1 trauma center from Jan 2012-June 2016. Demographic data and injury patterns were abstracted from the trauma registry. Charts were reviewed to determine the nature of the injury and classified under unintentional, intentional (assault), and self-inflicted subgroups. Statistical analysis was performed using chi square and ANOVA.

Of the 1100 patients reviewed, 15% were unintentional, 17% self-inflicted, and 68% intentional (assault) injuries. There were significant differences among the groups with regard to ISS, length of stay, and mortality with self-inflicted injuries representing the most severely injured patients (p<.0001). In addition, significant differences were observed with regard to location of injury as unintentional injuries primarily involved the extremities, intentional injuries involved the thoraco-abdominal region, and self-inflicted injuries predominately involved the head (p<.0001). Despite higher injury severity, fewer self-inflicted injured patients required operative intervention. Pre-existing diagnoses of mental illness and alcohol abuse were significantly higher in the self-inflicted injuries but illicit drug use was highest in the intentional (assault) injuries.

Patients sustaining firearm injuries are markedly different with regard to outcomes, injury patterns, need for operative intervention, and preexisting addiction and mental illness dependent upon the circumstances surrounding the injury including self-inflicted injuries as compared to assaults and accidental versus intentional injuries. Analysis of large databases may lead to an under-appreciation of these differences and inappropriate injury prevention strategies in these distinct patient populations.
Bullet fragments lodging in the wall of the aorta is a rare phenomenon with potentially devastating consequences. These ballistic injuries have been reported to migrate within the arterial or venous circulation resulting in life-threatening complications from the migration event as well as risk from exsanguination. Herein, we report a case of a bullet lodged in the wall of the thoracic aorta, which was successfully treated with a multidisciplinary approach utilizing minimally invasive techniques: endovascular stent coverage followed by thoracoscopic retrieval of the bullet fragment. Case Report: A 50-year-old man presented as a trauma alert after two gunshot wounds: one to the chest and one to the back. On initial presentation, he reported decreased sensation and inability to move his lower extremities. Decreased breath sounds were noted over the left hemithorax and a left-sided thoracostomy tube was placed, with 400 ml of blood return upon insertion and a rush of air. He was hypotensive (60/44 mmHg), requiring resuscitation with fluids, blood products, tranexamic acid, and norepinephrine drip. CT imaging revealed a large bullet fragment embedded in the descending aortic left lateral wall, a L1 burst fracture with bone fragments in the spinal canal, and a posterior liver contusion. A transthoracic echocardiogram confirmed the bullet fragment lodged within the aortic wall, partially intraluminal. Initially, his unstable spinal injury precluded him from positioning for a left sided thoracotomy. Neurosurgery proceeded first with a T11 through L3 percutaneous arthrodesis using stereotactic navigation for stabilization of his spinal injury on hospital Day 3. The patient tolerated this procedure well, and was cleared by neurosurgery to undergo planned surgical intervention with vascular and thoracic surgery for retrieval of bullet fragment. A combined team approach between vascular and thoracic surgery proceeded with retrieval of the bullet fragment from the aortic wall. An initial aortogram demonstrated a bullet fragment 5 cm below the subclavian artery, with no contrast extravasation. A Gore Tag 26 x 26 x 10 cm thoracic stent was subsequently placed by vascular surgery, sealing either side with ballooning. The thoracic surgery team then proceeded with left thoracoscopy, pulmonary decortication and removal of bullet fragment from the aortic wall. There was only mild oozing from the aortic wall, which was appropriately controlled. Completion angiogram showed good seal, no extravasation, and the bullet fragment no longer was present. The patient recovered well and was eventually discharged to a rehabilitation center. Discussion: The advent of the acute trauma centers, and advances in cardiovascular technology and techniques have led to an increased rate of successful repair of these acute thoracic injuries. The use of stent grafts have increased the scope of treatment, along with minimally invasive thoracic procedures, such as video assisted thoracoscopy. A combined team approach, as in this case, allows for successful repair of these injuries via less morbid interventions such as endovascular and thoracoscopic procedures.
BILATERAL DISTAL URETERAL TRANSECTION IN THE SETTING OF BLUNT TRAUMA

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UF Health Jacksonville

Ureteral injuries secondary to trauma account for less than 1% of all urologic traumas with penetrating injuries being far more common than blunt. Unilateral ureteral transection is more common than bilateral ureteral transection. Bilateral ureteral transection has been described in only 12 case reports all of which described proximal ureteral injuries. Ureteral injuries can result in significant morbidity and mortality. Associated intra-abdominal injuries occur in 90% of patients with a ureteral injury with an associated mortality of 17%. This is the first reported case of bilateral distal ureteral transection due to blunt trauma.

We present the first reported case of bilateral distal ureteral transection due to blunt trauma.

A 69-year-old male presented as the restrained driver involved in a high-speed head on motor vehicle collision. When he arrived he was awake and alert and initially hemodynamically stable. On examination he had bilateral pneumothoraces, an open book pelvic fracture, an open wound at the left groin, and gross hematuria on foley catheter placement. He subsequently developed hemodynamic instability and required emergency transfusion. He stabilized enough to obtain a computed tomography (CT) scan that revealed a liver laceration, hemoperitoneum, extraperitoneal bladder rupture, and concern for ureteral injury. He was taken to the operating room and underwent emergent exploratory laparotomy. Exploration revealed a ruptured bladder and it appeared both ureters had been avulsed off of the bladder. The right ureter was completely transected at the mid ureteral level at the pelvic brim. The left ureter was found to be decompressed without obvious injury, however, the bladder injury left concern for a distal avulsion. Due to persistent pelvic bleeding and hemodynamic instability he was taken to interventional radiology for an angiogram and embolization. Due to hemodynamic instability, percutaneous nephrostomy tubes were not placed. Re-exploratory laparotomy was performed that revealed abdominal packs in place with no signs of uncontrolled bleeding. The patient was transferred to the surgical intensive care unit (SICU). Continuous renal replacement therapy (CRRT) was begun due to hyperkalemia. The following day he underwent re-exploratory laparotomy with complex urologic injury repair by the Urology team. A distal complete left ureteral transection was confirmed in addition to the known right transection. Left ureteral re-implantation was performed and augmented by ureteral stent drainage. All anterior wall bladder injuries were repaired as well as the bladder dome injury. Due to coagulopathy, acidosis, and consistent slow bleeding it was decided not to reconstruct the right ureteral injury. A urinary diversion stent was placed and externalized. The patient was transferred back to SICU and remained on CRRT. Post-operatively, multisystem organ failure ensued. Compassionate wean was performed on hospital day 5.

Patients with traumatic ureteral injury are often critically ill due to associated injuries and require prompt identification of ureteral injury as well as identification of the need for urinary diversion in the hemodynamically unstable patient to decrease morbidity and mortality in these patients.
Kiosk 4- Trauma/Critical Care

73. CORRELATION BETWEEN INJURY SEVERITY SCORE AND SERUM MYOGLOBIN LEVEL IN TRAUMA PATIENTS

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Genesys Regional Medical Center

Recent studies recommend limiting the amount of crystalloid perfused during resuscitation for trauma patients. However, severely injured sustain extensive muscle damage with subsequent high serum myoglobin precipitating acute renal injury (ARI) if not treated immediately. To timely identify patients at risk of ARI, we proposed determining the strength of the correlation between the American College of Surgeons defined injury severity score (ISS) and the serum myoglobin level in the first 24 hours of arrival to the emergency room.

A retrospective analysis was conducted at a 400-bed community teaching hospital with a level 2 trauma section and annual admission of 750-800 patients utilizing the data in the trauma registry (2010-2015). Patients with an ISS score of 15 or above were selected and a Pearson correlation two-tailed analysis was used to identify the relationship with serum myoglobin.

There were 192 patients total, with 135 males (70.3%) and 57 females (29.7%) and a mean age of 53.88 (range 18-96). The mean ISS was 25.37 (range 16-75). The median level of serum myoglobin in the first 24 hours of admission was 848.56 ng/mL (range 22-11,197 ng/mL). There was a strong and significant correlation between the two variables ($r=0.397, p<0.0001$), suggesting that with higher ISS acute kidney injury is eminent and should be avoided early in the patient management.

We recommend that attention should be diverted toward urine alkalinization and diuretics using crystalloid following initial resuscitation. This becomes more significant with a higher ISS.
Kiosk 4- Trauma/Critical Care
74. ACUTE TRAUMATIC SUBDURAL HEMATOMA: FACTORS INFLUENCING READMISSION IN THE ELDERLY
T Ho DO, J Frisbie DO, TJ Wasfie MD, J Boyer PA-C, K Barber PhD, BS Shapiro MD
Genesys Regional Medical Center

Studies have shown that admission rates for acute traumatic subdural hematomas have increased through the years. Many of these patients are readmitted for recurrent subdural hematomas or other complications. This has increased the financial burden placed on our health care system. The purpose of this study is to identify risk factors affecting readmission rates for patients with traumatic subdural hematomas. Through early identification of such risk factors, providers can change surveillance strategies after discharge for these patients thereby reducing readmissions and associated health care costs.

A retrospective analysis was conducted including patients with traumatic subdural hematomas age ≥18 admitted through the trauma service from 2014-2016. A total of 221 patients had traumatic subdural hematomas. Readmission data was incomplete and not included for 54 patients. In the final analysis, 75 patients were readmitted and 92 patients were not readmitted. The following factors were compared for these two groups; patient age, sex, diagnosis on readmission, number of comorbidities, anticoagulation status, surgical intervention, ICU length of stay, injury severity score, discharge disposition, and number of days until readmission.

Most readmissions were within 5 months of initial discharge. 42.3% of patients were readmitted within one month. Patients who were readmitted had an overall higher mean age than those who were not readmitted (74.1 vs. 65.4, p=0.0009). A higher proportion of patients who were readmitted were over the age of 60 compared to those who were not readmitted (81.3% vs. 60.9%, p=0.0047). 80% of patients who were readmitted had >4 comorbidities compared to only 38% of those patients who were not readmitted (p<0.0001). Recurrent acute subdural hematomas (RASH) were the main diagnosis in 32.2%, and other diagnosis (non-RASH) in 67.8%.

This study underscores the importance of identifying risk factors, age >60 and >4 comorbid conditions, that affect readmission rates for patients with traumatic subdural hematomas within 5 months of initial discharge and the implementation of strategies to decrease this trend including extension for community health outcome programs (ECHO).
Kiosk 4- Trauma/Critical Care

75. INSURANCE STATUS AS A PREDICTOR OF HOSPITAL LENGTH OF STAY IN TRAUMA PATIENTS

D Swift BS, JK Friedman MD, AA Smith MD PhD, JP Hunt MD MPH, P Greiffenstein MD, J Duchesne MD, R Schroll MD
Tulane University School of Medicine

Hospital length of stay (HLOS) has emerged as a way to understand outcome disparities and health care costs in trauma patients. Data on HLOS and insurance status is equivocal, with some recent studies pointing to decreased HLOS in uninsured patients. Proposed explanations include mechanism of injury (MOI), racial disparities, decreased resource utilization, and discharge disposition. Our objective was to determine if the trend for decreased HLOS in uninsured trauma patients was observed in the racially and economically diverse population of New Orleans, and to further elucidate the cause of that disparity if it did exist.

Insurance status and HLOS for adult trauma patients at a major level I trauma center from 2012-2014 were recorded. Results were analyzed using a Student’s t-test, one way analysis of variance, and Chi-Squared test. A regression model to control for confounding factors was used to calculate independent changes in HLOS.

1337 insured patients and 1584 self-pay patients were analyzed. Unadjusted HLOS was longer in insured patients (9.8 days vs. 6.4 days, p<0.001). Insured patients stayed 11.6% (p<0.001) or 0.523 days longer (p<0.001). Longer HLOS was independently associated with higher injury severity score, blunt trauma, male gender, older age, higher shock index, lower Glasgow coma score, comorbidities, increased procedures, and medical discharge.

In clarification of conflicting evidence on this subject, we found that patients without insurance had a significantly shorter HLOS compared to those with insurance. In contrast to previous studies, this relationship persisted when controlling for race, discharge disposition, MOI, and number of procedures performed. While further study on the ways in which provider-related factors may affect HLOS is warranted, particularly with regard to ancillary services, results from this study suggest that patient factors may play a role in the differences observed in HLOS between insured and uninsured patients.
<table>
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<tr>
<th>Predictor</th>
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<td></td>
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* Dropped from final model due to insignificant p-values.
Temporary intravascular shunts (TIVS) are utilized in instances where definitive treatment of a traumatic vascular injury cannot be immediately performed. In the era of balanced blood product resuscitation (BBPR), the outcomes associated with the use of TIVS are poorly understood. The objective of this study was to not only perform a contemporary review of cases in which a TIVS was used, but to also compare patient outcomes both before and after the implementation of BBPR.

This was a retrospective chart review of all patients presenting to our level 1 trauma center treated with a TIVS between 2011 and 2016. This cohort of patients was then compared to a similar cohort of patients who presented prior to the implementation of BBPR (2002-2007). Outcome measures included mortality, post-operative complications, and graft outcomes.

A total of 39 vascular injuries requiring TIVS were identified in 31 patients. The majority of injuries (27/39, 69.2%) were arterial and were most often secondary to a penetrating trauma (28/39, 71.8%). Overall mortality was 16.1% (5/31). Even with the significant increase in FFP use in the more recent cohort, outcomes including survival (26/31, 84% vs. 27/29, 93%, p=0.3), amputation rate (3/31, 9.7% vs. 4/29, 13.8%, p=0.6), and graft thrombosis rate (5/39, 12.8% vs. 7/43, 16.3%, p=0.7) were unchanged over time. No patients who left the OR with a TIVS in place were given therapeutic anticoagulation. Interestingly, despite an improvement in base deficit at the time of presentation (-10.5 ± 1.3 vs. -5.6 ± 1.2, p=0.007), TIVS are being utilized more frequently for “damage control” purposes in the current era (27/39, 69.2% vs. 15/43, 34.9%, p=0.001).

In this single institution study, the outcomes of temporary intravascular shunting were compared both prior to and after the implementation of BBPR. Despite the changes in resuscitation paradigms, the usage of TIVS remains a safe and viable option.
### Table 1. Comparison of patients before (2002-2007) and after (2011-2016) the implementation of balanced blood product resuscitation.

<table>
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<td>-</td>
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<td>SFA 12 (30.8%)</td>
<td>-</td>
</tr>
<tr>
<td>Damage control</td>
<td>15 (34.9%)</td>
<td>27 (69.2%)</td>
<td>0.001*</td>
</tr>
<tr>
<td>Base deficit</td>
<td>-10.5 ± 1.3</td>
<td>-5.6 ± 1.2</td>
<td>0.007*</td>
</tr>
<tr>
<td>Mean blood products (units):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRBCs</td>
<td>12.0 ± 2.1</td>
<td>18.4 ± 3.1</td>
<td>0.1</td>
</tr>
<tr>
<td>FFP</td>
<td>3.3 ± 0.7</td>
<td>10.7 ± 2.1</td>
<td>0.002*</td>
</tr>
<tr>
<td>Platelets</td>
<td>0.5 ± 0.1</td>
<td>1.1 ± 0.4</td>
<td>0.09</td>
</tr>
<tr>
<td>Cryoprecipitate</td>
<td>2.7 ± 0.8</td>
<td>1.8 ± 0.8</td>
<td>0.4</td>
</tr>
<tr>
<td>Mean dwell time</td>
<td>31.9 ± 3.3</td>
<td>33.3 ± 4.5</td>
<td>0.8</td>
</tr>
<tr>
<td>Amputation rate</td>
<td>4 (13.8%)</td>
<td>3 (9.7%)</td>
<td>0.6</td>
</tr>
<tr>
<td>Graft thrombosis rate</td>
<td>7 (16.3%)</td>
<td>5 (12.8%)</td>
<td>0.7</td>
</tr>
<tr>
<td>Fasciotomy rate</td>
<td>23 (79.3%)</td>
<td>23 (74.2%)</td>
<td>0.6</td>
</tr>
<tr>
<td>Survival rate</td>
<td>27 (93.1%)</td>
<td>26 (83.8%)</td>
<td>0.3</td>
</tr>
</tbody>
</table>

SFA: superficial femoral artery, POV: popliteal vein, PRBCs: packed red blood cells, FFP: fresh frozen plasma
Kiosk 4- Trauma/Critical Care
77. THAT’S NO BEE STING: PENETRATING NECK TRAUMA WITH ISOLATED VERTEBRAL ARTERY INJURY
KM Rountree DO, JA Zachwieja DO, JA Coleman MS-IV, IJ Hinton DO, PP Lopez MD
Henry Ford Macomb Hospital

A case report of a rare case of penetrating neck injury by a metallic object thrown from a lawn mower causing an isolated vertebral artery injury. Computed tomography imaging demonstrated a metallic object transversing the C4-C5 vertebral foramen and transecting the left vertebral artery without evidence of injury to other major structures. Isolated vertebral artery injury from penetrating neck trauam is rare and accounts for approximately 0.5% of cases of arterial trauma.

This case emphasizes the importance of appropriate imaging studies, emergent surgical exploration, and high index of suspicion for unsuspected injuries in stable patients with penetrating neck injury. The wire was removed at time of neck exploration without complication and hemostasis achieved with application of topical agents and pressure. At follow up the patient had no defiict or complaints.

Figure 2: A) Metallic object (arrow head) traversing the neural foramen of C4-C5 with hematoma (arrow) anterior. B) Metallic object (arrow head) appeared to transect the left vertebral artery within the canal.
78. THE PROBLEM OF EXPOSURE FOR DAMAGE CONTROL IN AN ADOLESCENT WITH MULTIPLE ABDOMINAL GUNSHOT WOUNDS SIX MONTHS AFTER SURGERY FOR A PREVIOUS ABDOMINAL GUNSHOT

J Schwartz DO, NJ Madden DO, CA Butts DO, GJ Slotman MD, MH Budeir MD
Inspira Health Network

Surgical management of abdominal gunshot injuries is complex, with life-threatening hemorrhage an immediate problem, and intra-abdominal infection, sepsis, and organ dysfunction frequent sequelae. During trauma surgery, rapidly achieving exposure adequate to the extent of injury is vital. However, severe scarring from prior operations can increase the difficulty in gaining exposure. This is especially challenging in patients who are shot after surviving a previous abdominal gunshot wound.

A 17-year-old male sustained a gunshot wound to the abdomen resulting in a duodenal, small bowel and hepatic flexure injury necessitating a gastrojejunostomy, pyloric exclusion, small bowel resection, and segmental colon resection. Six months after complete recovery, the patient once again sustained multiple gunshot wounds to the abdomen and was taken emergently for exploratory laparotomy. The identified injuries included penetrating wounds to the head of the pancreas, stomach, and transverse colon. A segmental colectomy was performed, gastric injuries were repaired, and the pancreas was oversewn for hemorrhage control. Attempts to Kocherize the duodenum were unsuccessful given the dense adhesions in this area from his previous duodenal injury. At this point, we opted for a damage control approach to allow for resuscitation. Upon return to the OR for a second look, bile was emanating from a bullet tract that traversed the head of the pancreas. An intraoperative cholangiogram was performed through the gallbladder, which confirmed a leak within the intrapancreatic portion of the distal common bile duct. Given the inability to expose and repair the common duct or safely perform a pancreatic resection in the setting of his dense adhesive disease, we attempted to control the spillage of bile by fashioning a pancreaticojejunal anastomosis. During his post-operative course, the patient had elevated amylase levels in his drains and he underwent endoscopic retrograde cholangiopancreatography. Findings included a main pancreatic duct injury adjacent to the ampulla. A pancreatic sphincterotomy, septotomy and placement of a pancreatic stent were performed. The patient was eventually discharged and continues to do well in the post-operative period.

The management of penetrating pancreatic injuries remains a challenge, especially when combined with distal common bile duct injury. Careful inspection and full assessment of the extent of injury is essential in determining the best operative management. Repeated insult to the pancreas and duodenum limits the ability to fully evaluate injury or obtain adequate exposure. When this occurs, a definitive approach to management has not been previously reported. This case is unique in that complete intrabdominal evaluation was impossible due to the extensive amount of adhesions and residual inflammatory tissue from prior penetrating trauma and interventions to the same anatomic area within a six-month period. Further attempts at exposure may have proved catastrophic due to potential injury to the vena cava and/or the portal vein; thus, management must be tailored to the patient’s individual situation.
Kiosk 4 - Trauma/Critical Care
79. DOES 24 HOUR BEDREST AFFECT OUTCOMES IN PATIENTS WITH LOW GRADE (GRADE I-II) SPLENIC LACERATIONS OR HEMATOMAS?
SG Bhat MD, EA Whittington MD, CM Lawson MD, RE Heidel PhD
University of Tennessee Medical Center, Knoxville

Early ambulation in low grade splenic injuries (Grades I and II) is a poorly researched protocol. Most trauma centers in the country do some form of bedrest for patients with splenic injuries, despite a low grading. However, the amount of time for bedrest is debated and not clearly defined for non-operative management of these injuries. Bedrest protocols have been studied in the pediatric population, but even this literature is limited in number and scope. We would like to examine the effects that our current protocol of early ambulation has on patient outcomes to determine if any bedrest is necessary.

We are comparing two arms in this study: retrospectively collected data from patients with low grade (grade I-II) splenic injuries who were on the previous protocol of 24 hours of bedrest and prospectively collected data from patients who are ambulated at least 100 feet three times daily within the 24 hours after diagnosis, provided no contraindication to ambulating. Retrospective data review over a 2 year period was performed on patients who were diagnosed with low grade splenic injuries; prospective data will be collected from patients who met inclusion criteria and this data will be obtained on a rolling basis for at least the next three years. From the data obtained, we will compare the following outcomes: failure of non-operative management within 3 days, deep venous thrombosis, pulmonary embolism, pneumonia, splenic abscess, pleural effusion, transfusions required, deaths, and mean length of stay. As our prospective cohort group grows in number, we will compare it to the retrospective cohort group to determine the effects that early ambulation has in our patient population.

Retrospective data collection of the study was performed and found that of the 101 patients who met inclusion criteria, 6 failed non-operative management, 2 developed pneumonia, 5 developed pleural effusions, and there was 1 death. The average length of stay of this group was 4.7 days. The prospective data collection is ongoing and once we have approximately 26 patients in the prospective group, we can begin analyzing the data and perform a 4-to-1 comparison between the prospective and retrospective arms. As more patients are included in the prospective arm, we will continue to compare the overall trend in outcomes of the patient population who meets inclusion criteria.

After completing the retrospective data collection arm of the study, we have found that of the 101 patients in our patient population, 6 failed non-operative management, 2 developed pneumonia, 5 developed pleural effusions, and 1 death. We have found that the average length of stay for the retrospective group was 4.7 days. As our cohort of prospective patients continues to grow, we will compare the two arms of the study to determine the effects early ambulation has on outcomes in patients with low grade splenic injuries.
While superficial temporal artery (STA) pseudoaneurysms remain less than 1% of all traumatic pseudoaneurysms, they remain within the differential diagnosis in patients following blunt head trauma. Traumatic STA aneurysms are classified as acute, subacute, or chronic depending on time from injury to diagnosis. Respective time frames are less than 3 weeks, 3 weeks to 3 months, and greater than 3 months. STA aneurysms are usually easily treatable and well tolerated. Below we present the case of a 14-year-old male who presented as a level 2 trauma activation to a rural level 1 center following an MVC roll over.

Our patient sustained an MVC with partial ejection resulting in retained glass foreign bodies throughout his left temporal region. The patient’s wounds were irrigated and cleansed in the trauma bay. All identifiable foreign bodies were extracted and a small laceration was repaired. A week later when seen for suture removal, slight swelling was noted, pulsatile character or appreciable bruit. On re-evaluation in the trauma clinic a couple weeks later further swelling and a 1 cm pulsatile mass was noted. Diagnosis of subacute traumatic STA pseudoaneurysm was made. Contrast CT demonstrated a 9 mm left STA aneurysm. Patient was subsequently scheduled for surgery. The lesion was successfully identified and excised.

Pathology confirmed a 1.1 x 2.3 cm STA pseudoaneurysm. Of note, within the deep margin of the specimen was a retained glass fragment thought to be responsible for the pseudoaneurysmal degeneration of the vessel.

While uncommon, treatment of these delayed traumatic injuries is often easily accomplished. Options range from compression for small, acute pseudoaneurysms to embolization, clipping, or open ligation. Surgical ligation can be performed under local anesthesia as well. These injuries are most common in the young and the old. The young typically present with sports-related mechanisms of injury. The elderly often present with a history of repetitive falls. Differential diagnosis includes various benign cysts, lipomas, abscess, hematoma, arteriovenous fistula, vascular tumor or aneurysm of adjacent vessels. When correctly diagnosed and treated STA pseudoaneurysm repair is well tolerated.
GOING NOWHERE FAST: A COMPARATIVE STUDY IN MOPED AND MOTORCYCLE TRAUMA

JL Wentzel MD, AD Pinnola MD, K Muertos MPH, A Romano MD, A Pepe MD, JD Sciarretta MD, J Davis MD
Grand Strand Medical Center

The differences between mopeds and motorcycles are speed and regulation. In South Carolina, helmet laws are lax for both forms of transportation, but mopeds have fewer regulations on licensing, registration and operation. We hypothesize that although motorcycles are more likely to lead to severe injury due to higher rates of speed, mopeds represent a significant risk to riders on par with that seen in motorcycle traumas, particularly in regard to head injuries.

A retrospective chart review of all moped and motorcycle trauma at a single level one trauma center from 2013-2015 was performed. Demographics, alcohol intoxication, helmet use, GCS, ISS, ICU admission, hospital and ICU length of stay (LOS), ventilator requirements, rates of ICH, and mortality were compared between the groups. Fisher’s exact test and chi squared were used for comparative analysis with p<0.05 for significance.

Overall, 417 moped and 686 motorcycle traumas were identified. While both populations were predominantly Caucasian males, the moped riders were younger (38 vs. 41 years, p<0.001), more likely to be over the legal limit for alcohol intoxication (34.5% vs. 28.2%, p=0.036), and less likely to be wearing a helmet (9.2% vs. 20%, p<0.001). Motorcycle riders, while presenting with an equivalent GCS, had a higher ISS (8.8 vs 6.6, p=0.001), were 1.6 times more likely to be admitted to the ICU, and 1.9 times more likely to require ventilator support. However, LOS, ICU LOS, and overall ventilator days were comparable between the two groups. There was also a similar incidence of ICH (21.28% vs. 21.9%, p=0.809) and mortality (3.1% vs 5%, p=0.142) with increased odds of death in those with ICH.

Despite higher rates of speed achievable with motorcycles, many metrics remained similar to those seen in moped traumas. A need for increased safety measures, helmet regulations in particular, should be considered in an effort to reduce morbidity and mortality related to motorcycle and moped traumas.
Mortality in moped and motorcycle traumas with and without intracranial hemorrhages

With ICH: 5.8%
Without ICH: 2.1%

p<0.0001, OR 9.9 (5-19.5)
ICH: Intracranial hemorrhage
Kiosk 4- Trauma/Critical Care

82. PSYCHIATRIC COMORBIDITIES AND OUTCOMES IN TRAUMA PATIENTS: IS THERE A SIGNIFICANT DIFFERENCE?

PVP Perales MD, AE Elkbuli MD MPH, OM Morejon MD, MR Ramirez MD, MM McKenney MD MBA
Kendall Regional Medical Center

There is no data in the literature on whether the presence of psychiatric comorbidities affect outcomes in trauma patients. The main objective of this study was to determine whether the presence of psychiatric comorbidities has a significant impact on trauma outcomes, including mortality.

Our study is a review of prospectively collected data was performed utilizing our institution’s Trauma Registry for trauma patients admitted from 2013 through 2016. Patients who died in the first 24 hours, younger than 16 years old, and burns were excluded. Patients with pre-existing psychiatric comorbidities (psych) were compared to those with no pre-existing psychiatric comorbidities (non-psych). Demographics, ISS, operative procedures and mortality were included and compared between both groups. Chi Squared and t test analysis were used to compare data between groups with significance defined as p<0.05.

Patients identified with psychiatric comorbidities were older 60.4 (p <0.0001) and more likely female 56. (p <0.0001). Patients with psychiatric conditions had higher rates of penetrating versus blunt injuries 10.3% vs 7.4% (p=0.003). Moreover, patients with psychiatric comorbidities were more prone to need mechanical ventilation 3.7 vs. 1.9% (p = 0.004) but had a similar likelihood of getting an operative procedure 45.9 vs. 49.4% (p >0.05). The rate of readmissions and mortality were similar.

There are no differences in mortality or need for operative procedures between both groups. With good care, the presence of psychiatric comorbidities did not have significant impact on mortality in trauma patients.
<table>
<thead>
<tr>
<th></th>
<th>Trauma patient with no major psychiatric illness 2013-2016</th>
<th>Trauma patients with major psychiatric illness 2013-2016</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # of patients</td>
<td>10,363</td>
<td>745</td>
<td></td>
</tr>
<tr>
<td>Age (mean)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 65 y/o</td>
<td>33.6%</td>
<td>47.2%</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Female</td>
<td>38.7%</td>
<td>56.4%</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Mechanism of injury</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penetrating</td>
<td>7.4%</td>
<td>10.3%</td>
<td>0.003</td>
</tr>
<tr>
<td>Blunt</td>
<td>91.4%</td>
<td>87.5%</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>1.2%</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td>ISS (average)</td>
<td>8.5</td>
<td>8</td>
<td>ns</td>
</tr>
<tr>
<td>Required mechanical</td>
<td>1.9%</td>
<td>3.7%</td>
<td>0.004</td>
</tr>
<tr>
<td>ventilation %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaths (n)</td>
<td>184</td>
<td>15</td>
<td>ns</td>
</tr>
<tr>
<td>Mortality %</td>
<td>1.8</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Demographic Characteristics and Outcomes Variables
We describe the radiologic findings and the surgical treatment of an adult male who presented with a retro-aortic lumbar hernia after blunt trauma. To our knowledge, this type of injury has yet to be described in the literature. The purpose of this article is to discuss the clinical presentation of this unusual hernia and postulate the possible forces that led to its formation.

This case involves an otherwise previously healthy man who was struck by a truck. He was transferred from an outside hospital and arrived in the trauma bay awake complaining of moderate, non-radiating, mid abdominal pain, nausea and back pain. On his initial exam, he was hemodynamically stable and had mild to moderate mid abdominal tenderness as well as lumbar spine tenderness without step-off. The patient’s initial abdominal CT was remarkable for evidence of early small bowel obstruction related to a transition point as a loop of small bowel passed posterior to the aorta. (Figure 1) There was a wedge-shaped area of hypo-enhancement in the upper pole of left kidney with a small hematoma anterior to the right kidney. Bone findings included bilateral, displaced transverse process fractures of L2, displaced left transverse process fracture at L3 (Figure 3), as well as evidence of avulsion injury of the right superior pubic ramus. He underwent open abdominal exploration where a retroperitoneal defect was noted, containing small bowel coursing in the retro-aortic position as noted on the CT. There was a small perforation of the anti-mesenteric jejunum just lateral to the Ligament of Treitz with no evidence of ischemia. Additionally, bilateral small contained retroperitoneal hematomas and an L2 end plate fracture was found with segmental disc exposure. The bowel was tethered by this endplate fracture. A limited enterectomy with primary hand sewn anastomosis was performed. A postoperative MRI showed soft tissue injury involving the anterior and posterior longitudinal ligament, intervertebral disc space, and interspinous ligament at the L2-3 level with edema surrounding the vertebral bodies and an epidural hematoma but without associated vertebral fracture. The spinal injury was managed non-operatively. The patient’s postoperative course was unremarkable and he was discharged on postoperative day 6. At last follow up 7 months post operation, he was doing well without gastrointestinal sequelae.

In our case, the forces which were transmitted to the abdomen were not those of the standard anterior – posterior deceleration. This patient was struck by a truck causing torque forces to be transmitted to his abdomen. The resultant lumbar spinous process fractures likely caused a rent in the retroperitoneum. This defect in combination with the external forces caused the bowel to be pushed behind the aorta.

In conclusion, we have presented a case of an unusual blunt traumatic retroperitoneal injury with herniation of small bowel in the retro-aortic position. The complex of intraabdominal and skeletal injuries likely represents a combination of forces acting in concert to produce this injury. It is advisable to bear in mind that with blunt force trauma, there can be atypical mechanisms with forces different than expected producing unusual complexes of injuries.
Gastric ischemia is a rare condition due to the robust blood supply to the stomach. The presentation of gastric intraluminal air may represent two distinct entities: potentially fatal emphysematous gastritis associated with gas producing infection, or relatively benign gastric emphysema associated with mucosal injury. However, it is difficult to correctly identify these diseases at time of presentation, and optimal management remains controversial. We report two cases of gastric pneumatosis managed similarly but with vastly different outcomes.

The first patient is a 68 year old female who presented with several days of worsening abdominal pain, nausea and vomiting. She was tachycardic with epigastric tenderness but no peritonitis, with a significant leukocytosis and lactic acidosis. CT showed celiac artery occlusion, gastric pneumatosis, trace pneumoperitoneum and portal venous gas. She was started on antibiotics and taken emergently for esophagogastroduodenoscopy (EGD) and diagnostic laparoscopy, which showed focal ischemia of the anterior fundus and small pockets of purulence consistent with contained perforation. Drains were placed and the stomach was left intact. She was treated with therapeutic anticoagulation, Zosyn, nasogastric tube, and intravenous protonix, and was admitted to the ICU. Mesenteric duplex showed 70% superior mesenteric artery (SMA) stenosis of 70%, and an SMA stent was placed by Vascular Surgery. Post procedure she developed symptomatic right internal artery occlusion with right frontal parietal ischemia on CT head. Her lactic acidosis resolved and she was transferred out of the ICU. Repeat EGD four days after initial presentation demonstrated healthier mucosa, and her diet was gradually advanced. Her subsequent hospital course was complicated by ARDS requiring readmission to the ICU, reintubation, Clostridium difficile colitis, additional left sided ischemic strokes, and ultimately comfort measures with terminal extubation.

The second patient is a 65 year old male with history of hypercholesterolemia, former tobacco use, and diclofenac use, who presented with several hours of acute onset epigastric abdominal pain and coffee ground emesis. He was febrile, slightly tachycardic and slightly hypotensive with a mildly distended, nontender abdomen. He had a slight leukocytosis and lactic acidosis. CT abdomen/pelvis demonstrated gastric pneumatosis and portal venous gas. Mesenteric duplex demonstrated patent vessels. He was started on Zosyn and underwent urgent EGD and diagnostic laparoscopy which demonstrated a focal ischemic area of the posterior fundus, but otherwise healthy appearing mucosa. He was admitted to the Intensive Care Unit briefly and transferred to the floor the same day. His pain resolved and his diet was slowly advanced. Repeat EGD four days later demonstrated ischemic gastritis but improved from previous. He was discharged the following day.

These cases demonstrate two very different clinical courses from similar presentations of gastric pneumatosis. Both were managed with empiric antibiotics, resuscitation, EGD and diagnostic laparoscopy rather than exploratory laparotomy as previously described in the literature. Gastric pneumatosis may not always require laparotomy or gastrectomy.
57 y/o M with no prior abdominal surgeries, who presented to our hospital with nausea, vomiting, and epigastric abdominal pain. CT of the abdomen and pelvis showed a high grade small bowel obstruction with the transition point in the proximal ileum. No definite mass was visible and the appendix could not be visualized. Patient was admitted to the medicine service and managed non-operatively with nasogastric tube decompression, intravenous fluids, and NPO. General surgery team was consulted 24 hours after patient’s admission. Patient did not have an acute abdomen on our evaluation, but the decision was made to take him to the OR the next morning. He was found to have the appendix adhered to the proximal ileum on the left side, which caused an internal hernia through which the rest of the bowel had passed and was obstructed. En bloc resection of the appendix and small bowel was performed with stapled primary anastomosis. Pathology revealed a type II low grade appendiceal mucinous neoplasm (LAMN) with invasion into the small bowel serosa and subserosa. Patient was discharged five days postoperatively and was seen in clinic two weeks after discharge, he had no complaints. After discussions with the oncologist, we plan to perform a diagnostic laparoscopy in six months to evaluate for the presence of PMP and need for cytoreductive surgery. We discuss an atypical presentation and surgical options to manage it.

This is a case report of a patient that was evaluated and treated by the general surgery team at Wellstar North Fulton Hospital

Patient was found to have a low grade appendiceal mucinous neoplasm with invasion into the small bowel serosa and subserosa. No peritoneal seeding or involvement of other organ was apparent. The appendix and small bowel were removed En bloc and the mesoappendix was also removed. Small amount of ascites was found and sent for cytology, which showed macrophages, neutrophils, mesothelial cells, and occasional lymphocytes. No malignant or mucin cells were seen. Based on these findings and after discussion with medical oncology, it was decided for the patient to have a second look operation in 6 months to rule out pseudomyxoma peritonei.

Low grade appendiceal mucinous adenomas are very rare, but can be devastating to patients because of their feared complication of pseudomyxoma peritonei. Consequently, it is imperative to describe encountered cases in the literature. This will allow for increased understanding of the disease process and more effective treatments. In this case report, we describe a patient who presented with an intestinal obstruction due to a LAMN type II and how we treated him. As reviewed previously, LAMNs type 1 can be treated with watch and wait strategy and LAMN type II should undergo intraperitoneal chemotherapy due to the high chance of mucin or neoplastic cells to invade the peritoneal cavity. It was decided to schedule patient for a second look laparoscopy in six months and decide on chemotherapy at that time if there were positive findings. Such decision was made based on the lack of mucin or neoplastic cells on cytology of the ascitic fluid, negative laparotomy for intraperitoneal seeding, and negative margins observed during histologic evaluation of the specimen resected.
Mechanical bowel obstruction is a common cause of acute abdomen. Although intraperitoneal adhesions, tumors, and hernias are common causes, appendicitis can also cause obstruction of the bowel leading to acute abdomen. The diagnosis, however, is often obscured on initial imaging, and usually made at the time of surgery. Few cases of appendicitis as the cause for mechanical obstruction leading to acute abdomen have been reported in the literature. We present an unusual case of closed loop bowel obstruction due to appendicitis, resulting in partial colectomy. Case report A 69 year old female presented to the emergency department with severe right lower quadrant pain radiating to bilateral upper quadrants for 15 hours. She reported nausea, but denied emesis, diarrhea, hematochezia, chest pain, headaches, or migration of pain. Her last colonoscopy was 10 years ago, with no abnormal findings. Her physical exam was remarkable for diffuse tenderness in the abdomen, particularly in the right lower quadrant, with guarding. CT of the abdomen and pelvis demonstrated a segment of distended small bowel and chronic low-grade closed-loop obstruction, possibly due to internal hernia, with dilation of the biliary tree of unknown etiology. The patient was taken emergently to the operating room for exploration and dense adhesions were noted in the right and left upper quadrants around the liver, spleen, and stomach. She also had an enlarged cecum of approximately 12cm with a near complete obstruction around the appendix. The appendix had scarred around the terminal ileum, resulting in a torsion and high-grade obstruction. The necrotic-appearing appendix along with its surrounding scar tissue, terminal ileum, ileocecal valve, cecum, and part of the ascending colon were all resected as a single unit. Side-to-side anastomosis between the ascending colon and remaining small bowel was performed. Irrigation and washout was completed and patient’s abdomen was closed. The postoperative period was uneventful and the patient was discharged home in stable condition. Discussion Appendicitis resulting in obstruction of the small bowel and cecum is a rare condition, with very few cases described in the literature. Although rare, it is important to consider this life-threatening diagnosis in the workup of the patient with abdominal pain and bowel obstruction with unknown etiology. Clinical signs are variable and imaging inconsistent, making a diagnosis difficult. One must maintain a high index of suspicion and be prepared to proceed with surgical intervention with impending bowel compromise.
88. GASTRIC OUTLET OBSTRUCTION AFTER SUBTOTAL CHOLECYSTECTOMY

JF Tierney MD, J Qureshi MD
Rush University Medical Center

A 47 year old woman presented with acute cholecystitis and underwent an open subtotal reconstituting cholecystectomy after the critical view of safety was not visualized due to extensive inflammation. Her initial post-operative course was unremarkable, except for a gallbladder fossa fluid collection, treated by CT-guided percutaneous drainage. 9 months later, she developed intermittent left-sided quadrant pain and nausea, requiring admission. She underwent CT scan, which demonstrated inflammatory changes in the portal region and a dilated stomach; HIDA, which was negative for bile leak or obstruction; and EGD, which demonstrated diffuse gastritis and a narrowed, edematous duodenal bulb. She was treated empirically for H. pylori and discharged home after tolerating a diet. She was readmitted 3 months later with epigastric pain and persistent nausea and vomiting. CT scan (see image) demonstrated a gastric outlet obstruction, inflammation in the porta hepatis, and a fluid collection surrounding the remnant gallbladder. She was taken to the operating room for completion cholecystectomy and to relieve the gastric outlet obstruction.

An upper midline laparotomy was performed. Exposure was difficult, as all structures in the porta hepatis were extensively scarred. After exposure was obtained, the remnant gallbladder was identified lateral to the porta and was opened, producing purulent drainage. A single gallstone was extracted from the remnant gallbladder, after which bile drained retrograde into the lumen. A T-tube was inserted through the lumen into the duodenum and the remnant gallbladder was excised. A retrocolic gastrojejunostomy was then created and the abdomen was irrigated and closed.

Her post-operative course was unremarkable. Her nausea, vomiting, and abdominal pain have resolved. Pathology was consistent with chronic inflammation.

We report on gastric outlet obstruction as a unique presentation of remnant chronic cholecystitis after subtotal cholecystectomy. Although previous case reports have described gastric outlet or proximal duodenal obstruction resulting from a bilio-enteric fistula (Bouveret’s syndrome) and extensive inflammation from a prolonged, untreated course of cholecystitis, our case is the first to describe a gastric outlet obstruction after a subtotal cholecystectomy. Our patient’s gastric outlet obstruction was caused by persistent inflammation in the gallbladder remnant, extending around the portal triad and into the duodenum, not the gallstone itself. This case illustrates that although subtotal cholecystectomy is safe when the critical view of safety cannot be obtained during a cholecystectomy, recurrent gallstone disease after subtotal cholecystectomy can have an untraditional presentation. A high index of suspicion should be maintained for gallstone disease requiring completion cholecystectomy as the underlying cause of abdominal pain in patients after subtotal cholecystectomy.
89. SMALL BOWEL FISTULIZATION WITH ORPHANED INTRAOPERITONEAL VENTRICULO PERITONEAL SHUNT CATHETER

JP Wright MD, OL Gunter MD
Vanderbilt University Medical Center

Ventriculoperitoneal shunt (VPS) placement is one of the most widely utilized surgical methods to treat symptomatic hydrocephalus. Gastrointestinal, hollow viscus erosion and perforation are rare complications of peritoneal catheters within the abdominal cavity. We present the case of a 35-year-old female with an orphaned intraperitoneal VPS catheter found to be fistulized and eroded into the small bowel, twenty years after abandonment.

Case report of a patient with history of prematurity and hydrocephalus status post multiple VPS procedures and revisions. She presented with chronic abdominal pain and imaging evidence of erosion into the small bowel (Photo 1.A).

Based on the clinical and radiographic history the patient was taken to the operating room for diagnostic laparoscopy and removal of the orphaned catheter. Approximately 15 cms of intraluminal catheter was removed from the small bowel leaving a small enterotomy of roughly 10-15% diameter (Photo 1. B.C). The enterotomy was closed, primarily, in two layers. The patient was admitted to the hospital for observation and was discharged in stable condition on the first postoperative day. She was seen in follow up, two weeks later, for postoperative follow-up and was doing well without any complications, complaints or concerns.

Intraperitoneal VPS catheter complications are rare with bowel erosion or perforated only occurring in <0.1% of patients, often with delayed presentation. Little is known about the long-term consequences of orphaned peritoneal catheters. Future studies investigating outcomes of orphaned catheters is warranted and the utility of laparoscopic removal of orphaned intraperitoneal catheters at time of revision should be evaluated.
Hemangiomas of the gastrointestinal (GI) tract are rare, compromising 7-10% of all intestinal neoplasms. Frequently patients present with a GI bleed and iron deficiency anemia, but diagnosing hemangiomas remains a challenge. Few case reports on GI hemangiomas exist in the literature and most are in the pediatric population. We present a case of a 43-year-old male who initially presented with severe symptomatic iron deficiency anemia with hemoglobin of 7.1. Upon further work up by the gastroenterologists, he was discovered to have thickening of small bowel with luminal narrowing that was unable to be further delineated via colonoscopy or push balloon enteroscopy. On video capsule endoscopy patient was seen to have a large ulcerated mass without any obvious bleeding. CT abdomen/pelvis revealed a short area of marked small bowel thickening with luminal narrowing. The patient had reported associated left sided abdominal pain but denied any hematemesis or hematochezia.

He was taken to the operating room for an exploratory laparotomy. A midline infraumbilical incision was made. The small bowel was eviscerated and carefully examined from the ligament of treitz to the ileocecal valve. There was an area that was 15cm long approximately 20cm proximal to the ileocecal valve that was grossly abnormal with a vascularized mass external to the bowel. The abnormal area was resected with 3cm margins using a Covidien GIA 60mm stapler. A hand-sewn single layer end-to-end anastomosis was then created and the mesentery defect was closed.

Patient did well post-operatively with a stable hemoglobin at 10. He was discharged on postoperative day five. He was seen in clinic at 2 weeks post resection. He denied any melena. His hemoglobin normalized to 14. Pathology revealed a cavernous hemangioma.

This case exemplifies the difficulty in diagnosing small bowel hemangiomas. Delay in diagnosis can lead to iron deficiency anemia and significant gastrointestinal bleeds. Recognizing small bowel hemangiomas in the differential diagnosis of such disorders is essential.
Kiosk 5- General Surgery
91. ACCURACY OF MRI IN DIAGNOSING APPENDICITIS DURING PREGNANCY
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Appendectomy for presumed appendicitis is the most common surgical emergency during pregnancy. Diagnosing appendicitis during pregnancy can be difficult. Delaying or failing to diagnose this condition can lead to fetal demise or other complications. On the other hand, performing an unnecessary operation also carries risk for the fetus. The American College of Radiology recommends nonionizing diagnostic modalities such as MRI in pregnant patients. We sought to evaluate the accuracy of MRI in pregnant patients seen in our institution for suspected appendicitis.

We reviewed all pregnant patients admitted with abdominal pain and suspected appendicitis between January 1, 2014 and April 30, 2016. We included in our study those that had an abdominal MRI. We categorized the MRI reports into 3 categories: positive, negative and inconclusive. We recorded which patients eventually had an appendectomy. Based on the pathology reports these were categorized into positive or negative appendicitis. Those that improved without surgery were considered negative for appendicitis.

52 patients were included in the study. MRI findings were positive in 2 patients, negative in 29, and inconclusive in 21. In total, 12 patients had surgery, 11 of which had positive appendicitis on pathology. Both of the patients with a positive MRI had appendicitis. In the negative MRI group, four had surgery with 3 out of 29 (10%) having pathology proven appendicitis. In the inconclusive MRI group, 6 of 21 (29%) had pathology proven appendicitis. A positive MRI result was very specific with a 100% positive predictive value. However it was not very sensitive, as it only diagnosed 2/11 (18%) cases of appendicitis. Putting negative and inconclusive MRI results together, the negative predictive value was 41/50 (82%).

While a positive MRI finding was reliable in making a decision to operate, a negative or inconclusive MRI was not. In those patients where there is a high clinical suspicion of appendicitis, surgery should still be considered even in the absence of a definitively positive MRI result.
Kiosk 5- General Surgery
92. INTERNAL HERNIA AS A CAUSE OF SMALL BOWEL OBSTRUCTION WITHOUT HISTORY OF BOWEL SURGERY
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Eastern Virginia Medical School

An internal hernia is a protrusion of abdominal contents through a defect, either congenital or acquired, in the mesentery. These hernias cause up to 6 percent of small bowel obstructions, and most commonly occur after abdominal surgeries such as Roux-en-Y gastric bypass. We present the unique case of an 80-year-old female with a small bowel obstruction caused by an internal hernia without prior history of bowel surgery.

A retrospective study was performed with chart review of a single patient.

NA presented to the ED with a 1-day history of increasing abdominal pain and nausea. She had multiple episodes of bilious emesis with no bowel function for the previous day. Her only prior surgery was a hysterectomy. Nasogastric tube decompression returned a high-output of bilious fluid and did not resolve the obstruction. A small bowel series was performed and showed contrast still in the small bowel and stomach after 4.5 hours. The patient was taken to the operating room for diagnostic laparoscopy. Visualization during surgery revealed a viable, dilated portion of small bowel in the pelvis. A transition point was identified in the area of the sigmoid colon with the decompressed bowel entering through a defect in the mesentery of the sigmoid colon. The bowel was reduced and the defect closed laparoscopically. Postoperatively the patient did well. Because of our patient’s lack of past abdominal surgical history, the defect in the mesentery of the sigmoid colon was most likely congenital and caused by intestinal rotation and peritoneal attachment abnormalities. The most common congenital hernia is paraduodenal, occurring in approximately 53% of congenital internal hernias. Sigmoid mesocolon internal hernias, as presented in this patient, are rare and account for only 6% of congenital internal hernias.

Although rare, internal hernias are an important and lethal cause of small bowel obstruction. Our surgical team was concerned about a small bowel obstruction due to adhesions from the patient’s hysterectomy; however presence of an internal hernia could have led to bowel strangulation and death had we not proceeded to diagnostic laparoscopy quickly. It is important to keep a high index of suspicion for internal hernias in small bowel obstruction cases to prevent morbidity and mortality.
Staphylococcus lugdunensis is a coagulase-negative gram positive organism which has been implicated in skin and soft tissue infections, endocarditis and septicemia. However, necrotizing soft tissue infection requiring surgical debridement due to S. lugdunensis has rarely been reported.

We report a 33 year old male without pre-existing medical history who presented with one day onset of fever, abdominal pain, nausea and lactic acidosis. The patient developed septic shock after several hours and was found to have ischemic terminal ileum and colon requiring laparotomy and resection. Simultaneously, soft tissue emphysema of the left axilla and chest wall was also noted on computed tomographic imaging (see Figure) which necessitated urgent exploration. During exploration, there was crepitus involving the fascial planes of the pectoralis major and minor, serratus anterior, intercostal muscles, and the subscapularis. Minimal debridement was required as fascia and muscle were viable but all tissue planes were uncovered. He developed multiorgan dysfunction requiring vasopressor support and hemodialysis but ultimately recovered. Cultures grew S. lugdunensis. A literature review of soft tissue infections due to S. lugdunensis was performed.

Only one other case of necrotizing soft tissue infection requiring surgical debridement due to S. lugdunensis was found in the literature. S lugdunensis was reported as the pathogen in a wide array of invasive infections such as prosthetic joint infections, endocarditis, osteomyelitis and catheter-related infections. While S. lugdunensis can manifest with toxic shock syndrome, this patient lacked the classic signs of staphylococcal toxic shock syndrome. Another uncommon feature of his presentation not previously well reported in the literature was the simultaneous development of nonocclusive mesenteric ischemia early in the course of the disease.

Although S. lugdunensis has been recognized as an emerging pathogen associated with superficial skin and soft tissue infections, invasive crepitant soft tissue infection due to S. lugdunensis requiring surgical debridement with associated nonocclusive mesenteric ischemia is extremely rare. Clinicians should be familiar with this potentially virulent organism and its clinical manifestations.
Kiosk 5- General Surgery

94. MOYNIHAN’S HUMP – AN UNUSUAL ANATOMIC VARIATION ENCOUNTERED DURING LAPAROSCOPIC CHOLECYSTECTOMY

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Aberrant biliary anatomy can be a contributing factor to such injuries when not recognized by surgeons during the procedure. Tortuous course of the right hepatic artery, also known as Moynihan’s hump or caterpillar hump is a rare but important anatomic anomaly that if not recognized may lead to preventable intraoperative vascular and biliary injuries. We report a 19 year old female who during laparoscopic cholecystectomy for symptomatic cholelithiasis was found to have a tortuous course of the right hepatic artery with double vessels and the origin of the short cystic artery coming off the proximal loop lateral to the hepatocystic triangle.

Laparoscopic cholecystectomy was performed on a single patient in an outpatient surgery center in the United States. Using meticulous dissection of the hepatocystic triangle the tortuous right hepatic artery was visualized and exposed. The cystic artery and duct were divided only after the anatomy had been clearly demonstrated and the critical view of safety obtained. The procedure was thus performed safely and the patient’s recovery was uneventful.

A tortuous right hepatic artery creating a Moynihan’s hump in Calot’s triangle which was successfully visualized and exposed. The cystic artery and duct were divided only after the anatomy had been clearly demonstrated and the critical view of safety obtained. The procedure was thus performed safely and the patient’s recovery was uneventful. Early recognition of the aberrant anatomy prevented inadvertent injury.

This report presents an unusual case of tortuous right hepatic artery in the Calot’s triangle also known as Moynihan’s hump. This anatomic variation may lead to misidentification of the right hepatic artery as the cystic artery and its subsequent injury. Recognition of vascular variations is essential for a safe and uncomplicated laparoscopic cholecystectomy. The caterpillar hump or Moynihan’s hump of the right hepatic artery should be suspected when an unusually short cystic artery presents. Knowledge of such vascular variations is essential for surgeons to prevent iatrogenic injuries, conversion of laparoscopic to open cholecystectomy and reducing associated morbidity.
Ludwig’s angina is a deep neck infection manifesting as swelling and inflammation of all compartments of the floor of the mouth, a displaced tongue superoposteriorly, a firm and indurated anterior neck, trismus and dyspnea. Most commonly it originates from dental or periodontal disease. First described by German surgeon Wilhelm Friedrich von Ludwig in 1836 this condition is potentially life-threatening due to airway compromise. Awake tracheostomy is the standard of care but may be safely managed with advanced airway techniques. Prompt diagnosis and aggressive approach with antibiotic and surgery, has improved the morbidity and mortality of this disease. These patients are critically ill and are in danger of developing weakened gastric mucosal defences from decreased mucosal bicarbonate, decreased mucus production and splanchnic ischemia putting them at risk of intestinal bleeding and/or perforation.

We present a case of a 75 year old male referred to an ear, nose and throat (ENT) surgeon due to worsening sore throat and suspicion for peritonsillar abscess. In the ENT office he was noted to have significant edema of the floor of the mouth, a firm left submandibular gland and diffuse tenderness of the neck. He was sent directly to the emergency department (ED) for emergent airway as Ludwig’s angina had become the leading differential. In the ED the patient had lost his ability to verbalize, was in serious trismus, and spitting saliva.

His treatments at this point included intravenous (IV) steroids, antibiotics and an urgent intubation in the operating room. A computed tomography (CT) scan of the neck revealed suppurative submandibular glands and fluid in the prevertebral, parapharyngeal, and retropharyngeal spaces. He was transferred to the intensive care unit (ICU) and the following day underwent tracheostomy, direct laryngoscopy, and needle aspiration of purulent material from the left mandibular area and spontaneous transoral drainage of his neck abscess. During his course he developed a nonocclusive thrombus of the right internal jugular vein and was started on therapeutic anticoagulation. He also developed sudden onset diffuse abdominal pain with signs of peritonitis. A CT scan revealed free intraperitoneal air and evidence of duodenal perforation. After reversal of his anticoagulation he was taken emergently to the operating room for an exploratory laparotomy and modified Graham patch of a perforated pyloric ulcer. Despite the complicated course the patient recovered well and was discharged home.

We found multiple cases of Ludwig’s angina with unusual presentations or complications such as one complicated by adverse reaction to antibiotic treatment resulting in worsening systemic symptoms and worsening edema within the naso- and oropharynx requiring urgent tracheostomy. A different case was reported that resulted in fatal necrotizing fasciitis requiring extensive surgical debridement. A patient’s first manifestation of diabetes mellitus was Ludwig’s angina and ketoacidosis after odontogenic infection. We report a case of Ludwig’s angina complicated by deep vein thrombosis and intestinal perforation due to development of stress ulceration despite thrombo- and ulcer prophylaxis requiring surgical intervention.
Even though up to 30% of small bowel intussusceptions in the adult are due to malignancies, metastatic prostatic carcinoma has not been identified as one. We herein report a case and review the literature.

A single institution case report

A 69-year-old Korean man with a past medical history of hypertension presented to his primary care physician with complaints of one week of lower back pain and fatigue in January of 2011. Diagnostic work up showed spinal cord compression at T12, associated with an abnormal soft tissue mass, diffuse cervical, thoracic, lumbar, and sacral metastases. The PSA level was 29.3 ng/ml. The patient underwent a decompressive laminectomy of T11, T12 and L1, and histologic analysis of tissue showed a metastatic poorly differentiated adenocarcinoma, consistent with prostate origin. In June of 2012, the patient presented to the emergency department with nausea, vomiting and melena. A CT scan of the abdomen and pelvis demonstrated a long segment of small bowel intussusception in the right upper quadrant with decompressed bowel distally, bilateral pleural effusions, and a left chest wall soft tissue mass. Exploratory laparotomy revealed a proximal jejunal intussusception secondary to an isolated tumor without evidence for metastatic disease. A resection of the small bowel and primary anastomosis was performed. Pathology of the small bowel showed metastatic undifferentiated carcinoma consistent with prostate origin with two out of thirteen mesenteric lymph nodes positive for metastasis. The patient had an uneventful recovery from the operation.

