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<td>Notes</td>
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</tbody>
</table>

*See inside back cover for future meetings.*
LETTER FROM THE PRESIDENT

It is my great pleasure to welcome you to the 68th annual meeting of the Southwestern Surgical Congress. The Program Committee, under the leadership of Dr. Mike Truitt, has assembled an exceptional scientific program. And, keeping with the tradition of our organization, the Hotel del Coronado and the San Diego area offer numerous activities for spouses, children and even truant Fellows of the Congress!

The meeting is organized to maximize the educational opportunities for attendees. Two outstanding postgraduate courses will be held Sunday morning, both carefully planned for the interests and needs of our membership. One will address the use of ultrasound for the general surgeon. The other addresses acute care surgery. With two terrific but simultaneous post-graduate sessions made available at no extra charge to participants, your only difficult decision will be which one to attend!

The meeting will officially commence at 1:00 p.m. Sunday April 3 with our first scientific session. Outstanding presentations by residents throughout the program will be eligible for the prestigious Jack Barney Award. Simultaneous, topically grouped, “Quick Shot” sessions will be held Monday, Tuesday and Wednesday mornings. Scientific posters will also be available for viewing throughout the meeting.

The popular and ever-informative presentation by the American College of Surgeons will be Monday morning. We are fortunate to host the Executive Director of the College, Dr. David Hoyt, who will update the Congress on quality initiatives by the ACS. Christian Shalgian from the ACS Health Policy and Advocacy Group will provide an update on the crucial and rapidly changing topic of payment reform. We will also hear the ACS update on resident education. The morning will continue with Dr. Dan Dent’s analysis of the success of residency programs in the region of the SWSC in the American Board of Surgery certification process. That topic will segue nicely into a presentation by Dr. Brittany Bankhead-Kendall regarding program factors and their impact on ABS certification. The morning will conclude with a very important discussion by Dr. Sharmila Dissanaike on, “How to Avoid Burnout”.

On Tuesday morning, a new addition to this year’s meeting will be a Past Presidents’ Panel on “How I Do It”. I anticipate lively discussions as these seasoned surgeons provide personal insight (and maybe even personal innuendo!) on challenging surgical problems.
LETTER FROM THE PRESIDENT (continued)

Under the direction of Dr. Walt Biffl, the Graduate Medical Education Committee will present the GME Luncheon Tuesday on one of the most vexing issues in graduate medical education today, Autonomy in Surgical Training. All residents, program directors, faculty members and others interested in surgical education are encouraged to attend.

The newest component group of the Congress is the Advanced Practice Clinicians. A luncheon for them and for the surgeons who are fortunate enough to work with those individuals will also be held at noon on Tuesday.

On Tuesday evening, a Women in Surgery Cocktail Reception will be hosted by the Congress to provide an opportunity for networking with other women in surgery. The women of the Southwestern Surgical Congress are truly role models. We certainly encourage female surgery residents and medical students to take advantage of this opportunity.

We have invited three superb surgeon leaders to speak at the 2016 meeting. Dr. David Mercer, Chair of Surgery at the University of Nebraska, will deliver the Edgar J. Poth Memorial Lecture. The Thomas G. Orr Memorial Lecture will be delivered by Dr. Don Lesslie. And, Dr. Terry C. Lairmore of the Scott & White Clinic will deliver the Claude H. Organ, Jr. Memorial Lecture.

We are very pleased to welcome back to the Southwestern Dr. David Feliciano. David is the current President of our sister organization, the Southeastern Surgical Congress. He holds the singular distinction of being the only individual to have served as President of both the Southwestern and the Southeastern.

As noted, the opportunities abound for activities outside of the scientific meeting in this wonderful venue. I want to draw your attention, though, to those activities “officially sanctioned” by the Congress. Monday morning from 6:30-7:30 a.m. there will be Yoga on the Beach. The Congress’ Annual Golf Tournament will be Monday afternoon. For those who have not fallen into the trap of the game of golf, there will also be a group tour of the incredible U.S.S. Midway on Monday afternoon. Tuesday morning there will be a Fitness Walk at 6:45 a.m. And, on Tuesday afternoon there will be a Southern California Culinary and History Tour. Finally, I hope that all will attend the annual Southwestern Surgical Congress reception on Tuesday evening.

I look forward to seeing each of you at the meeting. If there is anything that I can do to make your trip more meaningful or enjoyable, please don’t hesitate to ask.

John
John R. Potts, III, M.D.
President, Southwestern Surgical Congress
PRESIDENTIAL BIOGRAPHY

John R. Potts, III, M.D.

Dr. Potts was raised in the town of Yale, Oklahoma then attended C.E. Donart High School in Stillwater, Oklahoma. He attended Oklahoma State University on a track scholarship and graduated with a B.A. with Honors in History. He attended the University of Oklahoma College of Medicine from which he graduated in 1977. He did his residency in surgery at the University of Oklahoma Health Sciences Center in Oklahoma City. On sabbatical from residency, he did a one-year laboratory fellowship in surgical gastroenterology at the University of Utah under the direction of Dr. Frank Moody. Following residency, he did a two-year clinical fellowship in surgery for portal hypertension under the direction of Dr. W. Dean Warren at Emory University. His first faculty appointment was at Vanderbilt University under the chairmanship of Dr. John Sawyers.

Dr. Potts joined the faculty of the University of Texas Medical School – Houston in 1991. There, he served as Program Director in Surgery for 21 years, as Chair of the Graduate Medical Education Committee for 16 years, as Assistant Dean for GME for ten years and as the ACGME Designated Institutional Official.

He was a Director of the American Board of Surgery from 2007-12 and during that time chaired the General Surgery Residency Committee.

In addition to the Southwestern Surgical Congress, Dr. Potts is a member of the Southeastern Surgical Congress, the Western Surgical Association, the Southern Surgical Association, the Halsted Society, the American Surgical Association and is a Fellow of the American College of Surgeons. He is a Past-President of the Houston Surgical Society, a Past-President of the Association of Program Directors in Surgery, a Past-Chair of the Organization of Program Director Organizations and an Honorary Lifetime Member of the Association of Program Directors in Surgery.

In 2012, he became the Senior Vice-President for Surgical Accreditation at the Accreditation Council for Graduate Medical Education.
# OFFICERS, STATE COUNCILORS & REPRESENTATIVES

## EXECUTIVE OFFICERS

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>City, State</th>
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<tbody>
<tr>
<td>PRESIDENT</td>
<td>John Potts, III</td>
<td>Chicago, IL</td>
</tr>
<tr>
<td>PRESIDENT-ELECT</td>
<td>Clay Burlew</td>
<td>Denver, CO</td>
</tr>
<tr>
<td>VICE PRESIDENT</td>
<td>Daniel Margulies</td>
<td>Los Angeles, CA</td>
</tr>
<tr>
<td>SECRETARY-TREASURER</td>
<td>Shanu Kothari</td>
<td>La Crosse, WI</td>
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<td>RECORDER</td>
<td>Daniel Vargo</td>
<td>Salt Lake City, UT</td>
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<tr>
<td>EXECUTIVE DIRECTOR</td>
<td>James Edney</td>
<td>Omaha, NE</td>
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## STATE COUNCILORS

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<tr>
<th>State</th>
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<tr>
<td>ARIZONA</td>
<td>Barb Pockaj</td>
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<td>ARKANSAS</td>
<td>Anne Mancino</td>
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<td>CALIFORNIA (SOUTHERN)</td>
<td>Nicolas Melo</td>
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<td>CALIFORNIA (NORTHERN)</td>
<td>Christine Cocanour</td>
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<td>COLORADO</td>
<td>David Partrick</td>
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<td>HAWAII</td>
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<td>IDAHO</td>
<td>Marcus Torgeson</td>
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<td>KANSAS</td>
<td>Josh Mammen</td>
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<td>Bryan Troop</td>
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<td>MONTANA</td>
<td>Glenn Winslow</td>
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<td>NEBRASKA</td>
<td>Rudy Lackner</td>
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<td>NEVADA</td>
<td>Shawn Tsuda</td>
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<td>NEW MEXICO</td>
<td>M. Timothy Nelson</td>
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<td>NORTH DAKOTA</td>
<td>Randolph Szlabick</td>
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<tr>
<td>OKLAHOMA</td>
<td>Gary Dunn</td>
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<td>SOUTH DAKOTA</td>
<td>Paul Bjordahl</td>
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<td>TEXAS (NORTHERN)</td>
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<td>Ernie Gonzalez</td>
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<td>UTAH</td>
<td>Ute Gawlik</td>
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<td>WISCONSIN</td>
<td>Brandon Grover</td>
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<tr>
<td>WYOMING</td>
<td>Sara Smith</td>
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</tr>
</tbody>
</table>
OFFICERS, STATE COUNCILORS & REPRESENTATIVES (continued)

COMMITTEES

CME CHAIR
Lillian Liao
San Antonio, TX

CONSTITUTION & BYLAWS CHAIR
Donald Lesslie
Houston, TX

GRADUATE MEDICAL EDUCATION
Walt Biffl
Denver, CO

HISTORIAN
William F. Sasser
St. Louis, MO

MEMBERSHIP CHAIR
Brian Morse
Atlanta, GA

NOMINATING CHAIR
Kenric Murayama
Philadelphia, PA

PROGRAM COMMITTEE CHAIR
Michael Truitt
Dallas, TX

PUBLICATIONS AND RESEARCH CHAIR
Daniel Vargo
Salt Lake City, UT

CONGRESS REPRESENTATIVES

AMERICAN COLLEGE OF SURGEONS - BOARD OF GOVERNORS
S. Rob Todd
Houston, TX

AMERICAN COLLEGE OF SURGEONS - ADVISORY COUNCIL FOR SURGERY
Kenric Murayama
Philadelphia, PA

AMERICAN BOARD OF SURGERY REPRESENTATIVE
Roxie Albrecht
Oklahoma City, OK
### PAST PRESIDENTS & MEETING LOCATIONS

<table>
<thead>
<tr>
<th>Year</th>
<th>President</th>
<th>Location</th>
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<tr>
<td>1949</td>
<td>*Walter Stuck, MD</td>
<td>Shamrock Hotel, Houston, Texas</td>
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<tr>
<td>1950</td>
<td>*Thomas G. Orr, MD</td>
<td>Shirley Savoy, Denver, Colorado</td>
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<td>1951</td>
<td>*Leo J. Starry, MD</td>
<td>Hotel Jefferson, St. Louis, Missouri</td>
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<tr>
<td>1952</td>
<td>*Michael E. DeBakey, MD</td>
<td>Baker Hotel, Dallas, Texas</td>
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<tr>
<td>1953</td>
<td>*Louis P. Good, MD</td>
<td>Hotel Utah, Salt Lake City, Utah</td>
</tr>
<tr>
<td>1954</td>
<td>*Philip B. Price, MD</td>
<td>Skirvin Hotels, Oklahoma City, Oklahoma</td>
</tr>
<tr>
<td>1955</td>
<td>*Lawrence P. Engel, MD</td>
<td>Hotel Muehlebach, Kansas City, Missouri</td>
</tr>
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<td>1956</td>
<td>*Charles R. Rountree, MD</td>
<td>Pioneer Hotel, Tucson, Arizona</td>
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<tr>
<td>1957</td>
<td>*John V. Goode, MD</td>
<td>Broadway Hotel, Wichita, Kansas</td>
</tr>
<tr>
<td>1958</td>
<td>*Kenneth C. Sawyer, MD</td>
<td>Shamrock Hotel, Houston, Texas</td>
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<tr>
<td>1959</td>
<td>*Lewis M. Overton, MD</td>
<td>Brown Palace Hotel, Denver, Colorado</td>
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<td>1960</td>
<td>*Fred H. Krock, MD</td>
<td>Riviera Hotel, Las Vegas, Nevada</td>
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<tr>
<td>1961</td>
<td>*Howard D. Cogswell, MD</td>
<td>Chase Park Plaza, St. Louis, Missouri</td>
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<tr>
<td>1962</td>
<td>*Charles M. O’Leary, MD</td>
<td>Western Skies Hotel, Albuquerque, New Mexico</td>
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<tr>
<td>1963</td>
<td>*Edgar J. Poth, MD</td>
<td>Maria Isable Hotel, Mexico City, Mexico</td>
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<td>1964</td>
<td>*Eugene M. Bricker, MD</td>
<td>Granada Hotel, San Antonio, Texas</td>
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<td>1965</td>
<td>*Wayne C. Bartlett, MD</td>
<td>Velda Rose Towers, Hot Springs, Arkansas</td>
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<tr>
<td>1966</td>
<td>*O. Ernest Grua, MD</td>
<td>Flamingo Hotel, Las Vegas, Nevada</td>
</tr>
</tbody>
</table>
PAST PRESIDENTS & MEETING LOCATIONS (continued)