We report a case of metastatic prostate carcinoma to the small bowel that was the lead point for a long-segment jejunal intussusception. With the increased use of radiologic imaging, abnormal findings on CT scan may be labeled as incidentalomas. Prostatic carcinoma is a rare but possible cause of metastasis to the small intestine possibly leading to intussusception and small bowel obstruction, particularly in the elderly.
Appendectomy is one of the most common procedures performed worldwide. If the appendix is incompletely removed, then stump appendicitis may occur. It is a rare and usually late complication of appendectomy. As a result, the diagnosis of stump appendicitis is often delayed, resulting in higher morbidity and perforation rates than acute appendicitis. Although the recommended treatment for stump appendicitis is completion appendectomy, the timing of the operation has not been well described in the literature. In this case, we present successful treatment of stump appendicitis with an extended course of antibiotics prior to performing a completion appendectomy.

A 45-year-old woman presented to the emergency department (ED) after 2 days of increasing right lower quadrant pain, subjective fever and chills, and decreased appetite. The patient’s medical history is significant for a laparoscopic appendectomy for nonperforated appendicitis 8 years prior. Upon evaluation in the ED, the patient was afebrile, tachycardic, and had localized peritonitis in the right lower quadrant. Lab work was demonstrated leukocytosis, and the abdomen/pelvis CT was consistent with stump appendicitis, showing significant inflammation in the ileocecal region (Fig. 1).

The patient was admitted to the hospital for close observation and bowel rest, and was initially treated with intravenous antibiotics (ciprofloxacin and metronidazole). The patient recovered quickly and her diet was advanced to clears on Hospital Day (HD) 1. On HD3 she was advanced to a regular diet and oral antibiotics. By discharge on HD4, the leukocytosis had resolved and the patient had completed 4 days of antibiotics, was able to tolerate a regular diet, and was requiring minimal pain medication. She was discharged with PO ciprofloxacin and metronidazole and completed a 14-day course. The patient underwent an outpatient completion laparoscopic appendectomy approximately 1 month after being discharged from the hospital. The residual appendix measured 2.3 cm and pathology was consistent with benign appendiceal tissue with focal active inflammation. The patient had an uncomplicated recovery and is doing well.

Stump appendicitis is an unusual, but real complication of an incomplete appendectomy. As a result, physician awareness and timely diagnosis and management are critical. Based on our case, and the limited literature, we propose that stump appendicitis can be successfully treated with an extended course of antibiotics prior to a completion appendectomy.
Kiosk 5- General Surgery
98. A RARE CAUSE OF CHRONIC ABDOMINAL PAIN: LYMPHANGIOMA OF THE GALLBLADDER
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Lymphangiomas are benign lesions created from incomplete formation of embryologic connections within the lymphatic system. They are discovered most frequently during childhood. The head, neck, and axilla account for 95% of diagnosed lymphangiomas with the remaining 5% distributed throughout the remainder of the body. Lymphangioma of the gallbladder is very rare with 12 cases previously reported in the literature.

A healthy 46-year-old female presented with a two year history of intermittent right upper quadrant abdominal pain. These episodes followed consumption of fatty meals and were associated with bloating and nausea. Vital signs and physical examination revealed no abnormalities; there was no abdominal tenderness or palpable mass. Laboratory values were unremarkable. Right upper quadrant ultrasound revealed a 7.1 x 0.9 x 2.5 cm fluid collection adjacent to the gallbladder (Figure 1), but the gallbladder itself was unremarkable. Computed tomography (CT) with intravenous contrast showed a well-defined fluid collection interposed between the gallbladder and the liver with no apparent involvement of surrounding structures. Magnetic resonance imaging (MRI) further characterized the fluid collection as having multiple very fine septa with simple appearing fluid.

At laparoscopy, the gallbladder itself appeared grossly normal. There was a thin-walled, cystic structure between the gallbladder and liver within the gallbladder fossa. Intraoperative cholangiogram was normal. The cyst was completely removed along with the gallbladder. The patient recovered uneventfully after surgery. The cyst measured 4.5 x 2.5 cm and pathology returned consistent with cystic lymphangioma of the gallbladder.

The clinical presentation for patients with lymphangioma of the gallbladder is variable from asymptomatic or may be indistinguishable from biliary colic. Intraabdominal lymphangiomas have distinct radiologic findings. On ultrasound, lymphangiomas appear as multiloculated cystic masses that may contain echogenic debris but are generally anechoic. CT scan may show enhancement of the cyst wall with IV contrast administration. On MRI, these lesions have characteristics similar to simple fluid with low signal intensity on T1-weighted images and high signal intensity on T2-weighted images. The treatment of choice for any intraabdominal lymphangioma is surgical resection. Injection of sclerosing agents and radiation treatment have been suggested but malignant transformation has been described in previously irradiated benign lymphangiomas, however these have not shown lasting results. Despite the benign nature of these lesions, there is a 9.5% recurrence rate associated with incomplete resection of any intraabdominal or retroperitoneal lymphangioma. Delaying surgical resection can lead to significant increase in size or development of complications such as infection, rupture, torsion or hemorrhage that could render successful resection more difficult and significantly increase the risk of local recurrence.
Intestinal malrotation is a rare, but potentially catastrophic, complication in fetal development. While typically identified in children, the diagnosis may be delayed until adulthood due to an indolent course with varied and nonspecific symptoms. Further clouding the diagnosis, multiple variants of malrotation exist. Reverse malrotation is the least commonly described, characterized by an abnormal net 90° clockwise rotation of the midgut.

A 43-year-old female with long standing history of intermittent acute on chronic epigastric pain previously evaluated by multiple providers over the course of 20 years without etiologic identification of the episodic pain. Physical exam and abdominal radiographs were unremarkable. Computed tomography (CT) demonstrated right sided small bowel, transverse colon posterior to the superior mesenteric artery (SMA), and clockwise swirling of the mesenteric vessels. At laparotomy a midline mobile cecum, 360° rotation of the duodenum encircling the superior mesenteric vessels in an anterior to posterior fashion, dilated proximal duodenum, transverse colon posterior to superior mesenteric vessels, and small bowel transiting through a right transverse mesocolic defect was identified (Figure 1). These findings represent a variant of reverse malrotation itself, previously identified as double reverse malrotation. Right hemicolectomy with ileotransverse colostomy and distal duodenectomy with duodenojejunostomy formally “malrotated” the anatomy for surgical correction.

Symptoms resolved with uncomplicated post-operative recovery.

Malrotation of any variant remains a challenging diagnosis for the general surgeon, as definitive diagnosis can prove elusive. Upper gastrointestinal series are useful, although more commonly obtained in children. CT is often the test of choice in adults, as it allows for diagnosis and surgical planning. Although consensus is lacking regarding the proper management of incidentally identified asymptomatic patients with this condition, surgical intervention should be pursued in the symptomatic patient. The general surgeon must maintain a high index of suspicion in the adult patient with bilious vomiting and vague abdominal pain. These non-specific symptoms may herald progression of the underlying abnormality and serve as the initial warning of a more ominous condition.
Kiosk 5- General Surgery
100. LIVER VOLVULUS: A RARE COMPLICATION OF WANDERING LIVER
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Greenville Health System

Wandering liver is a rare clinical entity that is typically attributed to congenital abnormalities within the suspensory structures of the abdomen. Liver volvulus has not been well described in the literature (only 3 cases reported) and has never been cited as a complication of wandering liver. Although extremely rare, early diagnosis is vital, as it requires urgent surgical attention. The aim of this report is to increase physician awareness surrounding the presentation and surgical management of liver volvulus and wandering liver.

A 71-year-old woman with a medical history significant for asthma presented to an outside facility’s Emergency Department with a 7-hour history of abdominal pain, diarrhea, chest pain, and shortness of breath. The patient also endorsed a several month history of indigestion. CT scans revealed a large left eventration of the diaphragm containing spleen, pancreatic tail, stomach, and colon. Based on her imaging, the patient was transferred to our facility the same day. Upon presentation to our hospital she was noted to have acute abdominal pain, leukocytosis, lactic acidosis, and rising transaminitis. Repeat CT scan showed volvulus of the left lobe of the liver around the falciform ligament (Fig. 1).

The patient underwent exploratory laparotomy followed by a left hepatectomy. During the laparotomy, the patient was found to have an ischemic left lobe of the liver torsed around the falciform ligament. She also had loose visceral attachments throughout the abdomen and only a few fixation points within her bowel. The patient was admitted to the ICU postoperatively, transferred to a regular floor on postoperative day (POD) 2, and discharged home on POD4. The patient had an uncomplicated recovery and was doing well as of her most recent office follow up.

Liver volvulus is a rare entity in the spectrum of the acute abdomen. However, increased awareness is important as successful management demands early recognition and immediate surgical attention.
Kiosk 5- General Surgery

101. USE OF LIGASURE DEVICE DURING EXCISION OF MASSIVE CHRONICALLY INFECTED PANNICULUS: A NOVEL TECHNIQUE AND REVIEW OF LITERATURE

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A 35 year old male with a history of morbid obesity (BMI > 70), hypertension, psoriasis, and massive panniculus with associated “buried penis” presented with chronic recurring panniculitis. His panniculus was causing a significant amount of discomfort and was a barrier to his attempts at weight loss. He was admitted to the hospital for treatment several times over the course of the last four years and was successfully treated with IV antibiotics and local wound care.

On physical exam, the pannus projected from the inferior abdomen caudal, over his scrotum with the inferior border at his knees. The skin of the inferior border did not involve the penis itself, but was placing traction on the dorsal skin of the penis. An ultrasound during a recent hospital admission showed no evidence of bowel in the pannus. Out of concern for chronic recurring panniculitis leading to possible sepsis and death, the patient requested a discussion concerning panniculectomy.

He was taken to the operating room and the superior margin was determined by the panniculus-abdomen skin crease. The inferior margin was determined by retracting the panniculus cephalad and marking along the panniculus-thigh skin crease that provided enough remaining skin above the penis to provide minimal traction deformity after closure.

Using the Ligasure device, there was successful hemostasis throughout the entire case with minimal blood loss and minimal time required to divert attention to hemostasis. The Ligasure device provided a quick, efficient, and effective tool for hemostasis during a procedure that is usually marked by excessive blood loss and time required to achieve hemostasis. The wound was closed in layers and two wound vacuums were placed for healing by secondary intention.
Kiosk 5- General Surgery

102. LAPAROSCOPIC RESECTION OF AN APPENDIX MUCOCELE IN A BREAST CANCER PATIENT
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Despite growing evidence that acute appendicitis may be treated with antibiotics, the majority of surgeons offer laparoscopic appendectomy (LA) for this disorder. Appendiceal mucocele may be caused by a variety of diseases and surgical removal remains treatment of choice due to the risk of pseudomyxoma peritonei if ruptured. LA has been suggested for this condition. Breast cancer may metastasize to the appendix. In case of hereditary breast cancer, patients may be at increased risk for primary appendiceal cystoadenocarcinoma.

A 45-year-old Caucasian woman with a diagnosis of bilateral invasive lobular breast carcinoma underwent bilateral mastectomy. She was found to have an enlarged appendix consistent with a mucocele on computed tomography scan during staging. Due to potential risk for malignancy and risk for perforation during chemotherapy appendectomy was suggested.

The patient underwent laparoscopic appendectomy using a 5mm port in the left upper and lower quadrant and a 10-12mm umbilical port. A strict minimal touch technique was applied. After creation of a window between mesoappendix and appendix, the vascular pedicle was divided. The appendix was resected with a 1cm rim of the cecal pole using a stapler and the specimen was immediately placed in a retrieval bag and removed from the abdomen. Pathology showed benign cystadenoma. The patient had an uneventful postoperative course and started chemotherapy four weeks later.

Suspicion of appendiceal neoplasm in high risk patients should warrant strong consideration for elective appendectomy. Laparoscopic appendectomy for appendix mucocele can be performed safely without undue increase in risk for spillage if careful technique is undertaken.
Kiosk 5- General Surgery

103. ROBOTIC-ASSISTED COMPLETION CHOLECYSTECTOMY FOLLOWING PREVIOUS SUBTOTAL CHOLECYSTECTOMY – A CASE SERIES

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Carolinas Medical Center

Subtotal cholecystectomy remains a viable and safe option when gangrenous cholecystitis, Mirizzi syndrome, or severe inflammation preclude visualization of the Critical View of Safety (cystohepatic triangle). Recent reviews show that approximately 3.1% of patients suffer from retained stones with 1.8% of these patients eventually requiring a reoperation. A patient who presents with symptomatic cholelithiasis or acute cholecystitis in a remnant gallbladder presents a challenging scenario for the surgeon. Both endoscopic and surgical treatment are viable options for treatment in this unique situation. Traditionally, completion cholecystectomy following subtotal cholecystectomy required an open approach. The laparoscopic approach has gained popularity in recent years with multiple robotic-assisted case reports for completion cholecystectomy. In this study, we present our single institution experience with 15 robotic-assisted completion cholecystectomies following previous subtotal cholecystectomy.

Case logs and operating room billing logs were reviewed from 2010 to 2017 to identify all robotic cholecystectomies performed at our institution. Manual review of all operative reports identified 15 “completion cholecystectomies” following a previous subtotal cholecystectomy. All additional variables including demographics, operative variables, and postoperative outcomes were determined from manual chart review of all consultation notes, operative reports, anesthesia records, progress notes, discharge summaries, and postoperative office visits.

Median time from previous subtotal cholecystectomy to robotic completion cholecystectomy was 84 months (7 years). The majority (53.3%) of patients underwent completion cholecystectomy for symptomatic cholelithiasis of the remnant gallbladder. 26.7% underwent completion cholecystectomy for acute cholecystitis. One patient each underwent completion robotic cholecystectomy for bile leak, Mirizzi syndrome, and gallstone pancreatitis. 66.7% of patients underwent preoperative ERCP with stenting. Average age at presentation was 49.1 years, average BMI was 32.5, and average ASA was 2.5. Average OR time was 113.2 minutes, and average EBL was 43.3cc. Average length of stay was 1.1 days. One patient out of fifteen had a postoperative complication (erythema around incisional site requiring a short course of oral antibiotics. No patients required a conversion or a postoperative readmission.

Although rare, recurrent cholecystitis or symptomatic cholelithiasis following a subtotal cholecystectomy presents a challenging surgical scenario. Although some patients can be successfully managed endoscopically, a subset of patients will eventually require operative intervention. Although traditionally performed in an open approach, we have had success in recent years at our particular institution with a robotic-assisted approach to completion cholecystectomy. We feel that the robot offers certain advantages in a hostile, reoperative field which allows us to perform these procedures in a minimally invasive fashion with no conversions to an open procedure to date. Previously limited to case reports, this series of 15 procedures represents the largest case series of robot-assisted completion cholecystectomies to date.
<table>
<thead>
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<th>Count (Percentage)</th>
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<td>Symptomatic cholelithiasis</td>
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<tr>
<td>Acute Cholecystitis</td>
<td>4 (26.7%)</td>
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<tr>
<td>Bile Leak</td>
<td>1 (6.7%)</td>
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<td>Mirizzi Syndrome</td>
<td>1 (6.7%)</td>
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<tr>
<td>Gallstone pancreatitis</td>
<td>1 (6.7%)</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>15</strong></td>
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*Table 1: Indication for robotic-assisted completion cholecystectomy following subtotal cholecystectomy.*
Necrotizing soft tissue infections (NSTI) have the potential for death or significant morbidity, especially if debridement is inadequate. While source control is the mainstay treatment of this disease, it is unclear if there is a role for sparing skin if the infection involves primarily the subcutaneous tissue and muscle. Limiting resection to infected deeper soft tissue may limit long term morbidity, especially from insensible losses due to the loss of the integumentary tissue. We present a rare complication from an elective cosmetic procedure leading to septic shock and NSTI, in which skin sparing wide local debridement was performed to save the patient and limit her morbidity from extensive skin grafting. A 40 year old female patient presented to our hospital in with abdominal pain and fever two weeks after having liposuction-assisted gluteoplasty at a specialty clinic and was found to be in septic shock with fever, tachycardia, leukocytosis and elevated lactate. Her abdominal examination was concerning for peritonitis and extensive abdominal wall cellulitis. Initial CT abdomen/pelvis demonstrated extensive anterior abdominal wall and gluteal infiltrative changes.

After resuscitation and broad spectrum antibiotic initiation, our patient underwent a combination of sharp and mechanical debridement with dilute chlorhexidine gluconate solution-soaked scrub brushes to enable sparing of her skin and subcutaneous tissues despite the large 40x30cm abdominal wall defect. During this process, a defect was found in the left posterior rectus fascia prompting laparotomy. A 0.5cm defect in the transverse colon associated with a colo-fascial fistula was identified. This portion of the colon was resected and primarily anastomosed due to inability to create an ostomy in compromised abdominal wall. A Barker wound vacuum was placed and the abdomen was left open after this initial procedure to be later closed with the assistance of biologic mesh. Debridement of 15x15cm defects on each buttock was also required. Our patient underwent five subsequent debridements of all compromised areas during her hospital course using the above skin-sparing technique followed by wound vacuum placement to both areas. Cultures revealed E. coli and Bacteroides, consistent with fecal contamination of her grafted fat during augmentation.

Only a small amount of split thickness skin grafting was required over our patient’s abdominal wall, as most of her skin was spared using this debridement technique. Primary closure of her gluteal wounds was also accomplished, allowing our patient to resume many activities of daily living. Finally, she was discharged home with local wound care and did not require additional time at a rehabilitation facility.

Necrotizing soft tissue infection as the result of a cosmetically enhancing procedure has the potential to lead to severe deformity due to the extensive debridement required for source control as well as significant morbidity from insensible losses in the absence of protective integumentary tissue. Through extensive debridement of subcutaneous tissue and muscle with sparing of the skin, it is possible to achieve source control as well as limit morbidity from severe deformity and significant insensible volume loss.
105. LAPAROSCOPIC REPAIR OF SUPERIOR MESENTERIC ARTERY SYNDROME

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Greenville Health System

Superior mesenteric syndrome is a rare cause of proximal small bowel obstruction. This illness is characterized by the compression of the third portion of the duodenum secondary to the narrowing of the angle between the superior mesenteric artery and the aorta. It is believed that this occurs due to the loss of the intervening mesenteric fat pad. Medical management of this disease is preferred but when symptoms persist, surgical intervention is warranted. In this case report, we present a laparoscopic approach as the definitive treatment of superior mesenteric artery syndrome.

A 46 year old woman with several months of persistent nausea and weight loss in the setting of CT findings concerning for superior mesenteric artery syndrome was brought to the operating room for laparoscopic repair. A 5 mm trocar was placed in the right lower quadrant and a 12 mm trocar was inserted in the right mid abdomen. Two additional 5 mm trocars were placed in the left lower quadrant. A side-to-side enterenterostomy was created laparoscopically between the proximal jejunum and the lateral second portion of the duodenum.

An intraoperative leak test was performed which did not reveal any abnormalities. On post operative day two, an upper GI was obtained, and again showed no leak. That same day, her nasogastric tube was discontinued and she was advanced to a clear liquid diet; this was subsequently advanced to a full liquid diet. She was discharged on POD 5 and has since had an uncomplicated recovery.

Laparoscopic approach to the repair of mesenteric artery syndrome is a plausible option for definitive treatment of this entity. It provides the benefits of minimally invasive surgical techniques.
Kiosk 6- Trauma/Acute Care/Other
106. ABDOMINAL AND PELVIC VASCULAR INJURY: AN NTDB STUDY
E Talbot MD, D Ghazali BS, S Evans MD, N Hellenthal MD, D Monie PhD, P Campbell RN, S Cooper MD
Bassett Medical Center

Traumatic injuries to the abdominal and pelvic vasculature can be devastating. Despite this observation, there is a dearth of descriptive data regarding predictive characteristics and outcomes. Our goal was to characterize outcomes related to abdominal and pelvic vascular injuries in trauma patients, particularly as it relates to mechanism of injury.

Using the 2012 National Trauma Data Bank, we identified 5858 patients with major abdominal and/or pelvic vascular injury (ICD-9 code 902.0-902.9). We stratified the patients by age group, gender, race, ISS score and mechanism of injury. We evaluated the percentage of patients with blunt and penetrating trauma by demographic and correlated mechanism of injury to ISS score, ER disposition, and hospital disposition. We performed logistic regression analysis to correlate parameters to likelihood of death.

In the final cohort, 1458 patients (25%) with abdominal/pelvic vascular injury died of trauma. In total, 3368 patients (57%) had a blunt mechanism of injury, while 2353 (40%) were victims of penetrating trauma. Patients with penetrating injuries were 1.72 times more likely to die from their injuries than those with blunt trauma (95% CI 1.52-1.94, p<0.001). Patients with higher ISS scores (>16) were more likely to die from their injuries (p<0.001) compared to those with lower ISS scores. Males were more likely to experience a penetrating vascular injury than females (48% versus 17%, p<0.001). Similarly, 77% of African Americans had a penetrating mechanism of injury compared to 20% of Caucasians and 43% of other races (p<0.001). There were 1910 patients with penetrating injuries (81%) that went immediately from the ER to the OR, compared to 1287 with blunt injuries (38%, p<0.001). Of the patients with blunt injuries, 695 (21%) died compared to 727 penetrating injury patients (31%, p<0.001).

Abdominal and pelvic traumatic vascular injuries carry a high mortality rate. Penetrating mechanism of injury, ISS score, and race are independent predictors of mortality.
Kiosk 6- Trauma/Acute Care/Other
107. VARIATIONS IN THE RATE OF PEDIATRIC SPLENECTOMY: AN NTDB STUDY
E Talbot MD, S Evans MD, N Hellenthal MD, D Monie PhD, P Campbell RN, S Cooper MD
Bassett Medical Center

There is wide variation in the accreditation criteria among the many state-specific Pediatric Trauma Level designations, and those of the ACS Trauma Level designations. Our goal was to investigate the factors affecting management and outcomes in pediatric trauma patients diagnosed with a splenic injury, to help determine potential accreditation criteria.

This retrospective database analysis used the 2012 National Trauma Data Bank (NTDB) registry to identify differences in splenectomy rates and outcomes based on ACS Trauma Level designation, state-specific Pediatric Trauma Level designation, splenic injury volume, age, and Injury Severity Scale (ISS). Pediatric splenic injury (PSI) patients (defined as ages 18 and younger) diagnosed with blunt and penetrating splenic injury were included.

A total of 3715 pediatric patients met the inclusion criteria. The overall splenectomy rate was eight percent. Institutional splenectomy rate was associated with the volume of PSIs evaluated, with higher volume centers performing fewer splenectomies, independent of state Pediatric Trauma Level designation (p<0.001). Institutions that evaluated fifteen or more PSIs annually had splenectomy rates less than half of that of institutions evaluating less than 15 PSI (OR = 0.43, 95% CI 0.31-0.61). There was no difference in ISS among patients presenting to institutions with different Pediatric Trauma Level designations (p=0.409), and no difference in splenectomy rate among the various state Pediatric Trauma Level designations, as well as the ACS Trauma Level designations. There was no difference in mortality for PSI presenting to institutions of the various Pediatric Trauma Level designations (p=0.276).

The splenectomy rate for pediatric trauma patients with splenic injuries was associated with patient volume but not Trauma Level designation, even though facilities with different designations evaluate patients with similar ISS scores. These findings may have significant implications for the qualifications required for pediatric trauma accreditation.
The incidence of civilian lower extremity vascular injury is quite low, reported at 0.3% (1). Involvement of the femoral artery varies from 17-27% in the literature (1,2).

This case study describes the presentation, management and outcome of a blunt femoral artery injury.

The patient was managed operatively with good outcome. He was discharged on post-operative day four.

Maintaining a high clinical suspicion for vascular injury is important in the evaluation of all blunt extremity trauma.
Kiosk 6- Trauma/Acute Care/Other

109. TEMPORAL FACTORS DRIVE MOTORCYCLE RELATED TRAUMA

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In traumatology, the mechanism of injury elucidates the injury pattern. Comprehension of the epidemiology of specific types of injury may identify areas of opportunity in the outreach and prevention efforts at a systems level. We sought to determine the incidence and prevalence of motorcycle injuries. We hypothesize that motorcycle crashes (MCCs) are temporally related, and that this could drive educational, as well as policy, efforts to decrease injuries.

We performed a retrospective cohort study. Data was acquired from the Trauma Registry of the American College of Surgeons (TRACS) database from an ACS verified Level 1 Trauma Center. We identified all MCCs and calculated descriptive statistics for demographic and injury severity, and disposition. In addition to relative and absolute frequencies for MCCs and all-trauma by day of week, time of day, weather, and day of year. Data by day of year was smoothed, normalized by the mean, and fit using non-linear regression. Logistic regression was used to analyze the impact of continuous variables on binary outcomes. For baseline characteristics and other outcomes chi-squared and the Student’s t-test were used as appropriate.

10,390 consecutive patients who presented between July 1, 2013 and June 30, 2016 were identified. 10,381 had sufficient injury and admission data recorded. Of these, 837 presented after MCC. The mean ISS was 17.6 (SD = 11.2), mean age 42.9 (SD =14.9), 734 were male (87.6%), 102 required urgent operative intervention (12.2%). There were 19 in-hospital mortalities (2.3%). Weekend days had over twice the daily rate of MCC admissions as compared to weekdays (P<0.0001). MCCs occurred 7.75 times as often from 4-10pm as compared to 4-10am (P<0.0001). Mid-summer MCC rates were found to be over 60% greater than the yearly mean, and mid-winter has little MCC trauma. Neither temperature nor time of day correlated with ISS. We observed no association between time of day or temperature with death or operative intervention.

In this retrospective cohort study, we found that the incidence of MCCs is temporally related, with a significantly increased incidence in the summer months as compared to the winter months. This elucidates the different strain that they place on trauma systems, and can help drive educational efforts on motorcycle safety. Future studies should examine the role of targeted educational and policy efforts to reduce MCCs, particularly in its peak incidence.
Kiosk 6- Trauma/Acute Care/Other
110. ELECTRONIC CIGARETTE EXPLOSIONS AS A CAUSE FOR BURN INJURY
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Electronic cigarettes have rapidly increased in popularity since their introduction nearly a decade ago. Recently, a multitude of media and a few literature reports of electronic cigarette explosions have emerged. As a result, the safety of these devices has been called into question. Most electronic cigarettes utilize a rechargeable lithium ion battery as a power source. These batteries may be prone to combustion if appropriate safety precautions are not met. Herein we describe the mechanisms by which electronic cigarette batteries lend themselves to such explosion and present three cases of such explosions resulting in significant burns that were treated out our institution.
111. A NOVEL APPLICATION OF AN OLD TECHNIQUE: THE USE OF EXTERNAL TO INTERNAL CAROTID ARTERY TRANSPOSITION IN TRAUMA
AM Jensen MD, JW Dennis MD, JC Allmon MD, JH Habib MD, DJ Skarupa MD
University of Florida College of Medicine

Penetrating injuries to the neck with associated major arterial injury carry a high incidence of morbidity and mortality, up to 27% and 50% respectively. Zone II is the most commonly injured area at 47-66%. Patients with hard signs of vascular injury should proceed to the operating suite. Surgical repair of the cervical carotid usually consists of primary repair or interposition grafting. External to internal carotid artery transposition has been used successfully for treatment of age-related occlusive disease. Successful use of this technique in trauma has not been reported.

A 27 year-old male who presented to the trauma center after sustaining multiple gunshot wounds to the neck including bilateral zone II injuries, tongue, and midline posterior neck. Due to lateralizing signs (left hemiplegia), active extravasation, and expanding hematoma at the area of the right zone II injury, the patient was emergently transported to the operating suite. Upon exploration the patient was found to have a near circumferential injury to the internal carotid artery just distal to the bifurcation. Due to segmental loss of the proximal ICA with surrounding blast injury, a primary repair was not feasible. Internal carotid artery flow was re-established via an external to internal carotid artery transposition in an end-to-end fashion with ligation of the proximal branches of the ECA. No shunt was utilized. The internal jugular vein was transected and required ligation.

The patient tolerated the procedure well without complication and recovered fully without residual neurological deficits. Follow-up CTA and US imaging revealed no flow-limiting stenosis of the anastomosis with good flow to the intracranial circulation.

External to internal carotid artery transposition is a viable option for repair of penetrating zone II neck injuries, particularly when the extent of the arterial damage precludes primary repair. The injury must be at the level of the proximal ICA in order to have adequate ECA length. Advantages of this technique are that it uses autogenous tissue that is readily available and requires only one anastomosis.
112. GROUP G STREPTOCOCCUS LEADING TO NECROTIZING SOFT TISSUE INFECTION AFTER LOWER EXTREMITY VENOUS ABLATION

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Saint Agnes Hospital

A 73 year old African American female developed severe necrotizing soft tissue infection superimposed by Toxic Shock-Like Syndrome (TSLS), due to Group G Streptococcus (GGS), after undergoing Endovenous Laser Ablation (ELA) of her left lower extremity four weeks prior to presentation. Conn's Current Therapy recognizes that necrotizing soft tissue infections (NSTI) are uncommon, with an incidence of 1000 cases in the United States; NSTIs secondary to GGS are quite rare. The duration of her symptoms was approximately twenty-two days, during which time she developed septic shock and required debridement of her left lower extremity. GGS necrotizing fasciitis is a debilitating complication of wound infection, and early identification and treatment are imperative to prevent mortality.

This is a patient case report describing a rare necrotizing soft tissue infection after undergoing endovenous laser ablation. Multiple articles and case reports were reviewed when writing this report.

Endovenous laser ablation allowed our patient's lower extremity to become vulnerable to infection. Group G Streptococcus was cultured from her wound which was proximal to the medial malleolus, ultimately leading to a necrotizing soft tissue infection which was superimposed by toxic-shock like syndrome. Only a handful of cases have been described in the literature of Group G Streptococcus causing necrotizing soft tissue infections.

Immune compromise and pre-existing comorbidities, including diabetes and peripheral arterial and venous insufficiency, are significant risk factors that can lead to serious complications post venous ablation. Our patient underwent ELA of her lower extremity and subsequently acquired necrotizing fasciitis due to Group G Streptococcus. ELA carries risk factors, as any procedure does, including skin burns and wound infections. Group G Streptococcus is an overwhelming bacterial infection that takes advantage of open wounds and weakened tissues, inciting intense systemic manifestations; necrotizing soft tissue infections of this etiology, although rare, can be fatal.
Complications of a tracheal injury can include pneumothorax, bronchopleural fistula formation, tracheoesophageal fistula, mediastinitis and empyema.

A 24 year old African American male presented with a gunshot wound to his right chest. Patient was found to be in respiratory distress, with subcutaneous emphysema with decreased breath sounds in his right chest. A right sided chest tube was placed with immediate release of air and 600 cc of blood. Chest X-Ray revealed adequate placement of the right chest tube, large left sided pneumothorax, severe pneumomediastinum with subcutaneous emphysema and bullet lodged in the left 2nd rib. Patient underwent emergent left sided chest needle decompression and a rapid sequence intubation after worsening of respiratory distress. After intubation, a left sided chest tube was placed with release of air and 850 cc of blood. Once stabilized, patient underwent a CTA of the chest, which was significant for severe pneumomediastinum, bilateral pneumothoraces right to left through-and-through tracheal injury superior to the carina without any signs of vascular or esophageal injury. Given the acuity of the patient’s injuries and findings on imaging, decision was made to take the patient immediately to the operating room with the Cardiothoracic surgery service. Preoperative fiberoptic bronchoscopy revealed a 1.5 cm right anterolateral tracheal wall injury 3 cm above the carina and a contralateral <1 cm left sided wall injury. A large continuous air leak was appreciated upon repositioning of the ETT proximal to the tracheal injury. The left main stem bronchus was then selectively intubated to aid in tracheal injury repair. A right posterolateral thoracotomy was performed and tracheal injury was identified at level of a mediastinal pleura laceration. Tracheal was circumferentially exposed. Primary repair was performed with simple interrupted stitches using 4-0 Prolene with pericardial pledgets and reinforced with a pericardial patch. No repair leak was visualized upon withdrawal of endotracheal tube (ETT) and increased ventilator pressure. An intercostal muscle flap was harvested and secured over the repair. Left chest tube was without air leak and minor leak was appreciated from right chest tubes at the end of the procedure. ETT was positioned distal to repair to promote healing. The patient was extubated on post-operative day one without complications with resolution of air leaks. Esophageal injury was ruled out with a CT scan with oral contrast on post-operative day 2. His hospital course was uneventful with successive removal of thoracostomy tubes and ans subsequent discharge home on post-operative day six. A repeat bronchoscopy one-month post injury showed a patent trachea with healed injury sites with signs of granulation tissue.

Patient did well after undergoing a primary repair of his tracheal injury and a buttressing intercostal muscle flap without post-operative granulation which supports the equal use of absorbable and permanent sutures as reported in prior studies.

We present a 24 year old male who presented with a through-and-through isolated tracheal injury after a gunshot wound to the right chest successfully managed with primary repair and buttressing intercostal muscle flap.
Figure 1

Plain Chest X-Ray film showing bilateral pneumothoraces with significant subcutaneous emphysema extending to the neck, a right sided chest tube and a bullet lodged in the interior aspect of the 2nd left rib.

Figure 2

Coronal view of CTA of Chest showing projected area of gunshot entrance wound based on right side rib fracture (Letter A), area where bullet is lodged in interior aspect of 2nd rib and suspected bullet trajectory based on suspected tracheal injury on imaging study (Black line).
Kiosk 6- Trauma/Acute Care/Other

114. VALIDATING A SCREENING PROTOCOL FOR BLUNT CEREBROVASCULAR INJURY AT A RURAL LEVEL ONE TRAUMA CENTER

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Memorial University Medical Center

Our institution implemented a screening protocol for blunt cerebrovascular injury (BCVI) using physical findings and established radiologic criteria. We sought to evaluate our protocol's effectiveness and determine how to optimize detection.

We performed a retrospective review of our registry over a 9-month period in 2016 after protocol introduction. We selected patients who received neck CT angiography (CTA) as part of their initial evaluation and excluded CTAs performed beyond 24 hours of arrival. Age, ISS, GCS, BMI, and rationale for CTA were identified for patients with and without BCVI.

We isolated 206 patients: 178 with BCVI and 28 without. ISS was significantly higher and GCS significantly lower in the BCVI group with an odds ratio of 1.079 (p = 0.001) and 0.870 (p = 0.001), respectively. Eighty-two neck CTAs were obtained for cervical spine fractures and 17 of these patients had BCVI yielding an OR of 2.687 (p = 0.018). The probability of BCVI varied depending on interaction with GCS (Figure 1). Also, seat belt signs were responsible for 44 CTAs, yet 2 caused BCVI (OR = 0.249, p = 0.066). Furthermore, 41 patients received CTAs in violation of protocol and detected 2 BCVI. Deviating from protocol did not significantly increase injury detection nor did any remaining criteria.

Our protocol appears effective in BCVI detection, with similar rates seen in the literature. Deviation from our protocol decreases identification 3-fold, supporting the validity of our protocol. Future efforts should focus on the utility of screening angiography for isolated seat belt signs.
115. DOES RESUSCITATIVE ENDOVASCULAR BALLOON OCCLUSION OF THE AORTA (REBOA) HAVE A ROLE IN UPPER GI BLEED?

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East Tennessee State University

REBOA is becoming more commonly utilized to temporize intraabdominal and pelvic bleeding with resulting hemorrhagic shock in the trauma setting. Previously, invasive and highly morbid procedures were the only option. While there is little evidence in the literature currently to support other uses of the REBOA, it theoretically can be used to control any intraabdominal bleeding source, including massive upper gastrointestinal bleeding.

A 58 year old man presented with a bleeding duodenal ulcer for which he underwent multiple endoscopies and clipping of the gastroduodenal artery (GDA). He developed hemodynamic instability with hematemesis and was taken to the operating room where he underwent duodenotomy with oversewing of a GDA hemorrhage, a Billroth 2 reconstruction, truncal vagotomy and omental patch to the duodenal stump. During the procedure the patient was progressively weaned off pressors and had stable vital signs upon transfer back to the ICU. Within 2-3 hours of returning however, he began to get hypotensive again and had very high output of bright red blood from his intraabdominal drains. Return to OR was planned, but a room was not immediately available. The patients systolic blood pressure (SBP) was between forty-five and sixty and he was being treated with the massive transfusion protocol and three vasopressors. REBOA was used to help control the intraabdominal hemorrhage. It was placed into his left femoral artery and measured to placement just above his xiphoid (which has the same effect as supraceliac aorta cross-clamping). Placement was confirmed with portable xray.

Once the REBOA was in place the patient’s blood pressure improved to a SBP of eighty-five. The balloon remained inflated until we reached the operating room where it was taken down before we entered the abdomen. We evacuated a large amount of blood and clot and then identified and ligated the bleeding GDA. During this time the patient’s vital signs improved. His small intestine was edematous and the patient was still requiring vasopressor support, so an Abthera was placed and a second look was planned for the following day. The REBOA was kept in place with the balloon deflated until the end of the case, when we were confident the patients bleeding had stopped. It was removed at bedside with pressure held for twenty minutes until hemostasis was achieved. The patient had a complicated post-operative course unrelated to REBOA placement, but did recover and was subsequently discharged.

REBOA is a useful tool to help control massive internal hemorrhage until a definitive procedure can be performed. Although not classically used for upper GI hemorrhage, in our case the inflation of the balloon did help increase systolic pressure in a massively bleeding patient until we were able to transport him to an operating room for definitive care. Further studies and reports of experience with REBOA will be necessary to determine REBOA’s scope of application.
GASTRIC PERFORATION FOLLOWING CPR WITH AN AUTOMATED MECHANICAL CHEST COMPRESSION DEVICE

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77-year-old male who was found down by EMS in PEA, ACLS was initiated on the field and an automated chest compression device was applied at the scene and continued until patient arrived at our emergency department. Patient underwent additional two rounds of ACLS until ROSC was obtained. Primary survey performed by ED attending did not find traumatic abnormalities. CXR showed pneumoperitoneum and a significantly elevated left hemidiaphragm. CT of the chest and abdomen and pelvis were ordered, which showed Pneumoperitoneum most likely due to bowel perforation. Patient was taken to the OR for exploratory laparotomy. He was found to have a 0.5 cm perforation in the anterior surface of the stomach. This was repaired primarily in two layers. No other abnormalities were noted after completion of the celiotomy. Not that many cases of gastric perforation are reported following CPR. Here we present a case of gastric perforation likely the result of patient’s anatomy and not of the way CPR was administered. However, we briefly discuss current data reporting the potential complications of CPR and if there is a difference in complications when using an automated device.

This is a case report of a patient evaluated at our hospital by the general surgery service.

Anterior gastric perforation following CPR with a Mechanical chest compression device.

This case report shows a rare complication of chest compressions while using a mechanical chest compression device. It is intended to raise awareness in factors that can impair patient’s hemodynamics in the immediate period following CPR and it leads a discussion about outcomes between automated and manual CPR.
Kiosk 6- Trauma/Acute Care/Other

117. BIOABSORBABLE MESH REPAIR IS A BETTER ALTERNATIVE TO OPEN ABDOMINAL WOUND MANAGEMENT FOR FASCIAL DEHISCENCE WITH LOSS OF DOMAIN AND PERITONITIS

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Loyola University Medical Center

D.K is an overall healthy 64-year-old, overweight Caucasian female, who presented 2 days after her recent hospital discharge with lower midline fascia dehiscence with evisceration associated with loss of abdominal domain. The surgical exploration unveiled an ileocolic anastomotic perforation with small bowel obstruction and purulent peritonitis. The patient was in septic shock with leukocytosis, mild tachycardia and hypotension.

A new stapled ileocolic anastomosis was constructed. The small bowel was suction decompressed through a small enterotomy. The abdominal cavity was irrigated with 12 L of NS. Generous bilateral external oblique component separation was conducted. The midline was closed without tension. A 20 cm x 25 cm DAVOL PPHASIX Mesh was used in an onlay approach to strengthen the abdominal wall. A peritoneal and 2 supra-fascial drains were left in.

The surgery lasted for nearly 3 hours with EBL approaching 250 cc. Bowel function returned on day 2 and the patient tolerated diet well. The peritoneal drain was discontinued before discharge home on day 5. A symptomatic large volume (800 cm) seroma was drained on day 21. Gram stain and cultures resulted negative. A follow-up CT 3 months post surgery showed no abdominal wall hernia with persistent moderate sized seroma.

The surgery lasted for nearly 3 hours with EBL approaching 250 cc. Bowel function returned on day 2 and the patient tolerated diet well. The peritoneal drain was discontinued before discharge home on day 5. A symptomatic large volume (800 cm) seroma was drained on day 21. Gram stain and cultures resulted negative. A follow-up CT 3 months post surgery showed no abdominal wall hernia with persistent moderate sized seroma.
118. GALLBLADDER RUPTURE AND ACUTE THORACIC AORTIC DISRUPTION FOLLOWING BLUNT TRAUMA
DR Price DO, LA Gurien MD, JM Linson MD, JW Dennis MD, BK Yorkgitis DO
University of Florida College of Medicine

Gallbladder rupture caused by blunt abdominal trauma is exceedingly rare. Its protective location within the gallbladder fossa shields it from injury, with only a significant amount of force able to cause perforation of this organ. Therefore, high-impact mechanisms that lead to gallbladder ruptures are usually associated with other intra-abdominal injuries. However, there are no reports in the literature of blunt traumatic gallbladder ruptures and concomitant major thoracic vascular injuries.

We describe a trauma patient found to have a ruptured gallbladder and a thoracic aortic disruption after sustaining blunt trauma.

A 34-year old male was transferred to our trauma center from another facility after being struck by a vehicle. Upon arrival, the patient was hemodynamically stable but was complaining of severe abdominal pain and had peritoneal signs. FAST exam was positive for intraperitoneal fluid. CT scan revealed a descending aortic disruption at the level of T6. Free fluid in the peritoneum without evidence of a solid organ injury was confirmed on CT scan. Medication was given to lower heart rate and blood pressure and he was taken immediately to the endovascular suite for repair of the aortic injury. A thoracic stent graft was successfully deployed with complete coverage of the injury. The patient was then transferred to the operating room for diagnostic laparoscopy. Upon entering the abdomen, a large amount of dark fluid was seen in the right upper quadrant pooling around the liver. The gallbladder appeared abnormal, and a second trocar was placed in the abdomen and used to retract the gallbladder. A large perforation was immediately identified at the gallbladder fundus (Figure). The case was converted from laparoscopic to an open approach and a complete abdominal exploration identified no other abdominal injuries. A cholecystectomy was performed, the abdomen was washed out, and the fascia was closed. He was transferred to the Surgical Intensive Care Unit for monitoring. His postoperative course was uneventful and he was discharged from the hospital on postoperative day #4.

This is the first reported case of a concomitant gallbladder rupture and high-grade thoracic aortic injury in a patient who sustained blunt trauma. While this injury is rare, blunt traumatic gallbladder ruptures result from significant force and mortality rates are high due to associated severe injuries. The finding of blunt traumatic gallbladder rupture should prompt work-up for other intra-abdominal and thoracic injuries.
Kiosk 6- Trauma/Acute Care/Other
119. LOWER EXTREMITY RECONSTRUCTION: REVISITING THE CROSS-LEG FLAP
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Greenville Health System

The cross-leg flap dates back over 150 years and was widely used for lower extremity reconstruction during the World War II era. Its use quickly declined after the free flap was introduced in the 1970s. However, there are clinical scenarios today in which a cross-leg flap may be the best option.

We present the case of a 41-year-old man who sustained multi-system trauma after a motorcycle collision. On arrival he had an obvious left lower extremity deformity with no pedal pulses. He was taken for emergent external fixation and angiography which showed preservation of 2 out of 3 lower leg inflow vessels. After multiple debridements the patient was left with a 15x15cm soft tissue defect of his left medial leg and a rectus abdominis free flap was proposed.

Patient was taken for free flap but the procedure was aborted intra-operatively due to concern for only single-vessel runoff. Two days later the patient underwent a cross-leg fasciocutaneous flap. Both legs were placed in external fixation by orthopedics to protect the flap. On POD#19 the flap was divided and inset and the external fixator removed. Several months later he was noted to have great wound-healing with full coverage and functional mobility of his left foot and ankle.

We propose that the cross-leg fasciocutaneous flap is still a viable option for lower extremity reconstruction in the setting of poor or limited vasculature at the recipient site. In these scenarios in which a free flap is not possible, the cross-leg flap provides adequate soft tissue coverage with favorable cosmetic and functional results.
120. A CASE OF ACUTE ON CHRONIC MESENTERIC ISCHEMIA INVOLVING MULTIFOCAL CARCINOID OF THE ILEUM

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Northside Hospital

Chronic mesenteric ischemia (CMI) and ileocecal carcinoids are elusive causes of acute abdominal pain. We report a rare case of acute exacerbation of CMI secondary to metastatic, multifocal carcinoid tumors of the ileum.

74 year-old female with HTN, aortic regurgitation, pulmonary hypertension, history of peptic ulcer presenting with sudden onset of diffuse burning abdominal pain associated with nausea and vomiting. She had a bowel movement prior to coming to the hospital which was normal. She had a colonoscopy performed approximately five years ago which she reports was normal. Contrast-enhanced computed tomography (CECT) obtained at this time demonstrated portal venous gas and pneumotosis coli of cecum. CECT also demonstrated extensive atherosclerosis of the aorta without aneurysm. Celiac artery was not visualized and occlusion of the proximal superior mesenteric artery (SMA) with reconstitution distally. Patient was taken to the operating room for exploratory laparotomy. Gangrenous, non-perforated cecum was found and an ileocolic resection was performed. The patient was left in discontinuity. On the following day, the patient was brought back to the operating room for aorto-SMA bypass with Polytetrafluoroethylene (PTFE), creation of end ileostomy and mucus fistula. Pathology demonstrated multifocal well differentiated neuroendocrine tumor of the ileum ranging from 0.4 cm to 1.5 cm with 4 of 15 lymph nodes positive for metastatic disease. Octreotide scintigraphy obtained 4 weeks later demonstrated no abnormalities.

Pathological findings demonstrated multifocal well differentiated neuroendocrine tumor of the ileum ranging from 0.4 cm to 1.5 cm with 4 of 15 lymph nodes positive for metastatic disease. Octreotide scintigraphy obtained 4 weeks later demonstrated no abnormalities.

Chronic mesenteric ischemia (CMI), typically caused by atherosclerotic disease (95%)1, is an uncommon pathology and often asymptomatic. Stenosis of one and even two visceral vessels is usually well tolerated secondary to the abundant collateral circulation between the celiac trunk, the superior mesenteric artery, and the inferior mesenteric artery. The significance of neuroendocrine tumor in the case of acute exacerbation of CMI is uncertain. However, in most cases, the discovery is made incidentally at the time of surgery or other diagnostic evaluations.2 Two case reports of mesenteric occlusion due to carcinoid syndrome were previously reported3. Of note, both patients were found to have widely metastatic disease and the cause of SMA occlusion was likely due to bulky tumor nodules along the mesenteric vessel causing vascular sclerosis. A less common cause for exacerbation is mesenteric venous thrombosis leading to mesenteric ischemia (5-15%) resulting in venous outflow obstruction and visceral edema can be associated with local inflammation and hypercoagulable states.4 Albeit uncommon etiology, may have contributed to the acute exacerbation of CMI in our case.
A Case of Acute on Chronic Mesenteric Ischemia Involving Multifocal Carcinoid of the Ileum

Cui Zhang, MD, Delidre Hart, MD, Marion Schacter, MD, Wayne Ambrose, MD, Maryam Saldy, MD
Georgia Colon and Rectal Associates

INTRODUCTION — Chronic mesenteric ischemia (CMI) and ileocolic carcinoids are elusive causes of acute abdominal pain. We report a rare case of acute exacerbation of CMI secondary to metastatic, multifocal carcinoid tumor of the ileum.

CASE PRESENTATION — 74-year-old female with HTN, acute retropulsion, pulmonary hypertension, history of peptic ulcer presenting with sudden onset of diffuse burning abdominal pain associated with nausea and vomiting. She had a bowel movement prior to coming to the hospital which was normal. She had a colonoscopy performed approximately five years ago which she reports was normal. Contrast-enhanced computed tomography (CECT) obtained at this time demonstrated portal venous gas and pneumoperitoneum of cecum. CECT also demonstrated extensive atherosclerosis of the aorta without aneurysm. Celiac artery was not visualized and occlusion of the proximal superior mesenteric artery (SMA) with reconstitution distally. Patient was taken to the operating room for exploratory laparotomy. Giapentosa non-perforated cecum was found and an ileocolic resection was performed. The patient was left in discontinuity. On the following day, the patient was brought back to the operating room for aorto-SMA bypass with Polytetrafluoroethylene (PTFE), creation of end ileostomy and anus fistula. Pathology demonstrated multifocal well-differentiated neuroendocrine tumor of the ileum ranging from 0.4 cm to 1.3 cm with 4 of 15 lymph nodes positive for metastatic disease. Octreotide scintigraphy obtained 4 weeks later demonstrated no abnormalities.

CONCLUSION — Chronic mesenteric ischemia (CMI), typically caused by atheroembolic disease (AED), is an uncommon pathology and often asymptomatic. Stenosis of one or even two visceral vessels is usually well tolerated secondary to the abundant collateral circulation between the celiac trunk, the superior mesenteric artery, and the inferior mesenteric artery. The significance of neuroendocrine tumor in the case of acute exacerbation of CMI is uncertain. However, in most cases, the discovery is made incidentally at the time of surgery or other diagnostic evaluations. Two case reports of mesenteric occlusion due to carcinoid syndrome were previously reported. Of note, both patients were found to have widely metastatic disease and the cause of SMA occlusion was likely due to bulky tumor nodules along the mesenteric vessel causing vascular ischemia. A less common cause for exacerbation in mesenteric visceral thromboembolism leading to mesenteric ischemia (5-12%) according to various outlets obstruction and visceral edema can be associated with local inflammation and hypercoagulable state. Also, uncommon etiology, may have contributed to the acute exacerbation of CMI in our case.

REFERENCES
Abdominal lymphangioma are benign cystic tumors that are extremely rare in the adult population. Resection of these lesions can be difficult due to their size at diagnosis and aggressive behavior.

We present a case of a 27-year-old male who presented with a symptomatic retroperitoneal lymphangioma involving vital intraabdominal structures that was successfully resected.

A healthy 27-year-old male presented with several month history of mid epigastric and lower back discomfort that had acutely worsened. CT scan demonstrated a multiloculated cystic appearing mass in the retroperitoneum measuring 10 x 10 x 4 cm with involvement of celiac artery, superior mesenteric artery, and aorta. MRI findings were consistent with lymphangioma. Due to symptoms, patient desired to undergo resection. Mass was excised en bloc. It arose behind the duodenum and into the pancreatic head and required extensive dissection from vena cava, aortocaval groove, celiac vessels, root of the superior mesenteric artery, bilateral renal veins and arteries, and anterior spinal ligament. Gallbladder was removed to facilitate further dissection into the porta hepatis. Final pathology revealed a lymphangioma. Patient had uneventful post-operative course and is currently doing well.

While abdominal lymphangiomas are rare benign lesions, they can be difficult to resect due to significant adhesions to organs. In this case, we report a successful resection of an extensive lymphangioma involving critical blood vessels including the aorta and vena cava.
Keloids are cutaneous lesions that result from the uncontrolled synthesis and deposition of increased amounts of collagen and proteoglycan by fibroblasts. Keloids can occur spontaneously but more commonly occur at sites of injury to the skin and at areas of stretch and higher tension. These lesions are often perceived as significant cosmetic deformities that have the potential to cause both physical and psychosocial symptoms in the individuals they affect, as they can restrict range of motion by causing contracture and can cause pain, tingling, pruritis, and psychological distress. Numerous modalities have been utilized in an attempt to address these issues but have been met with variable and inconsistent success, particularly in terms of recurrence. Surgical excision of keloids has a high recurrence rate, ranging from 45-100%, often within two years of excision. Other treatment options that have been employed include intralesional injection of 5-fluorouracil and steroids, cryotherapy, silicone gel sheeting, and anti-neoplastic agents. Adjuncts to surgery include the use of high-dose brachytherapy, pressure therapy, Integra, and radiation. The optimal technique and timing of dosing fractions of adjuvant radiation has not yet been determined. Previous work suggests that effective treatment of keloids with adjuvant radiotherapy requires administering a high dose in a short time period.

A modification of a protocol used previously was utilized in the treatment of the three patients presented in this case report (Figure 1). Patients underwent surgical excision of their respective keloids. This was followed by the placement of a dermal regeneration substrate (Integra) over the resulting wound bed to serve as a bridge to skin grafting. Three weeks after excision, the silicone layer of Integra was removed, and a thin (6/1,000th of an inch) split thickness autologous skin graft was applied over the neodermis. Adjuvant radiotherapy was then administered daily to the wound edges beginning on post-operative day one. Patients received a total of 1,200 cGy in three equal fractions of 400 cGy daily over a three-day period.

The patients presented in this report have been followed for a minimum of 27 months (range 27-37 months), and no recurrence of their respective keloids has developed.

Despite the potential benefits provided by employing radiotherapy in this manner, there are also a number of possible adverse effects that merit discussion. These include transient erythema, hyperpigmentation, radiation dermatitis, scarring, skin atrophy, telangiectasias, subcutaneous fibrosis, necrosis, and wound dehiscence. The adoption of adjuvant radiotherapy for the treatment of keloids is partially hampered by the carcinogenic properties of radiotherapy, particularly when administered at higher doses and to younger individuals. Five cases of malignancy associated with radiotherapy for treatment of keloids have been reported in the literature. The possibility that radiotherapy contributed to the development of these malignancies cannot be ignored. We present this modified protocol for management of keloids for consideration in patients for whom alternative treatment methods have failed.
Hemangiomas are common, benign vascular tumors that typically present in the skin and subcutaneous tissue. They are characterized clinically as well-circumscribed, red-to-purple papules or nodules. Occurrence in less typical sites, such as within muscle or visceral organs, can lead to misdiagnosis and clinical confusion.

A review of all cases at the University of Tennessee Medical Center from 1997 – 2017 revealed a total of 10 cases of intramuscular hemangiomas.

As is typical with intramuscular hemangiomas (IMH), the majority of our cases (8/10) occurred in the muscles of the face or limbs. One IM hemangioma occurred in the scapula. Here we report a case of an abdominal wall IMH. The patient was a 60 year old female who presented with a 13.5 cm soft tissue mass in the right abdominal wall within the internal oblique muscle. The patient’s mass was concerning for an intramuscular lipomatous tumor with features suggestive of a liposarcoma. Core biopsy was performed and suggested a non-lipomatous tumor, possible sarcoma. A marginal resection was performed, and the final pathologic diagnosis was an intramuscular hemangioma with multiple positive margins and no malignancy noted.

Though uncommon, intramuscular hemangiomas should be considered when evaluating intramuscular tumors. IMH can mimic soft tissue sarcomas due to their infiltrative growth pattern and can lead to unnecessary radical resections. A marginal resection is adequate in treating these lesions. Risk of recurrences is incompletely understood and additional, multi-institutional studies are needed to better understand the long-term outcomes.
Kiosk 6- Trauma/Acute Care/Other
125. MEDICAL AND WOUND CARE BY NON-PHYSICIANS IN KINGSTON, JAMAICA: THE URBAN UNDERSERVED IN A DEVELOPING NATION AND THE MISSIONARIES OF THE POOR
L Pedevillano MBS DO, R Davito, A Orlando, D Brown DO, K Tuitt DO, JP Dayandayan MOP, K Thaxter MD, GJ Slotman MD
Inspira Health Network Vineland

The Missionaries of the Poor (MOP) is a Catholic religious order providing housing and medical services to the physically and mentally disabled of Kingston, Jamaica. The MOP houses over 500 residents in adult male and female facilities, an orphanage, and dedicated advanced-stage HIV/AIDS care center. Medical services include chronic wound care, a weekly outpatient clinic that is open to the public, and treatment and supportive care to advanced HIV/AIDS patients. These services are provided through 1 MOP RN and 11 LPN’s, and various members of the religious order. Intermittent support by foreign physicians and healthcare professionals available through volunteers. We will describe the healthcare delivery by mostly non-physicians to patients in the setting of a large urban environment in a developing nation with a national healthcare system.

Outpatient data from weekly MOP clinic was collected from 2010 to 2017 including age, gender, and affected organ system. Mortality data from 1996-2013 MOP HIV/AIDS facility was also collected. All chronic wounds under MOP care were examined, photographed, measured. Cause, treatment, and co-morbidities were recorded. Wound cross-sectional area (WCSA) was calculated (cm2).

Outpatient data recorded for all visitors to the weekly clinic (n=4511). Females (n=3037) outnumbered males (n=1474). Most common organ systems were respiratory (n=1831), musculoskeletal (n=1150), integumentary (n=1139), and cardiovascular (n=1042). Urinary (n=885), gastrointestinal (583), neurological (582), endocrine (410) were least common. HIV/AIDS deaths numbered 97% (n=653) in 1996-2005, and 90% (n=276)2006-2013. Of these, 52% females, 48% males. Wounds (n=28) chronically treated 16 patients. Median age: 44 years (8-77). Males (n=13), Females (n=3). Wound site: ankle(n=12), lower leg(n=6), 2 upper leg(n=2), decubitus(n=3), shoulder (n=1). Multiple wounds (n=6). Median WCSA: 9.2cm2 (0.5-423cm2). Co-morbidities: diabetes (n=3), cerebral palsy (n=4), venous stasis (n=3), paraplegia (n=2), seizure disorder (n=2), mental disorders (n=6).

MOP provides wound care, outpatient evaluations, and care for HIV/AIDS patients in urban Kingston, Jamaica. Wound cleaning and wet-to-dry dressing changes are performed daily, although advanced treatment and skin grafting are not available. Weekly outpatient clinic headed by one Registered nurse and LPN-equivalent religious brothers serves many patients and comorbidities rendering it a remarkable necessity, although free healthcare is available at nationally-run health institutions. The decrease in mortality among HIV/AIDS patients correlates to the release of generic antiretroviral medication. However, the total deaths remain high in spite of treatment availability due to late presentation of patients. The social stigma surrounding the disease remains strong and many are often not diagnosed until late-stage. MOP provides care to many despite social and monetary limitations. These services are indispensable to those they serve, but may be improved in the future.
Kiosk 6- Trauma/Acute Care/Other

126. GOT BLOOD? OVERCOMING BLOOD SHORTAGE IN A HOSPITAL-BASED BLOOD BANK IN GHANA

D Martin MD, G Nanci MD, L Wuest MT(ASCP), F Agbemordzi MD, G Armah PhD
Northside Forsyth Hospital, Enchi Government Hospital, Noguchi Memorial Institute for Medical Research

West African hospitals suffer from a chronic shortage of blood for transfusions. A lack of blood bank equipment, unreliable electricity, insufficient cold storage, and cultural bias against blood donation all exacerbate the problem. Our study focuses on a two-year effort to identify the barriers and increase blood supply in a 105-bed hospital in Western Ghana. The hospital is the only source of surgical services in a district of over 150,000 people, with blood-on-hand ranging between 0-3 units on any given day. The authors found that even after donations of upgraded blood bank equipment were secured, there was little increase in the hospital’s average stored blood supply. Interviews with hospital staff and analysis of blood donation records revealed the hospital faced extreme difficulty in obtaining blood donations. The hospital received 20-35 donations each month, virtually all of which were emergency direct donations by friends or relatives of a patient with an acute need for blood. Donor recruitment challenges included fear of disease status disclosure and fear of donation side effects. A blood drive was organized, resulting in the donation of 45 units of blood, of which 33 were suitable for transfusion. The donors who provided useable units were placed on a list from which to draw regular volunteer non-remunerated blood donors (VNRBD). The combination of upgraded blood bank equipment, reliable cold storage, and community outreach resulted in a 900% increase over the hospital’s prior average on-site blood supply. A voluntary donor registry was created to ensure ongoing donation.
A fibroepithelial polyp is a benign tumor of the mesodermal origin. They are most commonly found in lower genitourinary tracts including lower glans penis, ureter, cervix, rectum, and in the anus. Most of these polyps remain smaller than 5 cm. Unusually large fibroepithelial polyps up to 18 cm or greater had been observed. Rarely, these polyps found in the anus have been associated with obstructive ileus of the gastrointestinal tract. However, small bowel obstruction secondary to a fibroepithelial polyp of the small bowel has never been reported.

42-year-old male with no known past medical or surgical history presented with 3 day history diffuse abdominal pain and inability to pass bowel movement. The pain was abrupt in onset and constant. Laboratory work up was notable for mild leukocytosis and hyponatremia. CT scan was notable for high-grade small bowel obstruction with a long segment of intussusception involving the distal jejunum (A, B). Patient underwent exploratory laparotomy. A firm and smooth mass was found in the left upper quadrant consisting of intussuscepted small bowel. The involved bowel and associated mesentery appeared normal without sign of necrosis or vascular compromise. The mass was resected and the small bowel was reconnected with side-to-side anastomosis. The gross pathology was notable for maroon and yellow colored polypoid mass measuring 5x3.5x0.5 cm attached to a mucosal surface of the intestine with a stalk measuring 1x0.8x0.8cm causing intussusception and obstruction (C). The microscopic pathology was consistent with a giant fibroepithelial polyp of small bowel with stratified epithelial cells and increased fibrocollagenous material of the stroma. There was no evidence of malignancy (D).

Fibroepithelial polyps are benign tumors of mesodermal origin. They are usually present in the lower genitourinary tracts or the perineum. Almost all fibroepithelial polyps are asymptomatic and small in size; however, there have been few reported cases of unusually large tumors. Therefore, giant fibroepithelial polyps should be included in the differential diagnosis of large smooth mass of the lower gastrointestinal or genitourinary tracts. The main modality of diagnosis of these tumors remain histological with their characteristically abundant fibrocollagenous stroma and stratified epithelial cells. The biological mechanism of these tumors is largely unknown. Galanis et al hypothesize reactive hyperplasia of the subepithelial connective tissue possibly due to repeated trauma to the area during passage of stool. This notion has been corroborated by a histological study of 40 cases of fibroepithelial polyp of the anus that showed morphological similarity to normal anal mucosa. The study also revealed that mast cells may be intimately related to the pathogenesis of the tumor through their fibrogenic or fibrolytic activities. The surgical intervention is indicated for symptomatic lesions only. Few cases of surgically managed giant fibroepithelial polyps in the lower genitourinary tract or anus associated with obstruction have been reported.

To our knowledge, this is the first case report of a giant fibroepithelial polyp presenting as high grade small bowel obstruction successfully managed with surgical resection.
129. GASTRIC ELECTRICAL STIMULATION: DO PATIENT FACTORS INFLUENCE DEVICE REMOVAL?
AD Pinnola DO, CE Dupree DO, DB Adams MD
Medical University of South Carolina & Grand Strand Medical Center

Gastric electrical stimulation (GES) with a surgically implanted pacemaker is a treatment option for patients with gastroparesis refractory to medical management. The use of GES for treating gastroparesis is controversial due to the difficulties of assessing randomized results based on subjective outcomes related to a surgical procedure. The purpose of this study was to identify factors associated with generator explant as a surrogate for GES treatment failure and a means to improve patient selection.

A retrospective review and analysis of patients who underwent GES therapy for gastroparesis refractory to medical management at the Medical University of South Carolina was undertaken. The study period from 2010-16 identified patient sex, age, etiology of gastroparesis (diabetes mellitus (DM) prior foregut surgery, or idiopathic), laparoscopic or open surgical placement, time since placement, device removal, time to device removal, and reason for device removal. A logistic regression analysis was utilized to identify factors related to device removal and treatment failure.

One hundred seventy six patients were identified. The mean age was 43.7 ± 14.6 years. Eighty one percent (81%) of the patients were women. Seventy two percent (72%) of pacers were placed laparoscopically. Etiology of gastroparesis and device placement was 48.3% for diabetes mellitus, 38.1% idiopathic, and 13.6% with prior foregut surgery. The mean follow up period was 40.6 ± 412.8 months. The mean time to removal was 15,741.5 months. Thirty two (18.2%) patients had the device removed. Of these patients, 46.9% of patients had the device removed for treatment failure, 34.4% for pain, 9.4% for infection, and 9.4% had resolution of symptoms and did not feel the device was needed any longer. Age, open or laparoscopic surgery, and gender did not correlate with device removal or reason for removal. Patients in the treatment failure group did not differ significantly from the other patients in regards to age, gender, open or laparoscopic placement, or time to removal. Patients in the treatment failure group trended towards a lower incidence of placement for DM (50.3% vs 26.7%), (p=0.08). Patients with pacers placed for gastroparesis secondary to history of foregut surgery or idiopathic reasons experienced higher but statistically insignificant rates of removal for treatment failure 13.0% vs 20.0% (p=0.45) and 36.6% vs 53.3% (p =0.20). (Table 1)

Although this study failed to identify patient factors that could improve patient selection and lead to lower treatment failures, it supported a clinical bias that patients with diabetic gastroparesis benefit the most from GES. Validation of this trend will require additional study with a larger patient cohort. Moreover, the data supports the clinical experience that the large majority of patients with gastroparesis intractable to medical management benefit from GES therapy.
<table>
<thead>
<tr>
<th></th>
<th>Continued Therapy</th>
<th>Treatment Failure (Removal)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age years (+/- SD)</strong></td>
<td>43.8 (14.6)</td>
<td>42.3 (14.3)</td>
<td></td>
</tr>
<tr>
<td>Female Gender %</td>
<td>81.4</td>
<td>86.7</td>
<td></td>
</tr>
<tr>
<td>Diabetes (%)</td>
<td>81 (50.3)</td>
<td>4 (26.6)</td>
<td>0.08</td>
</tr>
<tr>
<td>Idiopathic (%)</td>
<td>59 (36.6)</td>
<td>8 (53.3)</td>
<td>0.20</td>
</tr>
<tr>
<td>Post-foregut Surgery (%)</td>
<td>21 (13.0)</td>
<td>3 (20.0)</td>
<td>0.45</td>
</tr>
</tbody>
</table>
Kiosk 7- GI
131. JEJUNAL LYMPHOMA PRESENTING WITH GASTROINTESTINAL BLEED
EH Wood MD, MA Singer MD, RP Gonzalez MD, JE Eberhardt MD
Loyola University Medical Center

Our patient is an 83 year old male with a medical history significant for coronary artery disease, hypertension, and diabetes who was initially transferred to our institution for evaluation of a small bowel mass and melena. Pt had originally presented to an outside hospital with symptomatic anemia and was found to have a hemoglobin of 5.5 mg/dl. Upper and lower endoscopy was significant only for diverticulosis and CT imaging revealed a jejunal mass without involvement of the central mesenteric vessels. Push enteroscopy demonstrated a bleeding, friable jejunal mass and percutaneous FNA of the lesion was concerning for lymphoma. On physical exam, pt was obese and had a palpable firm mass in his upper abdomen. He had no abdominal pain or obstructive symptoms.

Throughout the hospital stay, patient continued to require intermittent blood transfusions due to persistent gastrointestinal bleeding and surgery was recommended prior to chemotherapy. The patient was subsequently taken to the operating room where an upper midline incision was made that revealed a large mass in the mid part of the jejunum with associated bulky lymphadenopathy extending down the mesentery as well as surrounding the SMA and aorta. A small bowel resection was performed and the thickened mesentery was carefully divided. A stapled side-to-side anastomosis was performed.

The patient’s post-operative course was unremarkable, and he was discharged home on post-operative day 6. Pathology revealed diffuse large B-cell lymphoma of the small bowel arising from a background of low-grade B-cell lymphoma. The low-grade lymphoma was further classified as extranodal marginal one B-cell lymphoma of mucosa associated lymphoid tissue (MALT) type. Approximately 8 weeks after surgery, CHOP-R chemotherapy was initiated. Pt is doing well and has not had recurrence of gastrointestinal bleeding.

Non-Hodgkin’s lymphoma of small bowel is rare and comprises less than 5% of all gastrointestinal malignancies. There are only a few historic case series that discuss treatment options for small bowel lymphomas. While the standard therapy for gastrointestinal lymphoma is chemotherapy, in the setting of symptomatic anemia requiring frequent blood transfusions it was felt that surgical resection was required to allow the patient to safely transition to systemic therapies.
Gastrointestinal stromal tumor constitutes 0.5% of all GI tract tumors, with the majority (~70%) of cases occurring in the stomach, and about 20% in the small intestine. RBC scan is a sensitive and safe tool for detection of GI bleeding but failed to accurately localize the source of bleeding in our case. CT scan with contrast enhancement is an important tool of GIST tumor diagnosis specially with active bleeding. Emergency surgery with tumor resection is recommended in active bleeding with subsequent adjuvant therapy depending on the tumor size and mitotic rate.
Gastroesophageal reflux disease (GERD) is common, affecting up to 60% of the population with up to 30% of adults having severe disease. Proton pump inhibitors (PPI) are commonly used to suppress the gastric acid. As more of the side effects of PPI are recognized, patients are eager to discontinue them. This especially important in elderly patients who used PPIs for extended periods.

This is an IRB approved observational study of prospectively identified Medicare patients who underwent trans-oral incisionless fundoplication (TIF) in a critical access hospital from 8/2015-2/2017. Patients were included if the hiatal hernia was ≤ 2 cm and their age was ≥ 65 years. All patients had barium esophagram (BE) and esophagogastroduodenoscopy (EGD) with Bravo pH capsule placement. High resolution manometry with impedance was selectively used for patients with dysphagia or when BE showed abnormal motility. Patients completed preoperative GERD related questionnaires (GERD-HRQL, RSI, GERSS, Patient Satisfaction) and the same questionnaires were used postoperatively for objective comparison.

17 patients (13 female, 4 male) were included, aged 66-80 years (average 71.1). 16 patients were on proton pump inhibitors (PPI) for 4 months to 20 years (average 7.8 years). Following TIF all patients stopped the use of PPIs along with significant improvements in each GERD related questionnaire (Table 1). There was no mortality, complication or readmission. Length of stay was one day for all patients except one (2 days).

TIF is a viable, safe and effective alternative to PPI for GERD management in Medicare beneficiaries in rural communities.

<table>
<thead>
<tr>
<th></th>
<th>Pre-TIF</th>
<th>Post-TIF</th>
<th>P value</th>
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<tbody>
<tr>
<td>N</td>
<td>17</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>GERD-HRQL Score</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median (Range)</td>
<td>28 (0-75)</td>
<td>1.5 (0-11)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Mean (SEM)</td>
<td>29.6 (4.9)</td>
<td>2.4 (1.1)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Improved, n (%)</td>
<td>-</td>
<td>12/12 (100%)</td>
<td></td>
</tr>
<tr>
<td>RSI Score</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median (Range)</td>
<td>18 (4-48)</td>
<td>2 (0-22)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Mean (SEM)</td>
<td>22.3 (3.4)</td>
<td>4 (1.9)</td>
<td>&lt;0.001</td>
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<tr>
<td>Improved, n (%)</td>
<td>-</td>
<td>12/12 (100%)</td>
<td></td>
</tr>
<tr>
<td>GERSS Score</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median (Range)</td>
<td>13 (1-49)</td>
<td>0 (0-8)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Mean (SEM)</td>
<td>17.0 (3.5)</td>
<td>1.3 (0.7)</td>
<td>&lt;0.001</td>
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<tr>
<td>Improved, n (%)</td>
<td>-</td>
<td>12/12 (100%)</td>
<td></td>
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<tr>
<td>Satisfaction Index</td>
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<td></td>
<td></td>
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<tr>
<td>Satisfied, n (%)</td>
<td>2/16 (12%)</td>
<td>12/12 (100%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Neutral, n (%)</td>
<td>3/16 (19%)</td>
<td>-</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Dissatisfied, n (%)</td>
<td>11/16 (69%)</td>
<td>-</td>
<td>&lt;0.001</td>
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Table 1. Pre and Post TIF Procedure Assessment Scores
Kiosk 7- GI  
134. IMPACT OF ENDOSCOPIC TRAINING FOR SURGEONS IN ENDOOLUMINAL AND LAPAROSCOPIC TREATMENT FOR GASTROESOPHAGEAL REFLUX DISEASE: DATA FROM A RURAL, HIGH VOLUME, ANTI-REFLUX PROGRAM  
M Fanous MD, A Jaehne MD, D Lorenson RN, S Williams RN  
Aspirus Health System  

Endoscopic training of rural surgeons and lack of gastrointestinal services provide a unique opportunity for embracing endoluminal options for gastroesophageal reflux disease (GERD). These procedures are safe and often performed as outpatient procedures. Rural surgeons with advanced laparoscopic skills can perform laparoscopic anti-reflux surgery in patients who are not candidates for endoluminal options.  

IRB approved observational study in patients presenting to an outpatient clinic from 08/2015 - 02/2017 with classic or atypical GERD symptoms.  

During an 18 month timeframe 277 patients were evaluated. Surgical interventions were offered to 155 patients following structured assessment in our esophageal laboratory. All patients had barium esophagram (BE) and esophagogastroduodenoscopy (EGD) with Bravo pH capsule placement. High resolution manometry with impedance was selectively used for patients with dysphagia or when BE showed abnormal motility. Demographics and procedures are shown in Table 1.  

Endoscopic training for general surgeons provides a unique opportunity to perform laparoscopic and endoluminal procedures for treatment of GERD. The impact of training and implementation is likely to be much greater for rural surgeons where a majority of patients do not have straightforward access to endoscopists.  

<table>
<thead>
<tr>
<th>Demographics</th>
<th>179:98, (65:35)</th>
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<tr>
<td>Female: Male, N (%)</td>
<td>(17-90)</td>
</tr>
<tr>
<td>Age, (Min-Max)</td>
<td>(16.1-53.8)</td>
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<tr>
<td>BMI, (Min-Max)</td>
<td></td>
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<table>
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<tr>
<th>Prior Medical Intervention</th>
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</thead>
<tbody>
<tr>
<td>H2 Blocker and Antacids, N (%)</td>
<td>40, 14.4 %</td>
</tr>
<tr>
<td>PPI, N (%)</td>
<td>237, 85.6 %</td>
</tr>
<tr>
<td>Duration, Mean in years, (Min-Max)</td>
<td>10.1, 1 month-30 years</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Surgical and Endoscopic or Combined interventions, N, %</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TIF, N (%)</td>
<td>115/277, 55.9 %</td>
</tr>
<tr>
<td>Redo-TIF, N (%)</td>
<td>40/115, 34.8 %</td>
</tr>
<tr>
<td>Laparoscopic Hiatal Hernia Repair and TIF combined, N (%)</td>
<td>2/40, 5%</td>
</tr>
<tr>
<td>Hiatal Hernia Repair without Fundoplication</td>
<td>55/115, 47.8 %</td>
</tr>
<tr>
<td>Non-Ablative Radiofrequency Therapy (Stretta)</td>
<td>12/115, 10.4 %</td>
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<tr>
<td></td>
<td>6/115, 5.2 %</td>
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</table>

Table 1.
Meckel’s diverticulum is a rare disease entity of the small bowel, affecting less than 2% of the population. Gastrointestinal carcinoid tumors are another rare tumor, with an incidence of approximately 1 in 100,000 in the general population. This case report describes a patient with these two already uncommon scenarios occurring simultaneously.

A 64-year-old male patient with stage I rectal cancer received neoadjuvant chemoradiation followed by surgery, for a T2N0 lesion located 2 cm above the dentate line. He experienced a complete pathologic response to the neoadjuvant treatment, with only a small plaque remaining at 8 cm from the anal verge, biopsies negative for residual carcinoma. Of note, he had history of prior exploratory laparotomy for gastric ulcer repair, cholecystectomy, and right hemicolectomy for colon polyps. He underwent robotic assisted laparoscopic low anterior resection, extensive lysis of adhesions, transanal proctocolectomy, and coloanal anastomosis, with diverting loop ileostomy. His post-operative course was complicated by pelvic abscess formation and associated partial anastomotic dehiscence and stricture, which was treated with serial flexible sigmoidoscopy, and observed to heal with time. 6 months after the initial operation, he was deemed appropriate for elective ileostomy takedown. At this operation, upon extracorporealization of the small bowel, the patient was incidentally found to have a Meckel’s diverticulum with some palpable hardness. Given its close proximity to the ileostomy, and suspicion for an underlying mass lesion, it was resected en bloc with the ileostomy specimen. Final Pathology revealed a 1.5 cm, well differentiated, low grade, malignant carcinoid tumor within a Meckel’s diverticulum, involving the submucosa, and invading into the muscularis propria, with negative margins, no lymph nodes identified in the specimen. The patient recovered well from surgery. He is planned to undergo an octreotide scan, then follow up with Hematology/Oncology to discuss adjuvant treatment options.

Despite its exceedingly rare presentation, several cases have been reported in the literature of Meckel’s diverticulum containing a neuroendocrine tumor. One study quoted that approximately 0.48 to 0.74% of all carcinoids occur in a Meckel’s diverticulum. When discovered incidentally and treated accordingly in an asymptomatic patient, the devastating outcomes of malignant carcinoid or carcinoid syndrome may be completely avoided. This raises the question of when it would be appropriate to surgically resect an incidental Meckel’s diverticulum, and whether the risks of surgery really do outweigh the benefits compared to watchful waiting. This case also identifies the treatment challenge in a patient with unknown diagnosis at the initial operation, bringing into question the role of surgical re-excision or adjuvant chemotherapy.
The Morgagni hernia is a congenital defect of the anterior, retro/peri-sternal diaphragm. It is but one of several types of congenital diaphragmatic hernias, whose prevalence as a group is between 1:3000 to 2:4000 live births. The Morgagni hernia represents just 2% of these defects. The majority of congenital diaphragmatic hernias are discovered, and subsequently repaired, either perinatally or during childhood, with the latter being true of most Morgagni hernias. Most of these are discovered incidentally with chest imaging, and remain asymptomatic, but a small percentage (~5%) will escape detection until later into adulthood. Here, they may present urgently with symptoms resulting from both abdominal organ incarceration/strangulation and the presence of a space-occupying entity within the chest. We present the case of an 86 year-old male, admitted to our ICU after failed outpatient treatment of a Clostridium difficile infection, with epigastric and inferior chest pain noted to have a new cough concerning for pneumonia. Computerized tomography revealed herniation of the cecum and ascending colon through an anterior diaphragmatic hernia, with concern for a closed loop obstruction and/or volvulus (see image). Emergent laparotomy confirmed the imaging findings and the hernia contents were subsequently reduced. The Morgagni hernia defect was repaired primarily without incident, and a right hemicolectomy was performed for ischemia and impending perforation of the cecum. Our case represents a typical presentation of an exceedingly atypical case. Although rare, in the patient presenting with both gastrointestinal and respiratory complaints that are seemingly unrelated, the Morgagni hernia and its sequelae should be on the differential of the astute provider. In symptomatic patients, such as ours, the bulk of case reports concur with laparotomy as the definitive treatment. In the asymptomatic patient, laparoscopic approaches to repair have been described.
Marginal ulcer is a common and often problematic complication in patients following Roux-en-Y gastric bypass (RYGB). Development of an aortoenteric fistula at the site of the marginal ulcer, however, is rare, with few reports found in the literature. In this case, we describe successful treatment of a life-threatening gastrointestinal hemorrhage secondary to an aortoenteric fistula which formed at the site of a marginal ulcer following RYGB.

A 38-year-old man presented to our Emergency Department with an upper gastrointestinal (GI) bleed. His medical history was significant for RYGB four years prior and successful repair of a gastro-gastric fistula. Following multiple failed attempts to treat the GI bleed endoscopically, the patient underwent emergent exploratory laparotomy which revealed an aortoenteric fistula at the site of the gastrojejunal anastomosis. The diseased gastrojejunalostomy was resected, and the aorta was repaired with interposition of a 14 mm Dacron graft. The gastrojejunalostomy was revised five days later when the patient was medically stabilized.

Following treatment for this life-threatening hemorrhage, the patient required massive transfusion and had a prolonged hospitalization prior to being discharged home. Unfortunately, one year later, the patient developed another marginal ulcer of the new gastrojejunalostomy.

Aortoenteric fistula is an uncommon pathology with various causes. Few reports of an aortoenteric fistula at the site of a marginal ulcer after RYGB exist. This case adds to the limited literature by providing one treatment option for a difficult and rare surgical condition.
Roux-en-O configuration is a rare complication of gastric bypass surgery that can result in devastating consequences. The improper anastomosis of the biliopancreatic limb to the gastric pouch is the result of misidentification of the Roux limb. We present a case report of a disconnected Roux-en-O configuration after gastric bypass surgery.

One case of a Roux-en-O configuration that occurred at an institution not affiliated with the authors was reviewed as part of a malpractice litigation case. The medical records, operative reports, radiographic images and pathology report were reviewed and tabulated. Consent was obtained from the patient’s estate to publish the findings.

The patient was a 26 year old woman who underwent a laparoscopic gastric bypass for morbid obesity. The operative note reported construction of a 100 cm Roux limb in the antecolic position and creation of the gastrojejunostomy using a 21mm circular stapler. The patient was reported to tolerate a liquid diet and was discharged home on postoperative day 2. She presented to the emergency room one day after discharge with obstructive symptoms. Computed tomography of the abdomen showed findings consistent with a bowel obstruction but did not identify the etiology. Due to persistent symptoms, she was taken to the operating room for an exploratory laparotomy nine days after the initial operation. The operative report noted identification of the biliopancreatic and alimentary limbs. Stricture at the jejunojjunostomy was described and “stricturoplasty” was performed. No other surgical intervention was described. The patient was transferred to a tertiary referral center for higher level of care three days after the reoperation due to clinical deterioration. The patient was managed non-operatively without a definitive diagnosis over the next fourteen days and subsequently died of respiratory failure. Autopsy showed a Roux-en-O configuration with a disconnected distal jejunal limb that was anastomosed to itself.

We report the first mortality as a result of a Roux-en-O construction during a gastric bypass. We suggest that this rare complication can be avoided by marking either the biliopancreatic or Roux limbs prior to division of the proximal jejunum.
Kiosk 7- GI
144. CECAL VOLVULUS CAUSED BY INTERNAL HERNIATION AFTER ROUX-EN-Y GASTRIC BYPASS SURGERY
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University of Florida College of Medicine

Cecal volvulus is the rotation of a mobile cecum resulting in a large bowel obstruction. Anatomic characteristics predisposing to cecal volvulus include incomplete intestinal rotation during embryogenesis and insufficient retroperitoneal attachments of the right colon, either congenitally or from mobilization during a prior operation. We present an unusual case of cecal volvulus resulting from herniation of the cecum, ascending colon and a substantial portion of small bowel through a large transverse mesocolon defect created during a roux-en-y gastric bypass operation 13 years earlier.

A 55 year-old female with a history of a roux-en-y gastric bypass and subsequent exploratory laparotomy for a perforated gastric ulcer was admitted to the hospital after presenting to the emergency department with several days of worsening abdominal pain and obstipation. Physical exam revealed substantial left-sided abdominal distention and moderate tenderness. Roentgenogram demonstrated a 14 cm diameter loop of colon in the left upper quadrant concerning for sigmoid volvulus (Figure, A). Infused computed tomography (CT) scan showed abrupt cut off of rectal contrast at the distal transverse colon with mesenteric swirl and a distended cecum, consistent with cecal volvulus (Figure, B and C).

Emergent exploratory laparotomy revealed the majority of the small bowel, the dilated cecum and a portion of the ascending colon had herniated through an iatrogenic transverse mesocolon defect created during her prior retrocolic gastric bypass over a decade earlier. The small bowel was clearly viable after reduction through the mesenteric defect into the correct anatomical position. An ileocecectomy with a handsewn ileocolonic anastomosis was performed given extensive serosal injury from the acutely dilated cecum. In an attempt to prevent future herniation, the large mesenteric defect was closed loosely around the roux limb.

Cecal volvulus is thought to be caused by an overly-mobile cecum twisting on itself. The literature does contain reports of cecal volvulus resulting from a variety of unusual causes. However, ours appears to be the first reported case of cecal volvulus caused by an internal hernia (IH) through a mesocolon defect created during a prior retrocolic gastric bypass operation. In the late post-operative period after roux-en-y gastric bypass, IH occurs with a reported incidence of 1-11%. No consensus exists on the operative conduct which most greatly minimizes the risk of post-operative IH. Antecolic configurations are generally associated with lower rates of IH compared with retrocolic positioning. While direct closure of defects would seem to reduce the risk of IH, empiric evidence suggests that it may have no effect, or even increase the rate of IH. Our patient was predisposed to cecal volvulus because of an excessively mobile cecum, which was congenital since her right colon had never been surgically mobilized. Her retrocolic roux-en-y configuration likely increased her risk of IH. Whether any of her defects were closed during her gastric bypass operation in 2003 is unknown. The effect that this might have had is unclear based on the existing body of literature. Ultimately, she recovered quickly and went home on post-operative day four.
Kiosk 7- GI
146. IS THERE A “HALO EFFECT” FOR BARIATRIC SURGERY?
DG Pearson MD, JD Scott MD, LR Beffa MD, TA Shull
Greenville Health System

Bariatric surgery has many direct and indirect effects on patients. Over time, patients can have dramatic positive outcomes in their life, leading to changes in their relationships and interactions with family members and members of their various social networks. Nearly one-half of all patients who undergo bariatric surgery are self-referred, likely due to interactions with family members or friends who have previously had a bariatric intervention. The secondary influence of bariatric surgery on relationships is known as a “halo effect” and is due to the significant changes in lifestyle, appearance, and improving health of bariatric patients, which are observed by the patients’ social contacts. In some cases, the observed success of bariatric patients may influence others to make lifestyle changes, attempt weight loss, or even seek bariatric surgery for themselves. We aim to objectively quantify the impact that bariatric surgery has on the families, friends, co-workers, and social network contacts of patients that undergo bariatric surgery.

A retrospective review of all patients who underwent primary bariatric surgical procedures at Greenville Health System between Jan. 1, 2015 - Dec. 31, 2015 was performed. Data collected included patient demographic information, medical comorbidities, procedure type, postoperative results and complications. These patients were then contacted by telephone and administered the “Halo Effect Questionnaire” (n=78) to evaluate the social effects of their bariatric surgery. The primary endpoint evaluated was the halo effect seen in social contacts that underwent bariatric surgery.

Seventy-eight bariatric patients completed the “Halo Effect Questionnaire”. A minority of patients, 28.2%, were referred for their bariatric procedure by a health care provider (n=22). Forty-four percent of patients were self-referred (n=35), and 55% were referred by family members or friends (n=43). Ninety-eight percent of patients (n=77) endorsed sharing their bariatric weight loss experience with family members, 93.5% shared with close friends (n=73), and 48.7% shared with co-workers (n=38). Fifty percent of patients (n=39) posted on social media websites specifically relating to their experience with bariatric surgery. Fourteen family members and 18 close friends of the bariatric patients underwent bariatric surgery. There were also 9 co-workers who underwent bariatric surgery. Bariatric surgery patients impacted the weight loss of 46 family members, 33 close friends, and 23 co-workers.

The impact of bariatric surgery reaches far beyond the bariatric patients themselves. There is a dramatic social consequence, or halo effect, produced when family members, friends, and co-workers observe the weight-related changes in bariatric surgery patients. These social contacts attempt weight loss and seek bariatric surgery based on interactions with patients who have undergone bariatric surgical interventions.
Congenital intestinal malrotation is diagnosed in 1 of 6000 live births, with estimated childhood incidence of 0.04-0.5%. It occurs between the 4th and 10th weeks of embryologic development when the embryonic intestinal loop fails to rotate 270 degrees as it returns to the abdomen. This results in the duodeno-jejunal flexure located right of the midline, and the cecum high in the left abdomen, with peritoneal bands (Ladd’s bands) from the cecum to the right abdomen. Complications of malrotation occur when Ladd’s bands cause duodenal outflow obstruction, or when the intestines and cecum rotate around the narrow-based mesentery and cause obstruction or midgut volvulus. In adulthood, the diagnosis is rare and is made incidentally on abdominal imaging or intervention, during work-up of chronic abdominal symptoms, or acutely as a bowel obstruction or midgut volvulus. Here, we present a morbidly obese patient with an incidental finding of congenital malrotation on attempted laparoscopic Roux-en-Y gastric bypass, successful laparoscopic sleeve gastrectomy, and subsequent duodenal obstruction secondary to Ladd’s bands.

The patient is a 52-year-old male with morbid obesity (BMI 55.4kg/m2), no prior abdominal surgeries, and multiple obesity-related comorbidities who presented to bariatric clinic for evaluation for surgical intervention. He had two prior admissions for chest and abdominal pain. Cardiac workup, esophagogastroduodenoscopy (EGD), and CT scan had no definitive diagnosis. After undergoing standard preoperative nutritional assessment, weight loss counseling, and EGD, he was scheduled for laparoscopic Roux-en-Y gastric bypass. Intraoperatively, he was found to have congenital intestinal malrotation and the procedure was abandoned. Ten days later the patient underwent laparoscopic sleeve gastrectomy and prophylactic appendectomy with uneventful perioperative course. Two months later he presented with obstructive symptoms and CT scan showing duodenal obstruction. He was taken urgently to the operating room where he underwent exploratory laparoscopy with intraoperative findings of duodenal obstruction, and successful laparoscopic lysis of peritoneal (Ladd’s) bands. An upper gastrointestinal series on postoperative day 1 showed no further obstruction. The patient has continued to do well postoperatively, with BMI 36.6kg/m2 five years after bariatric surgery, improvement in all noted obesity-related comorbidities, and no further surgical intervention required.

While this diagnosis is usually made acutely in infants, adults can present with acute or chronic symptoms of small bowel obstruction secondary to malrotation. Upon review of current literature, there are multiple instances of patients undergoing abdominal imaging, EGD, and even abdominal surgical intervention without malrotation being diagnosed, only to present later with obstructive symptoms.

Given its rare incidence in the adult population, missed diagnosis of congenital intestinal malrotation may occur despite prior imaging and intervention for other pathologies. While presence of malrotation does not necessitate surgical intervention, prior diagnosis of malrotation allows directed surgical intervention in patients with obstructive symptoms.
Axial and Coronal CT Images with duodenal obstruction secondary to Ladd’s bands
Visible is distended duodenum (D), superior mesenteric artery (SMA), superior mesenteric vein (SMV)
Polycythemia vera is a chronic myeloproliferative neoplasm characterized by clonal proliferation of myeloid cells with variable morphologic maturity and hematopoietic efficiency. Bleeding and thrombosis are known complications of polycythemia vera, which present a therapeutic dilemma regarding the management of the critically injured trauma patient.

We present the case of a 70-year-old male status post motor cycle crash. He arrived hemodynamically stable and imaging revealed a complex pelvic fracture with active extravasation from bilateral branches of the internal iliac arteries. He became hypotensive prompting transfusion with packed red blood cells, fresh frozen plasma, and platelets and underwent urgent coil embolization of bilateral anterior branches of the internal iliac arteries. He required further transfusion with packed red blood cells and fresh frozen plasma overnight and was taken for percutaneous stabilization of his pelvis fractures on hospital day 2. Duplex ultrasound of bilateral lower extremities obtained on hospital day 3 demonstrated a common femoral vein deep vein thrombosis. As the patient was not a candidate for anticoagulation due to his increased risk for bleeding, an inferior vena cava filter was placed.

Bleeding and thrombosis are frequent problems in poly-traumatized patients. Both contribute significantly to morbidity and mortality but have divergent treatments. Incidence for thrombosis and bleeding in polycythemia vera are 12-39% and 1.7-20%, respectively. Platelet-leukocyte interactions at the site of vascular injury have been implicated in the balance between hemostasis and thrombosis. Risk factors for major bleeding include a history of vascular events, splenomegaly, and heparin administration. In the case of major hemorrhage, acute blood loss in managed with hemorrhage control and volume replacement. Management of thrombotic events must be individualized, especially in those patients at higher risk of bleeding due to preexisting conditions.

Bleeding and thrombosis are known complications of polycythemia vera, but little data exists regarding management of polycythemia vera in the multi-injured trauma patient. While initial focus must be on achieving hemostasis, alternative methods to prevent thrombosis must be considered.
THE CORRELATION BETWEEN DISTAL EXTREMITY TEMPERATURES AND VASOPRESSOR USE

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Marshall University

The effects of vasopressors on skin necrosis have been reported for over 40 years but the etiology is inadequately understood. Vasoconstriction from vasopressor use leading to poor distal perfusion, thromboembolism from coagulopathy in critically ill patients may be contributing to these changes, but almost consistently, the extremities that are affected seem to be “cool to touch”. The purpose of this study is to examine the temperatures of the distal extremities and to evaluate if there is a correlation with these temperatures to the amount of vasopressors being used.

We will examine the surface temperatures of the distal extremities of patients on vasopressors in the ICU using an infrared thermometer (Nubee NUB8380). Gathering data such as age, sex, comorbidities, core temperature and presence of warming measures, we will then use statistical analysis with multivariate regressions to adjust for confounders to determine if there is a correlation between amount of vasopressor used and distal extremity temperatures.

This is an ongoing study that we expect to have results in by the time of presentation. We expect to find an inverse correlation between amount of vasopressors used in critically ill patients and the surface temperatures of the distal extremities. We hypothesize that this will still be significant after adjusting for core temperature, comorbidities, rewarming measures and other variables.

We expect that our data will show that increased vasopressor use is correlated with lower surface temperatures in the distal extremities. The lower temperatures may be contributing to the skin changes leading up to tissue necrosis. Further studies will be necessary to evaluate whether or not mechanically warming these distal extremities can improve outcomes and prevent necrosis from developing or progressing.
150. RETAINED GLASS IN PLEURAL CAVITY: IS CHEST XRAY ENOUGH?
CE Angeles MD, J Con MD
Westchester Medical Center

For minor penetrating chest trauma due to stab wound in the hemodynamically stable patient, an upright chest radiograph should be sufficient to determine main injuries. In children, the performance of a chest tomography after minor trauma is discouraged because the findings rarely influence the clinical management. Furthermore, children are more radiosensitive and have a longer potential lifespan in which to express radiation-induced tumors. But, is chest x-ray enough to identify potential foreign objects retained after penetrating injuries? We present a case of a retained piece of glass in the chest cavity unable to be detected in seven chest radiographs over the course of one week.

16-year-old male presents to the emergency department after penetrating chest injury. Caretaker reports patient had been pushed into a shattered picture frame, a piece of glass caused a small laceration to the right lateral chest. Wound was clean with no fragments found on local exploration. Chest x-ray showed a moderate right-sided pneumothorax, no foreign bodies were seen on two consecutive x-rays. A right-sided pigtail was placed with adequate re-expansion of the right lung. Pigtail was removed after two days and patient was discharged home in stable conditions. A total of seven chest radiographs were performed throughout his admission.

Two weeks later, patient is brought into the emergency department after presenting with severe right-sided chest pain while playing in gym class for the first time. Chest x-ray reveals a radiopaque foreign body along the right diaphragm. CT abdomen/pelvis showed a 5 cm linear foreign body in the right costophrenic angle. Patient underwent video-assisted thoracoscopy surgery and removal of foreign body. A piece of glass was retrieved from the right pleural cavity, adjacent to one of the lower ribs.

Radiography is an important tool in the initial diagnosis and follow-up imaging of foreign bodies. Nonetheless, the visibility of a non-metal object on a radiograph can depend on its size, radiopacity, anatomic location, patient’s body habitus and all the surrounding anatomic structures (5). Plastic and organic foreign bodies (such as wood) are not usually visible on radiographs as they are radiolucent. Stone foreign objects (such as porcelain) are radiopaque and generally visible on x-rays (4). Glass is very particular in terms of its radiographic visibility. All glass foreign objects are radiopaque, but the thickness of the object, the surrounding tissue and location alters the ability to see it on radiographs (5). Tomography has the highest sensitivity to detect all foreign objects (6). CT detection rate is not affected by location of the foreign body (6). In our case, the failure of multiple radiographs to detect a glass foreign object resulted in a delayed diagnosis and treatment. Judicious CT scanning is recommended in children because the risk of an occult internal injury is very high in these patients. Glass foreign objects are particularly missed on x-rays. We suggest that all pediatric patients with penetrating injury with non-metal objects should eventually undergo a CT scan focused on the area of impact.
Necrotizing fasciitis is an aggressive soft tissue infection with associated high rates of morbidity and mortality. Fungus is a rare source of necrotizing fasciitis. Prompt diagnosis with urgent surgical debridement and anti-fungal therapy is crucial to survival and minimizing morbidity. Zygomycosis is the third most common invasive fungal infection, and while most patients are immunosuppressed, trauma is a major risk factor in the immunocompetent patient. However, there is a paucity of data about fungal necrotizing fasciitis in the trauma population and specifically those arising in the civilian population and from bullet wounds.

In this case report, we describe a fungal necrotizing fasciitis in a healthy male admitted to an ACS Level 1 trauma center after multiple gunshot wounds to the abdomen. This rare infection originated from a bullet wound on his left flank. We also describe the use of hyperbaric oxygen to successfully treat the fungal infection, which was required since the infection was refractory to serial debridements and systemic anti-fungal therapy. A literature search for similar cases was performed using PubMed with keywords “fungal infection”, “trauma”, and/or “gunshot”. A second search was performed using “fungal infection” and “hyperbaric”.

Following successful operative repair of his traumatic injuries that patient had a short stay in the ICU and was subsequently transferred to the floor. On hospital day 15, the patient’s white count was still elevated and he was noted to have a large amount of induration, erythema and undermining at site of a left flank bullet wound and he was taken to the operating room for debridement of a necrotizing soft tissue infection. Tissue cultures from original debridement grew out zygomycete. Over the course of the next two weeks, his wound was monitored closely, with notable progression of necrotic tissue and visible growth of fungal hyphae within the wound requiring three subsequent debridements in the operating room and multiple bedside debridements in the ICU resulting in extensive soft tissue and muscle resection spanning from his mid-back, left flank, to mid-abdomen, exposing his left iliac crest and psoas muscle (45 x 35 cm). Despite multiple surgical debridements and systemic antifungal therapy, the infection continued to rapidly progress. Hyperbaric oxygen therapy was initiated and within three treatments, the patient was noted to have significant improvent and complete resolution at the end of therapy. His wound also began to granulate and revascularize. He was eventually able to return to the OR for split thickness skin graft, which successfully incorporated, and the patient was discharged to a long-term acute care facility on hospital day 74.

While fungal wound infections remain a rare complication in the immunocompetent patient, it is prudent to use this case as an example for considering fungal infections, such as cutaneous zygomycosis, in the differential diagnosis when evaluating the septic trauma patient with a prolonged hospitalization. In addition, it demonstrates the effectiveness of hyperbaric therapy in the treatment of refractory fungal wound infections and the need to strongly consider initiating this therapeutic option in similar clinical scenarios.
A 40-year-old Caucasian female was transferred from an outside hospital with left thoracoabdominal and extremity gunshot wounds. She arrived hypotensive, was not fluid responsive, and subsequently lost vital signs. Massive transfusion protocol was initiated, and a left thoracotomy was performed with aortic cross-clamping and open cardiac massage. There was a diaphragmatic rent and the spleen was obviously morcelated with hemoperitoneum and hemothorax. Spontaneous circulation returned, and she was taken to the operating room for splenectomy, colonic resection, gastrotomy repair, liver packing, diaphragmatic repair, ABThera placement and closure of thoracotomy. Once stabilized, she was taken back for washout and definitive repair, and a bile leak from the right liver was widely drained. ERCP revealed a normal common bile duct (CBD) and distal common hepatic duct (CHD), but gross extravasation of contrast prevented proximal filling. A sphincterotomy was performed, and a plastic biliary stent was placed. She developed hemobilia with hematemesis. CT revealed necrotic segments 4, 6, 7 and ischemic changes to 4, 3 and 8. Angiography revealed transection of the proper hepatic artery, and this and the gastroduodenal arteries were embolized. She underwent non-anatomic resection of segments 6-7, and portal exploration. The right and left hepatic ducts were not continuous with the CHD secondary to blast injury (Strasburg E4); these were drained and the distal CHD was oversewn. The portal vein remained the only blood supply to the liver. She was taken back several times for further liver debridement of segments 2-4 and was eventually closed. She continued to improve slowly and was discharged to inpatient rehabilitation with her right and left biliary drains and is currently doing well.
Kiosk 8- Trauma/Critical Care

153. THE ROLE OF EPINEPHRINE IN PREHOSPITAL PENETRATING TRAUMATIC CARDIAC ARREST: HIGHER DOSE OF EPINEPHRINE IMPROVES SURVIVAL TO ORGAN DONATION IN PATIENTS WITH ISOLATED HEAD INJURIES

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University of Tennessee Medical Center, Memphis

The role of epinephrine in traumatic cardiac arrest (TCA) is controversial. While epinephrine may not increase the chance of survival to hospital discharge it may provide physiologic support long enough for the patient to become an organ donor, especially in those with isolated gunshot wounds (GSWs) to the head. We therefore investigated whether the use of prehospital epinephrine in patients with isolated GSWs to the head was associated with increased survival to organ donation.

All adult patients in TCA after a penetrating mechanism transported on our city EMS service for 2013-2015 were included. Data on demographics,prehospital resuscitation, hospital course and outcomes were collected and analyzed. Any abbreviated injury scale (AIS) score greater than zero in the head and/or face with a zero in all other AIS body regions was used to define isolated head injury. Survival was considered hospital discharge or consideration for organ donation.

There were 82 total patients and overall survival was 5% (1 discharge, 3 organ donation). The survival rate was 15% (2 of 13 patients) for isolated GSWs to the head versus 3% (2 of 69 patients) for non-head injuries. Median prehospital CPR time for non-head injuries was 16 minutes in survivors versus 26 minutes in non-survivors and median epinephrine dose was 1 mg in survivors versus 2 mg in non-survivors. In contrast, median prehospital CPR time for isolated GSWs to the head was 15 minutes in survivors versus 25 minutes in non-survivors and median epinephrine dose was 3.5 mg in survivors versus 2 mg in non-survivors.

Patients with isolated GSWs to the head had higher survival to organ donation and received a higher average dose of epinephrine than those with non-head injuries. Prehospital protocols need to decrease futile resource utilization while supporting resuscitation in patients who might survive to organ donation. Therefore, in the prehospital setting, an aggressive epinephrine protocol may be indicated in those patients with isolated GSWs to the head to increase chances of possible organ donation. Further research is needed to better elucidate a prehospital epinephrine protocol in this select group of patients.
CONCOMITANT ABDOMINAL EVISCERATION AND MAJOR VASCULAR INJURY: AN EXCEEDINGLY RARE OCCURRENCE

J Nguyen DO, JB Kramer MD, E Whitton, C Clark MD, OK Danner MD, RL Matthews MD, AK Bashan MD, B Morse MD, P Rhee MD, A Taha
Morehouse School of Medicine

Traumatic injuries are the most common causes of mortality afflicting the young population, and blunt trauma constitutes a majority of these accidents. However, only a small percentage of those patients suffering from blunt abdominal trauma suffer from injuries to their abdominal wall. Even fewer suffer the forces necessary to create a total evisceration of the abdominal wall and the contents within. Although management and outcomes of the few recorded cases are variable, correlation between cause and expeditious identification of injuries are critical to patient care. We present patient AR, who was affected by concomitant abdominal wall evisceration and major vascular injury.

AR is a 20 year old woman who presented after a motor vehicle collision. Upon arrival, she was tachycardic to 126. She had bowel protruding from her lower abdomen and an obvious seatbelt sign across the area. She was taken emergently to the OR for exploratory laparotomy due to her traumatic evisceration. Her injury complex included full thickness abdominal wounds transversely at the level of her lap seatbelt in the lower abdomen with degloving of the abdomen with associated loss of domain of anterior abdominal wall and evisceration of bowel. She had a devascularized segment of ileum and sigmoid colon. An open appendectomy, small bowel resection with primary anastomosis and sigmoidectomy and end colostomy were performed. On CT afterwards, she was noted to have traumatic right iliac artery thrombosis. On post op day #2 she was taken back to the operating room for complex abdominal wound reconstruction with biologic mesh and right iliac vessel repair.

Her post-operative care was complicated by breakdown of the superior portion of the midline wound, requiring daily wet to dry dressing changes. She was discharged from the hospital and returned 6 weeks later with a superficial wound infection. She was taken to the OR for incision and drainage. She is now recovering nicely at home with daily dressing changes with Dakin’s solution at three months.

Complete evisceration of the abdominal wall pertaining to blunt trauma is exceedingly rare. In recorded events with blunt trauma to the abdomen, less than 2% present with any amount of herniation. Fewer than 0.2% receive a grade VI with total evisceration. Given the extreme force required to cause a blunt abdominal evisceration, we recommend CT scan after emergent laparotomy to identify these vascular injuries.
Kiosk 8- Trauma/Critical Care
155. GALLBLADDER NECROSIS AFTER RIGHT HEPATIC ARTERY EMBOLIZATION DUE TO TRAUMATIC HEPATIC INJURY
P Martinez Quinones MD, R Latremouille, T Pham MD, CQ White MD
Augusta University

Due to the liver’s size and location, it is one of the most frequently injured abdominal organs. When traumatic insult to the liver occurs, hepatic angioembolization can be used to control bleeding in hemodynamically stable patients. Embolization is a minimally invasive procedure in which vessels are occluded to stop hemorrhage. In comparison to surgical intervention, angioembolization decreases mortality, hospital length of stay, and blood product transfusion requirements. However, complications such as hepatic necrosis, hepatic abscesses, bile leakage, and gallbladder necrosis can occur. Gallbladder necrosis is a rare complication that occurs after embolization of the right hepatic artery and leads to increased morbidity.

We present a case of gallbladder necrosis after right hepatic artery embolization subsequent to blunt traumatic injury.

We present an 18 year-old female who arrived after a motor vehicle collision. Patient had initial Glasgow Coma Score 14, due to altered mental status. Her initial evaluation revealed multiple laceration, orthopedic injuries and rib fractures along with a positive FAST exam consistent with intraabdominal fluid. Imaging via computed tomography revealed a shattered liver with a large perihepatic hematoma and small active area of hemorrhage in segment 8, along with other intraabdominal injuries (grade II splenic laceration). Patient was hemodynamically stable and underwent Interventional Radiology (IR) angioembolization of liver segments 4, 7, 8. Forty-eight hours after admission a repeat CT scan of abdomen/pelvis to assess for acute blood loss anemia showed a necrotic gallbladder. Patient was subsequently taken to operating room where a necrosed gallbladder with thrombosed cystic artery was noted. An open cholecystectomy and hepatorrhaphy was carried out. Two days after intervention patient had endoscopic retrograde cholangiopancreatography (ERCP) with biliary stent placement due to continued bile leak from Duct of Luscka. Patient recovered from the interventions with no further complications and was discharged home.

Our case highlights the rare complication of gallbladder necrosis after hepatic transcatheter angioembolization due to inadvertent embolization of the cystic artery. Embolization of the cystic artery is sometimes considered unavoidable, and if it occurs patient should be monitored for abdominal pain or signs of gallbladder perforation which may require an emergent operation.
157. SURVIVAL AFTER SEVERE ACIDOSIS IN BLUNT TRAUMA: A CASE REPORT

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Morehouse School of Medicine

Base deficit has long been accepted as a measure of injury severity, possible need for intervention and marker of resuscitation. Trauma patients that present with an initial high base deficit have been shown to have higher mortality, longer hospital stays and need for massive transfusion. This case report demonstrates the utility of base deficit in the decision to initiate massive transfusion protocol and the need for emergency intervention in an unstable trauma patient with a negative FAST.

This is a 44 year old female involved in a motor vehicle accident. She was intubated on route by EMS for a GCS of 7. Her initial vitals included a HR in the 140’s. A left chest tube was placed for presumed pneumothorax. FAST was negative. She quickly became hypotensive and nonresponsive to blood products. On secondary survey, she had obvious left femur and humerus deformities. Her initial blood gas included a pH of 6.77 and a base deficit of -25. Massive transfusion protocol was initiated and she was taken to the operating room for exploration, in which a zone 2 hematoma was noted. Supraceliac control was achieved and a left nephrectomy, splenectomy and diaphragm repair was performed. The patient’s acidosis had largely corrected after MTP and she was transferred to the ICU post-operatively. She went bak post-op day one for definitive closure of her abdomen and a feeding gastrostomy tube.

Her course was complicated by a pancreatic leak, anastomotic leak, and a wound dehiscence. She continued to improve on the floor with wound care and good nutrition. Three months out, her fistula is healing well and no further complications were noted.

This case demonstrates the utility of base deficit as a marker of resuscitation, need for massive transfusion, marker of injury severity, and need for emergency intervention. By recognizing the severity of her bleed, we made the decision to perform a laparotomy in the absence of any other source of hemorrhage, aggressively resuscitated her, and saved a patient who had a very poor chance at survival with a pH of 6.77 and base deficit of -25. This was achieved by early recognition of her injury, mobilization of resources, and constant communication with the anesthesia and ICU team.
While trees are immovable objects that seem to pose no threat, they can actually cause severe injuries in motor vehicle crashes (MVCs), and when people are cleaning up or removing trees. Severe injuries can also occur when people fall out of trees or when trees fall onto people. New Jersey is estimated to be 39.5% covered in forest, and many of those trees are near roadways or residential areas. This study aims to determine the risks of certain types of injuries when a tree is involved.

A retrospective cohort study was conducted using the trauma registry of the Morristown Medical Center, an American College of Surgeons (ACS) Level I regional trauma center. Trauma patients who were hospitalized between January 2011 to December 2015 were included in this study. The exposed group included all patients in the trauma database that specified a tree was, while the control group included all patients that did not specify that a tree was involved. Data on age, admission, mechanism of injury, injury severity score (ISS), type of injury, and mortality were collected. T-tests and chi-square odds ratios were used to estimate the odds of having certain injuries if a tree was involved.

There were 12,797 trauma admissions at Morristown Medical Center and 548 were related to injuries caused by trees (4.28%). A considerable amount of tree-related trauma admissions occurred in 2012, likely due to Hurricane Sandy and the cleanup that ensued. 88% of the tree related traumas were due to motor vehicle crashes, 5% resulted from injuries when removing trees, 4% were caused by falling trees and 3% from people falling out of trees. The odds of having a forearm injury are 10.37 times greater when a tree is involved in any way. When comparing MVCs involving trees and not involving trees, the odds ratio for mortality was 2.7% greater.

We found that ISS (injury severity score) was significantly higher amongst all patients with a tree related trauma, and people in their 40s were most susceptible. Injury patterns can be seen in tree related traumas and vast majority of the traumas were MVCs. Drivers should use extra caution when traveling through heavily wooded areas. In addition, better street lighting and wider roads may help reduce the trauma admissions of MVCs with trees.
Inferior vena cava filter (IVCF) insertion has been prevalent in the trauma population for both therapeutic and prophylactic indications for many years. Recent innovations have both advantages and disadvantages, which have called into question as to the true ability of these filters to change the incidence of fatal pulmonary emboli in the injured population compared with their inherent risks.

We report the case of a 45-year-old obese, diabetic male (BMI 44) who was a helmeted motorcyclist involved in a motor vehicle accident. The patient was ejected and sustained multiple injuries and was brought to a Level I Trauma Center. Workup revealed a subdural hematoma, multiple rib fractures with flail segments, and bilateral pulmonary contusions. The patient progressed to acute respiratory distress syndrome (ARDS) and acute renal failure (ARF) requiring ventilation and dialysis. Because of his morbid obesity and prolonged intensive care unit and hospital stay, a Cordis TrapEase Vena Cava Filter was placed infrarenally with fluoroscopic confirmation of caval diameter and deployment without difficulty. The patient eventually survived and was discharged after 3 months on hemodialysis. Two years later, the IVCF was found dislodged in his right ventricle during a routine subclavian permanent dialysis catheter insertion. The patient remained hemodynamically stable and underwent median sternotomy, cardiotomy, tricuspid valve replacement, and removal of the IVCF.

To minimize IVCF complications such as fracture, embolization, migration, perforation, and retention, a novel device which has completed Phase III trial and has been FDA approved is being used.

Migration of IVCF is a rare but potentially morbid complication of a prophylactic procedure which requires surveillance, prompt recognition, and early surgical intervention. Subsequent studies are needed to ascertain the efficacy and validity of this promising novel device.
Kiosk 8- Trauma/Critical Care
160. RESIDENT ACCURACY IN PERFORMING EXTENDED FOCUSED ASSESSMENT WITH SONOGRAPHY IN TRAUMA; NOT AS GOOD AS WE THINK WE ARE?
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Extended Focused Assessment with Sonography in Trauma (FAST) exam has become a quick and noninvasive mechanism used primarily by residents in the trauma bay to identify intraabdominal fluid as well as pneumothorax or pericardial fluid after blunt and penetrating trauma. It is well documented in the literature that CT scans have a sensitivity between 92-97% and specificity of 98% versus 73-88% sensitivity and 98-100% specificity for FAST exams. At many teaching hospitals, resident physicians are performing the eFAST exam and may not be as facile as attending surgeons. The purpose of this study is to determine our institution’s sensitivity and specificity of the eFAST exam and factors that affect the exam.

A retrospective chart review was performed for 354 patients evaluated at Sentara Norfolk General Level I trauma center by the EVMS Trauma Service between July 1st, 2016 through December 31st 2016. Data was abstracted from the demographics, history & physicals, and imaging studies for those patients that had an eFAST and CT scan completed during their initial presentation. Information was obtained regarding the alert level of trauma, time of day, mechanism and level of resident completing the eFAST exam.

Of the 354 patients, 50 patients had an injury on CT scan that should have been evident on eFAST. 304 patients had negative eFAST and negative CT scans. At our level I trauma center, the sensitivity and specificity of eFAST was 18% and 99% respectively. The positive predictive value was 81% and the negative predictive value was 88%. The level of alert was identified as the only statistically significant (<0.05) factor negatively affecting the accuracy of the eFAST. Overall accuracy was higher in lower level activations compared to the higher level activation (89.4% vs 77.3%, p=0.021). There was no difference in accuracy based upon time of day, mechanism of injury (blunt vs penetrating) or level of resident performing the exam.

At our level I trauma center, eFAST is performed by a wide range of residents from different institutions with variable levels of training in comparison to previous studies that have studied attending surgeons, ultrasonographers, or only senior level residents with significant training completing the eFAST. This difference in level of supervision and extent of prior training could contribute to the differences seen in sensitivity and specificity. Given our findings, we plan to implement monthly ultrasound training for residents and subsequently reevaluate the sensitivity and specificity of the eFAST.
Penetrating abdominal injuries are by far the most common causes of traumatic abdominal vascular injuries, including the visceral blood vessels, and account for 90% to 95% of these injuries. Blunt abdominal vascular trauma occurs less commonly, with an incidence of approximately 5% to 10%. Our literature review found only 10 reported cases of blunt traumatic celiac injury.