1967
*John A. Growdon, MD
Del Webb-Town House, Phoenix, Arizona

1968
*Robert B. Howard, MD
Brown Palace Hotel, Denver, Colorado

1969
*John H. Clark, MD
Sahara Tahoe Hotel, Lake Tahoe, Nevada

1970
*Jean C. Gladden, MD
Sheraton-Dallas Hotel, Dallas, Texas

1971
*J. Robert Spencer, MD
Caesar’s Palace Hotel, Las Vegas, Nevada

1972
*John G. Shellito, MD
Hilton Inn, Albuquerque, New Mexico

1973
*James B. Growdon, MD
Mountain Shadows Hotel, Scottsdale, Arizona

1974
*Lawrence H. Wilkinson, MD
Del Monte Hyatt House, Monterey, California

1975
*George H. Mertz, MD
Caesars Palace Hotel, Las Vegas, Nevada

1976
*John B. Gramlich, MD
Hyatt Regency Hotel, Houston, Texas

1977
*Howard T. Robertson, MD
Princess Hotel, Acapulco, Mexico

1978
*Cyril Costello, MD
Riviera Hotel, Palm Springs, California

1979
*MacDonald Wood, MD
Caesars Palace Hotel, Las Vegas, Nevada

1980
Gilbert S. Campbell, MD
Broadmoor Hotel, Colorado Springs, Colorado

1981
*Wallace L. Chambers, MD
Hyatt del Monte, Monterey, California

1982
*Albert J. Kukral, MD
Hotel del Coronado, Coronado, California

1983
Livingston Parsons, Jr., MD
The Pointe Resort, Phoenix, Arizona

1984
*Raymond C. Read, MD
The Hyatt Regency, Honolulu & Maui, Hawaii
<table>
<thead>
<tr>
<th>Year</th>
<th>President</th>
<th>Location</th>
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<tbody>
<tr>
<td>1985</td>
<td>*Claude H. Organ, Jr., MD</td>
<td>Caesars Palace Hotel, Las Vegas, Nevada</td>
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<tr>
<td>1986</td>
<td>Ronald C. Elkins, MD</td>
<td>Hyatt Regency San Francisco, San Francisco, California</td>
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<td>1987</td>
<td>*Joseph L. Kovarik, MD</td>
<td>Hotel del Coronado, Coronado, California</td>
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<tr>
<td>1988</td>
<td>Arlo S. Hermreck, MD</td>
<td>The Pointe at Squaw Peak, Phoenix, Arizona</td>
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<td>1989</td>
<td>Frederic C. Chang, MD</td>
<td>Hyatt Regency Monterey, Monterey, California</td>
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<td>1990</td>
<td>Kent C. Westbrook, MD</td>
<td>LaQuinta Golf &amp; Tennis Resort, La Quinta, California</td>
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<td>1991</td>
<td>William F. Sasser, MD</td>
<td>The Mirage, Las Vegas, Nevada</td>
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<td>1992</td>
<td>David V. Feliciano, MD</td>
<td>Marriott’s Camelback Inn Resort, Scottsdale, Arizona</td>
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<td>1993</td>
<td>Dominic Albo, Jr., MD</td>
<td>Hyatt Regency Monterey, Monterey, California</td>
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<td>1994</td>
<td>Ernest Poulos, MD</td>
<td>The Westin LaPaloma, Tucson, Arizona</td>
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<td>1995</td>
<td>Robert B. Sawyer, MD</td>
<td>Hyatt Regency Hill Country Resort, San Antonio, Texas</td>
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<td>1996</td>
<td>Carey P. Page, MD</td>
<td>Marriott’s Camelback Inn Resort, Scottsdale, Arizona</td>
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<td>1997</td>
<td>James H. Thomas, MD</td>
<td>Westin Mission Hills Resort, Rancho Mirage, California</td>
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<td>1998</td>
<td>Charles H. McCollum, MD</td>
<td>Hyatt Regency Hill Country Resort, San Antonio, Texas</td>
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<td>1999</td>
<td>Ernest E. Moore, Jr., MD</td>
<td>Loews Coronado Bay Resort, Coronado, California</td>
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<td>2000</td>
<td>Victor J. Zannis, MD</td>
<td>The Broadmoor, Colorado Springs, Colorado</td>
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</table>
PAST PRESIDENTS & MEETING LOCATIONS (continued)

2001
Nicholas P. Lang, MD
Fiesta Americana Coral Beach Resort, Cancun, Mexico

2002
James A. Edney, MD
Hotel del Coronado, Coronado, California

2003
Russell G. Postier, MD
Loews Ventana Canyon Resort, Tucson, Arizona

2004
Jon S. Thompson, MD
Hyatt Regency Monterey, Monterey, California

2005
Jeffrey R. Saffle, MD
Westin La Cantera Resort, San Antonio, Texas

2006
Ernest L. Dunn, MD
Kauai Marriott Resort and Beach Club
Kauai, Hawaii

2007
Scott R. Petersen, MD
Rancho Las Palmas Resort and Spa
Rancho Mirage, California

2008
Alan G. Thorson, MD
Fairmont Acapulco Princess
Acapulco, Mexico

2009
Maria D. Allo, MD
Hotel del Colorado
Coronado, California

2010
Frederick A. Moore, MD
Loews Canyon Resort, Tucson, Arizona

2011
Edward Nelson, MD
JW Marriott Ihilani, Oahu, Hawaii

2012
Robert C. McIntyre, Jr., MD
Terranea Resort, Rancho Palos Verdes, California

2013
David Antonenko, MD, PhD
Bacara Resort
Santa Barbara, California

2014
Kenric Murayama, MD
Westin Kierland Resort
Scottsdale, Arizona

2015
Ronald Stewart, MD
Hyatt Regency Monterey
Monterey, CA

* Deceased
EDUCATIONAL OBJECTIVES

LEARNING OBJECTIVES:
The scientific program of the Annual Meeting of the Southwestern Surgical Congress will provide contemporary information on the management of a broad range of surgical diseases for community surgeons, academic surgeons and the surgeon-in-training. Topic areas discussed will incorporate a comprehensive perspective of surgical practice including abdominal and gastrointestinal surgery, emergency general surgery, trauma / critical care surgery, surgical education, thoracic and vascular surgery, surgical oncology, and breast and endocrine surgery. The intent of the program is to broaden the knowledge base of the audience and enhance the quality of patient care and patient safety. Audience participation and interaction will be encouraged. The content and format of the program have been developed based on evaluations and suggestions of attendees of previous programs of the Southwestern Surgical Congress.

At the end of this activity, attendees will / will be able to perform the following:

• Develop an understanding of current issues relevant to the advancement of the art and practice of surgery, specifically in the evaluation and management of hernia, breast, endocrine, gastrointestinal, thoracic, vascular, trauma / critical care and emergency / acute care surgical disease.

• Discuss the highlighted translational data and evidence based practice with respect to the potential impact on the future of patient care and evolution of surgical best practice.

• Implement a strategy to establish new technologies within the context of the individual’s current surgical practice.

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.

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. Please see the insert to this program for the complete disclosure list.
EDUCATIONAL OBJECTIVES (continued)

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 Southwestern 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 20.50 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 13.25 credits meet the requirements for Self-Assessment.

AMA PRA Category 1 Credits™ - PG Course: Ultrasound
The American College of Surgeons designates this live activity for a maximum of 3.50 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 3.50 credits meet the requirements for Self-Assessment.

AMA PRA Category 1 Credits™ - PG Course: Acute Care & General Surgery
The American College of Surgeons designates this live activity for a maximum of 3.50 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 3.50 credits meet the requirements for Self-Assessment.
GENERAL INFORMATION

HOTEL
Hotel del Coronado
1500 Orange Avenue
Coronado, CA 92118

REGISTRATION
The registration desk hours are as follows (Upper Grande Hall Foyer):
Sunday 8:00am – 5:00pm
Monday 6:30am – 11:30am
Tuesday 6:00am – 5:00pm
Wednesday 7:00am – 10:00am

SPOUSE ACTIVITIES
Spouse / Guest Event: Southern California Culinary and History Tour
Tuesday, April 5, 2016
1:00pm – 4:00pm
Tour Capacity 14 people
Cost: $50 per person

This walking tour offers delicious food samplings from local purveyors and eating establishments. You will hear interesting stories and tales of Coronado’s history while dining on fresh, tasty foods. You will visit unique places providing you everything from locally grown to globally inspired culinary samplings. The tour includes all food tastings, a goody bag and a bottle of water. We will be meeting in the hotel lobby at 12:45pm.
GENERAL INFORMATION (continued)

SWSC SPONSORED ACTIVITIES

Yoga on the Beach
Monday, April 4, 2016
6:30am – 7:30am
Hotel del Coronado
(Main Beach — meet in front of Del Beach Bar on the Paseo)
Cost: $30 per person

Yoga mats and a wares-oration will be provided Join us in a private yoga class that is designed to revitalize your body physically, mentally and spiritually. This class will focus on basic yoga postures and breathing that increase muscle tone, improve flexibility and concentration, detoxify vital organs and induce a state of deep relaxation.

Annual Golf Tournament
Monday, April 4, 2016
Consecutive Tee Times beginning at 1:00pm Coronado Municipal Golf Course
Cost: $95 per-person

Join us for an afternoon on the greens. Be sure to register in advance, as we typically have strong interest for golf. Fee includes transportation, greens fees, tournament coordination and prizes and boxed Lunch.

USS Midway Museum Tour
Monday, April 4, 2016
1:30pm – 4:00pm
Cost: $30 per person

The USS Midway is the longest-serving aircraft carrier in US Navy History, having served for 47 years. You will enjoy this self-guided audio tour covering over 60 different exhibits throughout the ship, including 24 restored aircrafts. This is a must see for history and military enthusiasts! The tour takes about 2 hours and there are lots of retired veterans on-board that enjoy talking with you and answering all of your questions.