A 68 year-old male was involved in an MVC and suffered blunt cardiac injury, cardiac tamponade and underwent a pericardial window. Post-op, a CT scan revealed a celiac artery dissection. He was hypotensive in the ICU with a rising lactate and a laparotomy was performed. There was a severe injury to the colon which was resected, but all other bowel was viable. The celiac artery was occluded at the root, however there was retrograde flow through the SMA. After consultation with vascular surgery, the decision to observe the injury was made. At this time, a TEE revealed a 10% EF with questionable thrombus.

Despite a patent SMA, his poor cardiac output resulted in a low flow state that was incompatible with adequate end tissue perfusion. A repeat laparotomy confirmed that his entire forgot had become ischemic. He succumbed to his injuries and passed away.

Celiac artery injuries are not uncommon in the setting of trauma; however, it is usually in the setting of penetrating injuries. In those settings, ligation has been shown to be a feasible option as there is collateral flow. We believe the same holds true in the blunt setting, but the repeated insults our patient received eventually lead to inadequate tissue perfusion and ultimately death. To date, only ten other cases have been reported, and this should be investigated further.
Kiosk 8- Trauma/Critical Care

162. PRELIMINARY VALIDATION OF AN UPDATED ABBREVIATED INJURY SCALE (AIS) CONDENSED CHART AS A TOOL FOR GLOBAL INJURY SEVERITY SCORING

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Five million people die every year from injury, mostly from developing countries where research on the epidemiology and treatment of injured patients is crucial for both prevention and improving trauma care. Injury severity scales are critical tools in injury research allowing comparison across different environments. Lack of a standardized high-quality scoring tool is a significant limitation. The abbreviated injury scale (AIS) condensed chart has shown ease of use and accuracy. Using the 2008 AIS update long form version, we aimed to update the condensed chart and to perform a preliminary validation study to determine the reproducibility and accuracy of this tool as a means of international benchmarking in injury research.

A concordance test was performed using one hundred de-identified, randomized patients from St. Mary’s Medical Center, a level one trauma center serving a higher risk urban population of underinsured and minority patients. The AIS condensed chart was updated. Three general surgery residents utilized the updated scoring sheet and independently scored the injuries. Pearson correlation coefficient ($r^2$) was calculated to determine concordance with the long form. Interrater reliability was calculated.

Concordance testing among the three scorers yielded $n=472$ injury data points with an overall $r^2$ of 0.86 ($p$-value < 0.00001) for correlation with the one page scoring sheet and the long form. Correlation amongst the scorers was 0.82. Interrater reliability was 82%.

Preliminary validity testing yields acceptable positive correlation between scores using the traditional long form compared with the updated condensed chart.
Kiosk 8- Trauma/Critical Care
163. DELAYED PSEUODOANEURYSM DEVELOPMENT FOLLOWING PENETRATING INJURY TO THE PROFUNDA FEMORIS ARTERY
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Pseudoaneurysm formation is a potential late complication of vascular injury or inflammation. Injury to the vessel wall may allow the pulsatile flow to dissect a plane between the muscularis propria and adventitial layers of the artery, resulting in a false aneurysm. These are at high risk for rupture with subsequent bleeding. Most commonly, pseudoaneurysms of the lower extremities are identified in the superficial femoral artery, proximal profunda, and common femoral artery. In addition, most present within the first two weeks following injury. Our case report demonstrates a unique example of a distal profunda branch pseudoaneurysm following a gunshot wound to the leg.

A 52 year old male presented to as a trauma activation following a gunshot wound to the right lateral thigh that tracked medial without bony injury. The patient had palpable dorsalis pedis pulses and subsequent ankle-brachial index at the time of the injury was 1.0 bilaterally. The wound was washed out and dressed, and the patient was discharged. He failed to keep his follow up appointment, but described an initially unremarkable recovery. The patient presented to clinic four months later with complaints of new onset swelling in his medial right thigh. There was no thrill in the leg, distal pulses were palpable, and no evidence of erythema, fluctuance, or drainage. A CT scan was obtained demonstrating a 16 x 10 cm fluid collection within the right thigh concerning for hematoma with a suspected underlying pseudoaneurysm. A CT angiogram was obtained and demonstrated a profunda branch pseudoaneurysm measuring 1.8 cm. He underwent an angiogram and embolization of this branch (Figure 1).

Repeat angiography the following day demonstrated resolution of the pseudoaneurysm.

Injury of profunda femoris is rare and difficult to identify following traumatic injury. Physical examination is of less utility for trauma to the deep branch of the femoral artery as it lies within the muscles of the thigh and may be present with normal, distal pulses. Delayed complications are even more rarely described. A review of relevant literature demonstrates several case reports of large vessel pseudoaneurysms including those in the abdominal aorta, pulmonary artery branch, renal arteries, and superficial femoral arteries following penetrating trauma. Several of these pseudoaneurysm presented late including one 30 years after the initial insult. This case is unique due to the pseudoaneurysm forming in a distal profunda branch in a delayed fashion. Treatment options include ligation, endovascular stent graft, or embolization. Ultimately, this patient underwent an embolization of this branch with resolution of the pseudoaneurysm on follow up imaging. Clinicians should remain aware that complications of profunda femoris injury may be difficult to identify and occur despite normal distal arterial flow.
164. VIOLENCE AGAINST WOMEN: FACIAL FRACTURES SECONDARY TO ASSAULT IN THE URBAN FEMALE POPULATION

NC Oleck BA, FC Liu BS, JN Halsey MD, ES Lee MD, MS Granick MD
Rutgers University

Assault has been frequently indicated as a major cause of facial trauma in the United States and around the world. Facial fractures secondary to assault have been shown to occur at a much higher rate in the male population as opposed to females. While these injuries may occur less frequently in females, they remain a significant medical problem within this demographic as facial trauma is one of the most frequently reported injuries resulting from domestic violence against women. Numerous studies have examined facial fractures in the general population, but few have assessed these injuries in females specifically. The objective of this study is to assess facial fractures secondary to assault in the female population. We intend to examine the prevalence and specific mechanism of action of these injuries in order to develop effective management strategies and decrease the likelihood of future injury.

All facial fractures between the years 2001 and 2011 were retrospectively reviewed based on International Classification of Disease (ICD-9) codes. The facial fractures included in this study were the result of assault in the female population in an urban, level 1 trauma center (University Hospital, Newark, NJ). Results were categorized by patient demographics, location of fractures, concomitant injuries, length of hospital stay, critical complications, and surgical management strategies.

From 2001 to 2011, 139 female patients were identified as having sustained a fracture of the facial skeleton due to assault. Mean age was 34.61 (range 1–73) years. A total of 202 fractures were recorded and treated. Most common fracture sites included the mandible (35.15%), orbit (22.28%), zygoma (15.84%), nasal bone (14.35%), and zygomaticomaxillary complex (7.92%). A Glasgow Coma Scale score was documented for 33 patients, averaging 13.7 (range 7–15). 16 patients were intubated on, or prior to, arrival to the ED. 100 patients required a surgical airway. Intubation in the ED was significantly associated with increased length of stay (P<0.0001). The most common concomitant injuries were facial/scalp lacerations (22.3%), maxillary sinus fracture (8.63%) and skull fracture (8.63%). 106 patients required surgical intervention. Of these, 32 required open reduction and internal fixation, 12 required closed reduction, and 22 underwent both open and closed reductions. 37 patients required soft tissue management and laceration closure. Average hospital length of stay was 5.8 days (range 1-58). 9.23% of the patients were admitted to an intensive care setting, while 90.77% were admitted to this hospital. One patient expired.

Traumatic facial injuries secondary to assault remain a significant medical problem in the urban female population. The authors hope that this study can provide some insight and further investigation into this topic as there is a dearth of literature regarding the management of facial fractures due to assault in the female population. Beyond the surgical treatment of facial fractures, it is necessary to examine the patterns of injury and presentation in order to improve prevention techniques, screening tools, and psychological support for victims of assault.
The outcomes following tube thoracostomy placed for treatment of chest injury in combat trauma is unknown. The intent of this study was to characterize the management and subsequent complications of combat injury tube thoracostomies and to determine risk factors for the development of pneumonia and retained hemothorax.

This was a retrospective chart review of combat casualties arriving to a United States Military Treatment Facility (MTF) between October 2010 and December 2015. Patients who underwent tube thoracostomies (TT) for pneumothorax (PTX) or hemothorax (HTX) management were included. Patients who underwent emergent thoracic surgery or expired shortly after arrival to treatment facilities were excluded. Demographics, thoracic interventions, and adverse outcomes were collected. After univariate analysis, logistic regression was used to identify the independent predictors for the development of pneumonia and retained hemothorax (defined as an additional intervention required to evacuate retained blood in the pleural space).

115 patients with 173 total chest tubes met inclusion criteria and were analyzed. The mean injury severity score (ISS) was 30.8 ± 11.6, 23.5% had traumatic amputations, 49.7% had HTX and 50.3% had PTX as indications for TT placement. 89.6% were intubated within 24 hours of injury, the majority (54%) were injured by improvised explosive devices, 35.6% sustained rib fractures and 12.2% had a diaphragm injury. A mean of 1.5 ± 0.7 (range 1-4) TT were placed, 18.3% of patients had bilateral TT, and the average TT duration was 6.7 ± 3.9 days. The incidence of pneumonia was 27% (n=31), retained hemothorax was 9.6% (n=11), and empyema was 1.7% (n=2) in our cohort. Patients who developed pneumonia were ventilated longer (4.7 ± 4.8 vs 13.4 ± 7.3 days, p=0.0009), tended to have higher ISS (28.4 ± 10.5 vs 37.4 ± 11.9, p=0.0009) and had bilateral TT (11.9% vs 35.4%, p=0.0062). Patients who developed retained hemothorax tended to have gunshot wounds as injury mechanism (23% vs 64%, p=0.0083), HTX for TT indication (46% vs 91% p=0.0083), diaphragm injuries (9.6% vs 36%, p=0.0281), and higher number of TT placed (1.18 ± 0.44 vs 1.73 ± 0.65, p=0.0004). Multivariate analysis identified duration of ventilation (< 4 days vs > 8 days, OR 0.064, 95% CI, 0.012-0.338, p=0.0012) and bilateral chest tube placement (OR 3.83, 95% CI, 1.18-12.4, p=0.0253) as independently associated with the development of pneumonia, while number of TT placed (OR 5.6, 95% CI, 1.7-18.4, p=0.0041) was independently associated with the development of retained hemothorax.

Increasing duration of ventilation and bilateral TT placement were associated with the development of pneumonia while number of TT placed was associated with the development of retained hemothorax. Further research is warranted to identify modifiable risk factors to reduce the incidence of pneumonia and retained hemothorax in patients with TT placed for traumatic injuries.
Kiosk 8- Trauma/Critical Care

166. THE USE OF REBOA IN TRAUMATIC CARDIAC ARREST: THE FIRST PLACEMENTS IN GEORGIA

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Morehouse School of Medicine

For decades, the management of a patient in traumatic arrest included an anterolateral thoracotomy in the Emergency Room. The use of Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) offers another solution to aortic occlusion. We detail the design of the REBOA program at our institution and the first deployments of a REBOA device in the state of Georgia.

Patients are considered for REBOA if they suffer from non-compressible torso hemorrhage below the diaphragm. The decision for REBOA placement was based on systolic blood pressure and site of suspected hemorrhage.

Since 12/2016, six patients have met criteria for, and underwent, the REBOA procedure. The average age was 42, ISS of 36, SBP of 65 and heart rate of 120 on placement, 6.8 minutes to placement, post-procedural SBP of 98 and heart rate of 100, 9 total units of blood product transfused, and a mortality rate of 33%. Our complication rates are 33% pseudoaneurysm rate, two over-inflation events and no amputations required.

As the sentinel cases in our institution and the state of Georgia, we demonstrated REBOA is feasible and produced its intended outcomes in a timely manner: to occlude the aorta and provide a window in which to reach definitive life saving hemorrhage control.

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* May consider REBOA in certain cases
May consider REBOA with suspected major thoracic vascular injury
Kiosk 8- Trauma/Critical Care  
167. REGIONAL ANESTHESIA IN TRAUMATIC RIB FRACTURES: A CAUTIONARY TALE  
AD Khan MD, LP Clement PharmD, AA Douville PharmD, E Ryan BS, B Leininger MD,  
TJ Schroeppe MD  
Memorial Hospital, University of Colorado Health  

Rib fractures create a management dilemma for practitioners. Both inadequate pain control and over-narcotization can lead to an increased risk of pulmonary complications. Our institution has utilized a clinical practice guideline (CPG) that includes forced vital capacity (FVC) as a means of stratifying the severity of injury. Included in the CPG is an aggressive use of regional anesthesia. Continuous paravertebral block catheters (PVB) can control pain peripherally avoiding the CNS side effects associated with thoracic epidural blocks. Theoretically, they can also minimize the amount of narcotics required for aggressive pulmonary hygiene. The objectives of this study were to quantify the narcotic requirements of patients managed utilizing this CPG and compare patients who received regional anesthesia to those who were managed with narcotics alone.

The trauma registry of a level-2 trauma center was queried for patients with rib fractures and LOS >48 hours from 01/14 to 12/16. Variables included demographics, ISS, LOS, ICU LOS, FVC, mortality, and morphine equivalents (MEQ). Patients who were on continuous infusions of narcotics, had epidural analgesia, or had withdrawal of support were excluded. All narcotics were converted into MEQ. Patients with paravertebral block catheters (PVB+) were compared to those who were managed with narcotics alone (PVB-).

220 patients met study inclusion criteria over the 36-month study period and 108 (49%) were PVB+. There was no mortality. The groups were well matched with few differences. PVB+ patients had more fractures, but a similar overall ISS. PVB+ had longer LOS and ICU LOS. The initial FVC was lower in the PVB+ group, but improved at the last FVC measured. Narcotic usage was higher in the PVB+ group overall, per 24 hours, and the PVB+ group was more likely to have scheduled opioids and a PCA (Table). After adjusting for presence of PCA, LOS, and scheduled opioids, multivariable linear regression showed that PVB was not predictive of narcotic use (B=2.25; p=0.941)

Use of PVB did not reduce narcotic requirement. In fact, the bivariate analysis demonstrated narcotic use was significantly higher despite a similar age and injury severity. Further revision of the CPG and development of a standardized narcotic dosing algorithm may take full advantage of the potential benefits of PVB for rib fractures.
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Kiosk 9- Endocrine and Solid Organ

169. RESOLUTION OF RAYNAUD’S SYMPTOMS AFTER PARATHYROIDECTOMY: A CASE REPORT

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The pathophysiology of Raynaud’s phenomenon is not fully understood, though it is believed to be related to enhanced smooth muscle contraction leading to vasoconstriction. Raynaud’s phenomenon is typically associated with connective tissue disorders, including Sjogren’s, scleroderma, systemic lupus erythematosus, and rheumatoid arthritis. Primary treatment is directed at prevention by avoiding exposure to cold environments. When conservative treatment fails, medical therapy with vasodilators is attempted. However, since the exact underlying etiology is not known, targeted therapy is not currently available.

A 49 year old white female with scleroderma (Raynaud’s phenomenon and eye involvement) was referred to Endocrine Surgery by Endocrinology for the surgical management of primary hyperparathyroidism. Laboratory studies were notable for a serum calcium of 11.3 mg/dL, PTH of 82 pg/mL, and an ESR of 36 mm/hr. The patient was diagnosed with osteoporosis by Dual-energy X-ray absorptiometry with a Tscore -2.9 at the lumbar spine. SPECT Sestamibi scan revealed focal, persistent uptake consistent with parathyroid adenoma posterior to the inferior pole of the right lobe of the thyroid. A 4D CT scan was obtained that demonstrated 16 x 6 x 11mm nodule inferior and posterior to the thyroid consistent with a right parathyroid adenoma (Fig. 1). Because of her age and her history of osteoporosis, the patient underwent a parathyroidectomy with final pathology consistent with a parathyroid adenoma. At a routine appointment 10 days post-operatively, the patient was recovering well without signs of hypocalcemia. Interestingly, she reported significant improvement in Raynaud’s symptoms despite the colder outside temperatures. At Rheumatology follow-up 6 months post-operatively, she reported continued improvement in prior Raynaud’s symptoms, but continues to experience eye symptoms (sicca). She has even had to get her rings re-sized as they no longer fit!

Extensive review of the current medical literature failed to find a known correlation between these two diseases. In fact, the association of these two conditions has previously been reported only once, 2 decades ago, in Israel. However, this patient was an elderly gentleman who elected against operative intervention and thus the correlation between parathyroidectomy and resolution of Raynaud’s could not be extrapolated. This case report draws attention to a potential correlation between parathyroid disease and the development of Raynaud’s phenomenon. When the patient’s underlying hyperparathyroidism was treated with parathyroidectomy, her Raynaud’s symptoms resolved. This suggests that further investigation to identify the molecular pathway responsible for her improvement may ultimately bring light to the underlying cause of Raynaud’s syndrome and hopefully guide the development of targeted therapy for this disease.

We present a case of resolution of Raynaud’s symptoms after parathyroidectomy. This suggests a causal relationship between hypercalcemic hyperparathyroidism and Raynaud’s phenomenon that warrants further investigation.
Ectopic thyroid is a rare condition, with a prevalence of about 1 to 100,000. Ninety percent of cases are lingual thyroids and in the midline of the neck and upper chest, following the course of the thyroglossal tract during embryology. Those that occur in the lateral aspect of the neck, most commonly in a submandibular position, are exceedingly rare. Because excision may remove the patient’s only source of endogenous thyroid hormone, it is important to recognize it before an unadvised excision is performed.

We reviewed a case of lateral ectopic thyroid recently under our care.

A 17-year-old girl had a prominent mass in the anterior triangle of the neck. The thyroid gland was not palpable. She had no difficulty breathing or swallowing. System review was negative for symptoms of hyper- and hypothyroidism. Serum T4 and TSH were both normal. Ultrasound (US) showed the mass be heterogenous in consistency, with prominent Doppler flow. The thyroid was separate from the mass and in normal position, much smaller than expected size. Magnetic resonance imaging (MRI) confirmed the US findings and the lack of lymph node enlargement. The mass avidly took up radioactive iodine on thyroid scintigraphy, revealed it to be a lateral ectopic thyroid gland. There was no uptake in the expected position of the gland in the midline of the mid-neck. A small signal measuring at the base of the tongue was discovered.

The key to diagnosis was recognizing the possibility of a lateral ectopic thyroid gland despite the unusual presentation in the lateral aspect of the neck. The condition is rarely encountered because most ectopic locations of thyroid tissue lie in the midline along the thyroglossal tract between the foramen cecum at the base of the tongue and the pyramidal lobe of the gland itself. The diagnosis can be made on ultrasound, nuclear scintigraphy, and MRI. The patient thus avoided an invasive diagnostic procedure, such as fine needle aspiration or biopsy. She also was spared surgical excision would have been unnecessary and removed her major source of thyroid hormone.
Kiosk 9- Endocrine and Solid Organ
171. HORMONALLY ACTIVE EXTRA-ADRENAL PARAGANGLIOMA ARISING FROM THE SPLEEN
MC Tufts MD, CJ Clark MD, M Burchell MD, RW Calicott, MD
Wake Forest University School of Medicine

Pheochromocytomas (PC) are rare catecholamine-secreting chromaffin cell tumors typically arising from the adrenal medulla; however, 15% occur extra-adrenally along the sympathetic chain. Extra-adrenal sympathetic or parasympathetic paraganglia are classified by the WHO as extra-adrenal paraganglioma (EAP). EAP when found in the abdomen, occur most frequently at the organ of Zuckerkandl (between IMA and aortic bifurcation) An estimated 50% of patients with PC or EAP are asymptomatic.

Case: A 63-year-old female Jehovah’s Witness with an EAP. The patient had an episode of pyelonephritis with microscopic hematuria and CT scan demonstrating retroperitoneal mass abutting the lateral aspect of the left kidney. She was taken to the operating room by the urology service as they believe this to be a malignant left renal lesion. During diagnostic laparoscopy, the mass was fused with the inferior pole of the spleen rather than the kidney or the adrenal gland. Intraoperative surgical oncology consult was obtained and resection offered; however, the patient’s family elected to have the patient participate in the discussion for splenectomy given the risk of blood loss and long-term risk associated with asplenic state. On re-exploration, the mass was found to be originating from the splenic hilum and resected with the spleen. The patient had labile hemodynamics during and after the case and final pathology demonstrated a EAP, arising from the splenic hilum. The patient recovered well did well postoperatively. During retrospective review, during the previous year, the patient was required admission at an outside hospital for headache and hypertensive crisis. PC/EAP was not considered in the differential diagnosis given excellent response to antihypertensives.

Extra-adrenal paragangliomas can have a varying and deceptive clinical presentation. We presented case of a hormonally active EAP arising from an anatomic location not described in the literature.

Judicious and complete preoperative testing for PC/EAP should be considered for all hypervascular retroperitoneal tumors.
Laparoscopic surgery for pancreatic neuroendocrine tumors (PNET) is becoming more common as surgeons become more facile with the technology. However, no study has focused on the trends of minimally invasive versus open surgery for treatment of PNETs.

The National Cancer Database was queried for PNETs diagnosed between 2010 and 2013. Patients undergoing minimally invasive (laparoscopic or robotic) surgical resections were compared to open pancreatectomies looking at yearly trends.

A total of 526 patients were included in the study (236 women and 290 men). The minimally invasive approaches increased over time with 17.5% of surgeries performed in 2010 versus 37.6% of cases in 2013. Over sixty-nine percent of cases performed minimally invasively were either distal pancreatectomies or enucleations. There was a concomitant 20.1% decline in the number of surgeries performed open during that same time (Table 1). Tumor stage played a statistically significant role in the choice of surgical approach. Open resections were more frequent with higher staged tumors while minimally invasive resections were more frequent with lower staged tumors (p<0.01). Median lymph node harvest was superior in open surgeries (12 vs 7, p<0.0002). Thirty day readmissions and mortality were not significantly different between the two groups. Median post-operative length of stay was shorter in the laparoscopic group.

Over recent years, there has been a trend to resect more PNETs using minimally invasive approaches with a decline in open technique. The minimally invasive approach has a statistically significant improvement in length of stay with no increase in unplanned readmissions.

**Table 1: Yearly Surgical Approach Trends**

<table>
<thead>
<tr>
<th>Year of Diagnosis</th>
<th>MIS n=138</th>
<th>Open n=388</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>27 (17.5%)</td>
<td>127 (82.5%)</td>
<td>*0.0059</td>
</tr>
<tr>
<td>2011</td>
<td>42 (27.8%)</td>
<td>109 (72.2%)</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>34 (26.6%)</td>
<td>94 (73.4%)</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>35 (37.6%)</td>
<td>58 (62.4%)</td>
<td></td>
</tr>
</tbody>
</table>

*Cochran Armitage Trend Test*
In the modern world, advanced stages of primary hyperparathyroidism (PHPT) are rarely seen with incidental hypercalcemia diagnosed frequently in asymptomatic patients. Osteitis fibrosa cystica (OFC) is osteoclast mediated bone resorption creating weak bones susceptible to deformity or pathologic fracture. Destructive hemorrhagic lytic lesions called brown tumors may develop. It is a severe presentation of PHPT no longer common in modern medicine and is, therefore, a great mimicker of metastatic and primary bone lesions.

The patient is a 52 year old Vietnamese female without previous medical care who presented for evaluation of a large 16cm pelvic mass with scattered lytic osseous lesions throughout her axial and appendicular skeleton. Her admission serum calcium and parathyroid hormone (PTH) were 13.6mg/dL and >2500pg/mL respectively. A sestamibi scan revealed a large enhancing mediastinal mass, further evaluated with CT scan. Stabilizing intramedullary nailing of three long bones was performed with open biopsy of one of the bone lesions revealing a benign brown tumor. She then underwent parathyroid exploration and was found to have grossly abnormal glands consistent with four gland hyperplasia. A 3 ½ gland parathyroidectomy was completed, the mediastinal gland weighing 40g (600x normal). Her intraop PTH levels dropped to 47pg/mL at the end of the case. She required continuous calcium infusion for hungry bone syndrome for 9 days. She later underwent definitive surgery for her pelvic mass. Final pathology was consistent with leiomyoma.

PHPT with OFC and malignancy (primary or secondary) are the two major etiologies of concomitant bone lesions and hypercalcemia. An elevated intact PTH indicates hyperparathyroidism. This should be followed with localizing studies of the parathyroids. Bone pathology should be stabilized; curative therapy is parathyroidectomy resulting in rapid bone remineralization. Postoperative hungry bone syndrome can be expected. Removal of the offending parathyroid(s) leads to healing of pathologic fractures and bedridden patients regaining the ability to walk.

This is an interesting case of a patient who presented with a large uterine mass and concomitant bony lesions throughout her axial and appendicular skeleton mimicking metastatic cancer. While rare in the developed world, lytic bone lesions may represent OFC of PHPT and should be included in the clinician’s differential. This rare but easily treated phenomenon must be differentiated from malignancy with hypercalcemia so early treatment can prevent irreversible progression of bone pathology.
**Kiosk 9- Endocrine and Solid Organ**

**174. APPLICATION AND UTILITY OF LEFT ADRENAL VEIN/INFERIOR VENA CAVA (LAV/IVC) CRITERIA FOR LATERALIZATION IN HYPERALDOSTERONISM**

*R Zhou MD, J Son MD, N Calcatera MD, J Hwang MD, W Niklinski MD, J Poirier PhD, S Abadin MD*

John H Stroger, Jr. Hospital of Cook County

In patients with primary hyperaldosteronism, adrenal vein sampling (AVS) is a reliable test to lateralize tumors of hyperfunction. The cannulation of the short, acutely angled right adrenal vein can be inconsistent due to technical difficulty. Often, AVS studies are deemed invalid, incomplete and not utilized in clinical decision making if the right adrenal vein is not cannulated. However, the left adrenal vein is often cannulated and these data may be useful in determining laterality. Previous studies have designated a theoretical cutoff values of ratios of LAV/IVC of >5.5 and <0.5 to predict with certainty left- or right-sided disease. The aim of this study is to apply this “5.5-0.5 criteria” to our study population.

The study was retrospectively carried out at John H. Stroger, Jr. Hospital of Cook County in Chicago, Illinois. A total of 23 complete AVS procedures were included in the study from 2008 to 2016. Demographic and biochemical data of the patients were collected. LAV/IVC was calculated for each patient. Right Adrenal Vein (RAV) data was neglected.

Seventeen out of 23 patients demonstrated lateralization on AVS. Four patients out of the 17 refused surgery or were poor surgical candidates. Out of the 13 patients who underwent unilateral adrenalectomy, 4 patients had LAV/IVC value outside the “5.5 to 0.5” range and 9 patients displayed values inside the range. All 13 patients demonstrated biochemical cure after surgery. The sensitivity of the “5.5 to 0.5 criteria” was 30.8% in our study population.

AVS can be used to reliably predict both lateralization and surgical cure in primary aldosteronism. However when the “5.5 to 0.5 criteria” was applied to our study population, it yielded a low sensitivity. With this model, a large proportion of the patients would not have been offered surgery who otherwise would have been cured of unilateral aldosterone hypersecretion. Perhaps these values are too stringent and future investigations can validate a more sensitive criteria range based on our demographics.
The increased use of imaging technology such as sestamibi scanning and intraoperative parathyroid hormone (PTH) level measurement have aided surgeons in identifying and resecting culprit parathyroid glands in primary hyperparathyroidism. However, institutional variation exists with such technology and regional population differences in adenoma localization have been reported. We sought to evaluate the demographics of our patient population, describe adenoma anatomical distribution, assess the accuracy of our preoperative sestamibi scanning, and quantify parathyroid hormone response following resection to determine whether our own institutional results conform to national data.


Fifty-five patients were identified, 75% female and 25% male. The mean age was 57.9±9.4 years. The left inferior (LI) was the most commonly removed gland, and was removed from 45.5% of the 55 patients. The left superior (LS) was removed from 30.9%, the right inferior (RI) from 25.5%, and the right superior (RS) in 5.5%. Of the 55 patients, three patients had both left glands removed and one had both of the left and the RI removed (n = 60 total gland resections). One patient had the scan implicate both left glands but only the LS was resected. Table 1 summarizes the sestamibi scan results and gland resections (n = 61 total scan-resection pairs), and a chi-squared test showed significant correlation (p < 0.01) with surgical gland resection. When each gland was assessed individually, the scan results significantly correlated with gland resection and showed high specificity for all gland and high sensitivity for all but the LS gland. Overall, the gland identified in the scan was resected 68.8% of the time. Intraoperative PTH level measurement was collected in 53 patients, who showed an average drop in PTH of 79.44±13.9%; only three patients had intraoperative PTH less than 70%, two of which had disagreement between the scan and gland resection.

Sestamibi scanning results correlated well with anatomical distribution of parathyroid adenomas, with the LI gland as the most common culprit. For the subjects in this study, parathyroid hormone level decreased ~80% following resection of a parathyroid adenoma. When the decrease is less than 70%, the surgeon may consider hyperplasia or double adenoma as possibilities.
Pheochromocytomas (PCs) are rare neuroendocrine catecholamine-producing tumors arising from chromaffin cells of the adrenal medulla, or less commonly from extra-adrenal paraganglia. The clinical presentation depends on the capacity of chromaffin cells to synthesize and release catecholamines. The main signs and symptoms of catecholamine excess include episodic and severe hypertension, palpitations, headache, sweating, and pallor. The initial evaluation for suspected PC is fractionated plasma metanephrines in combination with 24-hour fractioned urine metanephrines. In patients with equivocal results on repeated measurements the clonidine suppression test may be useful. Next, contrast-enhanced CT, or MRI provides the best imaging for adrenal tumor localization. Functional imaging techniques like (123I)-MIBG or FDG-PET scan can be helpful in localization. In selected cases, bilateral adrenal venous sampling (BAVS) might be requested for more specific localization before surgical management of refractory hypertension as our case illustrates.

A 68-year-old male with past medical history of type 2 diabetes mellitus and uncontrolled hypertension was referred for bilateral BAVS. His hypertension was inadequately controlled despite five antihypertensive medications. In addition, he had two recent emergency room visits for hypertensive crisis with headaches, sweating, diaphoresis, nonspecific abdominal pain and tachycardia. His prior evaluation showed elevated baseline plasma fractionated metanephrines, features of right adrenal hyperplasia and a left adrenal nodule on contrast-enhanced CT. BAVS was performed under anesthesia management with Cosyntropin infusion at 0.04mg/h. Venous sampling was obtained from the right adrenal gland, left adrenal gland, left renal vein, right renal vein, right gonadal vein, supra renal IVC and infra renal IVC and sent for analysis.

High Performance Liquid Chromatography assays with tandem mass spectroscopy for concentrations of free metanephrines and catecholamines along with established reference intervals for plasma concentrations are presented in Table 1. Baseline plasma fractionated metanephrines showed an elevated norepinephrine (800 pg/mL), and slightly elevated free normetanephrine (0.90 nmol/L) with normal values of dopamine, epinephrine and free metanephrine. An abnormal elevated aldosterone-renin ratio was obtained (113 ng/dL per ng/mL/hr.). Additionally, the patient was hyponatremic with normal potassium levels. BAVS established severe elevated plasma concentration of epinephrine, and to a lesser extent norepinephrine and dopamine, from the right adrenal vein compared to the left adrenal vein (Table 1). However, on CT imaging a left adrenal nodule measuring 11mm and features of right adrenal hyperplasia were reported.

This case reiterates the utility of BAVS in localizing functionally secreting adrenal glands in the management of surgically correctable hypertension. Conventional imaging techniques have limitations in defining hyper functioning tissue. However, before BAVS, appropriate safeguards must be taken to prevent a hypertensive crisis when managing patients suspected with pheochromocytoma.
<table>
<thead>
<tr>
<th>ADRENAL VENOUS SAMPLING</th>
<th>Right Adrenal</th>
<th>Left Adrenal</th>
<th>Right Renal</th>
<th>Left Renal</th>
<th>Suprarenal IVC</th>
<th>Infra renal IVC</th>
<th>Right gonadal</th>
<th>Reference range</th>
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<tbody>
<tr>
<td>Norepinephrine</td>
<td>47,400</td>
<td>506</td>
<td>229</td>
<td>391</td>
<td>149</td>
<td>241</td>
<td>339</td>
<td>92-542 pg/mL</td>
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<tr>
<td>Epinephrine</td>
<td>316,000</td>
<td>1,030</td>
<td>38</td>
<td>493</td>
<td>39</td>
<td>113</td>
<td>50</td>
<td>19-216 pg/mL</td>
</tr>
<tr>
<td>Dopamine</td>
<td>399</td>
<td>19</td>
<td>33</td>
<td>33</td>
<td>14</td>
<td>16</td>
<td>19</td>
<td>&lt;35 pg/mL</td>
</tr>
<tr>
<td>Cortisol</td>
<td>965.2</td>
<td>471.1</td>
<td>35</td>
<td>294.9</td>
<td>35</td>
<td>43.6</td>
<td>41</td>
<td>&gt;20-30 ug/dL</td>
</tr>
<tr>
<td>Aldosterone</td>
<td>847</td>
<td>266</td>
<td>18.9</td>
<td>138</td>
<td>12.6</td>
<td>19.2</td>
<td>19.7</td>
<td>4-31 ng/dL</td>
</tr>
<tr>
<td>ACTH</td>
<td>18</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>9</td>
<td>7</td>
<td>9</td>
<td>6-58 pg/mL</td>
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</tbody>
</table>
Primary B cell lymphoma of the adrenal gland is an exceedingly rare entity, accounting for less than 1% of extra-nodal lymphomas. Patients often present with symptoms of adrenal insufficiency due to bilateral adrenal involvement. Patients also experience constitutional symptoms including fever, night sweats and weight loss. Diffuse large B cell lymphoma is the most common variant, accounting for more than two thirds of all cases. Most patients are treated with chemotherapy and overall prognosis is poor.

We present an atypical case of primary adrenal B cell lymphoma in a unilateral adrenal mass found during work up for abdominal pain and diagnosed after complete surgical resection.

68 year old female presented to her PCP with complaints of abdominal pain. She was referred to gastroenterology for complete work up, which was negative. Computerized tomography of the abdomen and pelvis was obtained and an incidental adrenal mass was found. Magnetic resonance imaging was obtained for serial imaging, which revealed enlargement of adrenal mass with characteristics concerning for possible neoplastic process. At that time the patient denied any other symptoms including weight loss, fever, night sweats, changes in bowel habits, nausea, vomiting, hypertension, tachycardia, and palpitations. The patient was referred to surgery for a right laparoscopic adrenalectomy. At surgery, the large adrenal tumor was noted to abut and partially surround the vena cava. The mass was able to be dissected from the vena cava allowing for removal of the entire adrenal gland. Final pathology revealed CD 20 positive large cells positive for BLC-6 expressivity and co-expressing CD10, consistent with B cell lymphoma. The patient was referred to oncology post operatively and received six cycles of cyclophosphamide, doxorubicin, vincristine, prednisone, and rituximab (RCHOP) chemotherapy. The treatment course was complicated by development of congestive heart failure. The patient is otherwise doing well and is currently in clinical remission, a year and a half after surgical resection.

Primary B cell lymphoma of the adrenal is a rare pathology that typically presents with constitutional symptoms, is found bilaterally, and is treated non-operatively and with poor prognosis. Surgical resection of unilateral tumor with successful treatment is rare.
179. PERIVASCULAR EPITHELIOD TUMOR OF THE LIVER: A CASE SERIES AND REVIEW OF THE LITERATURE
AB Mitchell MD, AR Jordan, R Lewit MD, E Kruse DO
Augusta University

Perivascular epithelioid cell tumors (PEComas) are rare mesenchymal-derived lesions composed of immunohistochemically distinct perivascular epithelioid cells. Hepatic PEComas are particularly rare within this group of tumors. Herein, we report on two histologically and radiographically disparate cases of hepatic PEComas.

Two cases of hepatic PEComa from Augusta University were reviewed. A literature review was performed using PUBMED.

Our first case is a 63 year old female with an incidental liver mass found on CT. The mass was 3.5x3.9cm, rim enhancing, and hypodense. The tumor was PET avid with an area of central necrosis. Initial biopsy showed high-grade undifferentiated embryonal sarcoma. She underwent a right hepatectomy for definitive management and final pathology showed a malignant PEComa. The second case is a 67 year old female with an incidental liver mass discovered during an echocardiogram. She underwent MRI which showed a 9cm mass in segments 2 and 3. Biopsy showed a PEComa without concerning histological features. She underwent anatomic resection of segments 2 and 3, and final pathology confirmed PEComa. This case was considered of “uncertain malignant potential” based on criteria. Both patients are now undergoing surveillance imaging.

Hepatic PEComas remain an extremely rare clinical entity. There are no consensus guidelines regarding the management of the disease, and surgical excision with wide margins remains the standard of care. Recent literature delves into the role of adjuvant and neoadjuvant chemotherapy, the alternative of ablation, radiologic appearance, and criteria for risk stratification.
Hepatocellular carcinoma (HCC) has an increasing incidence and mortality rate. The current prognostic tools used to assess HCC severity pre-operatively have failed to mitigate the spread. Therefore, there is an urgent need to determine an accurate predictor of HCC prognosis. We hypothesize that elevated red cell distribution width (RDW) can be predictive of advanced HCC stage at time of liver transplantation.

We performed a retrospective cohort study of all consecutive adult orthotopic liver transplant (OLT) patients from January 1, 2012 through December 31, 2016. Only patients who were diagnosed with incidental or pre-operative HCC were studied.

Our transplant center performed 389 OLT of which 32.4% recipients were diagnosed with HCC (N=126). There was a statistically significant correlation between pre-OLT RDW and explant HCC (p=.026). Patients with pre-OLT RDW of >=14.2 were significantly more likely to have HCC present in explant pathology compared with pre-OLT RDW of <14.2 (OR=3.8; 95% CI 1.28 to 11.05). The results remained statistically significant (p=.049) when pre-OLT treatment type (TACE, RFA, Y90) was taken into consideration, with an odds ratio of 1.448 (95% CI 1.00-2.09). Overall patient survival when correlating pre-OLT RDW with explant HCC was not significant (p=.959).

This is the first research that demonstrates a positive correlation between pre-OLT RDW values and HCC outcomes. Our findings are retrospective from a single center, thus limited. Future multicenter collaborations are essential to further validate these conclusions.
Nonalcoholic steatohepatitis (NASH) is liver inflammation arising from obesity. With the increase of NASH in the Western world the rate of this disease as an indication for liver transplantation continues to increase. We hypothesize that hepatocellular carcinoma (HCC) related to NASH has poorer survival rates and higher recurrence after liver transplantation.

We performed a retrospective cohort study of all consecutive adult orthotopic liver transplant (OLT) patients with HCC from January 1, 2012 through December 31, 2016. Only patients who were diagnosed with incidental or pre-operative HCC were studied.

Our transplant center performed 389 OLT of which 32.4% recipients were diagnosed with HCC (N=126). Of the 126 HCC patients, 16.67% were also diagnosed with NASH (N=21). Recurrence of HCC after OLT occurred in 19% of NASH patients (N=4) vs. 7.6% of Non-NASH patients (N=8). The mean recurrence free survival for patients without NASH was 1816 days versus 1571 days for patients with NASH. The difference was not statistically significant (HR 0.439; 95% CI 0.130 to 1.479; p=.173). The mean survival for patients without NASH was 1749 days versus 1571 days for patients with NASH. The difference was not statistically significant (HR 0.522; 95% CI 0.182 to 1.491; p=.217).

Patients without NASH related HCC have a higher mean patient survival and recurrence-free survival. As the rates of NASH related HCC continue to increase, we can anticipate increased recurrence and decreased survival compared with non-NASH related HCC. Our findings are retrospective from a single center, thus limited. Future multicenter collaborations are essential to further validate these conclusions.
Kiosk 9- Endocrine and Solid Organ
184. CIRRHOTIC CARDIOMYOPATHY AND DIASTOLIC DYSFUNCTION IN LIVER TRANSPLANTATION
N Kemmer MD, J Buggs MD, A Kumar MD, M Shramek, E Rogers
Tampa General Hospital

Cirrhotic cardiomyopathy (CCM) is defined as a definitive clinical entity characterized by a blunted inotropic and chronotropic response to stress, impaired diastolic relaxation of the myocardium and prolongation of the QT interval in the setting of the liver cirrhosis without other known cardiac disease. There currently is no diagnostic criteria or diagnostic tests to identify patients with CCM pre-orthotopic liver transplantation. We hypothesize CCM and diastolic dysfunction in orthotopic liver transplantation (OLT) impacts patient survival and also hospital resource utilization (LOS, ICU days, and intubation days).

We conducted a retrospective cohort study of consecutive OLT from January 1, 2012 through December 31, 2015.

Our transplant center performed 324 OLT of which 85.5% recipients were diagnosed with cirrhosis (N=277). Of the cirrhotic patients, 20% (N=56) had CCM whereas 80% (N=221) did not. There was no difference in age, race or BMI between the two groups. There were statistically significant correlations between CCM vs. Non-CCM for LOS (15/11) p=.002, ICU days (6/4) p=.005, intubation days (2/1) p=.017, and patient survival days (1808/1488) p=.001.

CCM is statistically correlated with increased cardiovascular mortality and resource utilization (LOS, ICU days, and intubation days) in our study population. Our findings are retrospective from a single center, thus limited. Future multicenter collaborations are essential to further validate these conclusions. This may lead to possibly including CCM in published transplant guidelines for Cardiovascular Risk stratification to ensure better utilization of resources.

Mean Length of Stay (LOS), Intensive Care Unit (ICU) Stay, and Intubation Duration for Patients with and without Cirrhotic Cardiomyopathy (CCM)

<table>
<thead>
<tr>
<th></th>
<th>P Value</th>
<th></th>
<th>P Value</th>
<th></th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCM</td>
<td>0.002</td>
<td>NonCCM</td>
<td>0.005</td>
<td></td>
<td>0.017</td>
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<tr>
<td>Mean LOS</td>
<td>14.91</td>
<td>Mean ICU days</td>
<td>6.161</td>
<td>Mean Intubation</td>
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<td></td>
<td></td>
<td></td>
<td>3.977</td>
<td>Duration</td>
<td>1.318</td>
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Kiosk 9- Endocrine and Solid Organ

185. LIVER SIZE MISMATCH IN DECEASED DONOR LIVER TRANSPLANTATION

J Buggs MD, V Bowers MD, J Sokolich MD, N Kemmer MD, E Rogers
Tampa General Hospital

With living donor liver transplantation, matching of donor/recipient volume is more structured and essential to successful outcomes. However, practices with deceased donor (DD) liver transplantation are flexible with less emphasis on size matching between the donor and recipient. We hypothesize that size mismatch (SMM) between the donor and recipient in whole cadaveric liver transplantation can effect outcomes when compared with normal for size (NFS) donor and recipient pairings.

We conducted a retrospective cohort study of consecutive orthotopic liver transplant (OLT) recipients of DD from January 1, 2006, through December 31, 2015. Patients were grouped based on BSAi Classification (small for size (SFS) <0.78, normal for size (NFS) 0.78-1.24, and large for size (LFS) >1.24).

Our transplant center performed 903 OLTs. However, 19 were excluded with missing data (N=884). In total, 802 (90.7%) were NFS, and 82 (9.3%) had SMM (66 SFS and 16 LFS). There were no statistical differences between NFS and SMM based on age, race, cold ischemic time, pre-transplant albumin, total bilirubin and MELD score. Gender differences were significant for the SMM group with female donor to male recipient combinations (P >.001). The mean 2-year graft survival (days) was significant (NFS 660 vs. SMM 623; P=.042). The mean 2-year patient survival (days) was significant (NFS 672 vs. SMM 641; P=.045).

Our findings, indicate poorer outcomes with donor/recipient size mismatch in cadaveric liver transplantation to improve patient and graft survival. This study was retrospective from a single center and warrants more robust investigation.
Kiosk 9- Endocrine and Solid Organ
186. THE IMPACT OF CPR IN HIGH-RISK DCD AND ECD DONORS FOR KIDNEY TRANSPLANTATION
J Buggs MD, V Bowers MD, E Rogers
Tampa General Hospital

The demand for kidney transplant organs compels the use of high risk (HR) donation after circulatory death donors (DCD) and extended criteria donors (ECD). Many cadaveric donors receive CPR but the literature does not address consideration of donor CPR as an additional benefit to graft survival. We hypothesize that donor CPR correlates with improved graft survival with HR DCD and ECD KTX.

We retrospectively analyzed consecutive cadaveric KTX recipients and their donor data from January 1, 2008 to December 31, 2013.

A total of 646 cadaveric donors (498 SCD, 55 DCD, and 93 ECD) facilitated 910 cadaveric KTX. Within the 148 HR donors, 31 received CPR and 117 did not. There were 223 cadaveric KTX performed at our center from the 148 HR donors. The mean age of HR donors was 44.94 yrs. with CPR and 53.45yrs. without CPR (p-value 0.005). The KTX recipients of HR donors revealed no significant difference in BMI, length of stay (LOS), discharge creatinine, cold ischemic time (CIT) or delayed graft function (DGF) with and without CPR. Graft survival at 3 years was significant with 0 failures out of 50 KTX from HR donors with CPR vs. 16 graft failures out of 173 KTX from HR donors without CPR (p-value 0.026).

Our study is limited as a single center retrospective study, however the result of significant 3 year graft survival in HR donors who received CPR suggests donor CPR should be considered a positive criterion when assessing organs for transplantation.
**Kiosk 9- Endocrine and Solid Organ**

**187. THE IMPACT OF DELAYED GRAFT FUNCTION IN KIDNEY TRANSPLANT PATIENTS**

*V Bowers MD, J Buggs MD, A Kumar MD, J Boone MD, M Adesunkanmi, R Mehta, E Rogers*

Tampa General Hospital

Delayed graft function (DGF) or dialysis within seven days post kidney transplantation (KT) reportedly occurs up to 60% with deceased donors (DD) and 8% with living donors (LD). We hypothesize the outcomes of KT with DGF differ based upon the etiology for dialysis.

We conducted a retrospective cohort study of consecutive KT recipients with DGF from January 1, 2012 through December 31, 2016 and grouped patients based on hyperkalemia (HK) or volume overload (VO) as the indication for KT admission dialysis.

Our transplant center performed 1,131 KTs (902 DD and 229 LD) of which 12.9% had DGF N=146 (72 with HK and 74 with VO). There were no statistical differences between the groups based on age, KDPI, CIT or CPRA. LOS was longer for patients dialyzed for VO (15 days) vs. HK (10 days), P-value < 0.001. Patients with VO also required more dialysis treatments during the transplant admission, 3 for VO vs. 2 for HK (P-value=0.007). There was no statistically significant difference in patient survival (mean days: HK 724 vs. VO 719, P-value=.208) or graft survival (mean days: HK 689 vs. VO 666, P-value=.838).

Patients with DGF dialyzed for volume overload required more transplant admission dialysis treatments and had longer hospital stays than patients dialyzed for hyperkalemia. Our findings are retrospective from a single center, thus limited. Future multicenter collaborations are essential to investigate optimal interventions and resource utilization for different indications for DGF.
188. LIVING KIDNEY TRANSPLANT OUTCOMES WHEN THE SAME SURGEON VS. DIFFERENT SURGEONS PERFORM THE DONOR PROCUREMENT AND THE RECIPIENT TRANSPLANT SURGERIES
J Sokolich MD, J Buggs MD, V Bowers MD, E Rogers
Tampa General Hospital

Living Kidney Transplantation (LKT) has provided a means of increasing the organ pool for patients with end-stage renal disease (ESRD). Surgical practices vary regarding the use of the same surgeon (SS) vs. different surgeons (DS) to perform LKT donor/recipient operations. We hypothesized there is no difference in patient and graft survival in LKT with the use of the same surgeon vs. different surgeons for donor/recipient operations.

We conducted a retrospective cohort study with SPSS analysis of data from electronic medical records of consecutive adult LKT from October 2011 through December 2015.

There were 159 LK transplants performed (47 SS vs. 112 DS). There were no statistically significant differences between the SS group vs. the DS group when analyzed for OR utilization time (SS 7 hrs. vs. DS 8 hrs.), cold ischemic time (SS 2 hrs. vs. DS 2 hrs.), length of stay (SS 6 days vs DS 6 days), delayed graft function (SS 2% vs DS 1%), 18 month graft survival (SS 539 days vs DS 532 days), and 18 month patient survival (SS 547 days vs DS 538 days).

The rising incidence of ESRD demands the need to increase the donor pool with the use of living kidney transplants. Our results indicate similar outcomes of graft and patient survival when the donor/recipient surgeries for LKT are performed by the same surgeon vs. different surgeons. These findings suggest transplant programs can safely use either the same or different surgeons to perform the donor and recipient surgeries for living kidney transplants based on preference and availability of staff. Future large multicenter studies are needed to further validate these conclusions.

<table>
<thead>
<tr>
<th></th>
<th>Same Surgeon N=47</th>
<th>Different Surgeons N=112</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR Utilization Time (mean hours)</td>
<td>7 ± 1.2</td>
<td>8 ± 1.1</td>
<td>.056</td>
</tr>
<tr>
<td>CIT (mean hours)</td>
<td>2 ± 0.8</td>
<td>2 ± 0.8</td>
<td>.370</td>
</tr>
<tr>
<td>Recipient LOS (mean days)</td>
<td>6 ± 3.5</td>
<td>6 ± 3.0</td>
<td>.992</td>
</tr>
<tr>
<td>Delayed Graft Function</td>
<td>1 (2%)</td>
<td>1 (1%)</td>
<td>.505</td>
</tr>
<tr>
<td>18 Month Graft Survival (mean days)</td>
<td>539 ± 51.2</td>
<td>532 ± 82.5</td>
<td>.632</td>
</tr>
<tr>
<td>18 Month Patient Survival (mean days)</td>
<td>547 ± 0.0</td>
<td>538 ± 65.6</td>
<td>.359</td>
</tr>
</tbody>
</table>
Kiosk 9- Endocrine and Solid Organ
189. OUTCOMES OF DONOR AND RECIPIENT OBESITY IN KIDNEY TRANSPLANTATION
V Bowers MD, J Buggs MD, A Kumar MD, R Mehta, J Boone, M Adesunkanmi, E Rogers
Tampa General Hospital

Obesity (BMI >30) is a world health epidemic projected to increase the incidence of diabetes, the leading cause of kidney failure. There is debate regarding negative vs. positive effects of obesity in surgical outcomes. The shortage of transplant donors coupled with increased worldwide obesity makes this an important matter to evaluate. We hypothesize adverse outcomes from obese donors/recipients compared to non-obese donors/recipients undergoing kidney transplantation.

We conducted a retrospective cohort study of consecutive kidney transplants (KT) from January 2012 through December 2016 and grouped data based on four categories: 1) Obese donor and recipient (ODR), 2) Non-obese donor and recipient (NODR), 3) Obese donor and non-obese recipient (OD/NOR), and 4) Non-obese donor and obese recipient (NOD/OR).

Our transplant center performed 1,131 KT (608 NODR, 219 NOD/OR, 208 OD/NOR, and 96 ODR). There was no statistical difference based on graft survival, readmissions, or complications (during admission or 1 year later). Delayed graft function was significant when comparing ODR (25%) to NODR (10.4%); p<.0001 and ODR (25%) to OD/NOR (11.5%); p=0.003. Length of stay was statistically significant when comparing NODR (8 days) to NOD/OR (7 days); p=0.043. Patient survival was statistically significant only for OD/NOR (p=0.011).

Kidney transplantation using obese donors and recipients does not correlate with adverse outcomes, thus allowing further confidence and consideration in the obese population. While our findings are statistically meaningful, they are limited as a retrospective study from a single center.
Paraduodenal hernia (PDH) is an extremely rare congenital internal hernia caused by a failure of the mesentery to fuse to the parietal peritoneum, resulting in abnormal defects, allowing for bowel loops to herniate and encase in a hernia sac. Right sided PDH’s are seen in the setting of malrotation. Patients with PDH may present with seemingly benign intermittent abdominal pain with spontaneous resolution, or with acute bowel incarceration and volvulus. Due to these wide and non-specific presentations, diagnosis is difficult. Early diagnosis and surgical intervention is essential to avoid morbidity and mortality.

A 4-year-old otherwise healthy patient presented with a 4-hour history of abdominal pain and bilious emesis. He was reported to have a history of intermittent abdominal pain with spontaneous resolution since he was 1 years old. Each episode would cause severe debilitating pain with associated emesis. He had sought medical attention in the past and was told it may be intussusception or constipation, but never had any imaging performed. On this particular episode, the patient awoke with acute onset symptoms of bilious emesis with unrelenting pain. He was taken to the hospital for evaluation. On presentation, patient was tachycardic with diffuse abdominal pain, and laboratory work demonstrating mild leukocytosis and acidosis. CT scan was obtained which showed a right sided internal hernia with possible pneumatosis, and malrotation. Based on his exam and CT findings he underwent urgent exploratory laparotomy. Upon entry into the patient’s abdomen, the right-sided paraduodenal hernia sac was immediately encountered (see figure 1). It was also clear he had malrotation anatomy. The small bowel was reduced from the hernia sac, and appeared to be healthy. Ladd’s procedure was then performed along with an appendectomy. Bowel was reinspected at the end of the procedure and was determined to be viable. Patient had an unremarkable post-operative course and was discharged on POD5 tolerating a regular diet and having normal bowel function.

The incidence of congenital internal hernias, such as paraduodenal hernias, is extremely rare. However, they must be on a physician’s differential when working up pediatric patients with abdominal pain in order to identify potential surgical emergencies. This patient had been previously evaluated by physicians for his abdominal pain and failed to be diagnosed. PDH has been shown to be accurately detected by upper GI with small bowel follow through, and CT scan. Diagnosis of right sided PDH in an non-urgent setting could have allowed for an elective Ladd’s procedure, avoiding an emergent laparotomy with threatened bowel. In this case, the patient obtained diagnosis and surgical intervention expeditiously, allowing for successful management and recovery.
Kiosk 10 - Pediatric

191. INTRAPERICARDIAL TERATOMA IN A NEONATE: A REPORT OF AN INTERESTING CASE
A Landmann MD, JJ Johnson MD, K Webb MD, RW Letton MD
University of Oklahoma Health Sciences Center

Intrapericardial teratomas are rare pediatric mediastinal masses, occurring in less than 5 out of 10,000 primary pediatric cardiac tumors. Often diagnosed on prenatal ultrasound, these lesions can be identified by the presence of pericardial effusion, hydrops or cardiac tamponade. Neonates may present with symptoms associated with respiratory distress and cyanosis. The presence of significant pericardial effusion presents the risk of causing tamponade physiology and requires urgent decompression.

We present the case of a 6-month old female who carried a prenatal diagnosis of mediastinal mass. She was followed with serial imaging and was referred for surgical resection after significant growth was demonstrated on ultrasound. We proceeded with a right thoracotomy. An intrapericardial mass was found, densely adherent to the right atrium and aorta. Pathology revealed a mature teratoma measuring 5.5 x 4.5 x 3.0cm.

Primary cardiac tumors presenting in infancy are rare, accounting for 0.06-0.32%; approximately 25 cases of intrapericardial teratomas have been described in the literature. Intrapericardial teratomas are often right sided and connected to one of the great vessels via a pedicle. They are slow growing, lie entirely within the pericardial sac and may cause constriction of cardiac inflow. They appear smooth and lobulated with a multicystic surface. Vascular supply comes from the adventitial vessels of the aorta. When diagnosed at prenatal ultrasound, delivery should be considered via cesarean section once fetal lung maturity has been established. Vaginal delivery is not recommended due to cardiac compression with possible progression to tamponade. Symptoms at presentation may include ascites, cardiomegaly and cardiopulmonary distress. Prompt surgical excision, even in the setting of cardiac failure, is recommended due to mass effect and development of hydrops. In addition, approximately 15% of pericardial teratomas are malignant. Pericardiocentesis may provide a temporary relief of cardiac obstruction. Due to the limited involvement with the myocardium or great vessels, cardiopulmonary bypass is rarely required.

Intrapericardial teratomas are rare mediastinal masses in children. Surgical resection is recommended due to potential for mass effect and for complete histologic diagnosis.
Kiosk 10 - Pediatric
192. LONG-TERM FOLLOW-UP AFTER STAPLED INTESTINAL ANASTOMOSES IN NEONATES
AW Christian, CB Muncie MD, CJ Blewett MD
University of Mississippi Medical Center

The safety and validity of stapled anastomoses in adults and children is well documented. The long-term outcomes associated with stapled anastomosis in neonates are not as well validated. Previously a retrospective study was performed looking at short term outcomes after stapled anastomoses in neonates at our institution, published in the American Surgeon (Simmons et al, 2010). We performed a 10 year follow up retrospective study of these patients to determine the long-term outcome from their operation.

All patients from the neonatal intensive care unit that underwent a stapled anastomosis were identified retrospectively between February 2007 and May 2008. A side-to-side functional end-to-end intestinal anastomosis had been performed using an endo-gia anastomotic stapler. Demographic and postoperative data were acquired by means of chart review. Variables of study include estimated gestational age at birth and surgery, associated diagnosis, location of anastomosis, post-operative visits, follow-up visits or other documented encounters.

A total of 18 patients were identified from the previous study. Nine patients received an enteroenterostomy, eight received an ileocolostomy, and one received a colocolostomy. The average gestational age at the time of surgery was 38.7 weeks. Seven patients had no identifiable complications related to their anastomosis. Four patients had the anastomosis resected. Indications for resection included dilation of the anastomosis with volvulus, adhesive obstruction, dysfunctional anastomosis, and a twisted anastomosis. One patient underwent a Suave pull-through after ostomy reversal. Another patient underwent a bowel lengthening procedure in which the fate of the anastomoses has not been made clear. Two patients died from issues unrelated to the anastomosis. Two patients were lost to follow-up.

This follow up retrospective review is one of only several in the literature that report the the long-term outcome after stapled intestinal anastomoses in neonates. This is one of only a few reports in the literature of dilation of the anastomosis leading to a volvulus, which we believe is due to technical error during the creation of the anastomosis. As the stapled technique for creating an intestinal anastomosis in neonates is widely accepted, making this information an important addition to the literature.
<table>
<thead>
<tr>
<th>Age at Surgery</th>
<th>Diagnosis</th>
<th>Operation</th>
<th>Fate of Anastomosis</th>
<th>Complication</th>
<th>Follow-up Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 day</td>
<td>Ileal Atresia</td>
<td>Jejunogastrostomy</td>
<td>Resected (9 months post-op)</td>
<td>Jejunal volvulus resulting in Jejunostomy and subsequent Duodenostomy</td>
<td>9 yrs. 7 mos.</td>
</tr>
<tr>
<td>7 weeks</td>
<td>Spontaneous Intraluminal Perforation</td>
<td>Loop Jejunostomy</td>
<td>Resected (1 month post-op)</td>
<td>Dysfunctional anastomosis</td>
<td>10 mos.</td>
</tr>
<tr>
<td>20 weeks</td>
<td>Gastroschisis, Perforated Umbilical Cleft</td>
<td>Loop Jejunostomy</td>
<td>Resected (2 yrs. 3 months post-op)</td>
<td>Twisted anastomosis</td>
<td>9 yrs.</td>
</tr>
<tr>
<td>12 weeks</td>
<td>NIC</td>
<td>Subtotal Colectomy (Resections)</td>
<td>Resected (3 yrs. 3 months post-op)</td>
<td>Adhesive obstruction</td>
<td>9 yrs.</td>
</tr>
<tr>
<td>15 weeks</td>
<td>Colon Perforation</td>
<td>Oncostomy Reversal (choscolectomy)</td>
<td>PI diagnosed with Hirschsprung’s after colostomy reversal. Same procedure at 2 weeks post-op.</td>
<td>Hirschsprung’s Disease</td>
<td>12 yrs.</td>
</tr>
<tr>
<td>10 months</td>
<td>Gastroschisis Finitum</td>
<td>Segmented Jeunal Resection/Mercury Procedure</td>
<td>Patient underwent a bowel-lashing procedure at another institution. The fate of anastomoses is unclear.</td>
<td>9 yrs.</td>
<td></td>
</tr>
<tr>
<td>22 weeks</td>
<td>Gastroschisis Finitum</td>
<td>Oncostomy</td>
<td>Oncostromy (choscolectomy)</td>
<td>No issues</td>
<td>5 yrs.</td>
</tr>
<tr>
<td>10 weeks</td>
<td>Ileal Atresia</td>
<td>Jejunogastrostomy</td>
<td>No issues</td>
<td>5 yrs.</td>
<td></td>
</tr>
<tr>
<td>8 weeks</td>
<td>NIC</td>
<td>Oncostomy Reversal (choscolectomy)</td>
<td>No issues</td>
<td>6 yrs.</td>
<td></td>
</tr>
<tr>
<td>1 week</td>
<td>Ileal Atresia</td>
<td>Jejunogastrostomy</td>
<td>No issues</td>
<td>3 yrs.</td>
<td></td>
</tr>
<tr>
<td>1 week</td>
<td>Ileal Atresia</td>
<td>Jejunogastrostomy</td>
<td>No issues</td>
<td>2 yrs.</td>
<td></td>
</tr>
<tr>
<td>1 week</td>
<td>Real Anus</td>
<td>Bled Resection (cholecystectomy)</td>
<td>No issues</td>
<td>9 yrs.</td>
<td></td>
</tr>
<tr>
<td>1 week</td>
<td>Real Anus</td>
<td>Bled Resection (cholecystectomy)</td>
<td>No issues</td>
<td>2 yrs.</td>
<td></td>
</tr>
<tr>
<td>1 day</td>
<td>Real Anus</td>
<td>Resection</td>
<td>Last to follow up</td>
<td>5 yrs. 3 mos.</td>
<td></td>
</tr>
<tr>
<td>1 day</td>
<td>Real Anus</td>
<td>Resection (cholecystectomy)</td>
<td>Last to follow up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 weeks</td>
<td>NIC</td>
<td>Bled Resection</td>
<td>Decreased</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 weeks</td>
<td>Unexplained Ileal Atresia</td>
<td>Resection w/ Primary Anastomosis</td>
<td>Decreased</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Kiosk 10 - Pediatric

193. PEDIATRIC NISSEN FUNDOPICATION: A COMMON PROCEDURE WITH THE POTENTIAL FOR LONG-TERM COMPLICATIONS, A REPORT OF AN INTERESTING CASE

A Landmann MD, K Watkins MD, JM Reinersman MD, S Deb MD
University of Oklahoma Health Sciences Center

Fundoplication for Gastroesophageal reflux disease has become a common procedure performed in children over the last 20 years. The majority of patients show good results with a very low complication rate.

We report the case of a 26-year-old girl who was referred to thoracic surgery for progressive dysphagia, chest pain and emesis. Repeat imaging revealed a recurrent Type IV hiatal hernia. Her past surgical history was extensive with nine previous operations for chronic vomiting and pain. Her first operation was a nissen fundoplication and gastrostomy tube at two years old. A redo-nissen was performed several months later followed by a third operation for a closure of a gastrocutaneous fistula. Her symptoms and failure to thrive persisted and an isoperistaltic jejunal interposition was performed. This malfunctioned requiring reoperation. Several years later she developed a diaphragmatic hernia which was repaired, but was complicated by incarceration of her jejunum into her mediastinum which necessitated another procedure. A small bowel perforation left her with an open abdomen and prolonged ventilator course. She was approximately ten years from her previous operations when she came to our clinic and endoscopy revealed concerning findings of a food bezoar and tortuous anatomy. She was taken to the operating room for a right thoracolaparotomy and after several hours of lysis of adhesions she was found to have a blind ending remnant stomach that was incarcerated into her chest. A completion gastrectomy was performed. Her surgery extended over two days, and she had an uneventful postoperative course. Her symptoms have improved and she is now tolerating a regular diet.

Nissen fundoplication is commonly performed in the pediatric population for medically refractory gastroesophageal reflux disease and apparent-life threatening events. The majority of patients, over 92%, show good results without residual symptoms. Approximately 10% of patients will require a reoperation for persistent reflux symptoms, and, in this patient population, the incidence of post-op complications is increased with the feared progression to failed surgical repair necessitating esophageal replacement. Isoperistaltic jejunal interposition is a complex reconstruction used for reconstruction of a malfunctioning esophagogastric junction with positive results in select patient populations. Here we report the case of a young girl who suffered severe complications after a failed fundoplication resulting in a nonfunctional, blind ended stomach and floppy jejunal interposition severely affecting her quality of life. We hope to bring to light the potential complications of multiple failed operations in a young patient.

Nissen fundoplication have been increasing in incidence in pediatric patients due to the availability of laparoscopic surgery and relatively low complication rate. Here we report the case of a young patient who suffered severe sequel after multiple failed anti-reflux procedures.
Kiosk 10 - Pediatric

194. TOTAL PARENTERAL NUTRITION LIPID EMULSION PLEURAL EFFUSION MASQUERADING AS A CHYLOTHORAX AFTER TRACHEOESOPHAGEAL FISTULA REPAIR

CR Campbell BS, PB Ham MD, W Pipkin MD, R Hatley MD
Medical College of Georgia at Augusta University

Although it is a rare complication, total parenteral nutrition (TPN) effusions in neonates have been reported in the literature, often with poor outcomes. We present a successfully identified case of TPN pleural and pericardial effusion masquerading as a chylothorax following tracheoesophageal fistula repair.

A newborn infant male with VACTERL association status post tracheoesophageal fistula repair and imperforate anus repair receiving TPN via umbilical venous catheter (UVC) presented with high-volume milky-white chest tube output and hemodynamic instability.

Chest X-ray demonstrated a globular-shaped cardiac silhouette and appropriately positioned UVC. Pleural effusion fluid analysis revealed high triglycerides and low lymphocytes, a composition consistent with TPN over lymphatic fluid. TPN was stopped. Echocardiography showed a significant pericardial effusion and tamponade physiology, so pericardiocentesis was performed. 32 mL of milky-white fluid was removed. The UVC was withdrawn. The chest tube output diminished and the infant stabilized.

TPN pleural effusion may mimic chylothorax, particularly after thoracic surgeries with an indwelling chest tube. A high level of suspicion must be applied to infants receiving TPN with hemodynamic instability in order to ensure timely diagnosis and increase the likelihood of a favorable outcome.
Kiosk 10 - Pediatric
195. SYSTEMIC THROMBOLYSIS OF AN OCCLUSIVE AORTIC THROMBUS IN A NEONATE ON EXTRACORPOREAL MEMBRANE OXYGENATION
C Onwubiko MD PhD, T Koppelmann MD, AM Waters MD, A Radulescu MD PhD, MK Chen MD, CA Martin MD, SA Anderson MD, RT Russell MD MPH, VE Mortellaro MD, DA Rogers MD MHPE, EA Beierle MD
Children’s Hospital of Alabama

Presence of a significant thrombus in a patient on extracorporeal membrane oxygenation (ECMO) is a phenomenon presents significant treatment challenges. We present a case of a neonate on ECMO who was found to have an aortic thrombus that was treated with systemic thrombolysis.

A 5-day-old male infant was transferred to our hospital for evaluation for ECMO to treat persistent hypoxia due to persistent pulmonary hypertension of the newborn. Physical examination revealed poor perfusion and absent pulses in bilateral lower extremities; further investigation with ultrasound (US) discovered aortic stenosis. The patient was cannulated to ECMO and was systemically anticoagulated on a heparin infusion; however due to a history of pulmonary hemorrhage, the infusion rate was half the usual rate. After cannulation, a repeat US revealed the aortic stenosis was actually an aortic thrombus causing complete occlusion from proximal to the celiac trunk to the iliac artery bifurcation. As the child was not a candidate for catheter-directed thrombolysis or thrombectomy, we initiated systemic tissue plasminogen activator (tPA). We utilized the following protocol: systemic tPA infusion was initiated at 0.03mg/kg/h with an US every 6 hours to assess response. If there was no response in 6 hours, the dose would be increased to 0.1mg/kg/h, then to the maximum dose rate of 0.3mg/kg/h if still no response.

Six hours after the tPA infusion was initiated, there was no change in the thrombus on US, so the infusion rate was increased. At the 12 hour mark, there was decrease in size of the thrombus, with restoration of flow to the celiac axis, superior mesenteric artery and the right renal artery. The tPA infusion was continued for a total of 30 hours with near complete resolution of the thrombus and restoration of flow to all major aortic branches, including the iliac bifurcation. The treatment was complicated by significant oropharyngeal hemorrhage (likely secondary to the prior traumatic intubation), which required multiple adjustments in the tPA infusion rate, replacement with blood products, and initiation of vasoactive medications to maintain blood pressure throughout the treatment course. In addition, the patient developed renal failure requiring hemodialysis and liver failure during this time period. A head US performed >30 hours after cessation of the tPA infusion revealed a intracranial hemorrhage and progressive ischemia. This finding, combined with the patient’s multisystem organ failure, led the patient’s family to withdraw care and the patient died on day of life 12 (hospital day 7).

Systemic thrombolysis may be used to treat significant thrombus while a patient is on ECMO. However, constant re-evaluation and careful consideration of the risk-benefit profile is of paramount importance.
Familial Adenomatous Polyposis is a hereditary polyposis syndrome that results from autosomal dominant inheritance of the APC gene. The development of adenomatous polyps in the epithelium of the colon and rectum occurs in the first 2 decades of life with progression to cancer in nearly all cases. Prophylactic proctocolectomy with ileal pouch to anus anastomosis is the current standard of care given the risk of colorectal cancer often within 10 years following the initial diagnosis.

We present the case of a 10 year-old male patient who underwent total proctocolectomy with J pouch creation at the age of 5.

Three years following his initial surgery, he developed failure to thrive of unknown etiology. He was subsequently diagnosed with a chronic enterovesicular fistula with intra-abdominal abscesses following review of studies and complete evaluation.

In this report, we discuss his presentation and surgical management, which included takedown of the enterovesicular fistula, as well as the rarity of his presentation with total proctocolectomy at such a young age.
Kiosk 10 - Pediatric

197. PEDIATRIC PATIENTS WITH SMALL CELL CARCINOMA OF THE OVARY DO NOT HAVE WORSE SURVIVAL THAN ADULTS: A REVIEW OF THE NATIONAL CANCER DATABASE

C Onwubiko MD PhD, II Maizlin MD, TR Nice MD MSPH, M Goldfarb MD, KW Gow MD, M Langer MD, JG Nuchtem MD, SA Vasudevan MD, JJ Doski MD, A Goldin MD, EA Beierle MD

Children’s Hospital of Alabama

Small cell carcinoma of the ovary (SCCO) is a rare malignancy. Younger patients have reportedly had worse prognosis than their older counterparts. This study examined the association between patient demographics, tumor characteristics, treatments, and overall survival (OS), with specific focus on comparison between pediatric and adult patients.

The National Cancer Database was reviewed for cases of SCCO from 1998 - 2012. Patients were stratified by age at diagnosis: <21 years, 21-30 years, 31-50 years, and >50 years. Demographics, tumor characteristics, treatments, and OS were compared using pooled variance t-tests and chi-square tests. Kaplan-Meier survival analysis examined each variable’s effect, and survival was estimated at 1 and 5 years. Univariate and multivariate Cox proportional hazard models assessed each variable’s effect on OS. Significance was determined at p ≤ 0.01.

The database contained 574 patients with SCCO diagnosis, of which 562 cases (97.9%) contained survival data and were analyzed (<21 years: 71 patients; 21-30 years: 108 patients; 31-50 years: 174 patients; >50 years: 209 patients). There was an association with stage of cancer and age, with patients <21 years having 34% Stage I and 20% Stage IV while patients >50 had 17% and 30% Stage I and IV tumors, respectively (p<0.001). Surgery and chemotherapy were both commonly utilized therapies, but use decreased with age. Kaplan-Meier analysis (Figure) showed better estimated 1-year survival for younger patients (p=0.003) but there was no significant difference in estimated survival between the age groups at 5 years (p=0.14). On multivariate Cox analysis, only lower tumor stage (p<0.001), chemotherapy (p<0.001), and surgery (p=0.001) were associated with improved survival.

Younger patients with SCCO tended to have lower stage tumors and were more likely to receive chemotherapy and surgery, but this did not translate into improved survival compared with older patients. These findings highlight the need to develop innovative diagnostic and therapeutic interventions for SCCO.
Tubo-ovarian abscess in sexually inactive females represents a rare clinical entity. Pathogens are atypical and presentation may be acute or chronic, making the diagnosis challenging.

A 2-year, 8-month old female was transferred to our tertiary care center for imaging studies concerning for ovarian mass. She presented with a history of subjective fever, abdominal pain and anorexia for seven days. Ultrasound was performed with concerns for a cystic ovarian mass with concern for underlying ovarian torsion. Past medical history revealed a history of MRSA flank abscess treated with local drainage and antibiotics. She was taken to the operating room for exploratory laparotomy and was found to have copious purulent fluid in the pelvis originating from the left ovary and fallopian tube. There was no ovarian mass or torsion evident on exploration. Cultures were obtained and pelvic exam revealed an intact hymen and no external signs of trauma. Final cultures and sensitivities showed methicillin resistant staphylococcus. She was treated with a course of clindamycin with no residual disease.

Tubo-ovarian abscess is an ascending infection that complicates pelvic inflammatory disease and is sexually transmitted in 85% of cases. Typically a polymicrobial infection, Neisseria gonorrhoea and Chlamydia trachomatis are pathognomonic of this disease process in sexually active females. Any area of the upper genital tract can be involved, including the endometrium, fallopian tubes, ovaries; peritonitis and perihepatitis occur in severe disease. Case reports in the literature suggest possible routes for colonization in sexually inactive females including intestinal bacterial translocation or ascending vaginal infection from urine bacterial translocation. No other case reports exist in the literature demonstrating a cutaneous translocation of bacteria in a sexually inactive patient presenting with tubo-ovarian abscess.

Tubo-ovarian abscess in sexually inactive females is a different disease process, frequently culture positive for bowel flora. No other case reports exist of a methicillin-resistant staphylococcus aureus tubo-ovarian infection in a young patient.
Kiosk 10 - Pediatric

199. RECURRENT PYLORIC STENOSIS: CASE REPORT AND REVIEW OF THE LITERATURE

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Medical University of South Carolina

Recurrent infantile hypertrophic pyloric stenosis (IHPS) is exceedingly rare, with only 11 cases previously reported in the literature. We report a case of recurrent IHPS managed successfully with repeat laparoscopic pyloromyotomy and examine the operative management of previously reported cases.

The patient is a 2-month-old firstborn male born at term who underwent a laparoscopic pyloromyotomy for IHPS at 4 weeks of age. Post-operatively symptoms resolved, and he was tolerating oral feeds with excellent weight gain for a period of 5 weeks. He represented to our medical center with recurrent symptoms of non-bilious, non-bloody emesis at 10 weeks of life. On ultrasound, he was found to have pyloric channel measurements consistent with IHPS, which was confirmed with an upper gastrointestinal contrast series, and the diagnosis of recurrent pyloric stenosis was made. He underwent a second, uncomplicated laparoscopic pyloromyotomy cranially on the pylorus [Figure 1]. Post-operatively he had minor post-prandial emesis but was able to advance to ad lib feeds and be discharged on post-operative day 5.

IHPS is the leading cause of gastrointestinal obstruction in the first months of life. There are 11 documented cases of recurrent IHPS in the literature. To diagnose recurrent pyloric stenosis, a symptom-free interval in the initial post-operative period with appropriate feeding and weight gain must occur. These cases have been managed by laparoscopic or open repeat pyloromyotomy and balloon dilatation. Age at initial presentation ranged from 14 to 63 days (median 23 days) with our patient being the second oldest at 34 days. Presentation to the hospital with recurrent symptoms occurred at 24-56 days (mean 41 days) after the index operation, and our patient represented on post-operative day 37 or day of life 72. Of the eight cases that report gestational age at delivery, infants with recurrent pyloric stenosis have been term deliveries, and the majority male. All patients have done well after repeat pyloromyotomy or dilatation with appropriate feeding and weight gain and absence of symptoms. With increasing evidence of possible novel genome-wide genetic locus on chromosome 11, recurrent IHPS may represent a second de novo occurrence of this disease, rather than a post-operative surgical complication.

We present a rare case of recurrent pyloric stenosis managed successfully by repeat laparoscopic pyloromyotomy. While there was variability in the approach of repeat surgeries in regards to location of pyloromyotomy and open versus laparoscopic technique, each of the previously reported cases including ours resulted in resolution of symptoms, tolerance of oral diet, and appropriate weight gain. As scientific evidence of a genetic predisposition to IHPS increases, surgeons and parents should be aware that recurrence may be possible, with some cases under-reported.
Kiosk 10 - Pediatric
200. A CASE OF AN EXTRAGONADAL RETROPERITONEAL TERATOMA IN AN INFANT
CA Lott DO, DW Parrish MD, MW Morris MD, BR Berch MD, CJ Blewett MD, DE Sawaya MD
University of Mississippi Medical Center

Teratomas are rare tumors of embryonic origin that are usually composed of more than one of the three germ cell layers. Teratomas can be described as either mature or immature, and cystic, solid, or mixed. The location of these tumors has been shown to be dependent on age, with extragonadal tumors occurring most frequently in neonates and young children. Extragonadal teratomas frequently occur in midline structures, including the anterior mediastinum, retroperitoneum, sacrococcygeal region, and pineal gland. While sacrococcygeal teratomas are by far the most common location in the pediatric population, retroperitoneal teratomas are not unheard of. When teratomas are located in the retroperitoneum, they are usually not identified until they have grown to be quite large. While most of these tumors are benign, they do carry a 25% chance of malignancy. Management with surgical resection is the standard for treatment and is required to make a definitive diagnosis. We present the case of a large retroperitoneal teratoma in a one year old female.

One year old female with no medical history presented to the Pediatric Emergency Department after a “knot” was noticed in her abdomen the day before. She had abdominal distention since two months old, but it was intermittent. She had no problems with constipation, change in bowel habits, or weight loss. Her vital signs were normal, and her lab work was unremarkable. An abdominal x-ray was obtained that revealed right side abdominal calcifications. A Computed Tomography (CT) Scan was obtained of her abdomen which demonstrated a 15 x 14 cm retroperitoneal mass containing fat, calcium, and large cystic components. There was a significant mass effect on the kidneys, small bowel, colon, and inferior vena cava. Tumor markers, Beta-Human Chorionic Gonadotropin, Alpha-Fetoprotein, and Lactate Dehydrogenase, were obtained to determine the origin of the mass. The tumor markers returned as normal, and the patient was taken to the operating room two days later for resection. Through an upper abdomen transverse incision, the mass was able to be completely excised intact. The right renal vessels, which appeared to be entrapped on the CT, were able to be dissected free, preserving the right kidney.

The patient recovered from her operation quickly and uneventfully. She was tolerating a regular diet on postoperative day two, and she was discharged home in stable condition on postoperative day four. Her pathology returned on her discharge day as a mature cystic teratoma, measuring 19.4 x 11.4 x 6.3 cm and weighting 441 grams.

Extragonadal retroperitoneal teratomas are a rare tumor, seen most often in children. Surgical resection is the mainstay of treatment. Patients, like ours, with complete resection of a benign teratoma have an excellent prognosis. Those with malignant disease need evaluation for metastases. They may need treatment with chemotherapy following resection, especially if unable to achieve negative margins.
201. MANAGEMENT OF IMPERFORATED ANUS WITH A RARE RECTOPENILE FISTULA NOT COMMUNICATING WITH URETHRA
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Children’s Hospital of Alabama

While anorectal malformations are frequently seen in pediatric surgery, rare variants have been difficult to classify. Determining the proper anatomy prior to surgery is crucial for appropriate treatment. We report a rare variant of imperforated anus with a concurrent rectopenile fistula that is noncommunicating with the urethra.

Retrospective chart review of the patient’s medical record was performed, with specific emphasis on demographics, operative details and post-operative course.

A 6 day old male was referred to our facility with complicated imperforated anus and hypospadias. A small amount of meconium was found at the base of the penis. Descending colostomy with mucous fistula was performed to avoid possible complications given unusual genitourinary anomaly. Patient was followed up at 32 days of age and found to be growing normally with no complications. At 5 months, a colostogram was performed using the mucous fistula which was unable to identify evidence of a distal fistula connecting to the renal collecting system. Patient was scheduled for sagittal anorectoplasty 1 month later. In the operating room, a repeat distal colostogram under pressure was performed prior to sagittal anorectoplasty. An intraoperative distal colostogram (Figure 1A) at that time showed a perineal fistula in the distal rectum that appeared to track to the base of the penis, emerging near the scrotal raphe where an unusual accessory fold of skin was observed. An intraoperative urethrogram (Figure 1B) was unable to show any apparent connection between the renal collecting system and the fistula. It was then determined that the patient had a rare variant of imperforated anus with a rectopenile fistula that did not communicate with the urethra or bladder. A posterior sagittal anorectoplasty (PSARP) was performed, with the proximal fistula identified intraluminally on the anterior rectal wall. Circumferential dissection between the rectum and the urethra demonstrated the two structures to be completely separate. Patient tolerated the procedure well and post-operative follow-up demonstrated appropriate recovery.

Anal atresia with rectopenile fistula is a rare variant of anorectal malformation that has only been documented 7 times in the last 40 years. Of those, rectopenile fistulas that do not communicate with the urethra has only been documented once in the literature. Distal colostogram, urethrogram, and fistulogram are important tools in determining the proper anatomy prior to operating. Descending colostomy would be highly advised if there is any uncertainty about anatomy. A good prognosis is achievable, but lack of awareness of the lesion may delay diagnosis and put patient at risk for multiple operations.
202. HEMOPERITONEUM DUE TO A PERFORATED MECKEL DIVERTICULUM

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A Meckel diverticulum is a relatively common congenital abnormality of the gastrointestinal tract. The condition usually remains clinically silent, but may present at any age with painless gastrointestinal bleeding, obstruction, inflammation, umbilical drainage, tumor, or entrapped foreign body. Hemoperitoneum is a reported but exceedingly rare complication of a Meckel diverticulum.

A 10-year-old boy presented with a one-week history of non-specific infra-umbilical abdominal pain and constipation. His white blood cell count was 13.1 with 80% neutrophils and his hematocrit was 40.3. Abdominal ultrasound demonstrated compressible, peristalsing small and large bowel without inflammation or free fluid. The appendix was not visualized. He was admitted for observation. Worsening of his pain the following morning prompted an abdominal CT scan which demonstrated an inflamed 2.1 x 1.8 x 1.6 cm blind-ending structure in the mid abdomen. He was taken to the operating room for diagnostic laparoscopy, whereupon significant hemoperitoneum was encountered necessitating conversion to laparotomy. Exploration revealed a perforated Meckel diverticulum (Image 1) with erosion into the adjacent small bowel mesentery resulting in hemorrhage into and between the mesenteric leaves. The perforation was located at the base of the diverticulum. No intraluminal source of bleeding was identified, so a simple diverticulectomy was performed. Hemostatic sutures were placed in the mesenteric erosion. Pathologic examination demonstrated an inflamed, gastric mucosa containing Meckel diverticulum. Postoperatively, the patient had an uncomplicated recovery, was discharged home on post-operative day 4, and has done well in follow-up.

A Meckel diverticulum, a remnant of the omphalomesenteric duct, is a true diverticulum occurring on the antimesenteric border of the small bowel. The “Rule of Two” is classically used to describe Meckel diverticula; this states they occur in 2% of the population, are twice as common in males, become symptomatic in 2% of inflicted individuals within the first 2 years of life, are 2 inches long, occur within 2 feet of the ileocecal valve, present with either bleeding or obstruction, and half contain either gastric or pancreatic heterotopic tissue. In actuality, this rule is an over generalization. Most cases, such as the one presented here, do not fit within these confines.

Despite intestinal hemorrhage being a common presentation of a gastric mucosa containing Meckel diverticulum, frank hemoperitoneum due to perforation in the absence of inflammation is rare. Management includes controlling the hemorrhage and excising the diverticulum. The management of an asymptomatic incidentally found diverticulum remains controversial, with current literature recommending against resection. This case of hemoperitoneum highlights a potentially life-threatening complication of a previously asymptomatic Meckel diverticulum and suggests a role for further consideration into the surgical management of asymptomatic Meckel diverticula.
Mesenteric cystic lymphangiomas (MCL) are rare, benign tumors most commonly encountered in the pediatric population. Clinical presentation can vary between asymptomatic to an acute abdomen and bowel ischemia. Presented is a 4-year-old male with symptoms of bowel obstruction and peritonitis from a mesenteric cystic lymphangioma.

A 4-year-old male presented with 36 hours of abdominal distension and emesis with every meal. He was otherwise healthy and had no prior surgical history. On examination he appeared dehydrated and listless. His abdomen was distended and tympanic with generalized peritonitis and involuntary guarding. His laboratory values demonstrated evidence of dehydration and a mild leukocytosis. Dilated loops of small bowel were visible on abdominal radiographs. He underwent fluid resuscitation and was taken to the operating room for surgical exploration. A laparotomy was performed. On entering the abdomen there was a moderate amount of ascites. Exploration revealed a cystic mass originating in the mesentery encasing 15 centimeters of the jejunum causing an obstruction. There was not evidence of ischemia of unaffected small intestine. The affected area of small bowel and the mass were resected (Figure 1) and a primary anastomosis was performed. He had an uneventful postoperative course and was discharged home 5 days post operatively.

Cystic lymphangiomas are congenital malformations of the lymphatic system. The neck is the most common location at 75%, followed by the axilla around 20%, with less than 1% occurring in the mesentery, omentum, and retroperitoneum. While benign in nature, the location can affect surrounding structures. Histologically they are characterized as hamartomas, with an endothelial wall containing smooth muscle and lymphatic tissue. Intra-abdominal cystic lymphangiomas, in particular mesenteric cystic lymphangiomas are quite rare. The incidence of these malformations is approximately 1 per 100,000 hospital admissions. In children, they are more common in males with a male to female ratio of 3:1. Clinical presentation is quite variable from asymptomatic, chronic distension, palpable abdominal mass, bowel obstruction, or acute distention and generalized peritonitis. Diagnosis can be made preoperatively with ultrasound (US), computed tomography scan, or magnetic resonance imaging. MRI has been useful in better demonstrating the extent of the mass when there is concern for involvement of the mesentery or retroperitoneal structures. The use of plain films may identify an obstructive pattern.

Treatment for MCL is complete surgical excision. Historically, drainage of the cyst or injection of sclerosing agents has been performed with suboptimal results and recurrence. There have been rare cases of spontaneous regression, which has raised the question of safety in observation for asymptomatic patients. However, definitive treatment in symptomatic patients remains complete surgical excision. Recurrence has been described in approximately 9.5% of patients, however is usually related to microscopic incomplete resection.
Infants with hypertrophic pyloric stenosis that present with a metabolic alkalosis require resuscitation prior to surgery, leading to an overall increased length of stay. We hypothesize that insurance status, as an indicator of socioeconomic status, is associated with a prolonged overall length of stay.

All infants presenting from home with pyloric stenosis and undergoing pyloromyotomy during the same admission over a 4-year period were reviewed. Patient demographics, imaging, lab data, and outcomes were collected. Standard univariate statistics were used to examine the association between socioeconomic factors and surgical outcomes.

186 patients were eligible for analysis. Compared to privately insured patients, patients with government insurance had longer postoperative (29 vs. 27 hours, p=0.008) and overall length of stay (3 vs. 2 days, p=0.019); time from admission to surgery did not differ. Pyloric length, pyloric wall thickness, and admission bicarbonate were similar between insurance sources. Weight at time of surgery (3.79 kg vs. 4.02 kg, p=0.023), but not birth weight or incidence of prematurity, was significantly lower in patients with government insurance.

Infants with hypertrophic pyloric stenosis that are socioeconomically disadvantaged have longer postoperative recovery and overall length of stay that are not accounted for by differences in markers of disease severity.
205. RECURRENT PAIN AFTER RESECTION FOR SLIPPING RIB SYNDROME: REPORT OF A DIFFICULT CASE
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Slipping rib syndrome (SRS) is a highly under-diagnosed disorder thought to be caused by a weak anterior attachment of the ribs to the sternum. This mal-attachment leads to hypermobile costal cartilages that irritate the intercostal nerve, apply strain on the intercostal muscles, and cause inflammation near the costal margin. The exact pathophysiology of this syndrome remains unknown. Though it has been over a century since this condition was first described, it is rarely referenced in medical or surgical textbooks, and many physicians today are not aware of SRS.

After obtaining written consent from the patients family a retrospective review was performed of the patients case. Information was gathered including presentation, diagnostic workup, and treatment records. Patient was followed through their treatment course and continues to be followed as treatment is ongoing.

The patients is a 16-year-old female gymnast presenting with left lateral chest pain for nine months. Medical history was significant for multiple shoulder subluxations and hypermobile joints. She claimed she could feel her ribs “click” in and out with each respiration, a symptom very characteristic of SRS. Imaging tests were confirmed normal, and physical exam revealed point tenderness over left ribs five though seven and a palpable left sixth costal cartilage. The patient was diagnosed with SRS and underwent surgical excision of a single mobile left sixth costal cartilage. Two weeks following the excision, the patient reported new rib popping and pain inferior to the prior operative site. Suspected of having an underlying connective tissue disorder, she was referred to geneticist and was diagnosed with Ehler’s Danlos Syndrome, Hypermobility type. Over the next few months, the patients pain progressed bilaterally, and six months after her first surgery, the patient underwent a modified Ravich procedure to remove bilateral costal cartilages seven through ten. At subsequent follow-ups, the patient reported continued pain on both sides of her ribcage, though less severe than before surgery. The patient’s pain has yet to be completely resolved, and after having an intermittent response to intercostal nerve blocks the patient has plans for undergoing a redo modified Ravitch procedure at another institution.

Conservative treatments provided temporary relief for many patients, but surgical resection of affected cartilages is the only treatment to date that has shown a definitive resolution of pain. This is exhibited in several case reports and series in the literature. The purpose of this case report is to spread knowledge and awareness of this rare syndrome and highlight a difficult case of slipped rib syndrome in a young teenager.
Intestinal duplication is a rare congenital abnormality with a reported incidence of 1 in 4500 births. They can be found to involve any portion of the gastrointestinal tract, from mouth to anus, and can be tubular or cystic in shape. Diagnosis of this abnormality is most commonly made before the age of two. The presenting clinical picture can vary greatly depending on the location, size, and type of the duplication. An intussusception, which occurs when one portion of bowel invaginates into an adjacent segment, is a common cause of bowel obstruction in children; it is rarely associated with an underlying anatomic abnormality in young children.

We report the case of a seven month old male who presented to the Emergency Department with a one-day history of emesis, bloody “red currant jelly” bowel movements, and inconsolability. Abdominal ultrasonography was consistent with an intussusception. Radiographic reduction of the intussusception was unsuccessful (Image 1). The patient was ultimately taken to the operating room where the intussusceptum was found just distal to the splenic flexure (Image 2). After complete manual reduction of the intussusception, close examination revealed a persistent 3x2x2 cm soft mass within the cecum. This mass was adjacent to but distinct from both the ileocecal valve and the normal appearing terminal ileum. Because this mass likely served as the lead point for the intussusception, an ileocectomy was performed. Pathologic examination ultimately identified the mass as a cecal duplication cyst.

Enteric duplications are a rare abnormality that typically present before the age of 2. They most commonly occur in the distal small bowel, followed by the esophagus and then colon. Colonic duplications are typically cystic structures found on the antimesenteric border of the cecum and present with obstruction secondary to compression, volvulus, or intussusception. The surgical management for cecal duplications consists of resection with primary anastomosis. In young children, intussusception typically occurs in the absence of a pathologic abnormality. The presence of an anatomic lead point begins to increase after 2 years of age. Meckel diverticula, polyps, and intestinal duplications are the most common lead points in these cases. In the absence of surgical indications such as peritonitis or pneumoperitoneum, initial management begins with radiologic reduction. This reduction is less likely to be successful in the presence of an anatomic lead point, as in the case presented here.

This case presents an exception to the generalization that intussusception in infants is usually a primary process. While intussusception secondary to a duplication cyst is exceedingly rare, it is important to consider an underlying anatomic lead point in the differential diagnosis of all patients with intussusception.
Kiosk 10 - Pediatric

207. MESOBLASTIC NEPHROMA RUPTURED IN UTERO
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Classic form mesoblastic nephroma is the most common renal tumor in neonates and infants younger than 3 months. These tumors are usually benign and can be treated with surgery alone. We describe a case of congenital mesoblastic nephroma with a sarcomatous component found to be ruptured in utero. Despite undergoing initial radical nephrectomy, our patient experienced rapid recurrence and ultimately required chemotherapy.

A male infant was born at 35 weeks gestation and admitted to the neonatal ICU at birth due to respiratory distress. Pregnancy was significant for polyhydramnios and a right renal mass identified on prenatal ultrasound. A CT scan was obtained demonstrating a 6.7 x 7.7 x 7.1 cm heterogeneous mass anterior to the right kidney as well as moderate fluid in the retroperitoneum and peritoneal cavity (Figure 1). Exploratory laparotomy on the second day of life revealed a centrally necrotic, ruptured tumor associated with large volume hemoperitoneum. Right radical nephrectomy was performed.

Pathology analysis revealed a mesoblastic nephroma with sarcomatous elements. The patient recovered well from surgery and was discharged home 10 days later. MRI at age 2 months demonstrated two large soft tissue masses in the in the upper abdomen consistent with hepatic tumor recurrence or metastasis. Thus the patient was started on sarcoma-based VAC chemotherapy. Interval MRIs demonstrated positive response to chemotherapy. The patient subsequently underwent liver mass resection at age 6 months. He continued to receive chemotherapy postoperatively and an end of therapy MRI showed no evidence of recurrence.

Due to patient age less than 3 months, the decision was made to perform close follow up after the initial resection rather than chemotherapy. This resulted in aggressive tumor recurrence. Our findings suggest that adjuvant chemotherapy may be indicated in cases of cellular type mesoblastic nephroma regardless of age.
Kiosk 10 - Pediatric

208. FETAL MIDGUT VOLVULUS PRESENTING AS NEONATAL BOWEL OBSTRUCTION.

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Rotational anomalies occur as a result of an arrest of normal rotation of the embryonic gut. Symptomatic malrotation in neonates occurs with a frequency of 1 in every 6000 live births. Midgut volvulus usually presents in the first year of life (60%), half of these cases presenting during the first month. Fetal midgut volvulus due to malrotation is a rare and often fatal congenital anomaly. Few cases have been reported describing this entity. We describe a single case of a premature infant presenting with early bilious emesis.

Our case describes a baby boy, born at 33 weeks and 6 days gestational age (GA), due to premature onset of labor, following a routine prenatal follow up to a 26 year old mother (Gravida 2, Para 1). His 20 week sonography was normal and consistent with GA. The baby was born via vaginal delivery, amniotic fluids were meconium stained, and the Apgar scores were 8 and 8 at 1 and 5 minutes. His birth weight was 2.278 kg. Shortly after birth, the baby presented with bilious emesis and abdominal distention. A nasogastric tube was placed and an abdominal plain film was obtained. This x-ray demonstrated prominently distended loops of small bowel with cutoff in the region of the mid jejunum and no clear-cut gas beyond that point, suggestive of small bowel atresia. An Upper GI was also performed which demonstrated the stomach, the pyloric channel and the duodenal-jejunal junction in normal position. Distended air-filled loops of proximal small bowel. Overall findings were suggestive of a jejunal atresia. No other congenital anomalies were present.

In our course of treatment we took the baby to the OR for an exploratory laparotomy. Intraoperatively, we found significantly dilated jejunum ending blindly about 10 cm distal to the 4th part of the duodenum and no distal small bowel was identified. We identified a small and unused colon, its proximal blind end, most probably transverse colon, lying in proximity to the jejunal blind end. No midgut was observed. Due to the scarcity of bowel we decided to perform a primary anastomosis despite the large discrepancy of small and large bowel caliber. The baby tolerated the procedure well. Postoperatively the baby has been recovering well from surgery, TPN dependent, minimal stool output, awaiting his next surgery which will include a gastrostomy placement and a possible STEP procedure.

Fetal midgut volvulus may occur at any point throughout intestinal rotation. Early fetal events are more likely to be associated with hydrops fetalis and abortion. Whereas, third trimester intrauterine midgut volvulus is more likely to end in fetal distress and premature delivery induced by the activation of hypothalamic and adrenal hormones. This pathology, leading to a state of short bowel syndrome would entail long term parenteral nutrition dependence, and the eventual need for bowel transplant, should be considered during surgical planning and needs to be thoroughly discussed with families.
Kiosk 10 - Pediatric
209. THE UNKNOWN DANGER OF THE SAFETY CAR SEAT
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The proper use of age and size-appropriate child restraints (safety car seats, booster seats, and seat belts) saves lives. In children younger than one year of age who are involved in motor vehicle accidents, the use of safety car seats decreases mortality by 71%. In children 1-4 years of age, safety car seats and booster seats result in a 45% reduction in injury compared to seatbelts alone. Despite the clear benefits of a properly installed safety seat, prolonged immobilization of infants and children can be dangerous. We present the case of a 6 month old infant male who developed a sacral pressure ulcer following a family road trip.

A 6-month old infant male was referred to the pediatric surgery clinic after his mother noted skin changes to the sacral area following a family vacation. The parents stated that the patient was properly restrained in a safety car seat for the duration of the 14-hour drive. The longest period of time without stopping was 8-9 hours. Three days after returning from the trip, the patient’s mother noticed a chevron shaped dark area of skin on his buttocks. This area then developed into a 6x2 cm stage III sacral decubitus ulcer spanning the gluteal cleft.

The development of the patient’s pressure ulcer was not deemed to be related to neglect according to Child Protective Services. With the assistance of wound care specialists, he was treated for several months with enzymatic debridement and dressing changes until the wound healed completely.

Infants and children with immobility, neurologic impairment, impaired perfusion, poor nutritional status, hypovolemia or abnormalities in weight have a well-known increased risk for pressure injury to the skin, which can result in pain, disfigurement, and increased mortality. The development of pressure ulcers from safety car seats in otherwise healthy and neurologically normal infants and children is rare and has not been previously reported in the medical literature. Safety car seats are life-saving devices, and their use should always be encouraged. Pressure ulcers are preventable injuries. A recommendation for frequent breaks during long trips should be included in any instructions or anticipatory guidance provided to parents regarding safety car seat use.
Disorders of the umbilicus have a broad differential that include defects of the abdominal wall, urachus, and omphalomesenteric duct. Omphalomesenteric duct anomalies can occur in about 2% of the population, and include umbilical sinus, cyst, or fistula, as well as the more common Meckel’s diverticulum [1]. Defects noted at birth often require early surgical intervention. Diagnosis is usually made with physical exam, however, ultrasound and/or fluoroscopy can be used to facilitate an unusual exam. Only two cases of an omphalocele in association with an omphalomesenteric duct fistula at birth have been previously described.

A 34 week gestation male neonate presented with a fleshy, T shaped mass protruding from the umbilicus through the inferior edge of a small omphalocele defect. He was urgently taken to the operating room for exploration. After opening the omphalocele sac, an omphalomesenteric duct fistula with ileal prolapse was identified. The prolapse was reduced and the bowel was noted to be viable. A short segment of ileum was resected at the level of the defect and a hand-sewn anastomosis performed. Malrotation was also noted and a Ladd’s procedure was performed. The omphalocele defect was repaired during closure of the abdomen. Enteral tube feeds were slowly introduced with return of bowel function on day 7. The patient had slow progression increasing PO intake to a level sufficient to sustain nutrition which prolonged his post op course. However no major complications from surgery occurred and he was discharged home on post operative day 27.

The development of the digestive system begins around the 3rd week of gestation and is highlighted by a 270-degree counterclockwise rotation between the 6th -12th weeks. A connection between the yolk sac and the intestinal tract known as the omphalomesenteric duct persists during the 4th -9th weeks. Normally this duct involutes but in an estimated 2-3% of the population a portion or entirety of the duct remains patent [4]. The well-known Meckel’s diverticulum represents a persistence of the omphalomesenteric duct at the enteric end with no connection to the umbilicus [2]. Persistent patency at the umbilicus without connection to the bowel results in a blind ending sinus tract which continues to produce drainage from gastrointestinal mucosa and may present acute infection [1]. An omphalomesenteric duct cyst may occur when only the central portion between the umbilicus and ileum remains patent. Complete patency of the duct results in a fistula draining enteric contents at the umbilicus [3], and may prolapse as in our case. An omphalomesenteric duct that persists but is not patent results in a fibrous band tethering the ileum to the umbilicus and may become a lead point for small bowel volvulus. All symptomatic or suspected cases related to an omphalomesenteric duct remnant require exploration and surgical repair.

Our case is a rare presentation of a prolapsed omphalomesenteric duct defect with associated omphalocele. There are much more common presentations of omphalomesenteric duct defects but by highlighting such a rare case we hope to facilitate early diagnosis and treatment in similar patients.
Trauma is the leading cause of death during the functional years of life, and some of the times it could be prevented. Our purpose is to determine the incidence of traumatic-related mortalities by injury mechanism using the National Sample Program (NSP) provided by the National Trauma Database (NTDB), to calculate Years of Potential Life Lost (YPLL) by mechanism and evaluate differences in outcomes in order to propose preventive measures.

Review of prospectively collected data from trauma patients admitted to trauma centers across the US using the NSP 2013 data provided by the NTDB. Patients were divided in different groups by: mechanism of injury, by age (<= 65 years, and > 65 years), and by outcome (mortality). Our primary outcomes included YPLL (defined as the numerical difference between the age of death and 65 years) and fatality mechanism.

There were 172,386 trauma patients included in this analysis, 96.5% survived their injury while 3.5% expired. Numerically 5,473 of the 172,386 patients died of their traumatic events. In the 5,473 patient that died and grouped by mechanism; falls was the leading cause of death (42.7%), followed by MVC 30.5%, next 13.8% of the patients died due to penetrating injuries, then 6.8% expired from “other” traumatic conditions, while 1.9% died of burns. Patients 65 years and younger represent the group with years of potential life lost and accounted for 53% of the total deaths (2,903 deaths). In the younger group MVC was the leading cause of death accounting for 41% of the patient deaths, (average age at death was 38.8 years). The 2nd leading cause of death in the younger group was penetrating injuries and accounted for 23.7% of the deaths (average age was 33.0). Falls was the 3rd leading cause of death in the younger group, accounting for 17.9% of the deaths (average age was 51), the category “other” and burns were the 4th and 5th leading cause of younger deaths, accounting for 15.2% and 2.1% respectively. After calculating the total YPLL, there were 31,152 YPLLs from MVC (ave of 26.2 years lost per pt), there were 22,048 YPLL from penetrating injuries (ave of 32 years lost per pt), there were 7,294 YPLLs from falls (ave of 14 years lost per pt), there were 10,696 YPLLs from “other” (ave of 24.2 years lost per pt), and 1,172 YPLLs from burns (ave of 18.9 years lost per pt). For people more than 65 years old the most frequent cause of injury and death was fall (71.5%).

Knowledge of the most frequent causes of death in patients 65 years and younger can help drive preventative and treatment plans. Based on our findings, the leading causes of death for people 65 years and under years are are MVCs, penetrating injuries, and falls. These three mechanisms accounted for 84% of the years of potential life lost from all traumatic causes. A trauma prevention program aimed to educate the affected population to decrease the number of fatalities and years of potential life loss should be considered.
### Patients 65 years old and younger

<table>
<thead>
<tr>
<th>Mechanism of Injury</th>
<th># of Patients</th>
<th>% of Total Deaths</th>
<th>Average Age at Death</th>
<th>Total YPLL</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVC</td>
<td>1,189</td>
<td>41.00%</td>
<td>38.8</td>
<td>31,152</td>
</tr>
<tr>
<td>Penetrating</td>
<td>689</td>
<td>23.70%</td>
<td>33</td>
<td>22,048</td>
</tr>
<tr>
<td>Fall</td>
<td>521</td>
<td>17.90%</td>
<td>51</td>
<td>7,294</td>
</tr>
<tr>
<td>Other</td>
<td>442</td>
<td>15.20%</td>
<td>40.8</td>
<td>10,696</td>
</tr>
<tr>
<td>Burn</td>
<td>62</td>
<td>2.10%</td>
<td>46.1</td>
<td>1172</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2,903</strong></td>
<td><strong>100</strong></td>
<td><strong>40.1</strong></td>
<td><strong>72,362</strong></td>
</tr>
</tbody>
</table>
Chest injury is the second leading cause of death in blunt injury. The number of fractured ribs, bilateral rib fractures, pulmonary contusion and flail chest have been cited as risk factors for poor outcomes including mortality. The definition of radiologic flail chest, the presence of 3 or more contiguous multi-segmented rib fractures, and of clinical flail chest, the presence of paradoxical chest wall motion, are not clearly differentiated in published studies. Our study was designed to evaluate the relationship of radiologic and clinical flail chest to outcomes in patients with severe blunt chest injury.

An IRB approved study was conducted at a level 1 trauma center using the trauma registry. Adult patients with blunt chest injury admitted between Jan 1, 2014 and Jun 30, 2016 were identified. Patients with hospital length of stay (HLOS) > 3 days and 3 or more rib fractures were selected for analysis. Demographic and clinical characteristics present in the trauma registry were supplemented with chart review. Injury characteristics including the number and laterality of rib fractures, displacement, total body fractures, hemothorax, pneumothorax and days of mechanical ventilation, were compiled. Information regarding radiologic flail chest, clinical flail chest and the presence of paradoxical chest wall motion were extracted from the patient records. As the data was not normally distributed Wilcoxon scores were used to evaluate the effect of flail chest on HLOS and intensive care unit length of stay (ICU LOS). Fisher’s Exact Test was used to evaluate the influence of flail diagnosis on mortality. All analyses were conducted with SAS statistical software.

387 patients with an overall mortality of 3.88% were studied with and mortality rate was not significantly different in patients with clinical and/or radiologic flail chest diagnosis (n=18) was (5.56%) compared to patients without flail (3.62%), p=0.52. LOS in patients with and without flail chest were compared and patients carrying a diagnosis of flail chest were found to have a statistically significant increase in both HLOS and ICU LOS (p=0.0002, p<0.0001). Other injury characteristics increasing risks of poor outcomes including number of rib fractures, laterality and displacement were confirmed. Of the 18 patients diagnosed with flail chest, five patients did not meet the radiologic definition. No flail chest patient had paradoxical chest wall motion described in their record, however, two patients were described with chest wall crepitus and one with chest wall deformity.

While our study of patients with severe chest wall injury showed no relationship between the diagnosis of flail chest and mortality, a significant increase in both ICU and HLOS was present in the flail chest group. Our results differ from studies where paradoxical chest wall motion is used to define the diagnosis. The adoption of the radiologic flail chest diagnosis into clinical practice has obfuscated the importance of clinical flail chest with paradoxical chest wall motion and associated high mortality.
Kiosk 1- Trauma/Critical Care
214. ELDERLY FALL PATIENTS NEED A URINALYSIS
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In our institution, there has been an effort to limit a urinalysis (UA) to patients who complain of urinary symptoms, such as dysuria or frequency, to avoid inappropriate treatment of asymptomatic pyuria. In adults 65 years and older, falls are a frequent presenting complaint in patients seeking medical care. We hypothesize that falling is a symptom of “asymptomatic pyuria” in elderly patients who present to the Emergency Department (ED) after a ground-level fall.

We performed a retrospective clinical study at our Level 1 trauma center. We identified adults ≥ 65 years of age who presented to the ED from November 2015 through August 2016 using data obtained from the trauma registry and ED logs. We included patients who had a UA in the ED visit. We divided the patients into 2 groups. Group 1, the Fall Group, consisted of those who sustained a ground-level fall; Group 2, the Non-Fall group, included those patients seen in the ED with complaints of weakness, stroke, TIA, seizure, and/or MVC. We collected demographics, comorbidities and UA results. We defined a positive UA as pyuria (> 10 WBCs per high-power field), the presence of leukocyte esterase (LE) and/or nitrites. We also collected information on the UAs that subsequently were cultured. A positive urine culture was defined as >100,000 CFU (colony forming units). We looked for documentation of urinary tract symptoms in the medical record. We compared the Fall group to the Non-Fall group using Chi-square and logistic regression analysis to control for age, gender, and co-morbidities.

We collected data on 721 patients. There were 151 patients in the Fall group and 570 patients in the Non-Fall group. Both groups were mostly female (59%). The average age was 81 ± 9 years in the Fall group and 80 ± 8 in the Non-Fall group, (NS). There was a statistically significant difference for pyuria and LE and/or N-pos between the groups. Thirty-four percent of the patients in the Fall group had pyuria compared to 23% in the Non-Fall group (p< 0.02). The Fall group had 40% LE and/or N-pos in the UAs compared to 30% in the Non-Fall group (p< 0.03). We looked for documentation of urinary tract symptoms, but these were recorded in less than half of the medical records of the study patients. Adjusted odds ratios were significant for pyuria (OR 1.83; CI 1.16-2.89) and LE and/or N-pos (OR 1.60; 95% CI 1.04-2.49) after controlling for age, gender, and co-morbidities. The odds of a positive urine culture were 93% in the Fall group for UA’s with pyuria and LE and/or N-pos (CI 1.21-3.09). In the Fall group, 94% of cultures were positive versus 80% in the Non-Fall group.

Our data show a much higher incidence of pyuria in patients ≥ 65 seen in the ED who fell compared to patients ≥ 65 seen in the ED for other reasons. Patients may not complain of any urinary symptoms, so symptomatic pyuria or UTI may not be suspected. The patient may not associate feeling ill with a urinary infection causing weakness and contributing to falling. Our data suggest that a fall could be a symptom of symptomatic pyuria or UTI, rather than incidental, asymptomatic pyuria. In order to identify and treat those patients, we recommend that all patients who are ≥65 years have a UA in the initial workup of a ground-level fall.
Kiosk 1- Trauma/Critical Care

215. RETAINED BULLET OF THE MEDIASTINUM

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Retained foreign body of the thorax can pose diagnostic and management challenges. Traditionally, indications for a bullet removal from the mediastinum are any symptomatic missiles or bullet identification during an otherwise indicated operation. Because bullets often cause extensive artifacts on imaging and this is a relatively rare presentation, the choice to remove retained missiles is largely dependent on individual clinical judgment.

A 22-year-old man presented to trauma bay after sustaining multiple gun shot wounds to the left thoracoabdomen and left scapula. He was hypotensive, tachycardic, with decreased had diminished breath sounds. A left chest tube was placed for a hemothorax. Chest CT demonstrated a retained bullet in the mediastinum at the level of pulmonary artery bifurcation. Given the location of the bullet near the heart and critical vascular structures, he was taken to the OR with thoracic surgery. Left thoracotomy, mediastinal exploration, bullet removal, and bronchoscopy were performed. There were no injuries to the airway or lung parenchyma. A retained bullet was identified within the transverse sinus without any injuries to the surrounding structures. He had an uncomplicated ICU course and was transferred to the general surgical floor where he continued to receive care with orthopedics service and physical therapy. On postoperative day 11, his chest tube was removed and he was discharged home on postoperative day 14. On his follow up visit, he continues to have no respiratory complaints with stable radiographic findings.

Management of retained mediastinal bullet is controversial. Symptomatic missiles are an indication for removal. Those with asymptomatic presentation still pose a risk to bullet migration into the great vessels. Whether each case should proceed with operative management should be based on concomitant injuries and surgeon’s clinical decision.
Most victims of blunt trauma suffer multi-system injuries. During their treatment in the hospital, members of their team include the trauma surgeons, orthopedic surgeons, neurosurgeons, and interventional radiologists. Although each service has their respective injuries foremost in mind, it is the responsibility of the trauma service to effectively coordinate care and implement the subspecialists’ plan when it is safe for the patient in the grand scheme of their injuries and care plan.

A 29-year-old female presented following a high-speed motor vehicle collision. On arrival, she was hypotensive, tachycardic with a Glasgow Coma Scale score of 8. She was intubated and focused abdominal sonography for trauma (FAST) was positive. She was taken for damage control laparotomy for a Grade 4 liver injury, followed by liver embolization. Her abdomen was left open. CT of the cervical spine showed a C1 hangman’s fracture, although she was neurologically intact. She was successfully managed with a Miami J collar. CT angiography of the neck and chest showed bilateral vertebral artery dissections with an aortic hematoma. Her aortic injury was managed with blood pressure control until she could safely get a thoracic endograft for her blunt aortic injury on hospital day 12, due to her open abdomen. She required multiple orthopedic procedures for lower extremity open fractures. She was successfully discharged on hospital day 58.

A multi-disciplinary approach following blunt polytrauma require proper communication and teamwork.
Rectus sheath hematoma (RSH) is an increasingly common problem due to the increasing use of anticoagulation for medical conditions including atrial fibrillation, vascular bypass, and mitral valve replacements. Rectus sheath hematomas are frequently misdiagnosed because of the non-specific clinical presentations and can mimic other causes of abdominal pain. While relatively infrequent, it is usually managed conservatively and has a generally favorable outcome [1]. We report the first case of a rectus sheath hematoma extending into the retroperitoneal space resulting in abdominal compartment syndrome.

A 49-year-old female presented to the emergency department with a one-day history of abdominal discomfort. She had a history of factor V Leiden mutation with multiple pulmonary embolisms (PE) and deep venous thrombosis (DVT) for which she was on long-term warfarin therapy. On abdominal examination she was distended and tender in all four quadrants. Her hemoglobin (Hb) was 4.7 g/dl. Her INR was 1.5, which reversed and was transfused five units of packed cells. An emergency contrast CT scan of abdomen and pelvis showed a large right-sided rectus sheath hematoma extending into the retroperitoneum (Figure 1).

The following day the patient’s urine output declined progressively and she subsequently developed acute renal failure. Her intra-abdominal bladder pressure was noted to be 31 mmHg. The patient was emergently taken to the operating room for abdominal decompression. 2 liters of organized clot and blood was removed which had dissected into the retroperitoneal space bilaterally with cephalic extension to the diaphragm. Patient was taken back to the operating room within 24 hours for re-exploration and abdominal fascial closure. She recovered very well from her surgery.