Fitness Walk
Tuesday, April 5, 2016
6:45am – 8:00am
Hotel del Coronado (meet in front of Del Beach Bar on the Paseo)
Cost: $30 per person

Get your day started with a fun group fitness walk. This walk will offer a one hour guided walk around Coronado and will be led by one of the Hotel del local fitness instructors. There will also be fitness towels and a water station provided at check-in.
Dr. Potts was raised in the town of Yale, Oklahoma then attended C.E. Donart High School in Stillwater, Oklahoma. He attended Oklahoma State University on a track scholarship and graduated with a B.A. with Honors in History. He attended the University of Oklahoma College of Medicine from which he graduated in 1977. He did his residency in surgery at the University of Oklahoma Health Sciences Center in Oklahoma City. On sabbatical from residency, he did a one-year laboratory fellowship in surgical gastroenterology at the University of Utah under the direction of Dr. Frank Moody. Following residency, he did a two-year clinical fellowship in surgery for portal hypertension under the direction of Dr. W. Dean Warren at Emory University. His first faculty appointment was at Vanderbilt University under the chairmanship of Dr. John Sawyers.

Dr. Potts joined the faculty of the University of Texas Medical School – Houston in 1991. There, he served as Program Director in Surgery for 21 years, as Chair of the Graduate Medical Education Committee for 16 years, as Assistant Dean for GME for ten years and as the ACGME Designated Institutional Official.

He was a Director of the American Board of Surgery from 2007-12 and during that time chaired the General Surgery Residency Committee.

In addition to the Southwestern Surgical Congress, Dr. Potts is a member of the Southeastern Surgical Congress, the Western Surgical Association, the Southern Surgical Association, the Halsted Society, the American Surgical Association and is a Fellow of the American College of Surgeons. He is a Past-President of the Houston Surgical Society, a Past-President of the Association of Program Directors in Surgery, a Past-Chair of the Organization of Program Director Organizations and an Honorary Lifetime Member of the Association of Program Directors in Surgery.

In 2012, he became the Senior Vice-President for Surgical Accreditation at the Accreditation Council for Graduate Medical Education.
EDGAR J. POTH
MEMORIAL LECTURESHIP
RESIDENCY RE-DESIGN: IS IT TIME?

TUESDAY, APRIL 5, 2016
10:00am – 10:45am
Regent/Viceroy

Speaker:
David Mercer, MD
Omaha, NE

David W. Mercer, MD, is the McLaughlin Professor of Surgery and Chairman, Department of Surgery at the University of Nebraska Medical Center in Omaha, Nebraska as well as the Senior Vice President of Medical Services for Nebraska Medicine.

Dr. Mercer received his medical degree from the University of Wisconsin-Madison Medical School and completed a residency in General Surgery at Temple University Hospital in Philadelphia, Pennsylvania. During that time, he also completed 2 years of research training in gut physiology as the Reichele Surgical Research Laboratory Fellow at Temple University. Following residency, he was recruited to Houston, Texas in 1993 as a faculty member in the Department of Surgery at the University of Texas Medical School at Houston. In 1998, he became Chief of Surgery at LBJ General Hospital, held the Jack H. Mayfield Chair, and was Division Chief of General Surgery at UT Houston when he left in July of 2009 to assume the Chair position at UNMC. In 2014, Dr. Mercer accepted the role of Senior Vice President of Medical Services for Nebraska Medicine in addition to his role as Chair and continues to serve in both positions.

Dr. Mercer has over 100 publications and was continuously funded by NIH for the last 10 years at Houston. He was the Principle Investigator of the NIGMS funded P50 Trauma Research Center and the T32 Training Grants that examined the role of the gut in multiple organ failure. In addition he was the primary mentor for faculty at UT on K23, K08, K12, and Department of Defense Grants. He has sponsored over 15 post doctoral fellows and over 15 students.

Among the many professional organizations of which Dr. Mercer is a member are the American College of Surgeons, the Association for Academic Surgery, the American Association for the Surgery of Trauma, the Society of University Surgeons, the American Surgical Association, and the Society of Clinical Surgeons. Additionally, he is an honorary member of both the European Society of Surgical Research and the Surgical Research Society of Southern Africa and is a Past President of the Society of University Surgeons. He also serves as a Director on the American Board of Surgery and the American Board of Family Medicine.
### GUEST SPEAKERS

**EDGAR J. POTH MEMORIAL LECTURESHIP**

**PAST PRESENTERS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Speaker Name</th>
<th>Year</th>
<th>Speaker Name</th>
<th>Year</th>
<th>Speaker Name</th>
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<td>George H. Mertz, MD</td>
<td>1989</td>
<td>Carey P. Page, MD</td>
<td>2003</td>
<td>Kenneth W. Sharp, MD</td>
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<td>Frank G. Moody, MD</td>
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<td>James H. Tomas, MD</td>
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<td>Claude H. Organ, Jr., MD</td>
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<td>Lawrence W. Way, MD</td>
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<td>Raymond C. Read, MD</td>
<td>1992</td>
<td>Jon M. Burch, MD</td>
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<td>David Antonenko, MD, PhD</td>
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<td>William W. Monafo, MD</td>
<td>1993</td>
<td>Jeffrey R. Saffle, MD</td>
<td>2007</td>
<td>Edward W. Nelson, MD</td>
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<td>George C. Morris, MD</td>
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<td>G. Patrick Clagett, MD</td>
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<td>Ronald C. Elkins, MD</td>
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<td>Jon S. Thompson, MD</td>
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<td>Karen R. Borman, MD</td>
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<td>Wayne H. Schwesinger, MD</td>
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<td>J. Bradley Aust, MD</td>
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<td>Ernest E. Moore, Jr., MD</td>
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<td>Courtney M. Townsend, Jr., MD</td>
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<td>Stephen L. Wangensteen, MD</td>
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<td>Robert J. Fitzgibbons, MD</td>
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<td>Peter Angelos, MD, PhD</td>
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<td>Gregorio A. Sicard, MD</td>
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<td>J. Patrick Walker, MD</td>
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<td>Kent C. Westbrook, MD</td>
<td>2002</td>
<td>Layton F. Rikkers, MD</td>
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April 3 – 6, 2016 | Hotel del Coronado, Coronado, CA
THOMAS G. ORR
MEMORIAL LECTURESHIP
THE INSIDIOUS NATURE OF BURNOUT: WHAT HAVE WE LEARNED?

TUESDAY, APRIL 5, 2016
2:45pm – 3:30pm
Regent/Viceroy

Speaker:
Donald Lesslie, MD
Houston, TX

Dr. Donald P. Lesslie III received his medical degree from The University of North Texas Health Science Center / Texas College of Osteopathic Medicine in 1999. He completed his internship and General Surgery residency at The University of Texas Health Science Center at Houston. During his residency, he was awarded an NIH T32 postdoctoral research fellowship at M. D. Anderson Cancer Center in the departments of Surgical Oncology and Cancer Biology. During his research fellowship, Dr. Lesslie published multiple manuscripts detailing the contribution of oncogenes to chemoresistance in pancreatic and colorectal cancers. After completion of his chief resident year at UT Houston, he completed a two-year Surgical Oncology Fellowship at Fox Chase Cancer Center in Philadelphia where he received extensive training in both open and minimally invasive approaches to complex GI tumors.

Dr. Lesslie returned to The University of Texas in 2009 as Assistant Professor of Surgery to head the department’s Surgical Oncology efforts at Hermann Memorial Hospital – Texas Medical Center. He remains one of a handful of fellowship-trained surgical oncologists with formal training in minimally invasive surgery for cancer. Dr. Lesslie is well-trained in open, laparoscopic and robotic techniques for complex GI tumors, including those arising from the esophagus, liver and pancreas.

Dr. Lesslie’s organizational memberships include the Association for Program Directors in Surgery, American College of Surgeons, American Society of Clinical Oncology, Society for Surgery of the Alimentary Tract, Society of Surgical Oncology, Americas (and International) Hepatico Pancreatico Biliary Association, Clinical Robotic Surgery Association and Association of Surgical Education. After serving as both clerkship director and associate program director in The Department of Surgery, Dr. Lesslie was appointed full program director and vice-chair for surgical education in early 2012. He has received numerous teaching awards from The University of Texas - Houston and graduating chief residents for his ongoing dedication to resident education.
### GUEST SPEAKERS

**THOMAS G. ORR MEMORIAL LECTURESHP**

**PAST PRESENTERS**

<table>
<thead>
<tr>
<th>Year</th>
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<tr>
<td>1966</td>
<td>Michael E. DeBakey, MD</td>
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<td>Edgar J. Poth, MD</td>
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<td>1968</td>
<td>Stanley R. Friesen, MD</td>
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<td>Philip B. Price, MD</td>
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<td>Kenneth C. Sawyer, MD</td>
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<td>1971</td>
<td>Merlin K. DuVal, MD</td>
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<td>1972</td>
<td>C. Frederick Kittle, MD</td>
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<td>William R. Waddell, MD</td>
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<td>1976</td>
<td>Denton A. Cooley, MD</td>
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<td>Gilbert S. Campbell, MD</td>
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<td>Howard T. Robertson, MD</td>
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<td>Norman M. Rich, MD</td>
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<td>W. Gerald Rainer, MD</td>
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<td>1981</td>
<td>Arthur C. Beall, Jr., MD</td>
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<td>Arlo S. Hermreck, MD</td>
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<td>Charles M. Balch, MD</td>
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<td>Alex G. Little, MD</td>
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<td>Donald E. Fry, MD</td>
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<td>Keith Reemtsma, MD</td>
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<td>C. James Carrico, MD</td>
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<td>Frederick L. Grover, MD</td>
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<td>Ernest E. Moore, Jr., MD</td>
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<td>Nicholas P. Lang, MD</td>
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<td>H. Harlan Stone, MD</td>
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<td>Richard J. Andrassy, MD</td>
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<td>Alan Thorson, MD</td>
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<td>Thomas Weber, MD</td>
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<td>Byers W. Shaw, MD</td>
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<td>Shuvo Roy, PhD</td>
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<td>2009</td>
<td>Mark A. Talamini, MD</td>
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<td>2010</td>
<td>Barbara Lee Bass, MD</td>
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<td>2011</td>
<td>John Potts, III, MD</td>
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<td>2012</td>
<td>David Mercer, MD</td>
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<td>2013</td>
<td>Alicia Mangram, MD</td>
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<td>Daniel R. Margulies, MD</td>
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<td>2015</td>
<td>Raul S. Coimbra, MD, PhD</td>
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CLAUSE H. ORGAN, JR.
MEMORIAL LECTURESHIP
FROM THE LABORATORY BENCH
TO THE OPERATING ROOM:
THE ROLE OF THE SURGEON
IN CANCER PREVENTION

WEDNESDAY, APRIL 6, 2016
8:30am – 9:15am
Regent/Viceroy

Speaker:
Terry C. Lairmore, MD
Temple, TX

Terry C. Lairmore, MD, is Professor of Surgery and Director of the Division of Surgical Oncology at Baylor Scott & White Health and the Texas A&M University System Health Science Center College of Medicine in Temple, Texas.

He received a Bachelor of Science in Biology from Baylor University, where he was Phi Beta Kappa and recipient of the Henry L. Robinson Phi Beta Kappa scholarship, graduating summa cum laude in 1984. He then attended Vanderbilt University School of Medicine, where he was elected to the Alpha Omega Alpha honor medical society in his junior year, and graduated as Valedictorian with the Founder’s Medal to earn his Doctor of Medicine degree in 1988.

Dr. Lairmore completed his internship and residency in Surgery at Barnes-Jewish Hospital, Washington University School of Medicine in St. Louis. During his chief residency he also served as senior registrar at the Royal Infirmary in Edinburgh, Scotland under Sir David Carter for focused training in hepatobiliary surgery. As part of his residency, he completed a three year dedicated research fellowship in the Department of Genetics, studying the molecular genetics of the familial endocrine neoplasia syndromes. He contributed to work that ultimately lead to the identification of mutations in the RET proto-oncogene that are associated with multiple endocrine neoplasia type 2A (MEN2A). His current research interests are focused on the clinical management of patients with endocrine surgical diseases, as well as molecular genetics studies of the role of the MEN1 tumor suppressor gene in cholangiocyte progression.

Dr. Lairmore is a fellow of the American College of Surgeons, and a member of the Society of Surgical Oncology, the Southern Surgical Association, and American Association of Endocrine Surgeons (AAES). He is a past Vice President of the AAES 2007-2008.

Dr. Lairmore’s clinical interests are endocrine surgery and surgical oncology. He is nationally and internationally recognized for his clinical expertise and contributions to the care of patients with the multiple endocrine neoplasia (MEN) syndromes, familial hyperparathyroidism and neuroendocrine tumors of the pancreas.

Dr. Lairmore has been married for 29 years to Karen Ann McDonald Lairmore, and is the proud father of three children, Daniel, Ashley and Sarah who are all pursuing careers in health care. Dr. Lairmore’s outside interests include high-speed nature photography, music, and personal fitness.
GUEST SPEAKERS (continued)

CLAUDE H. ORGAN, JR. MEMORIAL LECTURESHIP
PAST PRESENTERS

1996
V. Suzanne Klimberg, MD

1997
LaSalle D. Leffall, Jr., MD

1998
Samuel A. Wells, Jr., MD

1999
Hiram C. Polk, Jr., MD

2000
F. Charles Brunicardi, MD

2001
John B. Cone, MD

2002
Douglas S. Reintgen, MD

2003
Frank Lewis, MD

2004
Philip Schauer, MD

2005
Sean J. Mulvihill, MD

2006
John Hanks, MD

2007
Glen D. Warden, MD

2008
Dmitry Oleynikov, MD

2009
Mary L. Brandt, MD

2010
Ernest E. Moore, MD

2011
Ronald M. Stewart, MD

2012
Eugene Foley, MD

2013
Kelly McMasters, MD

2014
Shanu N. Kothari, MD

2015
2015 Roxie M. Albrecht, MD
## AWARDS

### JACK A. BARNEY RESIDENT’S AWARD

Dr. Jack A. Barney received his medical degree in 1956 from the University of Oklahoma. He completed his surgical residency training at St. Anthony Hospital and the University of Oklahoma Health Science Center before entering private practice in Oklahoma City. Dr. Barney continued in private practice in Oklahoma City and Clinical Assistant Professor of Surgery at the University of Oklahoma.

This award was established in 1986 to recognize the dedicated service of Dr. Barney, who served as Secretary-Treasurer of the Southwestern Surgical Congress from 1966 to 1986. It is awarded to the best paper presented by a resident. The first Jack A. Barney award was presented at the 1987 Annual Meeting.

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<th>Year</th>
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<td>Ronald M. Stewart, MD</td>
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<td>T.L. Demmy, MD</td>
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<td>L. Lee Nelson, MD</td>
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<td>Daniel R. Meldrum, MD</td>
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<td>David A. Partrick, MD</td>
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<td>Tari King, MD</td>
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<td>David G. Affleck, MD</td>
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<td>Philip A. Woodworth, MD</td>
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<td>Sandra Wong, MD</td>
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<td>Hyong Kim, MD</td>
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<td>Jodi Gerdes, MD</td>
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<td>Jennifer Keller, MD</td>
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<td>Brenda Kopriva, MD</td>
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<td>Stephanie Cohen, MD, MS</td>
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<td>Paul Bjordahl, MD</td>
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<td>Irminne Van Dyken, MD</td>
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<td>Katie Wiggins-Dohlvik, MD</td>
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<td>Abdul Alarhayem, MD</td>
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## AWARDS

### BEST POSTER AWARD
This award is presented to the highest ranked poster presented at the Southwestern Surgical Congress Annual Meeting.

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<td>Gaurav Kaushik, PhD</td>
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<td>Anne Doughtie, MD</td>
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<td>Danny Little, MD</td>
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<td>Timothy Feldmann, MD</td>
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<td>Anees Chagpar, MD</td>
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<td>2004</td>
<td>Shawn St. Peter, MD</td>
<td>2015</td>
<td>Caitlin Gade, MD</td>
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IN MEMORIAM

DEATHS REPORTED 2015 – 2016
As of March, 2016

Mark Davies, MD – Houston, TX

George Farha, MD – Wichita, KS

Please report any known member deaths to the Southwestern Surgical Congress:

Southwestern Surgical Congress
14005 Nicklaus Drive
Overland Park, KS 66223

Phone: 913-402-7102
Fax: 913-273-1140
Email: events@lp-etc.com
Web: www.swscongress.org
2015 – 2016 NEW MEMBERS

NEW ACTIVE FELLOWS

Maria B. Albuja-Cruz, MD
Aurora, CO

Kathryn Beauchamp, MD
Denver, CO

Brandon Robert Bruns, MD
Baltimore, MD

Eric Michael Campion, MD
Denver, CO

William Carmen Cirocco, MD
Columbus, OH

Millard Andrew Davis, MD
Houston, TX

Molly Elizabeth Gross, MD
Salt Lake City, UT

John Andrew Harvin, MD
Houston, TX

Sarah Elizabeth Judkins, MD
Montrose, CO

Amy Mei Yee Kwok, MD
Fresno, CA

Erik D. Peltz, MD
Aurora, CO

Bartley Pickron, MD
Salt Lake City, UT

John M. Uecker, MD
Austin, TX

Peter A. Walker
Houston, TX

Nabil Wasif, MD
Phoenix, AZ

Sonlee Denise West, MD
Albuquerque, NM

Franklin Lee Wright, MD
Aurora, CO

NEW ASSOCIATE

Stefan Walter Johnson, MD
Grand Forks, ND

Katie Wiggins-Dohlvik
Temple, TX

NEW ADVANCED PRACTICE CLINICIANS

Alicia Conrad, MD
Denver, CO

Annika Kay, MD
Murray, UT

Lindsay O’Meara, MD
Baltimore, MD

Crystal Renee Szczepanski MD
Atlanta, GA
SCHEDULE AT A GLANCE
SCHEDULE AT A GLANCE

SATURDAY, APRIL 2, 2016

2:00pm – 5:00pm  Council Meeting
                 Boardroom

7:00pm – 8:30pm  President & Resident Reception
                 Vista Walk
                 (by invitation)
# SCHEDULE AT A GLANCE

## SUNDAY, APRIL 3, 2016

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<td>Registration</td>
<td>Upper Grande Hall Foyer</td>
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<tr>
<td>8:00am – 12 Noon</td>
<td>Postgraduate Course: Acute Care/General Surgery</td>
<td>Regent/Viceroy</td>
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<td>8:00am – 12 Noon</td>
<td>Postgraduate Course: Ultrasound</td>
<td>Seabreeze</td>
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<td>1:00pm – 2:30pm</td>
<td>Opening Scientific Session I: Abdominal &amp; GI</td>
<td>Regent/Viceroy</td>
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<td>2:30pm – 2:45pm</td>
<td>Introduction of New Members</td>
<td>Regent/Viceroy</td>
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<td>2:45pm – 3:15pm</td>
<td>Beverage Break / Exhibits &amp; ePosters</td>
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<td>3:15pm – 4:30pm</td>
<td>Scientific Session II: Trauma/Critical Care/Acute Care</td>
<td>Regent/Viceroy</td>
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<td>4:30pm – 5:15pm</td>
<td>Presidential Address: You Can't Blame the Wreck on the Train</td>
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<td>LifeCell</td>
<td>Regent/Viceroy</td>
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<td>5:30pm – 6:00pm</td>
<td>Featured ePoster Presentations</td>
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<td>6:00pm – 7:30pm</td>
<td>Welcome &amp; Exhibitor Reception</td>
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### MONDAY, APRIL 4, 2016

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>6:30am – 11:30am</td>
<td><strong>Registration</strong></td>
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<td>Upper Grande Hall Foyer</td>
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<td>6:30am – 7:30am</td>
<td><strong>Yoga on the Beach</strong></td>
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<td>Main Beach</td>
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<td>7:00am – 8:30am</td>
<td><strong>Continental Breakfast</strong></td>
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<td>7:00am – 8:00am</td>
<td><strong>Quick Shot Presentations:</strong></td>
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<td>Trauma – Regent/Viceroy</td>
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<td>Abdominal &amp; Gastrointestinal Surgery – Edison</td>
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<td>Education – Wilder</td>
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<td>8:00am – 11:30am</td>
<td><strong>American College of Surgeons Session</strong></td>
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<td>Regent/Viceroy</td>
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<td>9:30am – 10:00am</td>
<td><strong>Beverage Break / Exhibits &amp; ePosters</strong></td>
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<td>Empress</td>
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<td>1:00pm – 6:00pm</td>
<td><strong>Golf Tournament and USS Midway Museum Tour</strong></td>
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<td>6:00am – 5:00pm</td>
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<td>6:30am – 7:30am</td>
<td>Quick Shot Presentations: Oncology – Regent/Viceroy Acute Care Surgery – Edison Geriatric Trauma – Wilder</td>
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<td>6:30am – 9:00am</td>
<td>Continental Breakfast</td>
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<td>7:00am – 8:00am</td>
<td>Fitness Walk</td>
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<td>7:30am – 8:30am</td>
<td>Past President Panel</td>
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<td>8:45am – 10:00am</td>
<td>Scientific Session III: Abdominal/GI</td>
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<tr>
<td>10:00am – 10:45am</td>
<td>Edgar J. Poth Memorial Lectureship</td>
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<td>Residency Re-design: Is it Time</td>
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<td>Presenter: David Mercer, MD – Omaha, NE</td>
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<td>10:45am – 11:15am</td>
<td>Beverage Break / Exhibits &amp; ePosters</td>
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<td>11:15am – 12:15pm</td>
<td>Scientific Session IV: Breast/Endocrine</td>
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<td>12:15pm – 1:30pm</td>
<td>Graduate Medical Education Luncheon</td>
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<td>Autonomy in Surgical Training</td>
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<td>12:15pm – 1:30pm</td>
<td>Advanced Practice Clinical Luncheon</td>
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<td>Research: Getting the APP Involved</td>
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TUESDAY, APRIL 5, 2016

1:00pm – 4:00pm  Spouse Activity: Southern California Culinary and History Tour
                  Hotel Lobby

1:30pm – 2:30pm  Scientific Session V: Surgical Oncology
                  Regent/Viceroy

2:30pm – 2:45pm  Beverage Break / Exhibits & ePosters
                  Regent/Viceroy

2:45pm – 3:30pm  Thomas G. Orr Memorial Lectureship
                  The Insidious Nature of Burnout: What Have We Learned?
                  Donald Lesslie, MD – Houston, TX
                  Regent/Viceroy

3:30pm – 4:30pm  Scientific Session VI: Breast/Endocrine
                  Regent/Viceroy

4:30pm – 5:00pm  SWSC Annual Business Meeting
                  Regent/Viceroy
                  (Members Only)

6:00pm – 7:00pm  Women in Surgery Reception
                  Sundeck Bar

7:00pm – 10:00pm SWSC Reception
                  Sundeck Back
SCHEDULE AT A GLANCE (continued)

WEDNESDAY, APRIL 6, 2016

7:00am – 10:00am  **Registration**  
Upper Grande Hall Foyer

7:00am – 8:00am  **Quick Shot Presentations:**  
Critical Care – Regent/Viceroy  
Colorectal Surgery/Basic Science – Edison  
Trauma – Wilder

7:00am – 9:00am  **Continental Breakfast**  
Empress

8:30am – 9:15am  **Claude H. Organ, Jr. Memorial Lectureship**  
*From the Laboratory Bench to the Operating Room – The Role of the Surgeon in Cancer Prevention*  
Terry C. Lairmore, MD – Temple, TX  
Regent/Viceroy

9:15am – 10:30am  **Scientific Session VII: Trauma**  
Regent/Viceroy

10:30am  **Award Presentations & Closing Session**  
Regent/Viceroy
SCIENTIFIC PROGRAM
SCIENTIFIC PROGRAM

*Indicates resident paper competing for Jack A. Barney Award.