Rectus sheath hematoma is an increasingly common clinical condition in our hospitals due to the increasing use of anticoagulant therapies for various purposes among our patients. Treatment of spontaneous rectus sheath hematoma is generally conservative. For continued bleeding, interventional radiologic identification and subsequent embolization is an effective option. Surgery usually involves significant morbidity and is considered a technique of last resort [2]. An overall review of the literature shows that patients with RSH who develop ACS had poor outcomes if they underwent conservative management. Jafferbhoy SF et al. reported case of development of ACS in middle-aged male with RSH secondary to being on Coumadin for aortic valve replacement. He did not undergo surgery as it was felt that this would release the tamponade effect. The patient deteriorated overtime and then expired. In comparison there was no mortality among the patients who underwent surgery for ACS from rectus sheath hematoma or retroperitoneal hematoma [3,4] In conclusion, a large rectus sheath hematoma is a severe and potentially fatal complication of anticoagulant therapy. These patients require constant monitoring of hemodynamic and ventilatory parameters since they are at risk for developing ACS. We should have a lower threshold of taking these patients to the operating room, especially in patients with extension of the rectus sheath hematoma into the retroperitoneal space.
Kiosk 1- Trauma/Critical Care

218. USE OF AEROSOLIZED ANTIBIOTICS IN GRAM-NEGATIVE VENTILATOR-ASSOCIATED PNEUMONIA IN TRAUMA PATIENTS

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Ventilator-associated pneumonia (VAP) is a frequent complication of critical illness associated with significant morbidity (ventilator days, ICU days and cost) and a 2-fold increase in mortality in trauma patients. Despite younger, healthier patients, Gram-negative VAP continues to be particularly virulent among the trauma population. Multi-drug resistant strains of both Acinetobacter (AB) and Pseudomonas (PA) as causative VAP pathogens are becoming increasingly common. Aerosolized antibiotics (AA) achieve high alveolar concentrations and provide valuable adjuncts in the treatment of VAP. This study examined the impact of AA in the treatment of VAP in trauma patients.

Patients with either AB or PA VAP ($\geq10^5$ CFU/mL in BAL effluent) over 10 years treated with AA were stratified by age, severity of shock and injury severity. Outcomes included ventilator days, ICU days, hospital length of stay, antibiotic days, VAP recurrence and mortality. A matched (2:1) control group (age, ISS and causative pathogen) of VAP patients treated without AA was used for comparison.

120 VAP episodes (31 AB and 89 PA) were identified in 100 patients: 76 (76%) men and 24 (24%) women (mean age 44, mean ISS 29, 91% blunt). Aerosolized tobramycin, amikacin, and colistimethate were used in 85, 17 and 18 episodes, respectively. The use of AA was most commonly associated with VAP recurrence (48%) and persistent infection (35%). Microbiologic resolution was achieved in all AA-treated patients. There was no difference in mortality (18% vs 17.8%, p=0.99) and no antibiotic-related complications in either group.

Combined with systemic therapy, AA broaden the spectrum of empiric therapy and potentially provide synergistic activity. In addition, they serve as valuable adjuncts in select patients with minimal risk of antibiotic resistance and/or systemic complications. AA should be reserved for either VAP recurrence or persistent infection.
Kiosk 1- Trauma/Critical Care  
219. PERI-PROSTHETIC FEMUR FRACTURES ARE BAD ACTORS  
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With increased longevity, there is a rise in arthroplasty patients with peri-prosthetic fractures (PPF). Comparison of these femur fractures with non-PPF & the significance of patient characteristics on outcome in these situations have not been extensively studied. We hypothesize that PPF present a more morbid clinical injury picture.

Retrospective chart review from 2010 - 2016 identified patients ≥ 55 with traumatic PPF, and non-PPF femur fractures. Demographic data, co-morbidities, body mass index (BMI), injury severity score (ISS), & mechanism of injury (MOI) were collected. Outcomes included mortality, serious complication (wound infection, pulmonary embolus, deep vein thrombosis, pneumonia, sepsis & respiratory failure), hospital length of stay (HLOS), & discharge home. The groups were compared for clinical characteristics & outcomes using analysis of variance (ANOVA) & covariance (ANCOVA) for continuous variables, chi-square & multiple logistic regression for categorical variables.

The sample included 29 PPF (Group I) & 84 non-PPF (Group II) patients. Group I were older (81.0 vs 74.8 yrs, p<.012), with more total comorbidities (89.7% vs 71.4%, p<.05) with dementia being more common (34.5%, p<.02). Both groups were predominantly female, with falls being the dominant MOI; there were no differences in ISS or BMI. Group I patients had more complications (27.6% vs 3.6%, p<.001) & death (10.3% vs 1.2%, p<.05). Controlling for age & comorbidity, odds of serious complication was 6.7 times higher for PPF. Group I patients also had longer HLOS (7.41 vs 5.95 days, p<.019). Groups were similar for discharge home (20.7% vs 19.3%). In the Group I, both age (OR 1.3, CI 1.02-1.39) & obesity (OR 13.2, CI 1.0-175.1) were independent predictors of poor outcome.

Though occurring in older & sicker patients, PPF present a clinically worse injury than non-PPF resulting in poor outcomes. Clinical & operative strategies to improve this require exploration.
Traumatic lung herniation can pose a therapeutic conundrum. Lung herniation is described as lung tissue that passes outside of the thoracic cage, often through an intercostal space, and is a rare but serious complication from blunt trauma to the chest wall. The inciting injury must generate a large amount of intrathoracic pressure in order for the lung to herniate. Contact with the chest wall at multiple points of impact, such as from bicycle handlebars (a ‘handlebar hernia’) or three-point restraints from an automobile seatbelt, is often responsible for causing such herniation. In the acute setting, it can be difficult to determine the proper management. In patients presenting with other injuries, such as multi-organ trauma patients, it is challenging to determine if conservative management will be sufficient to treat the patient. Due to multiple comorbidities and presenting symptoms, the patient described in this case report underwent operative management to treat his pulmonary herniation.

A 48-year-old male presented after he was hit by a car while riding his bicycle. He was hemodynamically appropriate but with respiratory and neurologic compromise requiring intubation. CT revealed herniation of the right lung through chest wall and likely diaphragmatic rupture. At celiotomy the lung was reduced through the diaphragmatic hernia and diaphragm primarily repaired. Primary closure of the thoracic defect was completed through an anterolateral thoracotomy. Follow up CT demonstrated stable thoracic anatomy.

In patients who present obtunded from other injuries, the physician must rely on physical exam and radiologic adjuncts to make the diagnosis of a pulmonary herniation. Initial plain chest radiographs are often unable to detect pulmonary herniation as findings can be very subtle. Previous reports have shown, however, that chest radiographs may more clearly show a pulmonary herniation when taken while a patient performs a Valsalva maneuver.

Lung herniation is a rare finding in a patient presenting after trauma, and in those with polytrauma, the management paradigm is ill defined. As physician expertise and experience with these injuries evolves, the timing, management and operative approach will require further examination.
Kiosk 2- Trauma/Critical Care

221. NON-OPERATIVE MANAGEMENT OF INTRAABDOMINAL FOREIGN BODIES: SELECTED CASES INVOLVING RECURRENT SELF-HARM

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Traumatic intraabdominal foreign bodies pose an interesting challenge in the setting of a “hostile” abdomen. Typical management involves operative intervention for removal of the foreign body and assessment and repair of any intraabdominal injuries that may have occurred. However, when faced with a difficult dissection due to numerous prior abdominal surgeries, operative intervention may arguably risk further injury compared to observation alone. We present three cases where successful non-operative management was performed.

Three select cases at our institution as presented in the Results section.

Patient 1 is a 45 year old male with a history of bipolar 1 disorder and depression who presented to the emergency department following a self-inflicted penetrating abdominal injury with a writing pen two days prior. The patient had a history of multiple prior self-inflicted abdominal injuries resulting in several exploratory laparotomies. CT imaging demonstrated a retained pen adjacent to the transverse colon without extravasation of contrast. The patient was admitted for observation with serial abdominal exams and labs and subsequently discharged the following day after an uneventful hospital course. Patient 2 is a 32 year old male with a history of depression, schizophrenia, and bipolar 1 disorder who presented to the emergency department after stabbing himself in the abdomen with a sharpened toothbrush and writing pen. He had undergone three exploratory laparotomies for removal of foreign bodies in the past. Imaging showed the pen and toothbrush within the abdominal cavity. An exploratory laparotomy was performed and the toothbrush was removed; however, the pen was left in place due to the risk of injury from further dissection. His postoperative course was uneventful. Patient 3 is a 42 year old male with a history of schizophrenia who presented to the emergency department after inserting a paper clip and writing pen into his abdomen. The writing pen was partially exposed and removed in the trauma bay. The paper clip was found to be intraperitoneal but with no extravasation of PO contrast on imaging. The patient was observed for 24 hours and had an uneventful hospital course.

Self-inflicted abdominal injuries with retained foreign bodies are a rare presentation in the trauma setting. These cases are strongly linked with personality disorders and often involve recurrent episodes of self-inflicted injuries, frequently in the setting of acute psychosis or acts of malingering. It has been our experience with a select group of patients from a local prison hospital that recurrent operative intervention leads to increasingly prolonged and difficult dissections, increasing the likelihood of enterotomies or further injury. Non-operative management therefore avoids the risk of a potentially challenging and risky operation. However, successful non-operative management involves a period of observation as well as careful patient selection guided by imaging and physical exam findings. Our outcomes show that non-operative management is a viable and likely beneficial approach to the management of this unique patient population.
Mild Traumatic Brain Injury (MTBI) affects approximately 1.1 million people in the US annually. MTBI, as defined by the East MTBI guidelines, includes acute alteration in brain function caused by blunt external force, a GCS 13-15, loss of consciousness for 30 min or less, posttraumatic amnesia less than 24 hours and a negative CT of the head. In 2012 the updated guidelines made the following recommendations: CT scan of the head should be performed on patients with suspected brain trauma, patients with MTBI and negative CT can be discharged from the ED if they have no other injuries patients on Coumadin should have their INR checked and reversed if supratherapeutic and should be admitted for observation. While these guidelines are loosely followed, at our single institution there are still many instances in which patients are observed overnight due to loss of consciousness without other injuries. The purpose of this study was to examine cases in which patients were observed despite meeting discharge criteria according to the East MTBI guidelines and determine if any subsequent intervention was required. Additionally, patients that were discharged according to the same criteria were reviewed for any negative sequela.

This was a retrospective study of patients with loss of consciousness in Geisinger Wyoming Valley’s trauma registry from January 2015 to July 2016. We reviewed all patients who were admitted for observation despite meeting the criteria for discharge as well as patients who were appropriately discharged according to the guidelines. We reviewed and examined admitting diagnosis, mechanism of injury, age, race, sex, Glasgow Coma Scale, medications, admitting physician, length of stay, need for surgical intervention, and return to ED within 30 days for discharge. Binomial proportions and exact confidence intervals were used to assess the outcomes of further findings as well as those who returned within 30 days.

Forty-six patients were admitted for observation despite meeting criteria for discharge and 11 out of the 46 patients (24%) required outpatient follow up for neuropsychology or speech pathology. Only 2 of the 46 required any additional intervention with one patient ultimately requiring transfer for pediatric neurology evaluation and a second patient requiring cardiology evaluation. Sixty-one patients were appropriately discharged home per the guidelines. We found that 100% (95% CI [92 – 100%]) of the patients that were observed had no additional findings. When looking at the patients who were discharged we found that 89% (95% CI [78 – 95%]) did not return to the ED within 30 days.

At this time, the East MTBI guidelines are not strictly being followed at our institution. On occasion, the Geisinger Wyoming Valley Trauma Department is still admitting patients for observation with a GCS of 13 or higher, with a negative initial CT scan. Follow up with physical therapy, occupational therapy and speech therapy could potentially be done as an outpatient obviating the need for overnight observation. The data presented herein supports use of the East MTBI guidelines as best practice.
Traffic (MVC) fatalities in the young are a problem throughout the United States, but this is of particular concern in the South. Furthermore, this is a specific tragedy in Mississippi, where the MVC overall death rate and the MVC death rate among young drivers is the highest in the nation. The current analysis was designed to examine this trend and to explore possible correlating factors.

A retrospective review was performed of overall traffic fatalities, as well as MVC fatalities among drivers under age 35, across the United States, using latest data available from the National Center for Statistics and Analysis as well as the World Life Expectancy website. Data regarding deaths were reported per 100,000 population, and the data were further stratified by U.S. Census Region and by state. Population density was calculated as persons per square mile; the percentage of the population in each state living in areas defined as “rural” by the U.S. Census Bureau was expressed as a percentage; and, the median household income was expressed in $1000 increments.

There was a statistically significant difference between U.S. Census Regions in both overall MVC deaths and MVC deaths among young drivers; the greatest number in both categories was in the South, and the state with the single largest value was Mississippi. There was an inverse linear relationship between population density, as well as median household income, and both total and young MVC deaths; this was true across all regions but was most pronounced in the South and statistically significant in Mississippi. There was a direct linear relationship between rural population percentage and both total and young MVC deaths; this, too, was most pronounced in the South and statistically significant in Mississippi.

Though the MVC death rate, especially among the young, is a significant problem across the United States, this is a particular problem in the South. Furthermore, Mississippi seems to have a larger problem with this than any other state or region in the nation. This increased rate across the South appears to be a function of population density, rurality, and indigence, especially in Mississippi. Educational and driver safety efforts should be redoubled across the South—and especially in Mississippi—in an effort to stem this tragic tide.
224. INFLUENCE OF GEOGRAPHY ON THE VIOLENT DEATH RATE ACROSS THE UNITED STATES

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Much has been written about the rate of violent death in U.S. cities; that rate has been generally reported as dropping in recent years. The rate varies significantly across the United States, however, and this is true regardless of the mechanism of injury. It has also been proposed that there is a direct relationship between rurality and the homicide rate. The current analysis examines the influence of geographic location on the homicide rate across the U.S.

A retrospective review was performed of all homicides across the United States, both firearm related and non-firearm related, for the year 2014. Data regarding deaths were reported per 100,000 population, and the data were further stratified by U.S. Census Region and by state. Population density was calculated as persons per square mile; the percentage of the population in each state living in areas defined as “rural” by the U.S. Census Bureau was expressed as a percentage; and, the median household income was expressed in $1000 increments.

The South had the highest rate of both firearm related and non-firearm related violent death when compared to other Census regions. States of the Deep South—Louisiana, Mississippi, Alabama, and Arkansas—had the highest rates in both categories. There was no relationship between the rate of violent death and either population density, percentage of rural population, or median household income.

The increased homicide/violent death rate across the South does not appear to be a function of any of the standard associated parameters. Rather, it appears to be a function of geographic location in the U.S. and is most pronounced in the Deep South. This suggests a cultural rather than a demographic cause for this disparity, and this fact should drive further discussion and education in that region of the country.
Kiosk 2- Trauma/Critical Care

226. INSTITUTIONAL REVIEW OF LONGTERM POST-OPERATIVE HARDWARE COMPLICATIONS AFTER OPEN RIB FIXATION

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Rib fractures after chest wall trauma are a common injury; however, they carry a significant associated morbidity and mortality. Rib plating as definitive treatment is gaining popularity for blunt or penetrating injury. As this treatment methodology continues to evolve and become widely accepted, there exists limited literature on the longterm sequelae of this intervention - specifically incidences of periprosthetic fractures, hardware displacement or migration, heterotypic ossifications or spurring, or nonunion. Controversy exists in the Orthopedic literature regarding the necessity of routine explantation after plate fixation due to the concerns of the aforementioned. We hypothesis that at one-year follow up, there are no complications associated with hardware failure or malfunction.

A total of 153 patients were reviewed who underwent open rib fixation at our institution from April 2009 to July 2017. Rib fixation was performed using Synthes (N=146), RibLoc (N=12), BioMet (N=3), KLS (N=1). Nine patients in our review underwent bilateral open rib fixation. Two cases required hardware explantation due to infection. Six of 153 patients had repeat chest wall trauma after undergoing fixation and none were discovered to have periprosthetic fractures or hardware displacement (average time to repeat trauma was 2.3 years). Forty-five of the 120 patients one year or more out from rib fixation had plain radiographs available for review; average time of plain radiograph 1.6 years (min=1.0, max=7.6). There were zero cases identified with any longterm unwanted skeletal issues at oneyear follow up.

Rib fixation is becoming a more widely accepted treatment methodology for chest wall trauma. Advantages in outcome improvement is an area of continued research. Our review suggests routine hardware explantation is not necessary after rib fixation for chest wall trauma, as patients with implanted rib plating systems for osteosynthesis appear to have no unwanted or longterm sequelae.
Kiosk 2- Trauma/Critical Care  
227. FALL IN THE GRADUATED GERIATRIC POPULATION: PREDICTING ACUTE TRAUMATIC FINDINGS ON COMPUTED TOMOGRAPHY SCANNING OF THE HEAD  
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Fall in the geriatric patient has been well studied. Height of, GCS at time of evaluation for, and anticoagulation use prior to, fall are all risk factors for acute traumatic findings on computed tomography head (CTH). However, the average life expectancy is rapidly rising. These studies may be bias as they are not isolating out an emerging subset of this population, those living past the average life expectancy. This study examines in isolation those exceeding the average life expectancy to see if the same risk factors for acute traumatic findings on CTH apply. These individuals are coined the graduated geriatric patient(s) (GGP) and are defined as those of age 81 years or older.

The trauma registry of a community hospital from July 2012- December 2016 identified individuals 81 years of age or older who fell. Excluded were those who did not receive a CTH. The variables height of fall, GCS at time of presentation, and use of anticoagulation were compared against CTH results.

Those who fell less than 3 feet, 63% had a negative CTH and 37% had a positive CTH. Those who fell 3-15 feet, 44% had a negative CTH and 56% had a positive CTH. Those who fell more than 15 feet, 0% had a negative CTH and 100% had a positive CTH (p-value 0.008). GCS of 8 or less noted a negative CTH in 43% of cases and a positive CTH in 57% of cases. GCS of 9-12 noted a negative CTH in 50% of cases and a positive CTH in 50% of cases. GCS of 13-15, 60% of patients had a negative CTH and 40% of cases had a positive CTH (p-value 0.542). For those not on aspirin, 62% had a negative CTH and 38% had a positive CTH. For those on aspirin, 57% had a negative CTH and 43% had a positive CTH (p-value 0.242). For those not on anticoagulation, 62% had a negative CTH and 38% had a positive CTH. For those on anticoagulation, 56% had a negative CTH and 44% had a positive CTH (p-value 0.235).

The GGP sees increased risk of positive CTH as the height of fall increases. This was statistically significant and consistent with known data on falls in the geriatric population. Unlike known data in the geriatric population, the GGP did not show a statistically significant correlation of GCS and positive CTH findings. This population may have a lower GCS at baseline or may not have the same neuronal-pathophysiological response to trauma. Unlike known geriatric population data, the GGP showed no statistical significance in terms of aspirin or anticoagulation use and positive CTH findings. It may be that the prescription of these medications and the pharmacokinetics of these medications differs in the GGP versus the geriatric population. In summary, the GGP do not adhere to the same risk factors as the geriatric population in terms of positive CTH after falls. They’re a unique subset of the geriatric population that should be studied in isolation when analyzing traumatic data.
Kiosk 2- Trauma/Critical Care
229. IMPACT OF TRAUMA VOLUME ON EMERGENCY DEPARTMENT THROUGHPUT, AS SEEN BY COMPUTED TOMOGRAPHY SCAN COMPLETION TIMES
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Multiple trauma patients entering the trauma center at once has the potential to overwhelm the Emergency Department’s (ED) resources. A theory among most staff is that the arrival of a trauma patient slows the ED to a “halt.” We hypothesize trauma patient arrivals cause negative effects on ED patient throughput, as evidenced by CT exam completion times on all patients in the ED.

All tier 1 and tier 2 trauma activations and intra-hospital trauma transfers (n = 1,647) to the ED at our Level 1 trauma center during a one year period, January 1, 2015 through December 31, 2015, were reviewed. CT scan completion times were collected for trauma patients and for all ED non-trauma patients. This resulted in 18,094 scans being used for this analysis. The only patients excluded were those with an incomplete data set, those that had a negative time-period of completion of a CT scan, and patients awaiting inpatient bed placement with non-emergent CT scan orders. We performed multivariate linear regression to determine correlations between CT scan completion time, CT volume, and total trauma volume. A p-value of <0.01 was considered significant.

Based on linear regression, 29 minutes were required on average to complete a CT scan on a non-trauma patient when no other scans were ordered and no trauma patients were present in the ED. When a second CT scan was ordered on a non-trauma patient the completion time increased to an average of 40 minutes, a delay of 11 minutes. However, if the second patient was a trauma patient, the scan took 44 minutes to complete which was a 15 minute delay. Both values are statistically significant at the 0.001 level and account for 52.6% of the variability observed. The difference for adding a trauma patient versus a non-trauma patient CT scan was only 4 minutes.

Although there was an observed 4-minute delay in ED throughput for completion of CT scans when a trauma patient arrived as compared to a non-trauma patient, this delay does not support the perception of the ED "grinding to a halt." Future studies to assess effect of trauma patient arrivals on ED throughput should include variables such as physician ordering practices, ED staffing patterns, and laboratory study completion times.
Every year over 300,000 people over the age of 60 are hospitalized for hip fractures. Hip fractures in the elderly have a reported mortality rate of 36% in the year following repair with mortality highest in the early months following surgical repair. As many as 20% of patients will require readmission within one year of nonelective hip surgery, however little data is available regarding 90 day mortality rates in those patients whom require readmission with in 90 days of surgery.

repair of their traumatic proximal femur fracture admitted to the trauma service from January 1, 2015 through July 1, 2017. All patients readmitted within 90 days of discharge from index admission were identified and divided into two groups based on operative repair, arthroplasty vs medullary nailing/pinning. All cause 90-day mortality rates for both groups were calculated and compared using a Cox proportion hazards ratio to allow for censoring and the inclusion of other covariates to identify possible factors for predicting mortality. Approval from the institutional review board was obtained with waiver of informed consent.

From January 1, 2015 to July 1, 2017 there were a total of 685 patients admitted to the trauma service with proximal femur fractures that underwent operative repair. Of these 81/685 (11.82%) patients over the age of 60 were readmitted within 90 days, 28/81 (34.56%) patients had undergone hemiarthroplasty and 53/81 (65.43%) patients had undergone intramedullary nailing or pinning. For the readmitted hemiarthroplasty group the average age was 82.7 years old with 4/28 (14.28%) patients expired within 90 days of discharge from index admission. In the nailing/pinning the average age was 83.94 years old and 13/53 (24.53%) patients expired within 90 days. Rates of enrollment in hospice were calculated for the two groups with the hemiarthroplasty group having 5/28 (17.85%) enroll in hospice and 7/53 (13.2%) of the nailing/pinning group enroll in hospice within 90 days. Infection is the most common cause of readmission in both groups, 11/28 (39.28%) for hemiarthroplasty and 18/53 (33.96%) for nailing/pinning.

Traumatic proximal femur fractures account for 23% of our annual trauma service admissions. Identifying the rates of readmission and mortality within the high risk 90-day period following discharge will help clinicians council patients and families. By identifying infection as the most common cause of readmission we have identified a possible target for intervention and prevention of morbidity and mortality in these high risk patients.
Kiosk 3- General Surgery
231. COMBINED LAPAROSCOPIC CHOLECYSTECTOMY AND DEROOFING OF A LARGE LIVER CYST WITH A TWO TROCAR TECHNIQUE AND USE OF A NEEDLE GRASPER
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Laparoscopic cholecystectomy (LC) is usually done using four trocars; techniques to further reduce surgical trauma are developed. Non parasitic hepatic cysts (HC) are only treated if symptomatic or malignancy is suspected with laparoscopy becoming the preferred approach.

A 41 year old African American male presented with recurrent right (R) upper quadrant (UQ) pain. He was found to have cholecystolithiasis and multiple HCs with the largest located dorsally to segments 4,5,8 being >10cm in diameter (figure 1). Indication for surgery was made.

A 5mm trocar in the left (L)UQ, a 10-12 mm umbilical trocar and a Teleflex needle grasper between the two trocars were placed. The gallbladder (GB) was removed using a modified dome down technique due to difficult access to the hilum due to the bulging large HC. Following LC, the HC was dissected off the duodenum, gerota fascia, right adrenal gland and inferior vena cava (IVC) and thereafter, the roof was resected using a harmonic scalpel. Resection was incomplete medially due to close proximity with the hilar structures and the IVC. Also a liver wedge biopsy was done. The intra and postoperative course were uneventful and the patient was discharged after a 23 hours observation. Pathology confirmed chronic cholecystitis, mild hepatic steatosis and inflammation and benign HC wall with chronic inflammation. The patient was asymptomatic for more than 2 years when he developed RUQ pain. On CT-scan a small recurrent HC close to the liver hilum was identified, however the cause of his pain was a kidney stone.

Combined LC and HC deroofing is a rare procedure. Minimal invasive technique should be the preferred approach. In our case only two trocars were required and the Teleflex minigrasper completely replaced a trocar based instrument.

1a  GB  cyst

1b  cyst
Appendicoliths are a common cause of acute appendicitis secondary to luminal obstruction. They are formed as a combination of calcium salts and fecal material. In cases of perforated appendicitis, it is paramount to ensure removal as a retained appendicolith can be a nidus for recurrent intra-abdominal abscess formation. Additionally, there are documented cases of their ability to migrate throughout the abdomen and into other cavities like the thorax resulting in empyema. We present a case of a retained appendicolith resulting in ileal and cecal colitis with resultant bowel obstruction previously diagnosed as inflammatory bowel disease.

A 56 year old male presented to ED for nausea, vomiting, and right lower quadrant abdominal pain. CT imaging revealed severe ileal and cecal wall thickening with surrounding fat stranding resulting in a small bowel obstruction concerning for Crohn’s disease. He was previously admitted to the hospital two months prior with a similar presentation. At that time, he was treated successfully with antibiotics, bowel rest, and was discharged to home. He reportedly had a colonoscopy just prior to admission, which was grossly unremarkable. The patient’s past surgical history included an interval appendectomy after conservative treatment for perforated appendicitis only 6 months prior to this admission. On our review of his CT scan, we identified a foreign body outside of the lumen of the cecum in close approximation to the ileocecal valve. Given his surgical history and lack of endoscopic findings, we were concerned for a retained fecalith resulting in recurrent infection.

The patient was taken to the operating room for a diagnostic laparoscopy. We identified an adherent 1 cm by 1 cm fecalith at the junction of the ileum and cecum resulting in severe colitis and small bowel obstruction. The fecalith was retrieved laparoscopically and the abdominal cavity thoroughly irrigated. Post operatively, his nasogastric tube was removed and diet advanced as his bowel function returned. He was discharged to home on post-operative day number four. He has since followed up in our clinic and is doing very well. He has not had any recurrence of his symptoms since his operation.

Retained appendicoliths are well documented as a nidus of infection and a common cause of recurrent intra-abdominal abscess. While other complications like migration into other cavities have been reported, this is the first case to our knowledge resulting in colitis and recurrent obstruction. Our case, like others before, continues to stress the importance of removal of all fecal material after a case of perforated appendicitis. This case re-affirms our own personal mantra that a thorough history and personal review of imaging is of the utmost importance to surgeons.
Cecal bascule with hepatodiaphragmatic interposition and coexisting appendicitis is a rare phenomenon. Computed tomography aids in the diagnosis and can rule out an enteric perforation. Operative intervention is the only effective treatment for bascule or other types of cecal volvuli. A right hemicolecetomy is generally the procedure of choice; however, cecopexy may be an alternative in a patient with significant comorbidities.
Laparostomy is a surgical treatment method in which the peritoneal cavity is opened anteriorly and deliberately left open. Laparostomy is currently used in many severely ill or injured patients to facilitate healing or prevent complications. With improved understanding of the pathophysiology of common abdominal emergencies, such as abdominal sepsis, severe acute pancreatitis, and major abdominal trauma, as well as their relation to abdominal compartment syndrome, the number of patients with laparostomy can be expected to increase in general and surgical intensive care units.

Retrospective study covering all patients who underwent laparostomy in Surgical emergency unit in JR hospital in Oxford over 30 months.

51 patients underwent laparostomy over 30 months. The average length of stay in hospital was 17 days. The most common indication for laparostomy was bowel ischemia and abdominal contamination. All patients were admitted to ITU post operatively. Temporary abdominal coverage was achieved by Abthera vac dressing in 100% of patients. Average number of operations before definitive abdominal closure was 2.6, with average wait of 5 days. 68% of patients had primary abdominal closure, while 8% had closure assisted with prolene mesh and 7% had closure with vicryl mesh. 14% of patients developed incisional hernia, and 2% required abdominal wall reconstruction. The incidence of incisional hernia was lowest with primary closure, 20% of patients developed incisional hernia. And it was the highest after closure with vicryl mesh, 33% of patients had incisional hernia. Mortality rate was 22%.

Laparostomy has a relatively good outcome, taking in consideration that it is the solution for severely ill or injured patients. It has become more popular operation recently, so a protocol is required to identify the type of patients that will benefit from laparostomy.
Historically, leaving an abdomen opened was considered a death sentence. However, as the 20th century progressed, the idea of leaving an abdomen open, and the associated damage control laparotomy, was advanced. In recent years, a wide variety of new techniques and indications of temporary abdominal closure have been studied. However, there is little data on the indications and outcomes in patients who undergo an open abdomen (OA) within a single institution. The aim of this study was to determine overall incidence of patients managed with OA following exploratory laparotomy, and to compare trauma OAs with non-trauma OAs, including indications, complications, and outcomes.

Using a prospectively-maintained database, we queried all patients who underwent an exploratory laparotomy managed with open abdomen between February 2016 and March 2017. We then performed a retrospective chart review for past medical history, indications for OA, and outcomes, including disposition.

During our study period, a total of 1039 exploratory laparotomies were performed. From these, a total of 90 patients, and 323 surgeries (31%), had open abdomens. The average patient was male (61%), had a mean age of 55 years (±18.9), and underwent 3 surgeries (range 2–9). Indications for the OAs included bowel ischemia (39%), bowel perforation (19%), blunt trauma (23%), penetrating trauma (11%), necrotizing pancreatitis (4%), hemorrhage (2%), and abdominal compartment syndrome (2%). The mortality rate associated with non-trauma OAs [39%: bowel ischemia, 40%; bowel perforation, 41%; hemorrhage, 67%; other, 0%] was significantly higher than trauma OAs (7%: blunt trauma, 10%; penetrating trauma, 0%) [p=0.001]. Outside of mortality, complication rates were comparable between groups.

The mortality rate associated with open abdomen for bowel ischemia or bowel perforation is significant (39%), especially when compared with non-trauma open abdomen (7%). As such, physicians should be mindful of this outcome as they talk with patient families and evaluate treatment options.
Kiosk 3- General Surgery
236. HYPERTRIGLYCERIDEMIA-INDUCED PANCREATITIS: A CASE SERIES OF 57 CASES AT ONE INSTITUTION
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Hypertriglyceridemia is the third most common cause of acute pancreatitis, but hypertriglyceridemia-induced pancreatitis is relatively rare.

Discharge diagnoses were used to identify inpatients with hypertriglyceridemia (HTG), and acute pancreatitis (AP) between 2009 and 2015, and hospital records were reviewed to characterize their hospital course. Demographic data, lab data and CT scan results were examined. The outcomes measured included VIR or surgical intervention, transfer to higher level of care, hospital length of stay (LOS), and death.

Throughout this time period, there were 1813 patients diagnosed with AP, 626 patients with HTG, and 57 patients with both. Of the 1813 patients with AP, most were male (56.4%) with mean age of 49.3 +/- 16 years. In the HGT cohort, the majority were similarly male (60.4%) with mean age of 51.0 +/- 14 years. LOS was 7.4 +/- 11.9 days in AP group and 6.3 +/- 11.5 days in the HTG group. ICU admission rate was 14.7% (n=266) and 11.0% (n=69), and in-hospital mortality was 2.8% (n=50) and 1.4% (n=9), for AP and HTG consecutively. Patients with both HTG and AP, and therefore presumed HTG-induced pancreatitis, were overall younger (mean age 42.5) and more frequently male (77.2%). Mean triglyceride level on admission was 2723.0 mg/dL (range 168-17254 mg/dL), with mean lipase of 729.5 IU/L. Half of the patients (49.1%) presented with a glucose level >200mg/dL and 15.8% presented with WBC >16,000/uL. LOS was 8.4 +/- 14.7 days. CT scan was performed in 81% of the patients with HTG induced pancreatitis, and 84.8% revealed pancreatic inflammation, and 34.7% identified a peri-pancreatic fluid collection. ICU admission was required in 45.6% (n=26). Three patients (5.3%) required VIR intervention for drainage of pancreatic fluid collection and two patients (3.5%) required surgical intervention for necrotizing pancreatitis. One patient underwent 14 additional operations for management of an open abdomen. Eight patients required mechanical ventilation for respiratory failure. Three patients expired during their hospital stay, only one of whom had underwent surgical intervention.

Patients with hypertriglyceridemia induced pancreatitis have a high incidence of pancreatic fluid collections, a high rate of complications, and frequently require ICU admission.
POSTSPLENECTOMY JAUNDICE: AN UNUSUAL CASE OF SPLENIC AND PORTAL VEIN THROMBOSIS CAUSING CHOLANGIOPATHY

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Postsplenectomy portal vein thrombosis (PS-PVT) is a potentially life threatening complication. This case report demonstrates a patient with PS-PVT who subsequently developed jaundice and cholangiopathy requiring biliary stent placement. To our knowledge, this is the first case report in the literature of the patient with PS-PVT and cholangiopathy.

A single case of jaundice related to splenectomy was identified and reviewed.

The patient was a 22 year-old male with diagnosis of autoimmune hemolytic anemia and splenomegaly who underwent an uneventful laparoscopic splenectomy. He was discharged 4 days after surgery without complications but began complaining of abdominal pain with nausea after 1 week. Subsequent CT revealed thrombosis of the splenic vein extending into the portal confluence. Immediate medical treatment was started with heparin (intravenous and subcutaneous) and the patient experienced resolution of the symptoms. However, he developed worsening abdominal pain and jaundice 2 weeks later and was eventually noted to have radiographic findings of extensive, diffuse and complete thrombosis of the splenic and portal vein with vascular cholangiopathy due to compression of the common bile duct by venous collaterals. Endoscopic retrograde cholangiopancreatography (ERCP) with biliary stenting was performed for biliary decompression. His jaundice resolved and the stent was eventually removed 5 months later. This resulted in portal cavernous transformation of the portal vein with collateral portal flow but no long term liver sequelea. See Figure 1.

The incidence of PST-SMPv after splenectomy in the literature ranges from 0- 53%. No standard protocol of management exists for patients with PS-PVT. Biliary obstruction related to venous collateral formation due to portal vein thrombosis is unusual but can occur after splenectomy complicated by splenic thrombosis with propagation of the thrombus into the portal vein.
Foreign bodies found within the appendiceal lumen are a rare entity (1/20,000)1 as most ingested foreign bodies are expelled in the feces. Patients with foreign bodies within the appendiceal lumen present with a wide clinical spectrum depending on the degree of intraluminal obstruction, from asymptomatic to perforated appendicitis. The authors report the case of an 18 y/o male with a pellet causing recurrent abdominal pain and perforated appendicitis.

An 18 y/o male without significant medical history presents to the emergency department with four days of right sided flank pain. This was his fifth episode in the past seven months. The first episode was attributed to a urinary tract infection and treated with antibiotics. The remaining episodes were self-limited, improving with hydration. At this evaluation he was non-toxic appearing, with focal tenderness in his right lower quadrant. On his laboratory examination, his WBC was 16 103/uL, and his basic metabolic panel reflected dehydration. His abdominal X-ray was noted to have a metallic foreign body in the pelvis. Computed tomography of the abdomen and pelvis was obtained in the emergency department showing phlegmonous changes in the right lower quadrant with a small metallic foreign body. He denied any known ingestions in the past. He was treated non-operatively for perforated appendicitis with improvement of his symptoms.

He was taken to the operating room for an interval appendectomy two weeks after completion of his oral antibiotic regimen. At operation, he was found to have inflammatory changes in the right lower quadrant. The patient underwent a laparoscopic appendectomy and the appendix was sectioned ex vivo (Image 1). The appendix was indurated with an area of perforation at the midpoint, and 0.177 caliber pellet was found at the tip of the appendix.

Acute appendicitis is the result of proximal obstruction of the appendiceal orifice. In adults, this is most commonly due to fecaliths, but other causes (lymphoid hyperplasia, malignancy and parasites) have been described. Luminal obstruction has also been described from ingested foreign bodies, which are a rare etiology. The timing of surgery following discovery is determined by multiple factors. Foreign bodies in the gastrointestinal tract that are not excreted in the feces have the potential to lead to complications, including bowel perforation, sepsis, and fistulation.
Sepsis is a well-known complication of long-standing obstruction of the hepatobiliary systems. Prior instrumentation or failed procedures often worsen this clinical presentation. Preoperative antibiotics and fluids might lessen the clinical impact but as this case demonstrates, clinical vigilance is key to uncovering unexpected associations.

Case: A 56-year-old woman with several week history of jaundice presented for liver biopsy and biliary drain placement two days after upper and lower endoscopy. She had an uneventful single stick ultrasound-guided and fluoroscopically placed 10 French internal/External biliary drain placed followed by biopsy of the liver lesion. Post procedure, patient did well and requested discharge home. However, after brief observation she had multiple episodes of nausea and vomiting. Suddenly her tube stopped draining and could not be flushed. A CT of the abdomen was obtained showing a kinked drain in the subcostal space and inflammation of the pancreas. Patient was taken back to angiosuite to upsize the drain to 12 French. Antibiotics and fluids were administered and a new drain was placed. Patient was admitted and observed. Her fluid requirements increased and she was taken to the Intensive care unit for further management. Amylase and lipase levels were ordered and trended. A downward trend in all parameters was noted – suggestive of a recovering phase.

While sepsis appeared to be an obvious working diagnosis a search for other likely causes particularly in a patient who had multiple recent upper endoscopic procedures was not an unreasonable course. None of the parameters showed a rising or plateau phase in the trended data suggesting that a resolving pancreatitis was the process accounting for this patient’s clinical difficulty. Here, a history of prior procedures at another institution was missing link. With supportive care patient experienced a significant improvement in her clinical status.
Serous cystadenomas of the pancreas are infrequent, benign cystic neoplasms. They account for approximately 16% of cystic neoplasms of the pancreas and are most often found in the body or tail. Several histological subtypes have been described with the solid variant being the rarest. We present only the seventeenth reported case of a solid serous cystadenoma.

A 72-year-old male presented with vague abdominal pain, significant weight loss, and fatigue. Imaging, including an MRI, revealed a 4.4 cm solid-appearing, enhancing mass in the uncinate process concerning for a pancreatic malignancy. An endoscopic ultrasound confirmed a solid pancreatic neoplasm without evidence of vascular invasion, and the biopsy was non-diagnostic. Tumor markers were within normal limits. Given the patient's symptoms and the solid appearance of the mass, resection was offered.

Pancreaticoduodenectomy was performed. A pancreatic stent was utilized due to the small duct size and normal parenchyma. The final pathological diagnosis was a microcystic serous cystadenoma. The cysts were innumerable and so closely related that the overall appearance was that of a solid mass. The patient recovered from his surgery without complication.

Although new immunohistochemistry markers have been proposed to aid in diagnosis, the solid variant of serous cystadenomas is extremely difficult to differentiate from a solid pancreatic malignancy and resection is the most prudent option.
Afferent loop syndrome (ALS) is a rare complication of foregut surgery caused by obstruction of the biliopancreatic limb resulting in cholangitis, pancreatitis or perforation. We report the first case of an afferent limb perforation post pancreatectoduodenectomy managed successfully with surgery.

A 71 year old male with a history of pylorus preserving pancreatectoduodenectomy in 2015 for pancreatic neuroendocrine tumor presented with a 1 day history of severe epigastric pain preceded by 4-6 weeks of vague abdominal pain. Vital signs revealed mild sinus tachycardia and a fever of 101 F. Abdominal examination revealed a soft, non-distended abdomen with mild tenderness to palpation in the right upper quadrant. Initial labs were remarkable for a lactate of 5.2 mmol/L (0.5-2.0), bilirubin of 2.5 mg/dL (0.3-1.2) and alkaline phosphatase of 313 units/L (63-157). White blood cell count (WBC) increased from 7 to 20 K/mm3 (4-11) within 24 hours. Computed tomography showed a dilated afferent loop with a thickened area causing obstruction superior to the transverse mesocolon (Image 1). Patient was admitted to the ICU and started on broad spectrum antibiotics for cholangitis. Gastroenterology were consulted for an esophagogastroduodenoscopy (EGD) and endoscopic ultrasound (EUS). On EGD, extraluminal compression was noted in the afferent limb, which was traversed with difficulty. FNA was performed on an ill-defined soft tissue density near the pancreaticojejunostomy. The results were not conclusive for tumor recurrence. Given the need for a durable decompression of the afferent limb, we elected to perform a surgical exploration.

Dense adhesions between the afferent limb and right lateral abdominal wall appeared to be causing a mechanical obstruction with a visible transition point superior to the transverse mesocolon. There was no evidence of tumor recurrence. Proximally, a perforation measuring approximately 1 cm was noted between the hepaticojejunostomy and pancreaticojejunostomy. The obstruction was relieved after lysis of adhesions, followed by placement of a 14 Fr Malecot catheter into the perforation. This was secured to the surrounding jejunum with a purse string suture. An additional 19 Fr round Blake drain was placed just outside the perforation. The gastrojejunostomy was found to be slightly narrowed on inspection, prompting us to perform a Braun enterenterostomy. Postoperatively, the patient was kept on antibiotics until his WBC normalized. Initially, the Blake drain had biliary output and was higher volume than the Malecot. This balance slowly started shifting towards the Malecot. By postoperative day 10, all biliary drainage was contained within the Malecot catheter. We performed a repeat CT abdomen with enteric contrast only down the Malecot catheter which demonstrated no leakage of contrast. The Malecot was kept clamped for another 48 hours. When there was no further output recorded in the Blake drain, it was removed. Patient was discharged home on postoperative day 14 with the Malecot drain in place.

Afferent loop perforation in the setting of pancreatectoduodenectomy has not been previously reported. We describe the occurrence of such a case in our surgical practice and the decision-making steps in its surgical management.
 Debate exists regarding outcomes and cost-effectiveness of robot-assisted versus laparoscopic hepatectomy. We reviewed and compared published data to cost-benefit analyses for major hepatectomies performed at a single, high-volume institution.

A comprehensive literature review of robotic-assisted and laparoscopic hepatectomy (2008–2016) was performed. We performed a retrospective analysis (2008-2016) of patient data, operative characteristics, and outcomes for patients at our center undergoing a major ($\geq$3 segments) hepatectomy ($n = 181$ of whom $n=57$ robot-assisted and $n=124$ laparoscopic).

Published data report similar perioperative characteristics and outcomes for robot-assisted versus laparoscopic hepatectomy. A lack of consistent data precluded establishing a valid conclusion on superiority or relative cost-effectiveness. At our institution patients undergoing robot-assisted versus laparoscopic hepatectomy were older (58.1 vs 53.1 years, respectively; $p = 0.029$), admitted to ICU postoperatively less (46.3% vs 61.3%, respectively; $p = 0.041$), and readmitted less often within 90 days (7.0% vs 27.4%, respectively; $p = 0.002$). No significant differences were found for blood loss/transfusion volume, operative times, and length of stay. In addition, no significant difference in mean direct cost was observed for robot-assisted versus laparoscopic ($\$4,720$ vs $\$4,514$, respectively; $p > 0.05$).

Robot-assisted is an effective alternative to laparoscopic hepatectomy with no significant difference in direct costs. Improved standardization of data collection/reporting will enhance future analysis.
Primary neuroendocrine tumors arising from the gallbladder has an incidence of less than 1% of all neuroendocrine cancers. The subset of large cell neuroendocrine carcinoma (LCNEC) is even less likely to originate from the gallbladder. When found, these types of tumors may even present mixed with other types of cancers, commonly adenocarcinoma. Because of the lack of information, the management of patients with these conditions has been limited. Surgical resection is the only curative therapy but it is confined to those without multiple sites of metastasis. Medical management is still being explored for advanced disease.

Case Report: We present a case of 71 year old man who presented to our ER with worsening constipation, abdominal distention and pain. He complained of 30 lbs weight loss over 8 months. His workup including a CT scan of abdomen pelvis which showed a gallbladder mass involving the right hepatic segments 5 and 6 measuring 6.3 x 7.2 cm. The biopsy of the gallbladder mass performed showed poorly differentiated carcinoma favoring large cell neuroendocrine carcinoma. The Pathology staining showed 70% nuclear staining Ki-67. Rare cells were positive for CA19.9. They were positive for CD56, CDX2, CK20, Pancytokeratin, and Synaptophysin. It was focally positive for Chromogranin. It was negative for CK7, HAS, CK5/6, p63, PAX8, PSA, PSAP and TTF-1. Workup included a Baseline PET-CT showed FDG avid liver segment 5/6 mass contiguous with gallbladder measuring up to 7.1 cm, max SUV 22.8 and extensive FDG avid left supraclavicular and retroperitoneal/portacaval lymphadenopathy. He has been started on etoposide and carboplatin as his first line of Chemotherapy. Which he is tolerating well.

Review of Literature shows Neuroendocrine immunohistochemically markers have become paramount in detecting neuroendocrine differentiation of suspected neoplasms, with the most common markers being chromogranin A and synaptophysin. It has been further postulated that the level of chromogranin A expresses may correlate with the level of differentiation of the cells, indicating an important diagnostic tool for staging treatment. Usually, therapeutic decisions for NET of the gallbladder are based on the stage at the time of classification, which involves the mitotic index as well as cell morphology. A key biomarker, Ki-67, helps in distinguishing well differentiated from poorly differentiated neuroendocrine carcinomas.

New targeted therapies are being developed for gallbladder neoplasms but few, if any, are directed for primarily neuroendocrine tumors. With poorly differentiated, high-grade lesions, chemotherapy guidelines have utilized combination treatment with etoposide plus cisplatin, but there is no standard in treatment. This model has been adopted from the treatment suggestions for small cell lung cancer (SCLC) as they have overlapping genetics. Unfortunately, despite chemosensitivity to these agents, the prognosis of extra-pulmonary neuroendocrine tumors has remained dismal. In addition this combination has the potential for severe toxicity, with adverse events inclusive of myelosuppression, neutropenia, and nausea, among others.
Irreversible electroporation (IRE) has recently been used in unresectable pancreatic cancer. As it is a relatively new treatment, its complications have not been described.

70 year-old female with locally aggressive pancreatic head adenocarcinoma. It was determined to be borderline resectable due to common hepatic artery involvement. In addition the patient had significant comorbidities and because of this she was not felt to be a candidate for Whipple resection. She completed 7 rounds of Gemzar and Abraxane followed by in-situ IRE. The duodenum was kocherized and intraoperative ultrasound showed a 2x2 cm mass in the pancreatic head abutting the superior mesenteric vein. Four probes were placed with a 1 cm exposure. Three total ablations with pullbacks were performed with a goal delta of 12 amps.

On postoperative day 8, she had coffee ground emesis. CT scan showed air and tissue necrosis at the head of the pancreas at the site of ablation appropriate for the procedure. She remained stable until 4 days later she was noted to have shortness of breath and right arm numbness followed by bright red blood per rectum (BRBPR). She then became hypotensive and was transferred to the Intensive Care Unit. She began to be resuscitated with blood products as she continued to have BRBPR. Esophagogastroduodenoscopy revealed clot and bright red blood, but no mucosal lesions. CT arteriogram showed bleeding from branches of the gastroduodenal artery and a mucosal defect in the medial second and third portion of the duodenum. These branches were embolized resulting in stabilization of the patient.

This case illustrates a life threatening complication of IRE. Although there was no resection, this procedure can have complications similar to resection of the pancreatic head including injury to bowel and vessels. Although previous larger reports show both bleeding and injury to bowel as complications, they have not been shown together. Arterio-enteric fistulas can be a life-threatening complication and require timely embolization and resuscitation.
Sickle Beta Thalassemia Zero (Sβ0) is a variant of Sickle Cell Disease (SCD) that results in the complete absence of the beta globin gene, and thus no production of HbA. While the prevalence of Sβ0 is only one tenth that of homozygous sickle cell disease (SS), this variant is noted to be just as severe. As with SCD, Sβ0 patients are plagued with chronic hemolytic anemia and vaso-occlusive pain crises. High rates of hemolysis put these patients at increased risk of developing bilirubin gallstones, one of the most common causes of acute pancreatitis. SCD can also lead to acute pancreatitis via direct microvessel occlusion.

Through a thorough chart review and autopsy, we examine the case of an Sβ0 patient with fatal necrotizing pancreatitis that went undiagnosed until the time of autopsy. A subsequent review of the literature was performed to further describe the relationship between pancreatitis and sickle beta thalassemia zero.

Five cases of acute pancreatitis in the setting of SCD are found in the literature, but there are no published reports of patients with the Sβ0 variant. Of these cases, all five resulted in the effective treatment and resolution of pancreatitis following a correct diagnosis. Unfortunately for our patient, the diagnosis was not made in time and he was unable to recover.

In order to ensure prompt treatment and recovery, acute pancreatitis should be on the differential diagnosis of all sickle cell patients presenting with acute abdominal pain.
247. ACUTE HEPATIC FAILURE SECONDARY TO HEPATIC CONGESTION FROM METASTATIC GALLBLADDER ADENOCARCINOMA

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Gallbladder cancer is a very uncommon malignancy, with fewer than 5000 new cases diagnosed in the United States each year, but carries an extremely poor prognosis with 5 year survival rates ranging from approximately 50 percent in those with Stage I disease to as low as 2 percent in patients with Stage IV disease. Patients with gallbladder cancer are often asymptomatic and are only diagnosed incidentally upon pathologic examination following routine cholecystectomy. Surgical resection is currently the only potentially curative option for patients with gallbladder cancer often with subsequent adjuvant chemoradiotherapy with gemcitabine or fluoropyrimidine based regimens for all patients except those with T1N0 lesions per NCCN guidelines.

We present a case of a 54 year old female who was found to have T2N1 gallbladder adenocarcinoma discovered incidentally following routine laparoscopic cholecystectomy for symptomatic cholelithiasis. Following diagnosis, PET CT was performed which did not demonstrate metastatic spread. Patient was then referred for surgical evaluation and further treatment of her disease.

The patient underwent resection of liver segments 4 and 5, excision of cystic duct, and portal lymphadenectomy. Pathology from this procedure demonstrated no definitive adenocarcinoma in either the cystic duct or the liver. However, 2 of 6 lymph nodes were found to be positive for adenocarcinoma. The patient received adjuvant chemotherapy. Approximately 4 months following adjuvant therapy completion, she returned to the emergency department with hyperbilirubinemia, encephalopathy, and abdominal pain. CT imaging at that time demonstrated massive hepatomegaly, heterogenous enhancement of the liver in all phases, and multiple ring enhancing lesions throughout the liver suspicious for metastatic disease. A random transjugular liver biopsy demonstrated moderately to poorly differentiated metastatic adenocarcinoma with diffuse involvement of hepatic sinusoids.

Acute liver failure secondary to metastatic infiltration is an extremely rare process but must remain in the differential diagnosis in patients with known history of neoplasm and rapidly progressive liver failure. Making the diagnosis of malignant infiltration as the cause of acute liver failure is difficult and requires a high level of suspicion. Unfortunately, in the face of acute liver failure, there are no current treatment options which provide a survival benefit in these patients.
Most pancreatic ductal adenocarcinomas are deemed unresectable at the time of diagnosis, the abutment or encasement of major vascular structures often preventing the negative margins mandated for curative resection. Irreversible electroporation (IRE) employs multiple electrodes placed around the tumor periphery to generate a potential difference ≥1000V across the target tissues, thereby inflicting permanent cell membrane damage (nanopore formation) and consequent induction of apoptosis. High frequency IRE (H-FIRE) is an experimental alternative to commercially available IRE (Nanoknife) that obviates the requirement for muscle paralysis and cardiac synchronization, while also significantly reducing the intraoperative time for electrical pulse delivery. For this study, a dual electrode-single needle (DESN) probe for H-FIRE delivery was developed to enable rapid H-FIRE delivery to pancreatic tumors without the need for multiple electrode insertions.

An experimental DESN H-FIRE probe was developed and employed in a swine pancreas model in vivo (n=4 animals). Laparotomy was performed, the pancreas exposed via the gastrocolic ligament, and the DESN-H-FIRE probe placed in either the head or tail of the pancreas under ultrasound guidance. In the absence of paralytics or cardiac synchronization, 2 H-FIRE ablations (2,250V) of pancreatic tissue were performed in 4 separate animals using 2 different pulse configurations (1-5-1μs vs 2-5-2μs (on-off-on)). Animals were maintained under isoflurane anesthesia for 6 hours post-H-FIRE delivery prior to euthanasia and tissue evaluation.

All animals survived the experimental period with no EKG abnormalities or muscle spasm during H-FIRE delivery, and vital signs remained stable for the 6Hr period following H-FIRE delivery. Total time for H-FIRE delivery was 326±42s. Necropsy demonstrated reproducible pancreatic ablations (903±70mm3 vs 935±148mm3; 1-5-1 vs 2-5-2 pulse settings). Histological analysis revealed extensive cell death within the ablative field, in the absence of structural damage to the vascular or ductal architecture. Whole tissue staining (triphenyltetrazolium chloride [TTC]) and immunohistochemistry analysis revealed the area immediately surrounding the site of probe insertion was characterized by electrically-induced necrosis in the absence of thermal coagulation/necrosis. Beyond the site of probe insertion, pancreatic tissue stained extensively for cleaved caspase 3, indicating the induction of apoptotic cell death.

H-FIRE delivery, using a novel dual electrode-single needle probe, rapidly and reproducibly ablated pancreatic tissue in the absence of thermal damage, without the need for intraoperative paralytics or cardiac synchronization. Overcoming the need to place multiple needles around the tumor, and optimizing pulse delivery settings, significantly simplifies the intraoperative procedure and raises the possibility of developing H-FIRE for use with minimally invasive approaches.
Kiosk 4- HPB
250. UNDIFFERENTIATED PLEOMORPHIC SARCOMA OF THE GALLBLADDER: A RARE PATHOLOGY FOR A COMMON DIAGNOSIS
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Primary gallbladder sarcoma is an extremely rare finding – a worldwide review in 1982 reported a total of 124 cases, and less than 100 cases have been reported since then (1, 2). Here, we present a case of gallbladder sarcoma, specifically pleomorphic undifferentiated sarcoma (malignant fibrous histiocytoma), high grade.

A case report of an 84-year-old Caucasian male admitted to the surgical service for right upper abdominal pain radiating to the back with associated nausea, vomiting, and diarrhea. The patient has had previous history of cholelithiasis and cholecystitis. He was admitted with a diagnosis of recurrent acute pancreatitis.

Laboratory workup demonstrated leukocytosis of 16.7, mildly elevated transaminases with AST 116/ALT 105, normal total bilirubin, and markedly elevated lipase 1880. Ultrasound revealed thickened gallbladder wall at just under 5mm, large amount of biliary sludge, calculus measuring 2cm at the gallbladder neck, and non-dilated common bile duct. Findings: The patient underwent laparoscopic converted to open cholecystectomy. Intraoperatively, we noted an inflamed gallbladder with a 1.5cm stone at the Hartmann’s pouch. A 13.1 x 6.3 x 4.3 cm gelatinous mass was also found within the gallbladder (Figure 1). Pathology confirmed high-grade undifferentiated pleomorphic sarcoma with negative resection margins.

Gallbladder sarcoma presents a rare and fatal disease process, due to non-specificity of symptoms causing delay of discovery, as well as rapid progression and metastasis of disease. Surgery is the only known curative treatment, and adjuvant chemotherapy and possible radiotherapy can be considered, but outcomes remain poor. Due to the rarity of the disease, no consensus concerning management has been reached. Future studies comparing treatment outcomes at various stages of disease can elucidate upon the best management of the disease.
In recent decades, radiation therapy has become an increasingly important treatment modality in the management of abdominal and pelvic malignancies. However, radiation therapy is not innocuous and has been proven to cause multiple side effects. Many of complications can manifest many years after radiation treatment, which obscure causality and limit differential diagnoses. We showcase an interesting clinical scenario of a 53 year old African American female with a prior history of pelvic external beam radiation (XRT) and hysterectomy for a locally advanced Cervical squamous cell carcinoma who presented with an arterial-rectal fistula, which was managed successfully with endovascular stenting.

A 53 year-old African American female, with a past medical history significant for hypertension, end-stage renal disease on hemodialysis, a chronic right atrial thrombus for which she was taking Apixaban, as well as a history of locally advanced cervical cancer managed with neoadjuvant chemotherapy, radiation therapy and hysterectomy over 20 years prior, presented to OSH ED complaining of profuse bright red blood per rectum (BRBPR). She was in hemorrhagic shock with a hemoglobin level of 7 g/dL. Physical Exam: HR 130s, SBP 80s, sickly appearing and pale., prior midline laparotomy scar, abdomen was diffusely tender without peritoneal signs. Labs on arrival: WBC of 8.9, hemoglobin of 6 g/dL, hematocrit of 19%, platelet count of 222,000, PT of 20 seconds, INR of 1.6, PTT of 38 seconds, potassium level of 2.7, creatinine level of 2.5, BUN of 13 and lactate of 5.9. Rest of labs were WNL. Given her clinically significant hypotension and tachycardia despite aggressive resuscitation with intravenous fluids and transfusion of 3 additional units of PRBCs and persistent GI bleeding, she was taken to the operating room emergently and underwent a total abdominal colectomy with partial proctectomy down to the peritoneal reflection. Given the persistent bleeding and dense adhesions associated with her prior surgeries and radiation, a balloon was placed in the rectal cavity and inflated to tamponade the bleeding. Interventional radiology was consulted for abdominal angiography with possible embolization versus stent placement. Angiography revealed a large tortuous vessel with dynamic arterial flow initiating from the distal half of the right common connecting to the distal rectum consistent with a right common iliac arterial-rectal fistula with active hemorrhage and extravasation of contrast into the rectum (Figure 1). This was successfully treated with placement of a 10 mm X 40 mm covered self-expanding intravascular stent in the right common iliac with adequate diversion of blood flow from the fistula (Figure 2).