SATURDAY, APRIL 2, 2016

7:00pm – 8:30pm
President & Resident Reception
(by invitation)

SUNDAY, APRIL 3, 2016

8:00am – 5:00pm
SWSC Registration Open

8:00am – 12:00pm
Postgraduate Course: Ultrasound
Postgraduate Course: Acute Care/General Surgery

NOTE: There are no additional fees to attend the courses

1:00pm – 2:30pm
Opening Scientific Session I – Abdominal / GI
Moderators: Richard Frazee, MD – Temple, TX; Molly Gross, MD – Salt Lake City, UT

1:00pm – 1:15pm
*1. WHEN BMI FAILS TO MEASURE UP: PERINEPHRIC AND PERIUMBILICAL FAT AS PREDICTORS OF OPERATIVE RISK
Presenter: Luke Martin MD – Salt Lake City, UT
Discussant: Brandon Grover, MD – La Crosse, WI

1:15pm – 1:30pm
*2. ROUTINE INTRAOPERATIVE CHOLANGIOGRAPHY IS UNNECESSARY IN PATIENTS WITH MILD GALLSTONE PANCREATITIS AND NORMALIZING BILIRUBIN LEVELS
Presenter: Xuan-Binh Pham MD – Torrance, CA
Discussant: S. Rob Todd, MD – Houston, TX
3. PROSPECTIVE, MULTI-INSTITUTIONAL SURGICAL AND QUALITY OF LIFE (QOL) OUTCOMES COMPARISON OF HEAVYWEIGHT (HW), MIDDLEWEIGHT (MW) AND LIGHTWEIGHT (LW) MESH IN OPEN VENTRAL HERNIA REPAIR (OVHR)
Presenter: Steven Groene MD – Charlotte, NC
Discussant: Wayne Anderson, MD – Williston ND

4. TRANSANAL ENDOSCOPIC MICRO SURGERY (TEM) AND TRANSANAL MINIMALLY INVASIVE SURGERY (TAMIS): IS ONE TECHNIQUE SUPERIOR?
Presenter: Alyson Melin DO – Omaha, NE
Discussant: Molly Gross, MD – Salt Lake City, UT

5. IMPACT OF OBESITY ON POST-OPERATIVE 30-DAY OUTCOMES IN EMERGENT OPEN VENTRAL HERNIA REPAIRS
Presenter: Mary Mrdutt MD – Temple, TX
Discussant: Dmitry Oleynikov, MD – Omaha, NE

6. MISDIAGNOSING ADULTS APPENDICITIS: CLINICAL, COST, AND SOCIOECONOMIC IMPLICATIONS OF NEGATIVE APPENDECTOMY
Presenter: Kyle Mock MD – Torrance, CA
Discussant: Stephen Barnes, MD – Houston, TX

Introduction of New Members
Bryan Morse, MD – Membership Chair

PM Break/ePosters & Exhibits
3:15pm – 4:30pm

**Scientific Session II – Trauma / Critical Care / Acute Care**

**Moderators:** Robert McIntyre, MD – Denver, CO; Nicolas Melo, MD – Los Angeles, CA

3:15pm – 3:30pm

7. COMPARISON OF OUTCOMES OF PATIENTS WITH ACUTE APPENDICITIS BETWEEN AN ACUTE CARE SURGERY MODEL AND TRADITIONAL CALL COVERAGE MODEL IN THE SAME COMMUNITY

**Presenter:** Shaina Schaetzel MD – Fresno, CA

**Discussant:** Fred Pieracci, MD – Denver, CO

3:30pm – 3:45pm

*8.** ATTRIBUTION 2.0: WHOSE COMPLICATION IS IT?

**Presenter:** Greg Hambright MD – Dallas, TX

**Discussant:** Chris Cribari, MD – Loveland, CO

3:45pm – 4:00pm

*9.** CLINICAL PREDICTORS OF EARLY ACUTE RESPIRATORY DISTRESS SYNDROME IN TRAUMA PATIENTS

**Presenter:** Jessica Keeley MD – Torrance, CA

**Discussant:** Tom White, MD – Salt Lake City, UT

4:00pm – 4:15pm

*10.** TIME IS THE ENEMY: MORTALITY IN TRAUMA PATIENTS WITH HEMORRHAGE FROM TORSO INJURY OCCURS LONG BEFORE THE “GOLDEN HOUR”

**Presenter:** Abdul Alarhayem MD – San Antonio, TX

**Discussant:** David Feliciano, MD – Indianapolis, IN

4:15pm – 4:30pm

*11.** OUTCOMES IN ELDERLY FALL VICTIMS: WHAT HAPPENS AFTER HOSPITAL DISCHARGE?

**Presenter:** Lance Larson MD – Wichita, KS

**Discussant:** Lillian Liao, MD, MPH – San Antonio, TX
4:30pm – 5:15pm
Presidential Address: You Can’t Blame the Wreck on the Train
Introduction: Brijesh “Billy” Gill, MD – Houston, TX
Presenter: John Potts, III, MD – Chicago, IL

5:15pm – 6:00pm
LifeCell

5:30pm – 6:00pm
Featured ePoster Presentations

6:00pm – 7:30pm
Welcome & Exhibitor Reception
MONDAY, APRIL 4, 2016

6:30am – 11:30am
**SWSC Registration Open**

6:30am – 7:30am
**Yoga on the Beach**
Hotel del Coronado
*(Main Beach – meet in front of del Beach Bar on the Paseo)*
Cost: $30 per person
Yoga mats and a water station will be available
Join us in a private yoga class that is designed to revitalize your body physically, mentally and spiritually. This class will focus on basic yoga postures and breathing that increase muscle tone, improve flexibility and concentration, detoxify vital organs and induce a state of deep relaxation.

7:00am – 8:30am
**Continental Breakfast**

7:00am – 8:00am
**Quick Shot Presentations #1 – Trauma**
**Moderators:** Daniel Margulies, MD – Los Angeles, CA; Gail Tominaga, MD – La Jolla, CA

7:00am – 7:08am
**QS1. PROGRESSION OF INTRACRANIAL HEMORRHAGE IN CIRRHOTIC PATIENTS WITH TRAUMATIC BRAIN INJURIES DOES NOT ACCOUNT FOR INCREASED MORTALITY**
**Presenter:** Simone Langness MD – San Diego, CA

7:08am – 7:16am
**QS2. TRAUMA PATIENTS: “I CAN’T GET NO (PATIENT) SATISFACTION?”**
**Presenter:** Karalyn Bentley-Kumar MD – Dallas, TX

7:16am – 7:24am
**QS3. SURVIVAL IN PATIENTS UNDERGOING MASSIVE TRANSFUSION: AGE DOESN’T MATTER**
**Presenter:** Amanda Klein MD – Austin, TX
SCIENTIFIC PROGRAM (continued)

7:24am – 7:32am
**QS4.** PRE-INJURY POLYPHARMACY PREDICTS MORTALITY IN ISOLATED SEVERE TRAUMATIC BRAIN INJURY PATIENTS

**Presenter:** Joshua Catapano BS – Las Vegas, NV

7:32am – 7:40am
**QS5.** AN INTEGRATED MILITARY/CIVILIAN MODEL CONTRIBUTES TO OVERALL TRAUMA SYSTEM MATURATION: LESSONS LEARNED FROM TWO MAJOR REGIONAL CONFLICTS

**Presenter:** Jeffry Kashuk MD – Tel Aviv, Israel

7:40am – 7:48am
**QS6.** CIRRHOSIS AND OPERATIVE TRAUMA: TRANSFUSION THRESHOLDS AND MORTALITY

**Presenter:** Claire Isbell MD – Temple, TX

7:48am – 7:56am
**QS7.** UNDERREPORTED INCIDENCE OF UNNECESSARY EMERGENCY DEPARTMENT THORACOTOMY AT A LEVEL 1 TRAUMA CENTER

**Presenter:** Matthew Singer MD – Tucson, AZ

7:00am – 8:00am
**Quick Shot Presentations #2 – Abdominal & Gastrointestinal Surgery**

**Moderators:** Kenric Murayama, MD; Honolulu, HI; Glenn Winslow, MD – Great Falls, MT

7:00am – 7:08am
**QS8.** LONG-TERM ASSESSMENT OF SURGICAL AND QUALITY OF LIFE (QOL) OUTCOMES BASED UPON METHOD OF PERITONEAL CLOSURE IN LAPAROSCOPIC TRANSABDOMINAL PREPERITONEAL (TAPP) INGUINAL HERNIA REPAIR

**Presenter:** Steven Groene MD – Charlotte, NC

7:08am – 7:16am
**QS9.** ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY, MAGNETIC RESONANCE CHOLANGIOPANCREATOGRAPHY, OR LAPAROSCOPIC CHOLECYSTECTOMY: WHICH COMES FIRST?

**Presenter:** Wesley Badger MD – La Crosse, WI
SCIENTIFIC PROGRAM (continued)

7:16am – 7:24am
QS10. CONTINUOUS END TIDAL CAPNOGRAPHY AFTER WEIGHT LOSS SURGERY FOR PATIENTS WITH OBSTRUCTIVE SLEEP APNEA ON THE WARD — IS IT SAFE?
Presenter: John Gower MD – San Diego, CA

7:24am – 7:32am
QS11. LAPAROSCOPIC DONOR NEPHRECTOMY: MINIMALLY INVASIVE GENERAL SURGERY EXPERIENCE AT A SINGLE INSTITUTION 1999-2013
Presenter: Benjamin Raber, MD – Dallas, TX

7:32am – 7:40am
QS12. RETROSPECTIVE COMPARISON OF ROBOTIC VERSUS LAPAROSCOPIC VENTRAL HERNIA REPAIR: DOES ROBOTICS IMPROVE OUTCOMES?
Presenter: Christian Perez MD – Houston, TX

7:40am – 7:48am
QS13. MENIN EXPRESSION IN MDR2 -/- MICE REGULATES HEPATIC FIBROSIS
Presenter: Chad Hall MD – Temple, TX

7:48am – 7:56am
QS14. DO ACUTE CARE SURGEONS FOLLOW BEST PRACTICES FOR BREAST ABSCESS MANAGEMENT? A SINGLE INSTITUTION ANALYSIS OF 325 CONSECUTIVE CASES
Presenter: Alison Barron MD – Dallas, TX

7:00am – 8:00am
Quick Shot Presentations #3 – Education
Moderators: Daniel Dent, MD – San Antonio, TX; Tim Nelson, MD – Albuquerque, NM

7:00am – 7:08am
QS15. THE EFFECT OF A STATEWIDE INITIATIVE FOR TRAUMA EDUCATION: AN ANALYSIS OF THE RURAL TRAUMA TEAM DEVELOPMENT COURSE
Presenter: Deidre Wyrick MD – Little Rock, AR
7:08am – 7:16am
**QS16. SURGICAL CLERKSHIP MEDICAL STUDENT MID-ROTATION SELF-ASSESSMENT DISPARITIES**  
**Presenter:** Blair Lenhan BA – San Antonio, TX

7:16am – 7:24am
**QS17. A SYSTEMATIC APPROACH TO THE REVISION OF MORBIDITY AND MORTALITY CONFERENCE**  
**Presenter:** Lyndsey Kilgore MD – Kansas City, KS

7:24am – 7:32am
**QS18. MEDICAL STUDENT EXPECTATIONS FROM SURGICAL EDUCATION: A 2 YEAR INSTITUTIONAL EXPERIENCE**  
**Presenter:** Alessandra Landmann MD – Oklahoma City, OK

7:32am – 7:40am
**QS19. BECOMING A TRAUMA CENTER OVERNIGHT: USING SIMULATION TO TRAIN SEASONED YET TRAUMA-NAÏVE PROVIDERS PRIOR TO BECOMING TRAUMA PROVIDERS**  
**Presenter:** Andrew Becker – Philadelphia, PA

7:40am – 7:48am
**QS20. TRANSITION TO EPOSTERS: SURVEY OF AN ACADEMIC CONGRESS**  
**Presenter:** Daniel Vargo MD – Salt Lake City, UT

7:48am – 7:56am
**Presenter:** Kenneth Sirinek MD, PhD – San Antonio, TX
8:00am – 11:30am

American College of Surgeons Session

8:00am – 9:30am – Part 1
Moderator: David Hoyt, MD – Chicago, IL

American College of Surgeons Update
David Hoyt, MD – Chicago, IL

Payment Reform
Christian Shalgian, MD – Washington, DC

9:30am – 10:00am
Morning Break / Exhibits & ePosters

10:00am – 11:30am – Part 2
Moderator: John Potts, III, MD – Chicago, IL

10:00am – 10:20am
The American Board of Surgery Examinations: How Are the Southwestern Surgical Congress Programs Performing Compared to the Rest of the United States?
Presenter: Daniel Dent, MD – San Antonio, TX

10:20am – 10:40am
Program Factors as They Relate to High/Low QE/CE Pass Rates
Presenter: Brittany Bankhead-Kendall – Dallas, TX

10:40am – 11:25am
How to Avoid Burnout
Sharmila Dissanaike, MD – Lubbock, TX

1:00pm – 6:00pm
Afternoon Activities
1:00pm – 6:00pm
**Annual Golf Tournament**
Consecutive Tee Times beginning at 1:00pm
Coronado Municipal Golf Course
*Cost: $95 per person*
*Confirm exact tee time and foursomes at SWSC registration desk*

Join us for an afternoon on the greens. Be sure to register in advance, as we typically have strong interest for golf. Fee includes transportation, greens fees, tournament coordination, prizes and boxed Lunch.

1:30pm – 4:00pm
**USS Midway Museum Tour**
*Cost: $30 per person*

The USS Midway is the longest-serving aircraft carrier in US Navy history, having served for 47 years. You will enjoy this self-guided audio tour covering over 60 different exhibits throughout the ship, including 24 restored aircrafts. This is a must see for history and military enthusiasts! The tour takes about 2 hours and there are lots of retired veterans on-board that enjoy talking with you and answering all of your questions.
TUESDAY, APRIL 5, 2016

6:00am – 5:00pm
SWSC Registration Open

6:30am – 9:00am
Continental Breakfast

6:30am – 7:30am
Quick Shot Presentations #1 – Oncology
Moderators: John Moore, MD – Denver, CO

6:30am – 6:38am
QS22. THE EFFECTS OF REAL-TIME, INTRAOPERATIVE SPECIMEN
RADIOGRAPHY IN RADIOACTIVE SEED LOCALIZED BREAST
CANCER SURGERY.
Presenter: Daniel Rhee MD – Phoenix, AZ

6:38am – 6:46am
QS23. RETROSPECTIVE REVIEW OF TRANSJUGULAR LIVER BIOPSY
IN PATIENTS WITH LEFT LOBE ONLY LIVER TRANSPLANTS
Presenter: Brittany Bartolome – Las Vegas, NV

6:46am – 6:54am
QS24. MALIGNANT MELANOMA IN A RURAL STATE: BIOPSY
TECHNIQUE AND SUBSEQUENT CARE
Presenter: Daniel Persinger MD – Grand Forks, ND

6:54am – 7:02am
QS25. UTILIZATION OF EMERGENCY DEPARTMENT CARE BY
CANCER PATIENTS IN THE UNITED STATES
Presenter: Adil Shah MD – Phoenix, AZ

7:02am – 7:10am
QS26. TREATMENT PATTERNS, TRENDS, AND OUTCOMES OF
OCTOGENARIANS UNDERGOING GASTRECTOMY PERFORMED
FOR MALIGNANCY
Presenter: Geoff Bellini, MD – New York, NY
7:10am – 7:18am
**QS27.** SURVIVAL IS INCREASED IN PATIENTS DEVELOPING SEVERE WEIGHT LOSS AND MALNUTRITION DURING CONCOMITANT CHEMOTHERAPY AND RADIATION THERAPY FOR ADVANCED OPERABLE STAGE III AND IV SQUAMOUS CELL CARCINOMA OF THE HEAD AND NECK
**Presenter:** Casey Sheck DO – Vineland, NJ

7:18am – 7:26am
**QS28.** THE EFFECT OF PREOPERATIVE NUTRITIONAL STATUS ON POSTOPERATIVE COMPLICATIONS AND OVERALL SURVIVAL IN PATIENTS UNDERGOING PELVIC EXENTERATION: A MULTI-DISCIPLINARY COHORT OF PATIENTS AT TWO LARGE INSTITUTIONS
**Presenter:** Nathaniel Lyell – Columbus, OH

6:30am – 7:30am
**Quick Shot Presentations #2 – Acute Care Surgery**
**Moderators:** Michael Truitt, MD – Dallas, TX – Clay Cothren Burlew, MD – Denver, CO

6:30am – 6:38am
**QS29.** PROTOCOL DRIVEN MANAGEMENT OF SUSPECTED COMMON DUCT STONES REDUCES LENGTH OF HOSPITALIZATION RN
**Presenter:** Anthony Manning MD – Temple, TX

6:38am – 6:46am
**QS30.** THE DIFFICULT GALL BLADDER: OUTCOMES FOLLOWING LAPAROSCOPIC CHOLECYSTECTOMY AND THE NEED FOR OPEN CONVERSION
**Presenter:** Awais Ashfaq MD – Phoenix, AZ

6:46am – 6:54am
**QS31.** PREDICTORS OF EMERGENCY HERNIA REPAIR
**Presenter:** Krislynn Mueck MD, MPH – Houston, TX

6:54am – 7:02am
**QS32.** ACUTE CARE SURGERY: TRAUMA, CRITICAL CARE, EGS..... AND PREVENTATIVE HEALTH?
**Presenter:** Greg Hambright MD – Dallas, TX
SCIENTIFIC PROGRAM  (continued)

7:02am – 7:10am
QS33. INDICATION-SPECIFIC OUTCOMES FOR DAMAGE CONTROL LAPAROTOMY: A DESCRIPTIVE STUDY  
**Presenter:** John Taylor III MD – Houston, TX

7:10am – 7:18am
QS34. SURGICAL COMPARED WITH CONSERVATIVE TREATMENT FOR BILIARY TRACT DISEASE IN PREGNANCY  
**Presenter:** Aaron Parrish MD – Torrance, CA

7:18am – 7:26am
QS35. A RETROSPECTIVE CHART REVIEW OF A NOVEL BIOSYNTHETIC POLY-4-HYDROXYBUTYRATE MESH IN THE REPAIR OF GRADE 3 AND 4 ABDOMINAL HERNIAS  
**Presenter:** Darcy Shaw MD – Omaha, NE

6:30am – 7:30am
Quick Shot Presentations #3 – Geriatric Trauma  
**Moderators:** Alicia Mangram, MD – Phoenix, AZ; Lillian Liao, MD – San Antonio, TX

6:30am – 6:38am
QS36. THROMBELASTOGRAPHY AND PLATELET RESPONSE TO ASPIRIN IN HEALTHY ADULTS  
**Presenter:** Michelle Scerbo, MD – Houston, TX

6:38am – 6:46am
QS37. OUTCOMES FOR ELDERLY TRAUMA PATIENTS WITH TRACHEOSTOMIES: AS GOOD AS THEIR YOUNGER COUNTERPARTS  
**Presenter:** Danilo Martins MD – Austin, TX

6:54am – 7:02am
QS39. DISTRACTING INJURY DEFINED: DOES AN ISOLATED HIP FRACTURE CONSTITUTE A DISTRACTING INJURY FOR CLEARANCE OF THE CERVICAL SPINE?  
**Presenter:** Ryan Lindborg MD – Brooklyn, NY

7:02am – 7:10am
QS40. DEMENTIA AS A PREDICTOR OF MORTALITY IN ADULT TRAUMA PATIENT  
**Presenter:** Benjamin Jordan MD – Wichita, KS
7:10am – 7:18am
QS41. GERIATRIC FOCUSED TRIAGE CRITERIA: IMPACT ON UNDERTRIAGE RATES AT AN URBAN TRAUMA CENTER
Presenter: Alexandra Lopez-Aguiar MD – Atlanta, GA

7:18am – 7:26am
QS42. OUTCOMES IN PATIENTS AGES 65 AND OLDER WITH TRAUMATIC BRAIN INJURY
Presenter: Joshua Summers MD – Wichita, KS

7:00am – 8:00am
Fitness Walk
Hotel del Coronado (meet in front of del Beach Bar on the Paseo)
Cost: $30 per person
Get your day started with a fun group fitness walk. This walk will offer a one hour guided walk around Coronado and will be led by one of the Hotel del local fitness instructors. There will also be fitness towels and a water station provided at check-in.