This is the first case of an arterial-rectal fistula successfully managed with placement of an endovascular covered stent.

We attempt to bring into light the differential diagnosis of arterial-rectal fistula formation as a cause of significant lower gastrointestinal bleeding in the setting of a patient with a previously radiated pelvis. A thorough history and physical with an adequate workup should be performed. CT Scan with intravenous contrast can be used to distinguish between different possible causes of lower gastrointestinal bleedings.
Introduction: Central venous catheters with subcutaneous port are widely used devices in patients who require chronic intravenous access. Rare complications are vascular or nerve injuries. We present a case of a 29 year old male who developed a VBF from a port that had been placed in the left subclavian vein 3 years prior to his presentation.

Case Presentation: A 29 year old male with a history of of Kugelberg-Welander syndrome, chronic respiratory failure with a chronic tracheostomy, IgG deficiency and hypercoagulable state presented with productive cough and small volume hemoptysis. He had a left subclavian port that was placed 3 years prior, which was used for frequent IgG injections. The patient presented with chronic anemia. During a blood transfusion through his port he developed worsening cough and the hemoptysis became more severe. The transfusion was stopped and we decided to further evaluate the central venous access. A contrasted venogram was obtained via the port, which revealed a fistula from the tip of the catheter into the right bronchial tree. The catheter was removed in the operating room with simultaneous bronchoscopy. The patient tolerated the procedure well and was discharged home with no respiratory symptoms.

Discussion: VBF is an extremely rare but serious complication of chronic central venous catheter placement. In the literature there are only a few case reports. There are several potential reasons that central venous access may predispose to a fistula. First, the chronic inflammation of the catheter tip and the negative pressure related with blood draws against the blood vessels wall could in part predispose to fistulization. Second, the anatomic proximity of the vena cava and the right bronchus could predispose to the abnormal communication. Third, the constant injection of irritating agents could predispose to VBF. Patients usually present with pulmonary complains that include cough that worsens with catheter use, shortness of breath and hemoptysis. A patient with a chronic catheter and these symptoms should be evaluated with contrasted imaging studies. VBF can be treated with observation or removal of the central venous catheter.

VBF is a rare complication of chronic central venous catheters. In patients with pulmonary symptoms related to the usage of a port, a fistula should be suspected and investigated with contrasted imaging studies. If a fistula is diagnosed we recommend removal of the catheter in the operating room in a controlled environment due to the risk of acute bleeding into the right bronchus or the potential risk of air embolus.
Atherosclerosis of the aorta and iliac arteries can make conditions for transplantation increasingly challenging. These difficulties include placement of proximal and distal iliac artery clamps in severely atherosclerotic vessels and encountering extensive plaque at the anastomosis site requiring endarterectomy in 12% of patients. In addition, repeat transplantation requires non-traditional anastomotic sites which may require direct implantation to the aorta or inferior vena cava.

Three patients who underwent cadaveric renal transplants were included in this series. The first is a 58 year old male with external iliac artery atherosclerosis with 50% luminal narrowing. He required a 5cm endarterectomy and tacking up of the proximal and distal plaque. The second patient (Figure 1) is a 57 year old female with severe aorto-iliac disease who two months prior to transplantation was referred to Vascular Surgery and underwent angioplasty and stenting of the distal aorta, aortic bifurcation and right common-external iliac artery. These transplants were placed in the retroperitoneal space. The third patient is a 45 year old male with a history of 2 failed kidney transplants. One of these had been performed to the right external iliac artery, the other to the left external iliac artery and both transplants were still in place. The kidney was placed intraperitoneally and we performed our arterial anastomosis to the proximal right common iliac artery and our venous anastomosis to the distal Inferior Vena Cava. All patients had a Jackson-Pratt drain placed near anastomotic site.

The first two patients described had immediate graft function and all three patients were discharged within post-operative day 4 with adequate bowel function. The third patient had slow graft function as well as a chyle leak. This leak resolved with dietary modifications and the JP drain was removed in clinic within a week of discharge. All creatinine levels down trended at the expected rate. No vascular complications have been seen at six months post-operatively.

Computed Tomography Angiography (CTA) is an essential part of the pre-operative evaluation in renal transplant recipients with vascular disease. Performance of an extensive endarterectomy and reconstruction should be considered in patients with occlusive atherosclerotic disease. In addition, patients with extensive aorto-iliac disease may require vascular surgery consultation to consider anatomic reconstruction and ultimately provide adequate inflow to the graft; this may include angioplasty and stenting. Repeat transplant recipients may require implantation to non-traditional sites.
Figure 1. Left image shows aortic atherosclerotic disease. Right image shows near occlusive atherosclerosis of right common-iliac.
Endovascular intervention has shown to be a comparable approach to open surgery in treating patients with critical limb ischemia (CLI). The treatment of CLI is usually carried out through the femoral approach either in antegrade or contralateral retrograde fashion. This approach still has many challenges due to the widespread manifestation and complexity of the occlusive lesions and the common extension of the lesions into the tibial circulation.

The position of the foot during the access obtaining procedure is very important. When attempting to access the DP artery or the ATA, it is preferable to keep the foot in plantar flexion while inverting the foot as this will allow access to the PA. We usually keep the foot in dorsiflexion and eversion when accessing the PTA. Once the access is obtained using a 4 or 5 fr. micro access needle which is usually evident by the back bleeding, securing the access is the next step. This is usually carried out by inserting a micro puncture wire (0.018 in) through the needle into the vessel and advancing into the occluded segment, all while using the fluoroscopic guidance for visual confirmation. The needle is then slowly withdrawn and then removed. A 4 or 5 Fr sheath with a dilator is then passed over the wire down into the vessel, thus securing the access.

Of the patients who underwent successful pedal intervention, assisted primary and secondary patencies at 12 months were both 84 ± 10%. There are several technical advantages the retrograde approach has over the conventional approach which might play a significant role to its high success rate. Some of these technical advantages related to the fact that the pedal access site offers a short path into the occluded segment in the tibial vessel which means the wire will have enough structural support to cross the lesion even in the case of a severely calcified artery. The reduced likelihood of the wire to enter the side and collateral branches as it travels proximally to the occluded segment is because these collaterals usually are pointing downwards, opposite to the direction of the wire. Another advantage that is worth mentioning is the fact that the distal part of the occlusion might consist of less fibrotic or calcific tissue than the proximal portion. This allows easier passage of the guidewire into the occlusion. These factors allow the successful crossing of the occlusion in a retrograde fashion when the usual femoral approach fails.

The inability of the conventional endovascular intervention to successfully treat popliteal or tibial occlusion is estimated to occur as high as 20% of the time. Nonetheless, a retrograde pedal approach is another option for patients with CLI who cannot be revascularized through an antegrade approach and are not tibial bypass candidates. It can be achieved with minimal morbidity, avoiding the use of expensive re-entry devices, and an in-depth understanding of the tibioperoneal circulation anatomy is vital for the vascular surgeon to be able to perform the procedure successfully.
Kiosk 5- Vascular

256. FIBROMUSCULAR DYSPLASIA CAUSING HIGH GRADE STENOSIS OF MESENTERIC VESSELS REQUIRING REIMPLANTATION OF INFERIOR MESENTERIC ARTERY

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A 37 year old male with known fibromuscular dysplasia now with end stage renal disease on hemodialysis. He has a history of right renal artery stent placement and CAD with stent placement. During pre-operative work-up for renal transplant, CT Abdomen/Pelvis with contrast revealed near complete occlusion of celiac artery at origin, complete occlusion of SMA at origin extending several centimeters, and high grade stenosis of IMA with poststenotic dilation. A large marginal artery of Drummond was noted to feed directly into mid to proximal SMA. After consultation with the transplant surgeon and the patient, it was decided to reimplant the inferior mesenteric artery to the abdominal aorta.

The patient underwent midline laparotomy. Proximal and distal control of the infrarenal aorta was obtained. The IMA was clamped distally, then transected flush with the aorta. The previous origin was oversewn. The area of stenosis was resected and the IMA was spatulated. An arteriotomy was made just distal to the native takeoff of the IMA on the aorta using an aortic punch. An end to side anastomosis was performed.

Strong palpable pulse in IMA and at midpoint of SMA noted at the end of the case. Small bowel and colon all appeared healthy.

He was discharged from the hospital on POD #5 and continues to do well.
258. OPTIMAL TECHNIQUE FOR REPAIR OF PENETRATING POPLITEAL INJURIES
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Traumatic popliteal vessel injuries have a cited amputation rate as high as 30%. The repair of these injuries can be technically challenging and time-intensive and limb salvage rates are directly affected by time to reperfusion. In order to limit ischemic times, many techniques have described the optimal exposure and repair. In our experience, a medial approach with initial fasciotomy limits muscle ischemia from an un-diagnosed compartment syndrome. Repair of vein precedes arterial repair. Here, we present a case of a penetrating popliteal injury to describe our optimal approach to repair.

A single case report.

A 28-year-old female presented with a single gunshot wound to right knee. She was hypotensive and had absent distal Doppler signals. She was taken emergently to the operating room. She was positioned with her right knee abducted. Proximal control was obtained of the femoral artery through a groin incision. The patient was then anticoagulated with intravenous heparin, and a medial incision was made with division of the semimembranosus and semitendinosus. The gastrocnemius was left in place, ultimately to be used for tissue coverage following repair. Four compartment fasciotomies were performed in the lower extremity. The completely transected popliteal vein was repaired with a saphenous vein patch. The above knee popliteal arterial injury was repaired using a reversed saphenous vein interposition graft. Postoperatively, she recovered well and on discharge had a palpable dorsalis pedis pulse as well as intact sensation and motor function of the foot.

Traumatic popliteal vessel injuries are well managed with early fasciotomies and medial vessel exposure to limit ischemia time and improve functional outcomes.
Kiosk 5- Vascular

259. UTILITY OF INTRAVENOUS ULTRASOUND FOR EARLY DIAGNOSIS OF MAY-THURNER SYNDROME

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May-Thurner Syndrome (MTS), otherwise known as iliac vein compression syndrome, was first described by Virchow in 1851 as an iliofemoral deep vein thrombosis (DVT) secondary to venous stasis with a 5-fold predominance of the left lower extremity compared to the right. It took until 1956 for May and Thurner to illustrate the anatomical basis of left iliac vein compression by the right common iliac artery against the spine and pelvic brim. This compression leads to pain and swelling in the affected limb from venous insufficiency and venous stasis, hypercoagulability, endothelial damage, intimal hyperplasia, and ultimately thrombosis through compression and constant pulsatile force from the overlying artery. Doppler ultrasonography is the first line modality for assessing lower extremity DVTs, but is limited in its ability to evaluate the iliac veins deep in the pelvis. Digital subtraction venography is currently the gold standard for diagnosis of MTS with typical findings of flow reversal within the internal iliac vein, tortuous venous collaterals, and an enlarged ascending lumbar vein. However, in patients with mild symptoms of unilateral leg swelling without DVT venography findings can be subtle, making definitive diagnosis difficult. In these cases, intravenous ultrasound may be of benefit to better elucidate the intraluminal diameter of the common iliac vein and show evidence of compression that can guide appropriate treatment. The aim of this study is to evaluate patients with symptoms of unilateral lower extremity swelling without DVT with traditional digital subtraction venography and IVUS to identify and treat mild cases of MTS.

Patients were identified in a vascular surgery clinic with chronic discomfort from unilateral lower extremity swelling and were screened negative for DVT with Doppler ultrasonography. Patients identified had not had prior vascular procedures and had found minimal to no relief with conservative measures of lower extremity compression and elevation. These patients then underwent digital subtraction venography and IVUS during a single session, and those with evidence of common iliac venous compression were treated with a common iliac vein stent at the time of diagnostics. Patients were seen in appropriate clinic follow up within 4 weeks of the procedure and patient reported subjective improvements were documented.

A total of twelve patients were evaluated and treated. Most patients had borderline abnormal venography findings with the most prominent feature being enlarged collateral vessels. All patients demonstrated clear venous compression on IVUS and were treated with venous stenting. Ten of the twelve patients treated reported marked improvement in lower extremity swelling on follow up, while the remaining two reported only mild improvement. No procedural or treatment complications occurred.

In cases of unilateral leg swelling without DVT where digital subtraction venography results are inconclusive, IVUS is a useful adjunct in diagnosis of common iliac vein compression and can be used to guide appropriate treatment. This will allow earlier identification and treatment of common iliac vein compression to prevent disease progression and the potentially devastating sequelae of DVT.
Example case of venogram versus intravenous ultrasound (IVUS) in patient with May-Thurner Syndrome.

A: Venogram before stent placement
B: Venogram after stent placement
C: IVUS superior to stenosis
D: IVUS at level of stenosis
E: IVUS inferior to stenosis
Kommerell’s diverticulum (KD) is a rare vascular abnormality with a variety of surgical treatment options. Often presenting as dysphagia or respiratory difficulties when associated with a vascular ring in the pediatric population, adult presentations are reported to be secondary to aneurysmal dilatation of the diverticulum, increased atheromatous development within the vessel wall, and increased compression on surrounding structures. Kommerell’s diverticulum often requires intervention later in life given its increasing symptomatology or aneurysmal degeneration. Our operative interventions ranged from open techniques (subclavian-to-carotid bypass and open transection of the ligamentum arteriosum) to hybrid interventions (arch debranching followed by thoracic endograft) to thoracoscopic treatment (video-assisted thoracoscopic transection of the ligamentum arteriosum). We reviewed the operative planning and choice of treatment modality for each case.

We reviewed four separate cases of patients diagnosed and treated at our institution across both pediatric and adult populations. Using these examples, we analyzed the clinical presentation, including physical exam and imaging findings, that assist in diagnosing KD.

All patients were found to have resolution of their dysphagia and associated symptoms without significant morbidity or mortality.

Given the variability in treatment modalities, all patients achieved similar resolution of their presenting symptoms. We found that the pediatric patients had resolution of dysphagia without vascular reconstruction.
Bedside thoracostomy tube placement is a commonly performed surgical procedure that often has an under-appreciated complication profile. The British Thoracic Society and American College of Surgeons have issued guidelines highlighting the need for accurate physical exam and definition of the “triangle of safety” to minimize complications and misplacement of thoracostomy tubes. This study examines 100 consecutive chest tubes placed at the bedside by resident physicians comparing the radiographic location of thoracostomy tube placement compared to the resident documented location at time of insertion.

A retrospective study of 100 consecutive chest tubes placed at the bedside by resident physicians from January 1, 2016, to June 19th, 2017 was performed. All percutaneously placed small bore (less than 20F) catheters, tubes inserted in the operating room, or with image guidance were excluded. Only those with thoracostomy tubes inserted bedside by general surgery or emergency medicine resident physicians with post-procedure chest radiographs were included. Radiographic tube location was determined by a radiologist approved chest radiograph protocol and CT scan when available. Tubes noted to be crossing the lateral thoracic wall above the superior boarder of the fourth rib were deemed “high”, those crossing between the inferior boarder of the fourth rib and the superior boarder of the sixth rib were deemed “accurate”, and those crossing below the inferior boarder of the sixth rib “low”.

Statistical analysis included resident specialty, gender and year of training, patient characteristics including height, BMI, gender and age and laterality of tube location. Procedures were also separated by those performed for trauma or not. Of the 100 tubes examines, 76 were placed by general surgery residents with an error rate of 39.5, 24 by emergency medicine residents with an error rate of 45.8. There were no statistically significant variables between groups of chest tubes placed within the appropriate rib spaces and those placed outside the 4th or 5th rib interspaces. Only laterality approached statistical significance, 30% of tubes placed on the left were inaccurately placed and 48.3% of tubes placed on the right were outside of the 4th or 5th interspace, P value of 0.068. Only one tube was placed high. Of the 100 tubes placed, 10 had to be repositioned, 9 had to be replaced, and 2 required operative intervention from a complication from the bedside thoracostomy tube placement.

All general surgery and emergency medicine resident physicians at our institution are taught to preform tube thoracostomy insertion through the fourth or fifth rib interspace using the triangle of safety, and nipple location on physical exam. This study demonstrates a disparity between where providers are documenting where they entered the thoracic cavity and where the tube crosses the lateral thoracic wall. These findings highlight a need for evaluation of the educational process of providers performing bedside tube thoracostomy to improve accuracy of physical exam location, standardization of documentation, and prevention of complications related to improperly placed tubes.
Lymphangiohemangiomas, tumor-like lesions with lymphatic and vascular origin, are rarely found pathologies of the mediastinum.

Retrospective case study.

A 57-year-old male presented with a paracaval mass incidentally found on computed tomography. His only significant history was hypertension. CT revealed a soft tissue mass measuring 4.7 x 2.3 x 4 cm extending from the confluence of the brachiocephalic veins superiorly to the right atrial appendage inferiorly. These findings are depicted in Figure 1. A right video assisted thorascopic approach was converted to open thoracotomy due to lack of visualization. The lesion was communicating with the SVC. Venous ectasia was noted throughout the lesion. Pathologically, the mass was noted to be a multilobular cystic lesion with focal lymphocytes. Vascular endothelium, lymphatic endothelium, CD3, T and B lymphocytes, and elastin were noted within the specimen.

Lymphangiohemangioma is a hybrid tumor with combined histological features. These may arise later in life and are not expected to spontaneously involute. Since these are congenital malformations with potential for growth by cell proliferation, surgical excision is the most commonly accepted treatment for these benign mesenchymal tumors. Lymphatic and vascular malformations are most notably located in the cervicomediastinum, and it has been hypothesized that these lesions are anomalies of lymphojugular sacs in embryos. The pathogenesis of lymphangiohemangiomas is not well understood and difficult to study given their rarity. Since first described by Angtucaco et al in 1983, there have only been 14 cases that have been documented to date. Diagnosis has been reported over a spectrum of ages. Lesions may remain asymptomatic during development and growth if they do not impinge on surrounding structures. Possible symptoms include cough, dysphagia, hemoptysis, and chest pain. In all reported cases, workup of symptoms included chest x-ray and computerized tomography. Computerized tomography may be helpful in demarcating the lesion from surrounding structures as well as displaying possible vascular involvement when contrast dye is utilized. As imaging can be inconclusive, it is important to continue to keep the most common mediastinal lesions within the differential. These include: thymoma, lymphoma, or germinal tumors. These difficulties in preoperative diagnosis may account for why nearly 85% of the reported mediastinal cases have been treated with surgical intervention. Long-term follow-up of the patient is warranted due to concern of potential recurrence in the setting of incomplete resection.
Lung hernia is a rare entity and should be repaired if incarcerated or symptomatic. Open repair can be challenging especially in presence of scarring from previous surgery, proximity to cardiophrenic angle and difficulty to localize due to overlying breast or thick chest wall.

57 year old woman presents five years after removal of a benign chest wall tumor with recurrent pain at the scar site for over a year. The pain was sharp, severe, and episodic and associated with deep breathing. It was difficult to localize the hernia on physical examination due to overlying breast but CT scan confirmed left anterior Lung hernia under breast tissue close to cardiophrenic angle. Given multiple hospital admissions in the past from symptomatic Lung hernia it was decided to repair it. We used Video assisted thoracoscopic surgical (VATS) approach to localize and reduce the hernia after which a small anterior thoracotomy lateral to the defect was made to repair a defect 8 x 6 cm in size with a 10 x 15 cm sized 2mm thick GORE DUALMESH.

Patient had an uneventful postoperative course. There was no recurrence during the one year of follow-up and substernal pleuritic pain was completely resolved.

Repair of postoperative Lung hernia close to cardiophrenic angle and posterior to breast can be challenging especially if attempted with either open or thoracoscopic approach alone. Use of VATS along with open approach not only makes the procedure easier but also gives satisfactory results.
Solitary fibrous tumors refer to an uncommon, heterogeneous group of benign or malignant tumors of mesenchymal origin. They rarely occur in the mediastinum.

Retrospective case review.

A 75-year-old woman with history of gastrointestinal stromal tumor with previous partial gastrectomy was referred for an enlarging posterior mediastinal paraesophageal mass and increased discomfort and dyspnea with talking. A right thoracoscopic excision of the tumor was performed via two-port access, and pathology demonstrated a low grade epithelioid neoplasm. Immunohistochemical stains were positive for BCL-2, STAT-6, CD99, and CD117. These results were consistent with the diagnosis of a solitary fibrous tumor of the posterior mediastinum.

Solitary fibrous tumors (SFTs) are rare and typically benign tumors that comprise less than 2 percent of all soft tissue tumors. They occur in multiple sites, commonly in the fifth to seventh decades of life, affecting men and women equally. Intrathoracic SFTs may arise in the pleura, lungs, or mediastinum. Intrapерitoneal SFTs may arise from the liver or genitourinary tract. Additionally, SFTs may arise in the skin or nervous system. The most common site for occurrence is the pleura. Diagnosis of SFTs requires histologic examination and is based on a characteristic immunohistochemical phenotype that helps to distinguish from other mesenchymal tumors. Grossly, the tumors are well circumscribed with a fibrous or serosal lining. In large tumors, necrosis or calcification may be present. Histologically, SFTs span a spectrum of hypocellular to hypercellular tumors, composed of round or spindle-shaped cells. Definitive diagnosis of a SFT requires demonstration of positive markers, as well as negative markers for specific locations. The most commonly used positive tumor markers are CD34 and Bcl-2. More recently, STAT6 has been shown to be a highly sensitive and specific marker for SFTs and is useful in diagnostically challenging cases and histological mimics. These tumor markers, along with others, can be used to differentiate pleural, meningeal, cutaneous, gastrointestinal, and soft tissue SFTs.
Teratomas are the most common germ cell tumors and are generally located in the sacrococcygeal area and anterior mediastinum. Primary intrapulmonary teratomas (IPT) are rare with less than one hundred cases reported in the literature. Our objective is to describe the presentation, work up, and surgical treatment of an IPT.

We describe the case of a 56-year-old female presenting with hemoptysis and found to have a large, well-circumscribed mass of the left upper lobe. CT revealed an 8.9 x 7.3 x 7.0 cm mass, abutting the mediastinum, comprised of fat, fluid, and interspersed areas of gas suggestive of a teratoma with airway communication. During bronchoscopy, she developed massive hemoptysis requiring intubation and bronchial artery embolization. The mass was resected en-bloc with the left upper lobe. Final pathology revealed a mature IPT.

Teratomas contain tissue components derived from at least 2 embryonic germ layers, and arise from the abnormal migration of pluripotent stem cells during embryonic development. Specifically, mediastinal teratomas are thought to arise from these pluripotent stem cells descending with the primordial thymus gland, and further lateral spread along the developing lungs gives rise to IPT. IPTs are extremely rare and are most commonly found in the left upper lobe. Mature teratomas are often slow growing and benign, usually presenting with symptoms related to mass effect, such as chest pain, dyspnea and post-obstructive pneumonia. Intrabronchial invasion can lead to hemoptysis, and rarely trichoptysis, which is considered pathognomonic for IPT. Imaging with computed tomography (CT) is often diagnostic, with findings of an encapsulated mass with smooth walls containing soft tissue, fluid, fat, and calcifications in varying combinations. Complete surgical excision is recommended and curative for mature teratomas. If immature tissue is present, the risk of malignant transformation exists, and additional workup is necessary to rule out further spread. Chemotherapy may provide some benefit for patients with malignant transformation and metastasis.

Isolated intrapulmonary teratomas are rare and often benign. However, surgical resection is recommended as 20-30% can harbor immature tissue and therefore are at risk for malignant transformation. Treatment is complete surgical resection, which is also curative for mature teratomas.
Kiosk 6 - Thoracic
266. CHALLENGES IN ESOPHAGEAL CONDUIT TUNNELING IN THE MORBIDLY OBESE: A REPORT OF TWO CASES
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An esophagectomy is a complex surgical procedure that requires a significant amount of preoperative planning and postoperative care. The morbidly obese patient presents unique operative challenges in the setting of an already complex operation.

Here we report two cases of esophagectomy requiring substernal tunneling with thoracic inlet widening due to complications with posterior mediastinal conduit. First, we report a case of a 55-year-old male with a BMI of 42 and a diagnosis of T3N1M0 esophageal adenocarcinoma who underwent a transhiatal esophagogastrectomy after neoadjuvant therapy. Due to this patient’s body habitus, he did not tolerate tunneling of the conduit in the posterior mediastinal space, with significant hypotension and rhythm abnormalities noted at the time of tunneling. A substernal tunnel with enlargement of the thoracic inlet allowed passage of the conduit and cervical esophagogastrostomy. Our second case was a 73-year-old gentleman with a BMI of 37.5 who also presented with T3N1M0 adenocarcinoma of the esophagus. Due to a history of previous gastric sleeve, he underwent transhiatal esophagogastrectomy with colon interposition. At the time of passage of the conduit in the posterior mediastinal space, he also developed hemodynamic instability. A substernal tunnel with enlargement of the thoracic inlet allowed for creation of an esophagocolotomy.

Creation of an esophageal conduit requires tunneling of the stomach or colon for an anastomosis either in the posterior mediastinum, where the esophagus normally lies anatomically, or in the retrosternal position. The posterior mediastinum is the preferable location for conduits due to its shorter route which produces less tension on the conduit and provides functional superiority to other locations. The patients presented above posed unique challenges in the operating room. Due to body habitus with significant mesenteric adipose deposition, they did not tolerate posterior mediastinal tunneling with significant cardiac compromise when the conduit was introduced into the chest. A retrosternal approach provided a safe and acceptable alternative. We feel these cases highlight the difficulty in operating on the morbidly obese.

Morbid obesity can lead to intraoperative complications and may dictate the resting position of the conduit due to compromise related to tunneling in the posterior mediastinum.
267. NEUROFIBROMA OF THE ANTERIOR MEDIASTINUM: A CASE STUDY
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While common in the posterior mediastinum, neurofibromas are rarely found pathologies of the anterior mediastinum.

A 38-year-old, healthy male presented with anterior chest wall pain and dyspnea. Workup included computed tomography (CT), which was significant for a 10-cm tumor of the anterior, superior mediastinum. There was associated compression of the left main pulmonary artery, aortic arch, and left upper lobe. These findings are depicted in Figure 1. Percutaneous biopsy was confirmatory for peripheral nerve sheath tumor. Tumor markers were negative. A primary median sternotomy was performed and the tumor was found to be inflammatory and densely adherent. While there was no appreciable invasion of the pericardium or any underlying critical vasculature structures, the phrenic nerve was essentially encased by the tumor. The tumor was resected en bloc with a portion of the left upper lobe and the left phrenic nerve. Pathologically, the specimen was 11 cm in greatest dimension and was noted to be an encapsulated tumor consistent with a neurofibroma.

Neurogenic tumors of the mediastinum most commonly originate from elements of the sympathetic chain in the posterior mediastinum. These tumors are often incidentally found on chest x-ray and, if symptomatic, are often very large in size. Clinical symptoms include shortness of breath, chest pain, and cough. Regardless of whether the tumor is incidentally found or identified after workup of symptoms, it is important to obtain a computed tomography of the chest to evaluate the proximity of the tumor to adjacent structures. For patients who also present with neurologic symptoms or back pain, magnetic resonance imaging of the chest is necessary to rule-out invasion on the spinal canal. The importance of complete surgical resection cannot be overlooked when it comes to determining the best surgical approach. Isolated tumors are amendable to minimally invasive resection. When lesions are large in size or there are multiple tumors, a thoracotomy is often required to ensure complete resection. A minimally invasive approach has been shown to be most successful for tumors under 6 cm in size. Regardless of the approach, it can be extremely challenging to preserve the original nerve while completely resecting the neurofibroma. This challenge is secondary to the fact that neurofibromas are non-encapsulated and contain all nerve elements. When considering this challenge of complete resection, one must remember that recurrence is common in patients with neurofibromatosis. While neurofibromas are benign, malignant degeneration to neurofibrosarcoma has been documented. This emphasizes the importance of periodic monitoring in this patient population, as well as further work-up of any patient suspected to have neurofibromatosis. In conclusion, any patient with concern for a neurogenic tumor of the mediastinum should receive full work-up and consideration for surgical resection. Pre-operative planning will set the surgeon up for success, as the surgical approach is vital in achieving a complete tumor resection.
RARE CASE OF LARGE ESOPHAGEAL LEIOMYOMATOSIS REQUIRING ESOPHAGOGASTRECTOMY
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Esophageal leiomyomatosis is a rare condition caused by the abnormal proliferation of smooth muscle fibers. It is typically associated with Alport syndrome and is more common in childhood and in females. Although it is a benign condition, these tumors can require surgical intervention when the tumor causes compression of surrounding tissues and significant dysphagia.

Here we report the rare case of a 42-year-old male who presented with a 15 cm esophageal mass consistent with leiomyomatosis. He had multiple medical comorbidities including morbid obesity with BMI greater than 40 and type 2 diabetes mellitus. The patient reported progressive dysphagia. Initial imaging revealed circumferential multilobulated thickening of the esophagus with mass abutting the left ventricle and descending thoracic aorta. Esophagogastrroduodenoscopy was performed showing extension of tumor from the level of the thoracic inlet to the gastroesophageal junction. Esophagectomy was planned but unable to be carried out initially due to two episodes of asystole preoperatively. The patient remained intubated and was taken to the intensive care unit. His course was complicated by acute respiratory distress syndrome requiring mechanical ventilatory support and bronchoscopy. Once he was medically optimized, the decision was made to proceed with esophagectomy. Transhiatal esophagogastrectomy was performed via a laparotomy and left cervicotony. The patient recovered from his procedure, but developed nausea and vomiting nearly one year following the resection. Esophagogastrroduodenoscopy revealed viable conduit with no stenosis. A Botox pyloroplasty with balloon expansion was performed with alleviation of symptoms. No recurrence of the tumor was noted on follow up imaging.

Due to the uncommon presentation of esophageal leiomyomatosis in an adult male population, a high index of clinical suspicion is required to make such a diagnosis and proceed with the appropriate operative intervention. Barium esophagography will reveal a narrowing that is irregular and multilobulated. On esophagogastroduodenoscopy, smooth mucosal lining is noted which can be differentiated from the mucosal erosion often seen with a malignant process. Circumferential, often large volume, thickening can be seen on CT imaging.

Although esophageal leiomyomatosis is a benign process, it can necessitate surgical intervention with significant associated morbidity in patients with large volume tumors and progressive dysphagia.
Although metastatic disease of the heart is much more common than primary cancers of the heart, it remains an exceedingly rare clinical diagnosis. Most cardiac metastases arise from primary lung, breast, and hematologic malignancies with ovarian, gastric, renal, and pancreatic cancers accounting for a smaller number of cardiac metastases. Head and neck cancer is an extremely uncommon cause of cardiac metastases with only thirteen reported cases in the literature.

This patient was a seventy-year-old female who was diagnosed with biopsy proven squamous cell carcinoma of the tongue in August of 2009. Following diagnosis, she underwent chemotherapy with a fractionated cisplatin regimen as well as radiation. A post-therapy biopsy showed no residual tumor. Six years later, in July of 2015, she was diagnosed with congestive heart failure, new atrial fibrillation, and what appeared to be a ventricular thrombus on echocardiogram. Her ejection fraction at that time was 20-25%. Two months later, the patient was admitted to the hospital with worsening heart failure and hypotension. She was a heavy smoker at greater than two packs per day for many years. She had no other significant past medical history. Her family history was notable for a brother with bladder cancer. While in the hospital, she underwent a chest CT scan which revealed a large multi-lobular infiltrative mass along the left-sided anterolateral pericardium, measuring 8x10x10cm with likely invasion into the right and left ventricular walls and interventricular septum. The tumor appeared to encase the left main coronary artery with erosion into the pulmonary artery. There was question of whether the apical thrombus seen on echo two months previously actually represented the pericardial mass. Thoracentesis was negative for malignancy. A 4-cm anterior thoracotomy was performed in the 5th intercostal space. Multiple needle biopsies of the mass were taken through the pericardium which revealed metastatic squamous cell carcinoma with moderate differentiation. Following this diagnosis, the patient’s clinical status declined quickly with worsening heart failure and volume overload. The patient was discharged to hospice care 9 days following the pericardial biopsy. She passed away one day following her discharge.

Although metastatic tumors of the heart are found in 0.7-3.5% of the general population at autopsy, they remain very rare clinical diagnoses. Primary lung cancer represents 36-39% of cardiac metastasis, followed by hematologic malignancies at 10-21% and primary breast cancer at 10-12%. Other tumors which are known to give rise to cardiac metastasis are melanoma along with ovarian, gastric, renal, and pancreatic cancers. Although the pericardium is the most frequent site of cardiac metastasis at 64-69%, other sites include the epicardium at 25-34%, myocardium at 29-32%, and cardiac cavities at 3-5%. Head and neck squamous cell carcinoma is a very rare cause of cardiac metastasis. In the literature, there are only thirteen previously reported cases. Of these thirteen cases, eight were from primary tongue cancer. The other five cases were from primary cancers of the mandible, buccal mucosa, larynx, soft palate, and trigone of the oral cavity.
Functioning parathyroid adenoma causing symptomatic hypercalcemia in a young patient requires surgical removal. A Mediastinal parathyroid adenoma is rare and requires a transthoracic, rather than a cervical approach, for curative resection.

A successful, minimally invasive resection of a mediastinal parathyroid adenoma in a young patient is reported.

The patient is a 24 year old female who presented to an outside institution with a symptomatic kidney stone, which was treated with cystoscopy, lithotripsy and ureteral stent placement. The serum calcium was elevated, 11.5 mg/dl (normal; 8.5-10.5 mg/dl), serum PTH level 232.5 pg/ml (normal; 10-65 pg/ml). The diagnosis was consistent with primary hyperparathyroidism and the patient was referred to an endocrine surgeon at our institution. Imaging was done and a Technetium-99- sestamibi (99mTc-MIBI) scan identified increased activity in the superior mediastinum, consistent with a hyperactive parathyroid adenoma. computed tomography scan of the neck and chest, with intravenous contrast, confirmed abnormal enhancing soft tissue mass lying on the anterior pericardium, in the groove between the superior vena cava and ascending aorta and measuring 1.1 x 0.6 cm in size. Because a transcervical approach was deemed impractical for surgical resection, she was referred to our department of thoracic surgery. Under general anesthesia and single lung ventilation, a right sided Video thoracoscopic exploration of mediastinum was done. Three separate 3cm thoracoscopic incisions were used. The tumor was localized within the anterior mediastinum and just lateral to the thymus, on the anterior surface of the pericardium. The tumor was excised and parathyroid tissues was confirmed on frozen section and subsequent permanent pathology. PTH level returned to normal level 30 minutes after excision of the adenoma. The post operative recovery was unremarkable and patient discharged home on the third post operative day. Patient has remained asymptomatic and doing well on out patient follow up.

Parathyroid adenoma is a common cause of hypercalcemia. Majority of patients are asymptomatic, with combinations of symptoms classically described as ‘stones, bones, moans, groans and psychic overtones’ are rarely observed. cervical parathyroid adenoma is the usual cause, with functional ectopic mediastinal parathyroid adenomas are rare and account for 1-2% of patients undergoing surgical intervention. Careful workup and appropriate pre operative localization studies help dictate the appropriate surgical approach of parathyroid adenoma. Thoracoscopy is the best option for mediastinal adenoma with less post operative pain, shorter hospital stay, fast recover, and better cosmetic result.
Kiosk 7- Quality Improvement

271. PREVENTION OF POSTOPERATIVE PNEUMONIA IN SURGICAL PATIENTS

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Postoperative pneumonia is a nosocomial infection that causes increased hospital length of stay, morbidity, and readmission rates. Current data supports the use of perioperative chlorhexidine gluconate in elective cardiac patients to prevent postoperative pneumonia. The aim of this study was to determine the effectiveness of oral care with chlorhexidine, along with additional pre- and postoperative strategies to prevent the incidence of postoperative pneumonia among elective surgical patients tracked by The American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP).

The NSQIP database, which is the only national, risk-adjusted quality improvement system validated by surgeons was utilized to identify postoperative pneumonia as an adverse event to improve upon. A resident driven quality improvement project was designed to improve upon the postoperative pneumonia rate and establish a system for resident education. Patients received an oral and pulmonary care bundle in order to prevent the incidence of postoperative pneumonia among elective surgical patients tracked by NSQIP. The preoperative interventions included: i) incentive spirometry (IS) teaching by nursing staff in preoperative holding area; ii) oral care with 0.12% chlorhexidine gluconate rinse. The postoperative interventions included: i) incentive spirometry (10 workouts per hour); ii) twice per day oral care with 0.12% chlorhexidine gluconate rinse; iii) head of bed elevated to 30 degrees; iv) up for all meals.

We encountered multiple systematic issues while conducting this study, which mainly arose from organizing a hospital-wide program. This led to an imbalanced compliance to the preoperative and postoperative bundle. However, the rate of postoperative pneumonia was reduced from 0.6-1% to 0. We conclude that the stated oral and pulmonary care bundle may be a viable option to reduce the rate of postoperative pneumonia in elective surgical patients.
Kiosk 7- Quality Improvement

272. DOES PREOPERATIVE CHLORHEXIDINE GLUCONATE SHOWERING DECREASE POSTOPERATIVE WOUND INFECTIONS IN GENERAL SURGERY PATIENTS? A SINGLE INSTITUTION REVIEW
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There is a paucity of evidence in elective general surgery cases that preoperative chlorhexidine gluconate (CHG) showering decreases wound infections, with one recent study suggesting an increase in the rates of surgical site infections (SSI) post-operatively in patients who had preoperative CHG showering. Preoperative CHG showering has been partially implemented at our community hospital, with surgeon A participating in this practice and surgeon B abstaining, providing 2 similar patient populations for SSI comparison. Our study aims examines the benefit of preoperative CHG showering to the elective general surgical outpatient.

A retrospective review of general surgery cases from January 2014 to March 2017 was performed. Patient demographics, operating surgeon, patient comorbidities, as well and tobacco and drug use was collected. Inpatient cases and emergent cases were excluded. Cases which would not be subject to the CHG showering recommendations (such as colonoscopy or hemorrhoidectomy) were also excluded. Each patient case was reviewed for CHG showering and then for postoperative wound infection, skin irritation, rash or skin breakdown, as well as patient comorbidities.

About 820 cases were completed by two general surgeons during this time period. After excluding the inpatient and emergent cases, about 519 were included in the review as elective outpatient cases, with 267 having preoperative CHG showering, and 252 patients not. A total of five wound infections occurred in this patient population, for a wound infection rate of 0.96%. Of those undergoing CHG showering 1.50% (n=4) developed SSI, compared with 0.40% (n=1) of those forgoing CHG showering.

There is a growing trend of mandatory preoperative CHG showering or bathing for all operations. Our retrospective review of two matched patient populations adds to the literature that CHG showering does not have a significant impact on SSI in the general surgery population, and provides no benefit.
Kiosk 7- Quality Improvement

273. SEQUENTIAL COMPRESSION DEVICE UTILIZATION: A QUALITY MULTI-INSTITUTION REVIEW

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The American College of Chest Physicians recommends intermittent pneumatic compression devices (ICDs) for general and abdominal-pelvic surgery patients and patients at high risk of thrombosis. The East Tennessee State University (ETSU) residency covers three hospital systems. The ETSU residents did a quality review study to examine compliance with this important measure.

An observational study was completed by ETSU residents, on general surgery services at three different institutions. During morning rounds on days chosen at random, residents on surgical services, where all patients had ICDs ordered at admission, were asked to observe the number of patients that had their ICDs on and functional. Patients ambulating were excluded.

Of the 112 patients observed, 23 had their ICDs on and functional. Two patients were excluded as they were walking. This was completed over the course of 7 days. All three institutions had about equal number of patients. About 20% of patients had their ICDs on and functional.

Despite the ACCP guidelines and orders present on admission, about 20% of patients at 3 different institutions in east Tennessee on general surgery services, were observed wearing their ICDs. This information will be used to educate staff of the importance of ICDs and serve as the basis for a resident quality improvement study after implementation.
Kiosk 7- Quality Improvement

274. COMPARISON OF HIGHEST LEVEL ACTIVATION CRITERIA ALERT SYSTEM, VERSUS COMBINED ACTIVATION SYSTEM AT A LEVEL 1 TRAUMA CENTER

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This study compares mortality and outcomes of trauma patients from 2003-2010 and 2011-March 2017, at a level 1 trauma center. Prior to the end of 2010 there was a single trauma activation level, “Regular,” which was then split into Alpha (higher acuity) and Beta (lower acuity) trauma alerts after that point in time. We hypothesized that mortality would decrease in the 2011-2017 group, and show higher RMM values compared to the 2003-2010 cohort.

Using the data registry from 1994-2017, we performed a retrospective analysis using the RMM. The study stratified patients by time period and trauma alert status; ‘Regular’ (n=1146) between 2003 and 2010, and ‘Alpha’ (n=286), ‘Beta’ (n=979), and a combined ‘Alpha + Beta’ (n=1265) between 2011 and 2017. The Trauma and Injury Severity Scale (TRISS) Probability of Survival (POS) was used to compare mortality. We used the Relative Mortality Metric (RMM), which compares actual versus anticipated mortalities across all probabilities of survival, weighing each group equally. The RMM varies from -1 to 1 (0: actual survival = expected, >0: actual>expected). The relative mortality performance trend (RMPT) allows examination of statistically significant differences in RMM.

The RMMs calculated for each group are Regular (RMM= 0.458 ± 0.138), Alpha (RMM= 0.372 ± 0.193), Beta (RMM= 0.504 ± 0.210) and Alpha + Beta (RMM= 0.376 ± 0.137). The data shows no survival improvement in multiple POS bands (RMM) when comparing Alpha/Beta system to Regular system. However, the Alpha/Beta system better differentiated patients requiring ICU care (Odds Ratio 1.708; confidence interval 1.447-2.015). Alpha/Beta also proved more efficient at getting patients out of the ED (mean= 209 minutes, SD 4 181 minutes) compared to Regular (mean = 273 minutes, SD 4 217 minutes, two sample t-test, p<.001).

The RMM shows no survival improvement when comparing a two tiered activation system to a one tiered system. Of note, the Alpha/Beta system average patient age was 41.8, almost 4 years older than the average Regular patient age (38.0). It is unclear what age has to do with the above findings. We found a statistically significant reduction in average time spent in the ED for Alpha/Beta (209.9 minutes) vs Regular (273.3 minutes), demonstrating quicker throughput with the newer two tier system. The Alpha/Beta system was also more efficient at differentiating patients admitted to the ICU.
Figure 1: Comparison of average time spent in the ED, stratified by trauma alert level.
Kiosk 7- Quality Improvement

275. TIME TO TRACHEOSTOMY AT A RURAL, LEVEL ONE TRAUMA CENTER; INTERNALLY VALIDATING A TQIP REPORT
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Tracheostomy timing in trauma patients, specifically those with a traumatic brain injury (TBI), is vital and has become a unique tool to evaluate patient care through the Trauma Quality Improvement Program (TQIP). In 2015, TQIP reported a median time to tracheostomy of 6.5 days for our rural trauma center; however, TQIP’s 2017 data reported that our outcomes significantly worsened. We used these results as an opportunity for performance improvement and sought to determine our institution’s true time to tracheostomy and any factors that may have hastened or delayed its performance.

We performed a retrospective review from 2010 to 2016 of our trauma registry, querying all patients who received a tracheostomy during their hospitalization. We isolated patient demographics, injury severity score (ISS), GCS on admission, mechanism of injury, date(s) of intubation, date of tracheostomy, medical comorbidities, and specific traumatic injuries. Timing of interventions were calculated. Early tracheostomy was defined as ≤7 days and late as >7 days. Predictive analyses were performed via negative binomial regression with odds ratios and 95% confidence intervals.

Our 2017 TQIP Benchmark Report suggests that no tracheostomies were performed at our institution before 7 days of admission in severe TBIs; however, our study (n=618) shows that that median time to tracheostomy was 7.4 days (44.33 SD). Median ventilator duration was 14 days (48.1 SD) and median hospital length of stay was 26 days (45.14 SD). When divided into TBI (n=289) and non-TBI (n=329) cohorts, median time to tracheostomy was not significantly different (7.56 days vs 7.29 days, p =0.679). When stratifying patients into early (n=344) and late (n=274) tracheostomies, the only significant difference between the groups was ISS (23.8 vs 26.13, p = 0.0075). Interestingly, there was a significantly greater proportion of patients with medical comorbidities, specifically alcoholism (18% vs 10%, p= 0.005) and sleep apnea (5% vs 1%, p=0.005), in the early intervention group. Using negative binomial regression for our entire study population and the TBI and non-TBI cohorts, no independent variables (age, gender, race, ISS, GCS, or mechanism of injury) significantly predicted time to tracheostomy, total ventilator days, or total hospital days.

Early tracheostomy has been shown to decrease ventilator times and ICU length of stay in the trauma population. At our institution, we continue to perform this procedure within 7 days on average, which is in congruence with best-practice guidelines. We may even be more aggressive with patients expected to have longer mechanically ventilated times (ie alcoholics and patients with sleep apnea) as seen in our early tracheostomy group. Our 2017 TQIP tracheostomy report, though invaluable and much a nidus for ongoing performance improvement, is possibly a single snapshot in time of a data set at risk of inconsistent charting and chance.
276. BARRIERS TO COLONOSCOPY IN AN UNINSURED PATIENT POPULATION

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Colorectal cancer is the third leading cause of cancer-related death in the US, with over 140,000 diagnosed yearly. To address this, the National Colorectal Cancer Roundtable formed the “80% by 2018” initiative - with the goal of having 80% of adults aged 50 and older screened by 2018 through education and outreach. Our institution has an Ambulatory Care Clinic to serve as a safety net for the uninsured population. This study was designed to examine obstacles for patients who did not receive their scheduled colonoscopy, focusing on the impact of insurance status.

A retrospective chart review was done of patients scheduled for colonoscopy over the last 4 years who did not complete their colonoscopy. The control group consisted of 6 months of patients who completed their scheduled colonoscopy. Patient demographics, reasons for cancellation, duration until next colonoscopy attempt, colonoscopy findings, BMI, comorbidities, PCP status, and last ED visit were recorded.

175 patients missed 200 colonoscopies. The most common reasons for cancellation were patient illness (16%), no-show (14%), no prep done (13%), inadequate prep (10%), and no transportation (11%). There was a trend towards more non-Caucasian patients in the cancelled group (74% vs. 64%, p=0.06), but no differences in age, sex, or obesity. The cancelled patients showed a trend to uninsured (69% vs. 59%, p=0.07). The cancelled patients were significantly more likely to have the combination of no insurance and no PCP (13% vs. 4%, p=0.008). Interestingly, the cancelled patients had a significantly higher rate of personal history of cancer (22% vs. 12%, p=0.02) as well as a trend towards a higher rate of family history of colon cancer (16% vs. 9%, p=0.07). The patients who cancelled had a significantly lower history of colon polyps (37% vs. 53%, p=0.006), but a significantly higher rate of prior GI issues (78% vs. 50%, p<0.001). There were no significant differences in history of smoking (67% vs. 59%, p=0.16) or alcohol (63% vs. 60%, p=0.60), although the cancelled patients trended more likely to have a history of drug use (22% vs. 14%, p=0.07). There was no significant difference in cancellations based on the day of the week.

There are a number of barriers to colonoscopy in both the insured and uninsured patients. Difficulty with the bowel prep accounted for almost ¼ of all cancellations and likely would benefit from focus. Additionally, lack of insurance and poverty likely does create a barrier even in a system that has a safety net, with additional issues such as transportation and inability to miss work playing a role. Further study to assess methods to overcome these barriers is warranted.
Kiosk 7- Quality Improvement

277. INCIDENCE AND MANAGEMENT OF POST TRAUMATIC HEMOTHORAX AT A LEVEL 1 TRAUMA CENTER

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Post traumatic hemothorax is common, although the true incidence is unknown. Without surgical intervention, post traumatic retained hemothorax may progress to fibrothorax or empyema, which is associated with significant morbidity and mortality. Management options include observation, tube thoracostomy, intrapleural thrombolysis, video assisted thoracoscopic surgery (VATS), or thoracotomy. The AAST Retained Hemothorax Study Group has stated that VATS is the ideal initial therapy, although the optimal timing remains unclear. However, EAST guidelines recommend VATS be performed in the first 3 to 7 days of hospitalization to minimize the risk of infection and conversion to thoracotomy. In this investigation, we aim to determine the incidence of retained hemothorax requiring subsequent VATS, to identify risk factors predicting the need for VATS, and to identify areas for process improvement such as alteration in our chest trauma protocol.

This is a single institution, retrospective chart review of trauma patients with CT diagnosed hemothorax from January 1, 2015 – August 30, 2017. Patient characteristics were collected including age, gender, mechanism of injury, injury severity score, and initial volume of hemothorax evacuated by tube thoracostomy. We arbitrarily defined 500 cc or greater to define significant hemothorax. Retained hemothorax was diagnosed by non-contrast CT chest. We identified patients requiring tube thoracostomy and VATS. We attempted to identify indicators predicting which patients would need VATS.

Over the study period, 292 patients were admitted with traumatic hemothorax. In our study population of 281 patients, the average age was 46.4 years, and 80% were male, with average injury severity score of 21.6. Tube thoracostomy was performed in 185 patients (66%) and was not performed in 96 patients (34%). Of those requiring tube thoracostomy, 27 patients (15%) underwent VATS. Of note, one patient underwent VATS without prior tube thoracostomy. Of patients who ultimately underwent VATS, 19 (68%) presented following blunt trauma, and 10 (36%) had 500 cc hemothorax evacuated at time of initial tube thoracostomy. The average time to VATS was 8.8 days after presentation, with the average time to repeat CT chest of 6 days post injury.

The rate of post traumatic retained hemothorax requiring VATS in our multitrauma population was 10%. Mechanism of injury was not predictive of need for VATS. Initial sanguineous output from tube thoracostomy less than 500 cc predicts when VATS will not be needed, with a negative predictive value of 89%. However, the positive predictive value of undergoing VATS with initial output greater than 500 cc was only 28%. Earlier diagnosis with CT chest may be beneficial to decrease length of stay. Therefore, we have developed a protocol for early identification and management of post traumatic retained hemothorax.
Kiosk 7- Quality Improvement
278. THE ROLE OF OTOLARYNGOLOGY IN THE ASSESSMENT OF NASAL OBSTRUCTION IN CLP PATIENTS POST-RECONSTRUCTIVE SURGERY
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There is a need to more clearly define the characteristics of breathing patterns in patients with cleft lip and palate (CL&P) post reconstructive surgery. Otolaryngology’s only role with CLP is to assess tympanic membrane and Eustachian tube dysfunction. There is a clear prevalence of nasal obstruction experienced by patients post rhinoplasty. However, nasal obstruction in a patient post-reconstructive surgery is rarely evaluated by otolaryngology and is corrected primarily by plastic surgery. Furthermore, the current literature fails to clearly define breathing symptoms patients may experience post-operatively and does not provide guidelines for improvement. Furthermore, treatments are rendered on an as-needed basis. Treatments are also usually based on misdiagnosis of the symptoms with other pathologies. Chronic dyspnea is associated with many deleterious health effects; thus, if breathing complications related to CL&P post-surgery are found to be widespread, and thus it will show a serious need to address these symptoms in patients. The aim of this paper is to identify the prevalence of breathing complications in this population group.

Qualitative research was conducted to identify if patients used their noses or mouths to breathe during various activities, such as eating, reading, sleeping, and exercise. Patients also stated how comfortable they felt only using their noses to breath.

Eleven patients were surveyed, all post-palatoplasty. They were of various ages and with varying degrees of CL&P. Nine patients reported being tired after a full night of sleep, as well as waking with dry mouth due to relying on their mouths for breathing. They reported these symptoms to be chronic. Nine patients also reported snoring. All patients reported that they use their mouths to breath during sleep. Nine patients reported that they could not fully use their nostrils to breath despite effort. One patient reported an ability to breathe through the nostrils after surgical intervention.

The majority of patients surveyed admitted to chronic dyspnea. Different fields of medicine such as primary care and ear, nose and throat (ENT) should be involved in the evaluation of patients with CL&P post-palatoplasty. Further studies must be conducted to confirm the prevalence of this issue in different populations, and to investigate the physiologic sequelae of chronic dyspnea in these patients. Guidelines should reflect the need to evaluate every post-palatoplasty CL&P patient for dyspnea and to start treatment as appropriate.
Kiosk 7- Quality Improvement

279. DO PHYSICIANS, NURSES, OR PATIENTS HAVE BETTER INSIGHT ABOUT HEALTHCARE COSTS?

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Healthcare costs have continued to rise well above the rate of inflation for the past several decades and is expected to reach nearly 20% of national GDP (gross domestic product) by the year 2025. Despite healthcare costs becoming a major talking point among medical professionals, patients, and even politicians, there is still little understanding and even less transparency regarding the true costs of medical care. We sought to evaluate the differences in knowledge of healthcare costs among different stakeholders of the healthcare system, namely patients, nurses, and physicians, and medical students.

An identical anonymous questionnaire was distributed to patients, nurses, physicians, and medical students in a single tertiary care hospital. The survey required participants to guess both the cost to the hospital and the charges to the patient of ten common items in healthcare. These items were: a bag of normal saline, a bag of total parental nutrition, a complete blood count, and ultrasound of the abdomen, a CT scan of the abdomen and pelvis, a colonoscopy, surgical glue (Dermabond), a surgical energy device (Harmonic scalpel), an initial trauma evaluation, and 10 minutes of operating room time, with complete descriptions of each item included in the survey. Subjects were then asked several questions regarding the importance of knowing healthcare costs.

A total of 619 surveys were returned, divided into 323 patients, 259 nurses, 29 physicians, and 8 medical students. The overall response rate was 81.3%. Female respondents made up 68% of the overall survey population. All groups tended to greatly overestimate costs the hospital incurs to administer healthcare, with physician estimates on average 3.4 times higher, nurse estimates 4.7 times higher, and patient estimates 7.3 times higher than true cost. All groups tended to overestimate hospital costs on nearly all items [Figure 1]. Participants conversely tended to underestimate the charges for healthcare, but were generally more accurate, with physician estimates 1.03 times lower than true charges, nurse estimates 0.53 times lower, and patient estimates 1.1 times lower than true charges. The majority of nurses and patients agreed that it was “extremely important” for patients to know the costs of healthcare (58.5% and 59.1%, respectively), and for physicians to know the costs of healthcare (69.5% and 62.0%, respectively). Only 36.1% of physicians responded that it was extremely important for patients to know the costs of healthcare and only 47.1% responded that it was extremely important for physicians to know the costs of healthcare. Almost half of patients (48.7%) and nurses (46.8%) responded that cost was extremely important in making medical decisions, whereas only 27.8% of physicians responded this way.

While most participants agree that accurate knowledge about healthcare costs are important and should be known among patients and healthcare providers, all groups had significant deficiencies in accurately reporting both costs and charges of healthcare. There remains substantial lack of transparency regarding healthcare costs for all stakeholders in healthcare.
Identifying disparities in surgical outcomes among patient types may help hospitals target specific patient populations at highest risk for complications. Quality Improvement efforts can then focus on these groups in an effort to diminish disparities and improve overall outcomes. The South Carolina Surgical Quality Collaborative (SCSQC) is a regional collaborative made up of eight member facilities whose goal is to improve the quality and value of general surgical care in South Carolina. Using SCSQC data, we reviewed colon surgery outcomes to determine if disparities exist in outcomes between specific patient populations.

SCSQC colon surgery data was reviewed from August 2015 to August 2017. Surgical site infection, Length of stay, return to the Emergency Department, and reoperation rates were utilized as outcome measures. These outcomes were evaluated in specific patient populations stratified by gender, race (Caucasian, African-American), and Age (< 50, 50 to 70, and > 70).

2468 patients underwent colon surgery in one of eight collaborative hospitals during the study period. Their data was analyzed to determine differences in outcomes. The mean age for females was 56.3 and for males 54.2. 72.2% of patients were Caucasian and 26.5% African-American. 33% of patients were under 50 years of age, 48% between 50 and 70, and 19% greater than 70. There was no statistically significant difference in age between the Caucasian and African-American patient populations (55.5 v 54.8 p=0.2801). Statistically significant differences in outcomes were identified between Caucasian and African-American patients in length of stay (6.1 v 7.6 days p<0.0001) and return to the Emergency Department (8.1% v 15% p < 0.0001), but not in surgical site infection (6.5% v 6.9% p=0.9325) or reoperation rates (6.6% v 8.7% p = 0.1958). Length of stay increased with increasing age for all patients (4.1 v 7.1 v 8.9 p<0.0001). Surgical Site Infections varied by age group (3.9% v 8.4% v 6.6% p=0.0004). Reoperation rates increased with age (4.7% v 8.4% v 8.5% p = 0.0038). Return to the Emergency Department was inversely related to age, but did not reach statistical significance (11.4% v 9.8% v 7.9 % p=0.1218).

Conclusions: South Carolina Surgical Quality Collaborative data shows statistically significant differences in some, but not all, outcome measures based on race and age for patients undergoing colon surgeries. Knowledge of outcome differences between patient populations can help guide hospitals quality improvement efforts to improve specific outcomes for at-risk patient populations.
281. THE USE OF DEHYDRATED HUMAN AMNION-CHORION MEMBRANE (DHACM) ALLOGRAFT IN THE TREATMENT OF LARGE FACIAL SOFT TISSUE DEFECTS
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University of Alabama at Birmingham

Ablative treatment for facial skin malignancies often results in large defects with exposure of bone, cartilage and vital structures. These defects are reconstructed with local or regional flaps, skin grafts, bioengineered skin substitutes or rarely left to heal by secondary intention. Human amniotic membrane, comprised of amnion and chorion, has been used as a wound healing facilitator for over 100 years. Processed dehydrated human amnion/chorion membrane (dHACM) is a minimally manipulated, dehydrated, non-viable cellular amniotic membrane allograft that contains human extracellular matrix components, essential growth factors, and specialized mediating cytokines that modulate inflammation, reduce scar tissue formation, and enhance healing. Randomized controlled trials have shown dHACM allografts to be cost-effective in the treatment of hard to heal wounds.