7:00am – 2:45pm
ePosters & Exhibits Open

7:30am – 8:30am
Past Presidents Panel: How I Do It
Moderator: Clay Burlew, MD – Denver, CO
Alan Thorson, MD – Omaha, NE
Robert McIntyre, MD – Denver, CO
Edward Nelson, MD – Salt Lake City, UT
Ronald Stewart, MD – San Antonio, TX

8:45am – 10:00am
Scientific Session III: Abdominal / GI
Moderators: Ed Nelson, MD – Salt Lake City, UT; Chris Cribari, MD – Loveland, CO

8:45am – 9:00am
*12. LAPAROSCOPIC REDO HIATAL HERNIA REPAIR, A SAFE PROCEDURE WITH HIGH PATIENT SATISFACTION AND LOW MORBIDITY
Presenter: David Roife, MD – Houston, TX
Discussant: Daniel Dent, MD – San Antonio, TX
**SCIENTIFIC PROGRAM (continued)**

9:00am – 9:15am  
*13. POSTOPERATIVE ANTIBIOTIC USE AND THE INCIDENCE OF INTRAABDOMINAL ABSCESS IN THE SETTING OF SUPPURATIVE APPENDICITIS: A RETROSPECTIVE ANALYSIS  
**Presenter:** Esther Bae DO – Colton, CA  
**Discussant:** Dennis Kim, MD – Torrance, CA

9:15am – 9:30am  
**14. EFFICACY OF RETROPERITONEAL TRIPLE NEURECTOMY FOR REFRACTORY NEUROPATHIC INGUINODYNIA**  
**Presenter:** David Chen MD – Los Angeles, CA  
**Discussant:** Daniel Vargo, MD – Salt Lake City, UT

9:30am – 9:45am  
*15. A SINGLE CENTER EXPERIENCE WITH RECURRENT ACHALASIA: OUTCOMES OF REPEAT LAPAROSCOPIC HELLER MYOTOMY  
**Presenter:** Mark Banker MD – Dallas, TX

9:45am – 10:00am  
*16. SURGICAL OUTCOMES AND FAILURE TO RESCUE EVENTS AFTER COLECTOMY IN TEACHING HOSPITALS: A NATIONWIDE ANALYSIS  
**Presenter:** Ara Ko MD, MPH – Los Angeles, CA  
**Discussant:** David Antonenko, MD, PhD – Grand Forks, ND

10:00am – 10:45am  
**Edgar J. Poth Memorial Lecture:**  
**Residency Re-design: Is it Time?**  
**Presenter:** David Mercer, MD – Omaha, NE

10:45am – 11:15am  
**AM Break/ePosters & Exhibits**

11:15am – 12:15pm  
**Scientific Session IV: Breast / Endocrine**  
**Moderators:** Richard Gray, MD – Phoenix, AZ; Maria Albuja – Cruz, MD – Aurora, CO
11:15am – 11:30am
*17. HOLLOW SILICA NANO PARTICLES AS AN IN VIVO MARKER FOR NON-PALPABLE TUMORS USING A VX2 RABBIT MODEL
**Presenter:** Erin Ward MD – San Diego, CA
**Discussant:** Barbara Pockaj, MD – Phoenix, AZ

11:30am – 11:45am
18. THE ROLE OF LATERAL NECK ULTRASOUND IN DETECTING SINGLE OR MULTIPLE LYMPH NODES IN PAPILLARY THYROID CANCER
**Presenter:** Zahraa Al-Hilli MD – Rochester, MN
**Discussant:** Annabel Barber, MD – Las Vegas, NV

11:45am – 12Noon
19. CENTRAL VENOUS PARATHYROID HORMONE MONITORING UTILIZING A NOVEL, SPECIFIC ANATOMIC METHOD ACCURATELY PREDICTS CURE DURING MINIMALLY INVASIVE PARATHYROIDECTOMY
**Presenter:** Courtney Edwards MD – Temple, TX
**Discussant:** Anne Mancino, MD – Little Rock, AR

12Noon – 12:15pm
*20. IS FORGOING CHEMICAL VENOUS THROMBOEMBOLISM PROPHYLAXIS FOR WOMEN UNDERGOING BREAST CONSERVING SURGERY FOR BREAST CANCER SAFE?
**Presenter:** Samer Zammar MD, MPH – Phoenix, AZ
**Discussant:** Jeffry Kashuk, MD – Tel Aviv, Israel

12:15pm – 1:30pm
**Graduate Medical Education Luncheon: Autonomy in Surgical Training**
**Moderator:** Walt Biffl, MD – Honolulu, HI
**Presenters:** S. Rob Todd, MD – Houston, TX; John Moore, MD – Denver, CO; Katie Wiggins-Dohlvik, MD – Belton, TX; Harry Sax, MD – Los Angeles, CA

12:15pm – 1:30pm
**Advanced Practice Clinician Luncheon**
**Research: Getting the APP Involved**
Alicia Mangram, MD – Scottsdale, AZ
Clay Burlew, MD – Denver, CO
Barbara Eaton, RN, MS, CRNP, CCRN – Baltimore, MD
1:00pm – 4:00pm  
**Spouse / Guest Activity: Southern California Culinary and History Tour**

Tour Capacity: 14pp  
Cost: $50 per person

This walking tour offers delicious food samplings from local purveyors and eating establishments. You will hear interesting stories and tales of Coronado’s history while dining on fresh, tasty foods. You will visit unique places providing you everything from locally grown to globally inspired culinary samplings. The tour includes all food tastings, a goody bag and a bottle of water.

1:30pm – 2:30pm  
**Scientific Session V: Surgical Oncology**

Moderators: Robert Sticca, MD – Grand Forks, ND; Courtney Scaife, MD – Salt Lake City, UT

1:30pm – 1:45pm  
**21. EXPANDED SCREENING CRITERIA FOR BLUNT CEREBROVASCULAR INJURY: A BIGGER IMPACT THAN ANTICIPATED**

**Presenter:** Andrea Geddes MS – Denver, CO  
**Discussant:** Raminder Nirula, MD – Salt Lake City, UT

1:45pm – 2:00pm  
**22. COMPARISON OF PREOPERATIVE AND PREDICTED POSTOPERATIVE PULMONARY FUNCTION TESTS AND PERI-OPERATIVE OUTCOMES AFTER ROBOTIC-ASSISTED PULMONARY LOBECTOMY VS. SEGMENTECTOMY**

**Presenter:** Maria Echevarria BS – Tampa, FL  
**Discussant:** John Baldwin, MD – Lubbock, TX

2:00pm – 2:15pm  
**23. LONG TERM OUTCOMES AFTER HAND-SEWN VERSUS CIRCULAR STAPLED (25 & 29MM) ANASTOMOTIC TECHNIQUE AFTER ESOPHAGOGASTRECTOMY FOR ESOPHAGEAL CANCER**

**Presenter:** Jack Rostas MD – Louisville, KY  
**Discussant:** Courtney Scaife, MD – Salt Lake City, UT

2:15pm – 2:30pm  
**24. HOW DOES A CONCURRENT DIAGNOSIS OF CANCER INFLUENCE OUTCOMES IN PATIENTS UNDERGOING EMERGENCY GENERAL SURGERY?**

**Presenter:** Adil Shah MD – Phoenix, AZ  
**Discussant:** John Uecker, MD – Austin, TX
2:30pm – 2:45pm
PM Break/ePosters & Exhibits

2:45pm – 3:30pm
Thomas G. Orr Memorial Lecture
*The Insidious Nature of Burnout: What Have We Learned?*
**Presenter:** Donald Lesslie, MD – Houston, TX

3:30pm – 4:30pm
**Scientific Session VI: Breast / Endocrine**
Moderators: Terry C. Lairmore, MD – Temple, TX; Jared Linebarger, MD – La Crosse, WI

3:30pm – 3:45pm
*25. EXTRA-MAMMARY FINDINGS IN DIAGNOSTIC BREAST MRI AMONG PATIENTS WITH KNOWN BREAST CANCER: INCIDENCE AND COST ANALYSIS*
**Presenter:** Lisa Hayes MD – La Crosse, WI
**Discussant:** Richard Gray, MD – Phoenix, AZ

3:45pm – 4:00pm
*26. TRENDS IN MASTECTOMY AND RECONSTRUCTION FOR BREAST CANCER; A TWELVE YEAR EXPERIENCE FROM A TERTIARY CARE CENTER*
**Presenter:** James Chang MD – Phoenix, AZ
**Discussant:** Ronda Henry-Tillman, MD – Little Rock, AR

4:00pm – 4:15pm
*27. FLAT EPITHELIAL ATYPIA ON CORE NEEDLE BIOPSY: MUST YOU RE-EXCISE?*
**Presenter:** Alison Acott MD – Little Rock, AR
**Discussant:** Edward Nelson, MD – Salt Lake City, UT

4:15pm – 4:30pm
*28. PANCREATIC CYSTIC NEOPLASMS: A SINGLE INSTITUTION EXPERIENCE WITH UPDATED TREATMENT RECOMMENDATIONS*
**Presenter:** Alessandra Landmann MD – Oklahoma City, OK
**Discussant:** Wasif Nabil, MD – Phoenix, AZ
SCIENTIFIC PROGRAM (continued)

4:30pm – 5:00pm
SWSC Annual Business Meeting
-members only-

6:00pm – 7:00pm
Women in Surgery Reception

7:00pm – 10:00pm
SWSC Reception
WEDNESDAY, APRIL 6, 2016

7:00am – 10:00am
SWSC Registration Open

7:00am – 9:00am
Continental Breakfast

7:00am – 8:00am
Quick Shot Presentations #1 – Critical Care

7:00am – 7:08am
**QS43.** TAKE OUT THE TUBE! PATIENTS WITH AN OPEN ABDOMEN CAN BE SUCCESSFULLY EXTUBATED
*Presenter:* Eric Campion MD – Denver, CO

7:08am – 7:16am
**QS44.** INITIAL SAFETY AND FEASIBILITY OF PRE-HOSPITAL TRANEXAMIC ACID IN TRAUMA PATIENTS.
*Presenter:* Katharine Schulz-Costello DO – Colton, CA

7:16am – 7:24am
**QS45.** BOARDING ICU PATIENTS: ARE OUR ROUNding PRACTICES SUBPAR?
*Presenter:* Andrew Nunn MD – Philadelphia, PA

7:24am – 7:32am
**QS46.** EFFECT OF EMPIRIC ANTIBIOTICS ON THE DEVELOPMENT OF EARLY ONSET PNEUMONIA IN TRAUMA PATIENTS WITH SUSPECTED ASPIRATION
*Presenter:* Eric Tamrazian MD – Torrance, CA

7:32am – 7:40am
**QS47.** UNDERREPORTED INCIDENCE OF TUBE DISLODGEment IN PULL PEG (VS. PUSH PEG)
*Presenter:* Sadoun Moutamn, MD – Tucson, AZ
7:40am – 7:48am
**QS48.** RIB FIXATION USING THE MUSCLE SPARING MINIMALLY INVASIVE THORACOTOMY TECHNIQUE IS ASSOCIATED WITH IMPROVED PULMONARY FUNCTION  
**Presenter:** Francis Ali-Osman MD – Phoenix, AZ

7:48am – 7:56am
**QS49.** TROPONINS HAVE NO VALUE IN THE EVALUATION OF NEW ONSET ATRIAL FIBRILLATION IN THE TRAUMA POPULATION  
**Presenter:** T. Ellis Barnes MD – Charlotte, NC

7:00am – 8:00am
**Quick Shot Presentations #2 – Colorectal Surgery / Basic Science**  
**Moderators:** Rudy Lackner, MD – Omaha, NE

7:16am – 7:24am
**QS52.** TARGETING CANCER STEMS CELLS BY AUTOPHAGY INHIBITION IN PANCREATIC DUCTAL ADENOCARCINOMA  
**Presenter:** Diana Liang MD – Houston, TX

7:24am – 7:32am
**QS53.** IMPLEMENTATION AND OUTCOME OF AN ENHANCED RECOVERY AFTER SURGERY PROGRAM FOR COLORECTAL SURGERY AT A COMMUNITY TEACHING HOSPITAL  
**Presenter:** Mallory Bray MD – La Crosse, WI

7:32am – 7:40am
**QS54.** SURGICAL OUTCOMES AFTER COLECTOMIES IN UNDERSERVED AREAS OF CALIFORNIA: THE EFFECT OF SURGICAL DESERTS  
**Presenter:** Lia Aquino BA – Los Angeles, CA

7:40am – 7:48am
**QS55.** REVIEW AND ANALYSIS OF SURGICAL INFECTION RATES POST IMPLEMENTATION OF A SURGICAL SITE INFECTION BUNDLE IN COLON SURGERY PATIENTS  
**Presenter:** Jennifer Lu DO – Kansas City, KS

7:48am – 7:56am
**QS56.** PREOPERATIVE CHARACTERISTICS OF POOR OUTCOMES IN LOCALLY ADVANCED RECTAL CANCER AT A COUNTY HOSPITAL: IS THERE ROOM FOR IMPROVEMENT?  
**Presenter:** Aaron Parrish MD – Torrance, CA
7:00am – 8:00am