We present a series of patients with facial post-ablative defects, which underwent biweekly treatments with amnion resulting in complete re-epithelization obviating the need for local or regional soft tissue rearrangement.

Patient 1 underwent excision of 2 large lesions of the nose with a final defect greater than 20 cm² (Figure 1A). The defect was covered with fetal bovine dermis derived acellular dermal matrix. Amnion was added on a biweekly basis starting on postoperative day 7 days. On postoperative day 11 the defect size was 5.5x3.2 cm and the right cheek defect 1.2 cm. (Figure 1B) On postoperative day 18 these defects 1.4x1.8 cm and 6x4 mm respectively and by postoperative day 24, the cheek component was healed and the remaining defect was 8x4 mm. (Figure 1C) The patient underwent a forehead flap with cartilage graft reconstruction of the right ala. (Figure 1D) Patient 2 underwent excision of a 6.5x10 mm lesion of the right lower eyelid margin with immediate application of a 24 mm sheet of dHACM. On postoperative day 7, the wound measured 2 mm and was healed by postoperative day 14. Patient 3 underwent a full thickness skin graft reconstruction of the right nasal ala after excision of a skin malignancy. After failure of the skin graft, he was treated with weekly applications of dHACM with complete healing of the area after 21 days (3 applications). Several other patients who have had dHACM placed on periosteum, eyelid, breast, and nasal defects will be shown are currently being followed.

Human amniotic membrane is an immune privileged compound that modulates inflammation and reduces scar formation conferring it significant therapeutic potential for wound healing, tissue repair, and regenerative therapy. In the cases presented, dHACM allograft was effective in promoting healing in patients with a facial wounds following ablative therapy of skin malignancies decreasing the reconstructive efforts needed to get the wounds to heal.
Kiosk 8- Hernia
282. INGUINAL HERNIA REPAIR OUTCOMES PREDICTED BY MELD-NA SCORE IN NON-CIRRHOTICS
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Carolinas Medical Center

In patients with cirrhosis, the Model for End-Stage Liver Disease Sodium (MELD-Na) is validated as a predictor for transplant and non-transplant surgical outcomes. MELD-Na may also predict patient outcomes in the non-cirrhotic surgical patient. MELD-Na has been demonstrated to predict postoperative morbidity and mortality after elective colectomy, including anastomotic leak. The aim of this study is to apply MELD-Na to predict postoperative complications following elective inguinal hernia repair (IHR).

The ACS NSQIP database was queried (2005-2014) for all elective IHR in patients without ascites or esophageal varices. Postoperative complications and outcomes were compared by MELD-Na score using Chi-square tests and multivariate logistic regression analysis, controlling for multiple comorbidities.

19,660 IHR were identified with mean age 61.64±5.5 years, BMI 26.68±4.9 kg/m², and 90.0% performed in males. 22.1% of patients had preoperative MELD-Na score 10-14, 3.3% had a score 15-20, and only 0.9% had a score ≥20 (46 patients). The major, minor, and wound complication rates were 1.9%, 2.5%, and 0.9% respectively. 74.6% were performed open (OIHR) and mean length of stay (LOS) was 0.9545±0.84 days. In multivariate analysis of OIHR, incremental increases in MELD-Na score (10-14, 15-19, and ≥20) were independently associated with worse outcomes when compared to MELD-Na≤10. Meld-Na 10-14 predicted increased 30-day mortality (OR2.43, CI1.127-5.25), wound complications (OR 1.67, CI1.03, 2.68), major (OR1.60, CI1.12-2.29) and minor complications (OR2.043, CI1.45-2.88). MELD-Na 14-19 was associated with longer LOS (+1.05days, SE0.25, p<0.0001), higher 30-day mortality, return to OR, and wound, major, and minor complications (OR3.30, CI1.27-16.66; OR2.52, CI1.24-3.72; OR2.80, CI1.45-5.41; OR2.66, CI1.65-3.29; OR2.51, CI1.53-4.12, respectively). In laparoscopic repair (LIHR), patients with MELD-Na 10-14 had more major complications (OR2.61, CI1.17-5.83). MELD-Na 15-19 predicted major and minor complications (OR5.01, CI1.41-17.79; OR2.90, CI1.09-7.72, respectively). With OIHR and LIHR grouped, elevated MELD-Na scores continued to be associated with longer LOS, increased 30-day mortality, readmission, return to the OR, major and minor complications. MELD-Na 10-14 was independently associated with increased 30-day mortality, readmission, major, and minor complications (OR 2.24, CI1.06-4.73; OR2.36, CI1.34-4.17; OR1.91, CI1.42-2.56; OR1.9, CI1.42-2.56). IHR with MELD-Na 15-19 had longer LOS (+0.2 days, SE0.11, p<0.0001), and higher 30-day mortality, return to the OR, wound complications, major and minor complications (OR3.17, CI1.24-8.11; OR2.06, CI1.12-2.78; OR2.41, CI1.26-4.60; OR2.81, CI1.79-4.12; OR2.45, CI1.57-3.82). Patients with MELD-Na≥20 had significantly longer LOS (+1.23days, SE0.34, p=0.0003), higher readmission (OR5.06, CI1.33-19.26), return to the OR (OR7.19, CI 3.82-13.52), major and minor complications (OR2.81, CI1.79-4.42; OR 3.16, CI1.55-6.401).

MELD-Na is independently associated with increased postoperative complications, increased length of stay, and 30-day mortality in elective laparoscopic and open inguinal hernia repair. Preoperative MELD-NA screening in non-cirrhotic patients should be considered.
Outcomes of Elective Inguinal Hernia Repairs Based on MELD-Na Score. Multivariate Logistic Regression, CI: Confidence interval.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>MELD-Na &lt; 10</th>
<th>MELD-Na 10-14</th>
<th>MELD-Na 15-19</th>
<th>MELD-Na ≥20</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Reference</td>
<td>Odds Ratio (95% CI)</td>
<td>Odds Ratio (95% CI)</td>
<td>Odds Ratio (95% CI)</td>
</tr>
<tr>
<td>Return to OR</td>
<td>1.00</td>
<td>2.24 (1.06-4.73)</td>
<td>2.17 (1.24-3.72)</td>
<td>2.16 (0.35-15.40)</td>
</tr>
<tr>
<td>Readmission</td>
<td>1.00</td>
<td>2.96 (1.34-6.51)</td>
<td>2.50 (0.99-6.46)</td>
<td>5.06 (1.35-19.26)</td>
</tr>
<tr>
<td>30 Day Mortality</td>
<td>1.00</td>
<td>1.37 (0.90-2.10)</td>
<td>2.06 (1.12-3.78)</td>
<td>7.19 (3.02-13.32)</td>
</tr>
<tr>
<td>Major Complication</td>
<td>1.00</td>
<td>1.71 (1.22-2.38)</td>
<td>2.81 (1.79-4.42)</td>
<td>3.16 (1.56-6.40)</td>
</tr>
<tr>
<td>Minor Complication</td>
<td>1.00</td>
<td>1.91 (1.42-2.56)</td>
<td>2.45 (1.57-3.83)</td>
<td>3.72 (1.99-6.95)</td>
</tr>
<tr>
<td>Wound Complication</td>
<td>1.00</td>
<td>1.52 (0.99-2.34)</td>
<td>2.17 (0.63-7.23)</td>
<td>2.17 (0.63-7.23)</td>
</tr>
</tbody>
</table>
Two of the most common operations performed by general surgeons are appendectomy and inguinal hernia repair. However, they rarely occur simultaneously or are treated through the same incision. The first report of an appendix containing inguinal hernia dates back to 1735, when Claudius Amyand performed the first successful appendectomy on an 11-year-old boy, where the appendix was perforated inside the inguinal hernia sac. An appendix containing hernia is encountered about 1% of the time, and is complicated by acute appendicitis in 0.08–0.13% of cases. Previously devised classification schemes for Amyand’s hernia do not discuss the use of macropore versus micropore mesh for herniorrhaphy in the setting of acute appendicitis without perforation.

Appendectomy and inguinal hernia repair are two of the most commonly performed surgeries by general surgeons. However, they are rarely required to perform them simultaneously. Preoperative diagnosis of Amyand’s hernia is nearly as uncommon as the diagnosis. In the setting of non-perforated appendicitis, the authors maintain that it is safe to use a macroporous mesh to perform repair of the hernia defect in those patients with high risk of recurrence.

Figure 1: Intra-operative findings of inflamed appendix with thickened and suppurative tip delivered from the scrotum. The Penrose is encircling spermatic cord, including the appendix containing with the cecum at the deep inguinal ring.
Obturator hernias remain a rare but significant cause of small bowel obstruction. Due to the infrequency of this condition, clinicians often have a low index of suspicion that can delay diagnosis. Often diagnosis is only made after the patient is in the operating room. Obturator hernias represent 0.7% of all hernias and 0.4% of mechanical small bowel obstructions. They are seen almost exclusively in thin elderly females with vague symptoms. The frequent delay in diagnosis combined with high incidence of bowel strangulation associates this diagnosis with a high morbidity and mortality compared to other abdominal wall hernias.

A case of an obturator hernia presenting as a small bowel obstruction was reviewed and a review of the literature was conducted using a PUBMED search.

Our patient is a __ year old female who presented with four days of intermittent abdominal pain, obstipation, nausea and vomiting, and abdominal distention. CT of the abdomen was performed which showed a right-sided obturator hernia containing small bowel with a transition point within the hernia. The patient was taken to the operating room, and an exploratory laparotomy was performed. After reduction, the non-viable small bowel was resected. The hernia sac was ligated and the defect was closed with plication of the peritoneum. No mesh was utilized due to the contaminated nature of the case. On review of the literature, the surgical options include laparoscopic versus open repair with or without mesh. Both trans-abdominal and extra-peritoneal laparoscopic approaches have been described.

Obturator hernia remains a rare cause of small bowel obstruction, but should remain in a differential diagnosis. Early radiologic assessment followed by prompt operative intervention is critical to successful management. Open repair remains the most widely used technique, as seen in our case, but laparoscopic repair should be considered given the classically low physiologic reserve of the population.
Kiosk 8- Hernia

286. MANAGEMENT OF AN INCARCERATED LUMBAR INCISIONAL HERNIA

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Easton Hospital

Lumbar hernias are a rare form of abdominal hernia which occur through defects in the posterior and/or posterolateral abdominal wall. Surgery is the only treatment option but remains challenging. Posterior incisional hernias are even rarer especially with incarceration of intraabdominal contents.

We present our experience with the management of an incisional lumbar hernia which initially presented as a small bowel obstruction.

A 68-year old female presented with a 3-day history of worsening, acute abdominal pain and distension, with multiple episodes of emesis. A CT scan indicated a large, incarcerated posterolateral abdominal hernia (figure 1). The patient had a history of tumour resection as a child and also received chemotherapy and radiation. Emergency laparoscopy revealed the hernia, which entrapped the hepatic flexure and multiple, severely distended small bowel loops with a hemorrhagic segment. The contents were reduced and through a 6cm minilaparotomy the necrotic small bowel loop was resected, the distended small bowel of decompressed through the enterotomies and the anastomosis was created using a GIA-75 stapler. An elective hernia repair was scheduled. However, the patient deteriorated 3 days later. During emergency exploratory laparotomy, a large hematoma in the right flank was evacuated and the right colon was completely mobilized out of the hernia and thereafter, the duodenum was mobilized. The hernia was repaired using a 20x20 cm BIO-A mesh which was placed on top of the Gerota fascia and cranially tucked under liver segment VI. Anteriorly, the Mesh was fixated with absorbable tacks. Duodenum and colon were placed into the MESH pocket. CT-scan the next day identified a 2cm pseudoaneurysm of a side branch of a lumbar artery as source of the hematoma and embolized by interventional radiology. The postoperative course was further complicated by Clostridium difficile associated colitis but ultimately the patient recovered fully after the definitive hernia repair.

There is a paucity of literature concerning lumbar hernias, with about 300 cases reported. We believe the retroperitoneal bleed was associated with a fragile blood vessel at the area of her previous radiation and not with the laparoscopic surgery.
The incarceration of retroperitoneal structures within an inguinal hernia is a rare occurrence that can cause severe urologic sequelae. Specifically, ureteral incarceration can result in obstruction of the flow of urine, hydronephrosis, and renal failure. Extraperitoneal uretero-inguinal hernias are thought to be the result of developmental anomalies, while the more common preperitoneal uretero-inguinal hernias are acquired sliding hernias. In this case, we report a 60 year old morbidly obese gentleman with a remote history of a left-sided uretero-inguinal hernia that resulted in atrophy of the left kidney. Additionally, he was known to have a history of a right-sided, fat-containing inguinal hernia. The patient presented with complaints of increased scrotal swelling and upon evaluation, he was found to have new right-sided ureteral incarceration and acute on chronic kidney injury. Percutaneous nephrostomy tubes were placed and a Lichtenstein inguinal hernia repair was performed electively. This rare case of bilateral ureter containing inguinoscrotal hernia illustrates the importance of prompt intervention to prevent urological sequelae.
Hernias in pregnant women, although rare, introduce the possibility of urgent or emergent surgery in cases of obstruction of incarceration. The current study evaluates the outcomes of hernia repair in pregnancy.

National Surgical Quality Improvement Program database was queried for pregnant women who underwent hernia repair form 2005-2014. Preoperative, intraoperative, and postoperative variables were evaluated. Incarcerated, strangulated, and reducible hernias were evaluated. Statistical significance was set at $p<0.05$.

200 herniorrhaphies, including 20 groin and 180 ventral repairs, were performed. Mean age of 30 years noted in both groups (groin 30.84±4.9, ventral 30.44±5.8). Of the groin herniorrhaphies, 12 (60%) were inguinal hernia repairs and 8 (40%) were femoral hernia repairs. All but one groin hernia repair was open and 11 (57.89%) were reported as reducible. Of the ventral hernia repairs, 166 (92.22%) were performed open; 96 (56.8%) of patients had incarcerated or strangulated hernias. While 70% of ventral cases were performed under general anesthesia, only 25% groin hernias were, with spinal and local/regional anesthesia making up 40% and 35% of anesthetics modalities respectively. Obesity was present in 10% of groin repairs with a mean score of 25.04±4.3kg/cm² and 45% of ventral repairs with mean score of 30.44±5.8kg/cm². All other comorbidities, including DM, tobacco use, respiratory or cardiac conditions comprised <5% of cases. No mortalities were noted at 30 days postoperatively. Length of stay for ventral hernias was slightly longer compared to groin hernias (1.84±2.2 days vs 0.8 vs 1.5 days). Venous thromboembolic events were noted in the ventral group (1.11% DVT and 0.56% PE). Septic complications were noted in 5% of ventral cases. Comparison of reducible vs incarcerated/strangulated hernias did not reveal any differences in wound complications ($p=0.4572$), major complications ($p=0.7810$) or minor complications ($p=3851$). Emergent cases, however, were more likely with incarcerated or strangulated ventral hernias (54.2% vs. 20.6% reducible, $p<0.0001$) and, incarcerated were more likely to be classified as clean cases (85.4% vs. 64.4%, $p<0.0016$).

Most hernias necessitating repair in pregnancy are ventral and more commonly for incarceration or strangulation. Open approaches may be performed with minimal morbidity and mortality with sepsis and venous thromboembolic events being the most frequent postoperative complications.
Kiosk 8- Basic Science
289. ENDOTHELIAL INFLAMMATION AND LOSS OF BONE MORPHOGENETIC PROTEIN RECEPTOR 2 IN OSCILLATORY SHEAR STRESS MODEL

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University of Mississippi Medical Center

BMP Receptor II (BMPR2) plays an unexpected role as a critical anti-inflammatory and anti-atherogenic protein in endothelial cells (ECs) via a reactive oxygen species (ROS) and NF-κB-dependent mechanism. Pro-atherogenic stimuli such as disturbed laminar flow, angiotensin II, hypercholesterolemia, and the pro-inflammatory cytokine TNFα, significantly downregulate BMPR2 expression in endothelium, while anti-atherogenic stimuli such as laminar flow and statins upregulate BMPR2’s expression in vivo and vitro. These findings suggest that there may be a common mechanism by which pro-atherogenic factors downregulate BMPR2 expression and that protecting or restoring its expression could be a novel therapeutic approach for prevention and treatment of atherosclerosis. Our preliminary studies have identified microRNAs that possibly play a causative role in the loss of BMPR2, by binding to its 3’UTR, leading to degradation of BMPR2, endothelial dysfunction, inflammation, and subsequent atherosclerosis.

Our in vitro model of disturbed blood flow is characterized by a cone and plate system, wherein mouse aortic endothelial cells are subjected to unidirectional laminar shear (LS, 15 dyn/cm2) or oscillatory shear (OS, +/- 5 dyn/cm2 at 1 Hz frequency) for 24 hours. Endothelial cell inflammatory markers, BMPR2, and specific microRNA mRNA transcript fold changes, were then assessed via qPCR.

Under oscillatory flow conditions, in our in vitro shear system, BMPR2 is lost and mouse aortic endothelial cells acquire an inflammatory phenotype, with a corresponding increase in the fold change of mRNA for microRNAs-17, 21, 25, and 181.

We have identified microRNAs that may target BMPR2, leading to its degradation, and subsequent onset of endothelial inflammation. Blocking the aforementioned microRNAs, may represent a novel therapy in the treatment of endothelial inflammation and subsequent atherosclerosis.
Kiosk 8- Basic Science
290. IDIOPATHIC DEVELOPMENT OF VULNERABLE CORONARY PLAQUES IN A PORCINE MODEL OF ATHEROSCLEROSIS
CE Ezeuka MD
University of Mississippi Medical Center

Murine models of atherosclerosis provide practical advantages, particularly the ease of genetic manipulation, robust availability of molecular markers, cost-effectiveness, and reproducibility. However, a major limitation of murine models of atherosclerosis, are artery size, and differences between human pathology specimens and mouse specimens. An alternative to mouse models of atherosclerosis, are swine. Pigs offer a major advantage in atherosclerosis research, insofar as their cardiovascular anatomy is analogous to humans in vessel caliber, morphology, a well-developed vasa vasorum, and coagulation system.

11 healthy male farm pigs weighing ~25 kg were purchased for this study. On the day of PCL surgery, pigs underwent ultrasonography to ascertain baseline blood flow characteristics. Pigs were anti-coagulated with heparin preoperatively. 2% isoflurane was given for general anesthesia. Partial carotid ligation was done with application of double surgical clips on branches of the left common carotid artery; double clips were used to ensure continued ligation in the event of single clip dislodgement. Postoperative ultrasonography was conducted immediately after the procedure, and again at 1 week, 3 months, and 6 months, respectively. After PCL surgery, pigs were administered aspirin 81 mg daily and Clopidogrel, until the time of sacrifice. Pigs with robust plaque formation at 3 months would be sacrificed. Pigs with moderate plaque formation at the 3-month time point would be observed for an additional 3 months.

81% of the pig surgeries were performed successfully, as demonstrated by flow reversal on ultrasonography. Of the 9 successful partial carotid ligation surgeries, 4 pigs demonstrated stroke like symptoms and were sacrificed before the study conclusion (1 pig at 33 days, and 3 pigs at 3 months post-operatively). No significant atherosclerotic plaques were observed in the left carotid arteries of the abovementioned pigs. At 6 months, 5 pigs remained. Of the 5 pigs sacrificed at 6 months, no significant atherosclerosis was noted in the left carotid arteries. Unexpectedly, evaluation of the coronary arteries of the 5 pigs sacrificed at 6 months, demonstrated significant vulnerable coronary plaques.

Our novel findings may represent a causal link between coronary artery disease, and disturbed blood flow at remote locations, wherein paracrine factors epigenetically predispose the coronary endothelium to dysfunction, which may then be exacerbated by inactivity, high fat diet, smoking, and diabetes.
Kiosk 9-Education and Systems based practice

291. RESIDENTS BEHAVING BADLY: SURGICAL TRAINEES GOING ROGUE AND MAKING MEDICAL HISTORY

BP Lovasik MD, JK Srinivasan MD
Emory University

Innovations in surgery are often the result of bold action that encounter opposition from traditional practices.

We present the groundbreaking, albeit contentious, achievements of several surgical pioneers including Robert Gross, Jean Kunlin, and Werner Forsmann, who pressed forward, defying their world-renowned mentors, and made medical history.

Gross and Ladd: First Patent Ductus Arteriosus (PDA) Ligation, 1938 Robert Gross proposed ligation of the PDA while serving as the Chief Resident at Boston Children’s Hospital (BCH) under William Ladd. Ladd vehemently opposed this, and forbade Gross from performing the operation due to patient safety concerns. Gross waited until Ladd left for his summer vacation, and then performed the world’s first PDA ligation on a 7-year old girl, who was cured of her heart failure. Ladd was furious when he heard of the operation and sent Gross away from BCH for several months. Upon his return to BCH, Gross continued his work and became the first surgeon to cure aortic coarctation and duplicated aortic arch. Gross eventually rose to Chief of Surgery at BCH despite Ladd’s vehement objections to his appointment, and, ironically, assumed the chairman’s titular Ladd Professorship.

Kunlin and Leriche: First Arterial Bypass, 1948 During his training at the Hopital Americain in Paris, Jean Kunlin encountered a 54-year-old man with an occluded femoral artery and gangrenous tissue loss. Rene Leriche, Kunlin’s mentor, advocated for treatment with endarterectomy and sympathectomy (the eponymous Leriche procedure) as vasomotor pathology was thought to be the cause of atherosclerotic disease. While Leriche was on vacation, Kunlin performed the first arterial bypass using a reversed saphenous vein graft as a femoral-popliteal conduit. By the time Leriche returned, the patient’s gangrene had entirely healed. Of note, Leriche had proposed arterial bypass as early as 1923, although he mentioned, “I doubt that this would ever be possible.” After observing Kunlin’s result, Leriche became a strong proponent of bypass operations.

Forsmann and Sauerbruch: First Cardiac Catheterization, 1929 Werner Forsmann reluctantly became a surgical resident after failing to gain a residency in internal medicine. As a surgical intern, Forsmann proposed accessing the heart via the peripheral vasculature to his faculty mentor, but his ideas were dismissed. Despite the objections of his collaborators (a fellow surgical resident and the OR head nurse), Forsmann performed the world’s first heart catheterization on himself and successfully used a wire to reach his right ventricle from an antecubital vein. Forsmann’s work was published later that year, and his Chair of Surgery, Ferdinand Sauerbruch, swiftly fired him from his residency post. Following these events, Forsmann was unable to obtain either an internal medicine residency or an academic surgical post, and instead practiced as a community urologist. Forsmann was awarded the 1956 Nobel Prize in Physiology or Medicine for his discovery.

These pioneering surgeons have provided several lessons for modern academic surgical training: develop trainee independence, cultivate an atmosphere of discovery in residency programs, and keep an eye on the OR board when faculty members leave for vacation.
Kiosk 9-Education and Systems based practice
293. JOURNAL CLUB IN US PLASTIC SURGERY TRAINING PROGRAMS: ARE WE DOING IT RIGHT?
A Nayyar MBBS, MC Roughton MD, LK Kalliainen MD MA
University of North Carolina

Journal club (JC) is a recognized evidence-based teaching method for trainees in medical education. Journal clubs help residents learn critical appraisal skills by reviewing literature objectively with an emphasis on the validity of the evidence. To our knowledge, the format and overall goals of JC in plastic surgery (PS) training programs remain undefined in existing literature. Our study attempts to elucidate how PS residency programs across the US implement JC in training.

We distributed a 25-question survey by email to all 92 PS program directors (PDs) within the American Council of Academic Plastic Surgeons (ACAPS). The PDs were requested to forward the survey to residents to incorporate their views and experience. The survey was redistributed two and four weeks after the initial attempt. The questions pertained to the structure and perceptions about the role of JC in training. All responses were recorded and analyzed anonymously.

We received responses from 30 PDs (32.6%), 18 attending faculty and 37 residents. Ninety-four percent of the respondents are affiliated to a program with regular JC. Most JCs meet monthly (72%), in the evening after the work day (75%), are organized by an attending faculty (43%) or the chief resident (32%), are associated with meals (65%) paid for by the department/faculty (53%), discuss >4 articles/session (71%) and employ ‘Plastic and Reconstructive Surgery (PRS)’ journal as a resource (94%). The curriculum for most JCs varied with each academic year (92%) driven by current literature (61%), faculty preference (14%), and resident feedback (12%). Inservice exam scores did not play a role in articles discussed. Most JCs are mandatory for residents (96%) and voluntary for attending faculty (64%) with average attendance being 90% for residents and 45% for attendings. Most respondents ranked “keeping abreast with current literature” as the primary goal (59%) followed by “teaching critical appraisal skills” (31%) (Figure 1). Most programs (70%) did not have dedicated study/research time for residents and the average time available for resident education was 2-3 hours/week (53%).

The structure of JC is relatively consistent across programs. Time for resident education (including JC) accounts for <5% time of the 80-hour work week. Our study highlights some issues that may be helpful to maximize the use of this time to improve overall resident education.
Figure 1: Overall goal of journal club ranked as most important by respondents (%).

- 30.77%
- 58.97%
- 7.89%
- 2.56%

- To teach critical appraisal skills
- To keep abreast with current medical literature
- To improve reading habits of residents
- To improve patient outcomes by encouraging research utilization in clinical practice
Kiosk 9-Education and Systems based practice
294. REVIEW OF SIMULATION TRAINING IN SURGICAL RESIDENCY: APPLICATION AND IMPLEMENTATION OF SIMULATION TRAINING
N Gopinath, MBBS2, VK Mittal MD
Providence Hospital

The use of simulation lab training has vastly improved with technology and advancements in equipment. Simulators offer safe training prior to patient interaction, allow assessment of trainee skills, improvement of team performance and building of confidence within the resident. However, the effectiveness of simulation depends on how the program institutes and incorporates simulation throughout the training. The purpose of this survey was to obtain information about simulation training within surgical residencies, varieties of instituting training and if any systems were felt to be more effective in improving resident training.

A survey of 28 questions using Survey Monkey was sent to surgical residency program directors across the United States, and responses were collected over a 4-month period (7/2016-10/2016).

Out of 100 requests, 46 program directors responded (46%). Results showed large variations in how simulation was being incorporated in training, how residents were assessed based on training and how effective the simulation training was felt to be within the program. Over 70% of programs were university programs. Most programs (89%) reported having simulation centers – 100% of which included Fundamentals of Laparoscopic Surgery simulation. Despite 97% of programs having medical students, only 54% trained students using simulation. For residents, 50% of programs had no required competency of performance, 78% had no requirements prior to operating room experience and the belief that simulation training was effective and beneficial ranged from 10% response rate of no to a 50% of yes.

The use of simulation lab training has been shown to improve technique and proficiency in surgical residents during their training; however, programs have a variety of methods for instituting this training. The overwhelming belief that simulation is beneficial may be further supported by a standardized curriculum and set of resident competencies.
Kiosk 9-Education and Systems based practice

295. USE OF CLOUD STORAGE TO IMPROVE RESIDENT AWARENESS AND UNDERSTANDING OF TRAUMA PROTOCOLS
KM Kelley MD, J Collins MD, J Burgess MD, L Weireter MD, M Martyak MD, TJ Novosel MD
Eastern Virginia Medical School

To be effective and consistent in providing care at a level one trauma center requires protocols that can be assessed and changed as necessary to continually improve care. Adherence to these protocols is both important and challenging. At our center, like many centers, we have a team made up of nurse practitioners, physician assistants and residents rotating on service from a variety of specialties from two institutions. With the frequent turnover in our resident providers we have noted difficulty in ensuring that they are aware of the details of all of our protocols. Review of literature and available resources show online protocols and use of apps but little data about frequency of use and effect on trauma residents.

We utilized the google drive site as a free web based document sharing service. We placed all of our protocols on an account and gave access to all members of this team. In this study we wanted to assess the degree to which residents utilized this site and found it helpful. At the end of the academic year following implementation of our use of the cloud storage site, an anonymous survey was sent to all residents that had been on the trauma service in the past year. This survey asked about site usage and how helpful it was. Comments were also obtained.

The survey was sent to 108 residents from 2 institutions across multiple specialties. There were 52 respondents. Seventy-two percent used the drive more than once per week and 88% found it helpful. This was increased in the subset of residents in their first 2 years of training, 83% of them used the drive more than once per week and 91% of them found it helpful. The drive was more frequently used by residents from an outside institution than our home residents with 83% of visiting residents using the drive more than once per week while only 61% of our home residents used the drive more than once per week.

While there is the possibility of responder bias our study has shown that an easy and free site can provide a resource that residents will utilize and find helpful. It is particularly useful for junior and visiting residents. We continue to sustain and improve the use of this drive by regular discussion of it at our trauma quality meetings and continue uploading new protocols as they are approved.
Kiosk 9-Education and Systems based practice

296. THE RELATIONSHIP BETWEEN PHYSICIAN EMPLOYMENT AND JOY IN THE WORKPLACE

P Dale MD, L Cassidy MBA
Mercer University/Navicent Health

Studies indicate by 2020 the United States will be facing a significant physician shortage. The shortage will be experienced by all primary specialties including general surgery. This looming shortage is being attributed to many factors such as an aging physician workforce, fewer trainees and burnout of existing physicians. The importance of reducing physician burnout and increasing Joy in the workplace is being discussed among all specialties.

The medical staff of a large, > 600 bed, tertiary referral hospital located in central Georgia participated in an annual physician engagement survey. The six dimension/33 item survey was administered thru Avatar and the results were distributed to the medical staff. The survey was offered to all medical staff including employed physicians of Navicent Health Physician Group (NHPG) and physicians in private practice referenced as Community Physicians. The two groups were similar in their specialty distribution. Responses to the survey were evaluated according to employment status of the physician and national best practice.

There were 308 surveys completed for a 58% participation rate which exceeded the national norm of 50%. The largest positive variance between the two groups can be seen in the Cooperation/Inclusion/Recognition/Appreciation dimension reflecting 31 percentage points between the two groups with the employed group approaching the 90th percentile (Best in Class) of 78% favorable. The Community Physicians group fell below the national norm in all 6 dimensions.

The NHPG is a relatively young organization just entering its 3rd year. The group is physician lead and administratively supported. This dyad leadership approach has developed into a culture of shared responsibility for addressing physician burnout and partnering to create Joy in the workplace. The NHPG has harnessed the power of physician leadership and created a high level of transparency within the organization. The governance of NHPG allows for physician members to be active in leadership committees and to have a vote regarding strategic decisions. In addition, the group introduced a physician compact which fosters collaboration and a reciprocated agreement between NHPG administration and the physicians. Through the Physician Practice Committee (PPC) and the sub-committees, NHPG physicians have peer support which has been critical to helping physicians navigate the challenges that face healthcare professionals in this ever changing environment. Each PPC meeting is opened with recognition of the recent accomplishments of our physicians such as publication of articles, poster presentations, and community volunteerism activities. NHPG physicians rated 5 of 6 dimensions more favorable than the Community Physicians and exceeded the national norm in five dimensions indicating higher satisfaction in their own practice and their relationship with the health system. This increase in overall engagement is the positive side of burnout and is associated with an increase in the quadruple aim specifically related to physician resilience and Joy. Our experience with promoting engagement and avoiding burnout has made a difference for NHPG.
Plastic and reconstructive surgery (PRS) has evolved into a very broad field, encompassing reconstructive and aesthetic procedures of the head/neck, breast, body and extremities. Such diversity in our scope of practice may be confusing for patients and referring providers, who may not be aware of the full breath or depth of our discipline. Further contributing to the confusion are other specialties with overlapping clinical expertise: neurosurgery (N), otolaryngology/head and neck surgery (OHNS), oral maxillofacial surgery (OMFS), general surgery (GS), orthopedic surgery (O), OB-GYN, urology (U), vascular surgery (V), cardiothoracic surgery (CT), pediatric surgery (P), transplant surgery (T) and dermatology (D). Previous studies have shown variable understanding amongst patients, medical students and primary care physicians about plastic surgery scope of practice, however, referral patterns from other surgeons have not been explored. We seek to understand national trends of referring surgeons' perceptions of plastic surgery scope of practice.

An anonymous, web-based survey was administered to members of American College of Surgeons (ACS) with members of all surgical specialties. Respondents were asked to choose the surgical specialty they would consult for a variety of reconstructive and aesthetic problems.

Of 890 responses, 376 (42%) complete responses were received. The majority were general surgeons (40.7%), followed by plastic surgeons (13.6%) and otolaryngologists (10.7%). Referring surgeons considered plastic surgeons the expert in 12/35 (34.3%) reconstructive problems with the exception of head/neck cancer defects (OHNS), craniosynostosis (N), myelomeningocele (N), skin cancer (GS/D), hand fractures (O), upper extremity tendon lacerations (O), carpal tunnel syndrome (O), tissue biopsies (GS), hernia repair (GS), perineal defects (GS), lower extremity soft tissue defects/fractures (O), exposed spinal hardware (N), hidradenitis (GS), acute burns (GS) and chronic lower extremity wounds (GS) (Figure 1). For most aesthetic problems, referring surgeons considered plastic surgeons the expert with the exception of deviated septum (OHNS), hirsutism (D) and discolored skin patches (D).

Referring surgeons consider plastic surgeons the expert for most aesthetic problems. However, ambiguity exists over the best management of a variety of reconstructive procedures with considerable overlap with orthopedics, OHNS, general surgery and neurosurgery. In an era of increasing surgical specialization, plastic surgeons risk losing these important reconstructive fields to other surgical subspecialties. Increased physician outreach and education of plastic surgeon's breadth of practice may increase referrals in these areas.
Specialties Chosen by Surgeons (%) for Reconstructive Problems (abridged)
Kiosk 9-Education and Systems based practice

298. UNDERLYING ANGER IMPACTS DECISION-MAKING IN THE ICU

IC Botwinick, L Harmon, C Ramirez, S Yang, TM Scalea, DM Stein, E Lemay
University of Maryland School of Medicine

Medical decision-making is complex; we understand relatively little about how intensive care physicians can best work with families and patients to help make critical decisions regarding medical care. The literature suggests that emotions can influence decision-making. However, there is little data investigating whether physicians’ emotions and moods impact their clinical choices, particularly in an ICU setting where choices may have immediate life or death consequences and the potential for intense emotion is high. An emotional trait is a habitual pattern of emotion that is relatively stable over time. We hypothesized that higher levels of trait anger would correlate with a greater degree of certainty in medical decision-making.

To investigate our hypothesis, we carried out an online survey of medical providers, including physicians, residents, fellows and nurses. The survey addressed underlying trait anger and sadness using a variation of the Brief Affective Neuroscience Personality Scale, a validated set of questions that evaluates underlying emotional tendencies. The participants were then presented with a scenario in which they had to decide whether to offer tracheostomy and feeding gastrostomy (trach and PEG) to someone with a devastating neurological injury. Respondents gave a percentage on a scale of 0-100% expressing how likely they would be to choose these procedures. The scenarios included a random patient, a family member, or the individual participant. Cronbach’s alpha was used to measure internal consistency of the anger and sadness scales. We then performed a multivariate analysis of the relationship between trait anger, trait sadness and a participant’s desire to proceed with trach and PEG. In addition to looking at whether patients were unlikely (0%) or very likely (100%) to choose trach and PEG, we created an additional variable to address uncertainty, looking at those respondents who selected values closer to 50%, to represent a greater degree of uncertainty. Significance was set to p < 0.05.

We had a 12% response rate to our survey (n=262). Respondents were 73% female, 40% were 30-39 years of age, and 42% were nurses, 32% residents or fellows and 12% attendings. We found good internal consistency with Cronbach’s alpha 0.68 and 0.7 for anger and sadness subscales, respectively. Baseline levels of sadness or anger did not impact likelihood to perform trach and PEG. However, we did find that respondents with higher levels of trait anger were more likely to indicate they were very likely, or very unlikely to trach and PEG the patient; that is, trait anger had a statistically significant correlation with certainty in medical decision-making. This finding held true when controlling for male sex, age and professional status.

Our study demonstrates that underlying emotional traits, specifically anger, may influence how medical providers, families and patients make decisions. In the intensive care unit, as we work to provide care consistent with patient and family wishes, we must be cognizant of how our own underlying emotional traits impact our clinical choices. Further investigation into the nuances of the effect of emotion on critical care decision-making could help us to provide optimal care to patients.
Mycobacterium infection is arising as a considerable complication of medical tourism. This infection is a challenge because of a usual delay in diagnosis, need for revision surgery and the prolonged duration of recommended antibiotic treatment.

We present a case of our management of a Mycobacterial abscessus infection following an abdominoplasty in the Dominican Republic. The patient was treated with surgical debridement and prolonged intravenous antibiotic treatment.

Our patient presented to the plastic surgery clinic at our institution three years after an abdominoplasty and augmentation mammoplasty in 2013 in the Dominican Republic. She had had immediate post-operative complications managed by the original surgeon with removal of the breast implants within two weeks of placement. The patient reported incomplete umbilical wound healing with intermittent discharge since the index surgery despite different attempts at short term oral antibiotic treatments. Initial wound culture at our institution was negative and the patient had a sub-optimal response to local wound care with silver sulfadiazine cream. At this point, a Mycobacterial surgical site infection was suspected, and the patient referred to the Infectious Disease department for co-management where a new culture confirmed a Mycobacterial abscessus infection. We proceeded with debridement of the infected tissue at the abdominoplasty site concomitant with a prolonged course of intravenous amikacin and tigecycline for 12 weeks. Post-operative follow up showed discharge resolution and complete wound healing.

The incidence of surgical site infection after abdominoplasty is reported to be 3 to 5%. Typically surgeons will target their treatment plan against common skin organisms causing post-operative surgical site infection such as Streptococcus or Staphylococcus. Post-operative infections that are initially culture negative and/or fail to respond to typical antibiotics should raise the suspicion of a Mycobacterium infection, especially those patients who undergo cosmetic surgeries in endemic places such as Dominican Republic. Aggressive treatment with surgical debridement of infected tissue and prolonged course of antibiotics represents the best chance of cure as reported in our case and other published reports.
Kiosk 10 - Pediatric
301. CONTRALATERAL CHYLOTHORAX FOLLOWING CONGENITAL DIAPHRAGMATIC HERNIA REPAIR
YT Krishna MD, MW Love MD, A Hale BA, RL Gates MD
Greenville Health System

Chylothorax is a known postoperative complication in neonates being treated for congenital diaphragmatic hernia (CDH), occurring in 1%–7% of neonates. Cornerstone treatment of chylothorax includes adequate resuscitation, nutrition, and drainage, as needed. Based on the literature, chylothoracies occur after thoracic surgery on the ipsilateral side of operation. To our knowledge, this is the first reported case of a contralateral chylothorax following CDH repair.

A term male neonate was diagnosed with a left-sided CDH at the time of birth. Once stabilized, he underwent an open diaphragmatic repair on his second day of life. A Type B defect along the posterior wall was identified and the contents of the hernia were noted to be small bowel, colon, and spleen. The contents were easily reduced and the defect was repaired primarily. On postoperative day 7, a plain chest X-ray demonstrated a worsening right-sided pleural effusion. Thoracentesis confirmed a chylothorax, which was treated with chest tube placement and a medium-chain fatty acid based diet.

The patient’s chylothorax resolved without further surgical intervention. He was discharged on day of life 45 and has since had an uncomplicated recovery.

This case describes a neonate who developed a right-sided chylothorax after a left-sided thoracotomy for repair of a CHD. Even though chylothoracies following surgery for CDH have historically presented on the ipsilateral side as the surgery, this case illustrates that a contralateral chylothorax can occur and, as such, should be on the surgeon’s radar.
Kiosk 10 - Pediatric
302. OUTCOMES OF PECTUS EXCAVATUM REPAIR PERFORMED BY PEDIATRIC VERSUS NON-PEDIATRIC SURGICAL SPECIALISTS: A NSQIP-PEDIATRIC ANALYSIS
PD Danielson MD, NM Chandler MD
John’s Hopkins All Children’s Hospital

Pectus excavatum (PE) is the most common congenital chest wall deformity, with an incidence of over two in 1000. The majority of operations performed to correct PE in children are performed by surgeons trained in pediatric surgery and pediatric cardiothoracic surgery, although a smaller percentage are performed by general surgeons and adult cardiothoracic surgeons. The purpose of this study is to compare outcomes following repair by surgeons who primarily operate on children vs. those who primarily operate on adults.

Subjects were identified in the American College of Surgeons National Surgical Quality Improvement Program pediatric database utilizing CPT, ICD-9 and ICD-10 codes from 2012 - 2015. Patients aged 10 - 18 years with CPT code 21740, 21742, or 21473 were included. Those without a post-operative diagnosis of pectus excavatum, those operated on by specialties other than those listed above, and those who underwent additional major procedures at the time of PE repair were excluded. In addition to demographics, comorbidities including diabetes, heart disease, and lung disease were included in the analysis. Indicators such as operative time and postoperative length of stay, as well as incidence of outcomes such as wound infection, urinary tract infection, unplanned return to the OR, and readmission were assessed. Continuous variables were evaluated by Welch’s t-test, and categorical variable were evaluated by chi square test or Fisher’s exact test as indicated.

1599 subjects were identified. 1337 (84%) were male. Mean age was 15.3 years (range 10, 18), and mean weight was 56.1 kg (range 23, 179). Ninety-one percent of subjects were White, 1.8 percent were Asian, and 1.0 percent were African American. Eighty-five (5%) were operated on by general or adult cardiothoracic surgeons, while 1515 (95%) were operated on by pediatric surgeons or pediatric cardiothoracic surgeons. Those in the latter group had a higher percentage of cardiac risk factors (9.9% vs. 2.4%, p = .02). Otherwise, there were no significant differences in baseline characteristics between the two groups with respect to demographics or comorbidities. Four percent of procedures were performed open, 81 percent used a minimally invasive approach with use of thoracoscopy, and 15 percent were performed minimally invasively without thoracoscopy. While frequency in use of the open approach was similar between groups, use of thoracoscopy was more common in the pediatric surgeon group (83% vs. 38%, p < .001). Operative times were on average 14 minutes longer in this group (95% confidence interval 5.6 - 21.9, p = .001). There were no significant differences between pediatric and adult surgeon groups with respect to mean length of stay (4.3 vs. 4.2 days, p = .40) and unplanned readmission rates (3.4% vs. 1.9%, p = .52). Complication rates, including pneumonia (0.4%), bleeding (0.1%), superficial wound infection (0.8%), and unplanned reoperation (1.6%) were low and were similar between groups (Table 1).

Outcomes of pectus excavatum repair are similar when performed by pediatric surgical specialists and non-pediatric surgical specialists. Pediatric surgical subspecialists are more likely to utilize thoracoscopy and their operative times are slightly longer.
### TABLE 1

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Surgeon Type</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Pediatric ((n=1515))</td>
<td>Adult ((n=84))</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>1266 (83.6%)</td>
<td>71 (85.5%)</td>
<td>0.82</td>
<td></td>
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<tr>
<td><strong>Mean age (years)</strong></td>
<td>15.2 (range 10.3, 18.0)</td>
<td>15.1 (range 12.2, 17.7)</td>
<td>0.42</td>
<td></td>
</tr>
<tr>
<td><strong>Mean weight (kg)</strong></td>
<td>56.6 (range 23, 173)</td>
<td>58.4 (range 35, 179)</td>
<td>0.32</td>
<td></td>
</tr>
<tr>
<td><strong>Baseline Characteristics</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Cardiac risk factors</strong></td>
<td>149 (9.9%)</td>
<td>2 (2.4%)</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td><strong>Diabetes</strong></td>
<td>3 (0.25%)*</td>
<td>1 (1.4%)*</td>
<td>0.20</td>
<td></td>
</tr>
<tr>
<td><strong>Asthma</strong></td>
<td>125 (8.3%)</td>
<td>4 (4.8%)</td>
<td>0.31</td>
<td></td>
</tr>
<tr>
<td><strong>Chronic lung disease</strong></td>
<td>6 (0.40%)</td>
<td>1 (1.2%)</td>
<td>0.32</td>
<td></td>
</tr>
<tr>
<td><strong>Structural pulmonary abnormality</strong></td>
<td>78 (5.2%)</td>
<td>3 (3.6%)</td>
<td>0.80</td>
<td></td>
</tr>
<tr>
<td><strong>Neuromuscular disorder</strong></td>
<td>22 (1.5%)</td>
<td>0</td>
<td>0.63</td>
<td></td>
</tr>
<tr>
<td><strong>Steroid use</strong></td>
<td>7 (0.46%)</td>
<td>0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td><strong>Immune disease or suppression</strong></td>
<td>4 (0.33%)*</td>
<td>0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td><strong>Bleeding disorder</strong></td>
<td>5 (0.41%)*</td>
<td>0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td><strong>Hematologic disorder</strong></td>
<td>10 (0.66%)</td>
<td>2 (2.4%)</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td><strong>ASA class 1</strong></td>
<td>436 (28.8%)</td>
<td>20 (23.8%)</td>
<td>0.38</td>
<td></td>
</tr>
<tr>
<td><strong>ASA class 2</strong></td>
<td>1005 (66.3%)</td>
<td>62 (73.8%)</td>
<td></td>
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</tr>
<tr>
<td><strong>ASA class 3</strong></td>
<td>74 (4.9%)</td>
<td>2 (2.4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Procedure and Outcomes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Open repair</strong></td>
<td>58 (3.8%)</td>
<td>3 (3.6%)</td>
<td>&lt;.001</td>
<td></td>
</tr>
<tr>
<td><strong>Min inv repair with thoracoscopy</strong></td>
<td>1263 (83.4%)</td>
<td>32 (58.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Min inv repair without thoracoscopy</strong></td>
<td>194 (12.8%)</td>
<td>49 (58.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mean operative time (minutes)</strong></td>
<td>89.5 (23, 383)*</td>
<td>67.0 (36, 289)*</td>
<td>.001</td>
<td></td>
</tr>
<tr>
<td><strong>Mean postop length of stay (days)</strong></td>
<td>4.3 (range 0, 42)</td>
<td>4.2 (range 0, 9)</td>
<td>0.40</td>
<td></td>
</tr>
<tr>
<td><strong>Superficial surgical site infection</strong></td>
<td>11 (0.73%)</td>
<td>2 (2.4%)</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td><strong>Deep surgical site infection</strong></td>
<td>5 (0.33%)</td>
<td>0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td><strong>Organ space infection</strong></td>
<td>2 (0.13%)</td>
<td>0</td>
<td>1.0</td>
<td></td>
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<tr>
<td><strong>Wound dehiscence</strong></td>
<td>4 (0.26%)</td>
<td>0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td><strong>Pneumonia</strong></td>
<td>7 (0.46%)</td>
<td>0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td><strong>Urinary tract infection</strong></td>
<td>0</td>
<td>0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td><strong>Bleeding complication</strong></td>
<td>2 (0.13%)</td>
<td>0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td><strong>Venous thrombosis</strong></td>
<td>1 (0.07%)</td>
<td>0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td><strong>Sepsis</strong></td>
<td>1 (0.07%)</td>
<td>0</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td><strong>Unplanned reoperation</strong></td>
<td>25 (1.7%)</td>
<td>1 (1.2%)</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td><strong>Unplanned readmission</strong></td>
<td>52 (3.4%)</td>
<td>1 (1.2%)</td>
<td>0.52</td>
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</tr>
</tbody>
</table>

*Value of n used for calculation is smaller than total n for group due to missing data*
Pediatric patients who have undergone significant small bowel resections require intensive nutritional support typically involving parenteral nutrition and enteral elemental formulas. Using a food-based enteral formula in pediatric patients over the age of one with intestinal failure has been shown to improve stooling patterns, promote intestinal adaptation, and is well tolerated. We discuss the successful transition from an elemental formula to a combination formula including a real food-based pediatric formula in an 8 month old (5 month corrected gestational age).

A patient in the NICU with a history of stage III necrotizing enterocolitis had undergone resection of 28.5 cm of necrotic small bowel, fecal diversion, and subsequent ostomy closure. Patient’s nutritional support initially consisted of TPN followed by gradual advancement of Neocate Infant formula via gastrostomy tube. High ostomy output prevented fully weaning from TPN until a real food-based formula, Compleat Pediatric was added to the patient’s enteral regimen. The addition of Compleat Pediatric formula was gradually increased to achieve a mixture of 75% Compleat Pediatric and 25% Neocate Infant formula.

With the addition of Compleat Pediatric, the patient had significant decreases in quantity of stools, improved consistency of stools, and improvement in weight gain. Patient was able to be fully weaned from TPN, and at the time of discharge from the NICU was tolerating full enteral feeds, primarily via gastrostomy tube but also with some oral intake. Since patient’s discharge the patient has had continued success with the food-based formula mixture, increased oral intake, and continued growth.

Pediatric patients with intestinal failure have primarily relied on elemental formulas for enteral nutrition due to concerns of malabsorption and allergic response. A second option, adding a food-based pediatric formula, has evidence to support improved stooling patterns and enteral tolerance, implying stimulation of intestinal adaptation. Thus far, studies utilizing a food-based pediatric enteral formula have only included patients with intestinal failure over the age of one year. However, patients with intestinal failure may benefit from transitioning to a food-based enteral formula earlier, including patients under the age of one, in order to improve stooling patterns, enteral tolerance, and growth.
We report a rare case of anomalous insertion of the cystic duct causing common bile duct obstruction in a pediatric patient.

A 13-year-old male presented with right upper quadrant pain. Abdominal ultrasound and CT revealed a distended gall bladder and dilated intrahepatic bile ducts without gallstones. MRCP was non-diagnostic. HIDA demonstrated normal uptake with delayed filling suggestive of partial obstruction at the level of the common bile and cystic ducts, consistent with a diagnosis of primary sclerosing cholangitis (PSC) with a dominant stricture. At ERCP, CBD cannulation was unsuccessful. Percutaneous transhepatic cholangiogram (PTC) followed and revealed a stricture at the junction of the common hepatic and cystic ducts; an external biliary drain was placed with decompression of the gall bladder, after which filling into the duodenum was visualized. Repeat abdominal CT with injection of contrast through the PTC tube revealed high insertion of the cystic duct onto the CBD with narrowing at this junction.

The patient was taken for open cholecystectomy with intraoperative cholangiogram. Intraoperatively, the cystic duct was found to insert superior and medially into the common hepatic duct, overlying the common bile duct. Intraoperative cholangiogram confirmed the anatomy prior to cholecystectomy.

This case is relevant to surgery involving the gallbladder or biliary system. While the incidence of bile duct injury is low, the presence of an anatomical variant is a major cause of bile duct injury. Raising the awareness of rare anatomic variability may help avoid iatrogenic injury in the future.
Kiosk 10 - Pediatric

306. PEDIATRIC OPEN TRAUMATIC TESTICULAR DISLOCATION: A RARE COMPLICATION OF BICYCLING

RM Landis MD, AV Baronowsky MD, JM McCagg MD
Marshall University

Traumatic testicular dislocation is an extremely rare injury usually following a motorcycle collision. There are less than 150 cases of closed traumatic testicular dislocation with less than 10 open traumatic dislocations reported worldwide.

We present a case of a 11 year-old-male who was involved in a bicycle accident who presented with an isolated open traumatic testicular dislocation. The bicycle handle impaled his left hemi-scrotum, rupturing the anterior inguinal canal and causing externalization of the left testicle outside the canal. A CT of scan of the abdomen and pelvis confirmed the dislocation and exteriorization of the testicle. Testicular viability was confirmed with ultrasound prior to definitive operative repair. He underwent left groin exploration with left orchiopexy, inguinal canal reconstruction and closure of the scrotal defect.

The patient did well and was discharged on post-operative day two.

Although open testicular dislocation is a rare complication of bicycling, early diagnosis and awareness can decrease the incidence of orchiectomy. Delayed diagnosis can have devastating sequelae. Our review of the literature found less than 10 cases of open traumatic testicular dislocation. Trauma surgeons and pediatric surgeons should be educated on this unusual complication of bicycle trauma and the ability to preserve the testicle with urgent operative intervention.
Kiosk 10 - Pediatric
307. TRAUMATIC PEDIATRIC HEMOTHORAX FROM HIGH-PRESSURE WATER INJECTION
RM Landis MD, AD Cremeans BS, AV Baronowsky MD, J McCagg MD
Marshall University

High-Pressure water injection (HPWI) injuries are becoming more common with the growing availability of personal pressure washer systems. Most injuries from HPWI are usually to the distal extremities. There have been only a handful of thoracic injuries due to HPWI, but none in the pediatric population or resulting in a hemothorax. We report our experience with a novel cause of hemothorax from a pressure washer.

We present a case of an eight-year-old Mennonite boy that presented to our tertiary referral center as a trauma transfer from an outlying medical center. The patient had been playing in the driveway with his 6 year-old-sister who inadvertently sprayed him in the chest. Upon arrival, patient was noted to havea large horseshoe shaped abrasion over the left chest along with two anterior puncture wounds over the lateral chest and medial shoulder. Patient initially complained only of pain in his left upper chest, but over the course of his stay in the emergency department, he began to experience difficulty breathing and shortness of breath. A portable chest x-ray was performed and demonstrated a small apical pneumothorax and questionable pulmonary contusion. A Chest CT scan was performed which demonstrated a left hemopneumothorax. A 20 F chest tube was placed in the trauma bay.

The patient had the chest tube removed on hospital day 3 and the patient was discharged home hospital day 4 without complication.

It is not common for high-pressure washers to cause trauma. Most traumatic injuries secondary to high-pressure washers are usually involving the distal extremities and hand thus there are many orthopedic literature. From our literature search there are no cases reported involving pediatric patients or reports of hemothorax from high-pressure washers.
Blunt traumatic thoracic aortic injuries within the pediatric population are uncommon with few reports in the literature. Management of this highly morbid injury in children continues to evolve.

We describe a case of thoracic aortic transection in a pediatric patient and discuss the available literature on this topic.

A 14-year old male presented to the trauma center after falling 40 feet from a tree. Upon arrival, the patient was confused with a GCS of 14. He was tachycardic and hypertensive. Intravenous fluid resuscitation was started and plain film of the chest was concerning for a widened mediastinum (Figure). Prior to leaving the trauma center for the CT scanner, the decision was made to intubate the patient for airway protection as he remained confused and tachycardic with increasing agitation and diaphoresis. The patient was successfully intubated. Just prior to transport to the CT scanner, the patient became bradycardic. Pulses could not be palpated and CPR was started. Bilateral finger thoracostomies were performed with bright red blood seen in the bilateral chest cavities, right side greater than left. Resuscitative transternal bilateral anterolateral thoracotomies were performed with the aorta cross-clamped and the pericardium opened for internal cardiac massage. No return of spontaneous circulation was ever achieved and the patient was pronounced dead. Autopsy revealed a transected aorta at the isthmus along with multiple intra-abdominal injuries.

Blunt traumatic thoracic injuries of the aorta are rarely encountered in the pediatric population. Motor vehicle crashes are the leading cause of this injury. Due to concerns regarding long-term patency of endografts in young children, these injuries continued to be managed in the pediatric population with open repair even after endovascular repair was successfully reported in the adult literature. The first successful endovascular stent graft in a child was reported 15 years ago. Since then, this management strategy is becoming more acceptable in the medical community for adolescents. However, open repair is still the preferred approach in younger children with thoracic aortic injuries. There are no reports in the literature of survival for a pediatric patient with blunt traumatic thoracic aortic injury and loss of vital signs who undergoes a resuscitative thoracotomy. Due to the high lethality of these injuries, a high index of suspicion and early medical treatment is paramount to reduce the rate of rupture.
Pediatric trauma patients can present with challenging complex vascular injuries, especially in those with hemodynamic instability or associated soft tissue damage.

We present the first reported case of the use of biologic heterograft (Artegraft) in the setting of pediatric vascular trauma.

A 14-year old male involved in a pedestrian versus auto accident presented to the trauma center with hypotension, obvious bilateral lower extremity deformities, and absent pulses in the right leg. He was taken emergently to the operating room for wound exploration, which identified segmental loss and destruction of the right superficial femoral artery (SFA) and femoral vein. Extensive soft tissue damage to the thigh with degloving injury and femur fracture was also discovered. The extent of SFA injury precluded primary vessel repair, and the bilateral saphenous veins were injured. His massive soft tissue loss mitigated against synthetic graft use because of high risk of graft exposure and infection. The right SFA was therefore repaired with a 10 cm segment of interposition bovine heterograft. Intraoperative arteriogram demonstrated good flow through the graft into the popliteal artery with 3-vessel runoff (Figure). There was extensive damage to the femoral vein with loss of approximately 10-15 cms of the vessel. Given the considerable damage to the vessel and his intraoperative hypothermia and coagulopathy, the superficial femoral vein was ligated. The vascular repair was covered with adjacent muscle and a vacuum-assisted closure device. A four-compartment fasciotomy was performed and the muscle appeared viable. One year after his injury, the conduit remained patent without signs of graft infection, and the patient was ambulating without assistance.

Interposition bovine heterograft should be considered in the setting of pediatric vascular trauma when primary vessel repair and reverse saphenous vein graft are not feasible options. Unstable patients with significant soft tissue destruction may especially benefit from this approach.
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