Quick Shot Presentations #3 – Trauma

7:00am – 7:08am

QS57. LAGGING LEFT TURN SIGNALS REDUCE INJURIES AND SAVE LIVES
Presenter: Dennis Weiland MD – Scottsdale, AZ

7:08am – 7:16am

QS58. WHAT DRIVES THE COST OF TRAUMA PATIENTS? AN ANALYSIS USING A STATE-WIDE TRAUMA FINANCIAL SURVEY
Presenter: Kyle Kalkwarf MD – Little Rock, AR

7:16am – 7:24am

QS59. OUTCOMES OF A SELECTIVE ANGIOEMBOLIZATION APPROACH TO HIGH GRADE BLUNT SPLENIC INJURIES
Presenter: Jeffrey Quigley DO – Colton, CA

7:24am – 7:32am

QS60. PENETRATING CARDIAC INJURIES IN AMERICA – PREDICTORS OF OUTCOME IN 2016 PATIENTS FROM THE NATIONAL TRAUMA DATA BANK
Presenter: Juan A. Asensio MD – Omaha, NE

7:32am – 7:40am

QS61. WHO OPERATES ON PEDIATRIC VASCULAR TRAUMA AT A FREESTANDING LEVEL I PEDIATRIC TRAUMA CENTER: CHANGES OVER TIME
Presenter: Lori Gurien MD, MPH – Little Rock, AR

7:40am – 7:48am

QS62. PERCEPTION VERSUS REALITY: HELMET USE AMONG MOTORCYCLE RIDERS IN TEXAS
Presenter: Jawad Ali MD – Austin, TX

7:48am – 7:56am

QS63. FIELD OF DREAMS OR FIELD OF INJURIES: THE INCIDENCE OF ACUTE INJURY IN YOUTH BASEBALL
Presenter: Jessica Carlson MD – Cooperstown, NY
8:30am – 9:15am
Claude H. Organ, Jr. Memorial Lecture
*From the Laboratory Bench to the Operating Room: The Role of the Surgeon in Cancer Prevention*
**Presenter:** Terry C. Lairmore, MD – Temple, TX

9:15am – 10:30am
**Scientific Session VII: Trauma**
**Moderators:** Brian Eastridge, MD – San Antonio, TX; Frederic Pieracci, MD – Denver, CO

9:15am – 9:30am
29. NON-OPERATIVE MANAGEMENT OF ADHESIVE SMALL BOWEL OBSTRUCTION – WHAT IS THE BREAK POINT?
**Presenter:** Alexander Colonna MD – Salt Lake City, UT
**Discussant:** Ronald Stewart, MD – San Antonio, TX

9:30am – 9:45am
30. RESUSCITATIVE ENDOVASCULAR BALLOON OCCLUSION OF THE AORTA (REBOA) FOR CONTROL OF NON-COMPRESSIBLE TORSO HEMORRHAGE
**Presenter:** Clay Martin BS – Houston, TX
**Discussant:** David Plurad, MD – Sierra Madre, CA

9:45am – 10:00am
31. THE TIME IS NOW: VENOUS THROMBOEMBOLISM PROPHYLAXIS IN BLUNT SPLENIC INJURY
**Presenter:** Amy Kwok MD, MPH – Fresno, CA
**Discussant:** Justin Regner, MD – Temple, TX

10:00am – 10:15am
32. THE EFFECT OF ANTICOAGULATION ON GERIATRIC FALL TRAUMA OUTCOMES
**Presenter:** Julia Roberts MD, MPH – Toledo, OH
**Discussant:** Bellal Joseph, MD – Tucson, AZ

10:30am – 10:45am
**Award Presentations & Closing Session**
1. WHEN BMI FAILS TO MEASURE UP: PERINEPHRIC AND PERIUMBILICAL FAT AS PREDICTORS OF OPERATIVE RISK
LA Martin MD, G Seton MD, B Aldred MD, P Hopkins MD MSPH, J Chan MD, M Heilbrun MD, M Mone RN BSE, CL Scaife MD, WJ Peche MD
Salt Lake City, UT

BACKGROUND: An obese body habitus has been associated with poor surgical outcomes and increased technical difficulty. The most commonly used metric for body habitus is BMI, which has several known limitations. As an alternative metric, visceral and subcutaneous fat, quantified as perinephric fat (PNF) and periumbilical fat (PUF), may improve perioperative risk stratification. PNF and PUF are quickly and reliably measured, as compared to visceral fat area (VFA), which requires use of specialized radiographic software. We hypothesized that PUF and PNF would serve as improved predictors of operative risk compared to BMI.

METHODS: A retrospective review (2008-2014) was conducted of patients (n=249) undergoing elective, pelvic colorectal resections (LAR, APR, Pouch) where high levels of visceral fat may increase technical difficulty. Demographics and clinical data were obtained from the NSQIP database and the medical record. Operative procedures were grouped (3) based on complexity by a surgeon. Using preoperative axial imaging (CT, MRI, PET/CT) two radiologists, blinded to patient outcomes, measured visceral fat as the diameter of bilateral posterior perinephric fat (PNF) and subcutaneous fat as the diameter of bilateral periumbilical fat (PUF) [Figure 1]. Inter and intra-rater reliability testing was performed for the radiographic measurements. Means of the bilateral measurements were used for analysis.

RESULTS: The majority of patients were male (59.4%) and white (80.7%). Average age was 57.7 years (19.6 to 92.1). Median BMI was 26.5 (15.9 to 53.4); 29.7% of patients categorized as obese (BMI>30). Laparoscopic (49.8%) and open (50.2%) procedures were similarly represented. Median estimated blood loss (EBL) was 200 cc (20 to 1800) and median operative time (OT) was 254 minutes (97 to 614).

In women, PUF (P=0.004) and PNF (P<0.001) were each statistically significant predictors of EBL when controlling for case complexity, ASA score and BMI in multivariate analysis; PNF (p=0.012) was a statistically significant predictor of OT in multivariate analysis. BMI was statistically significant as a predictor of EBL and OT in each univariate analysis, but was not significant once PNF and PUF were included in either multivariate model (p=0.46; p=0.75). Holding other factors constant for the sample population, each 4.7 mm increase in PNF will on average increase OT by 15 minutes and EBL by 55 cc; each 8.6 mm increase in PUF will on average increase EBL by 55 cc. These results in females are similar to prior series of colorectal patients using VFA.

In men, none of the fat metrics (PUF, PNF, BMI) were significant predictors of either EBL or OT in multivariate analysis.

CONCLUSION: In women, PNF and PUF may offer an improved metric of body habitus over BMI for perioperative risk stratification, which can have important clinical and financial implications. Compared to VFA, these metrics are easily and reliably measured without the need for additional software or complex calculations.
2. ROUTINE INTRAOPERATIVE CHOLANGIOGRAPHY IS UNNECESSARY IN PATIENTS WITH MILD GALLSTONE PANCREATITIS AND NORMALIZING BILIRUBIN LEVELS

XD Pham MD, C de Virgilio MD, L Al-Khouja BS, MC Bermudez BS, AC Schwed MD, AH Kaji MD, DS Plurad MD, RS Bennion MD, DJ Saltzman MD, DY Kim MD
Torrance, CA

BACKGROUND: The benefit of intraoperative cholangiography (IOC) is controversial in patients with gallstone pancreatitis whose bilirubin levels are normalizing. IOC with subsequent endoscopic retrograde cholangiopancreatography (ERCP) may lengthen duration of surgery and hospital stay, whereas failure to clear the common bile duct (CBD) may result in recurrent pancreatitis. We hypothesize that foregoing IOC is safe in patients with mild gallstone pancreatitis and normalizing bilirubin levels.

METHODS: We performed a 6-year retrospective cohort analysis of consecutive adult patients with mild gallstone pancreatitis undergoing same-admission cholecystectomy at two university-affiliated medical centers. Institution A routinely performed IOC, whereas institution B did not. Patients who underwent a pre-operative ERCP were excluded. The primary outcome was readmission within 30 days for recurrent pancreatitis. Secondary outcomes included duration of surgery, length of stay (LOS), and performance of postoperative ERCP.

RESULTS: Of 520 patients evaluated, 246 (47%) were managed at institution A (routine IOC) and 274 (53%) were managed at institution B (restricted IOC). Institution B was far less likely to perform IOC than institution A (5.5% vs. 92%, P<.001). There were no significant differences in severity of pancreatitis, admission laboratory values, or CBD diameter between the two groups (Table). Patients at institution B had a significantly shorter duration of surgery (1.1 vs. 1.7 hours, P<.001), shorter LOS (4 vs. 5 days, P<.001), and fewer postoperative ERCPs performed (2.9% vs. 21%, P<.001), without a significant difference in readmissions for recurrent pancreatitis (1.5% vs. 0%, P=.12).

CONCLUSION: Routine intraoperative cholangiography is not necessary in the setting of mild gallstone pancreatitis with normalizing bilirubin values.
3. PROSPECTIVE, MULTI-INSTITUTIONAL SURGICAL AND QUALITY OF LIFE (QOL) OUTCOMES COMPARISON OF HEAVYWEIGHT (HW), MIDDLEWEIGHT (MW) AND LIGHTWEIGHT (LW) MESH IN OPEN VENTRAL HERNIA REPAIR (OVHR)

SA Groene MD, T Prasad MA, AE Lincourt PhD MBA, R Sing MD, BT Heniford MD, VA Augenstein MD
Charlotte, NC

BACKGROUND: OVHR is one of the most commonly performed surgical procedures in the world. Mesh choice is often defined and recommended according to its mass. Our aim was to analyze surgical and QOL outcomes among HW, MW and LW mesh.

METHODS: Evaluation of the multi-institutional, prospective International Hernia Mesh Registry was performed for OVHR. Operative details, complications, recurrence and QOL at 1, 6, 12, 24 and 36-months were statistically evaluated.

RESULTS: There were 549 OVHR performed, 99 using HW, 262 MW and 188 LW. Among the groups, there was a difference in age, diabetes and hypertension (all p≤0.03) (see chart). Hernia characteristics that differed included defect size, incarceration, and suprapubic location (all p≤0.008). There was also a difference in concomitant component separation and OR duration (all p≤0.01). Surgical outcomes that differed significantly include superficial surgical site infections (SSI) (p=0.04) and LOS (p<0.0001). There was no difference in post-op hematomas, seromas, deep SSI, UTI, DVT, ileus or abdominal wall complications. Also, there was no difference in recurrence rates (6.1 vs 6.1 vs 8.0%;p=0.71).

At 1-month post-op, the only QOL outcome that was significantly different was the max pain score (27.4 vs 44.6 vs 42.1%;p=0.03) for HW, MW and LW, respectively. At 6 months, there was a significant difference in mesh sensation (14.9 vs 21.9 vs 30.7%), movement limitation (15.2 vs 14.2 vs 28.3%), pain score (16.4 vs 21 vs 31.9%) and overall symptom score (23.5 vs 28.5 vs 44.8%) (all p≤0.04). At 12 months, there was still a significant difference in movement limitation (17.7 vs 16.8 vs 32.3%), pain score (14.5 vs 19.2 vs 31.5%) and overall symptom score (28.2 vs 28 vs 42.8%) (all p≤0.02). At 24 months, the only significant difference in QOL was movement limitation (16.4 vs 20.2 vs 32%; p=0.04), and by 36 months, there was no significant difference in QOL among the groups. After controlling for geographic surgical location, smoking, component separation and pre-op pain, multivariate analysis (MVA) demonstrated that LW mesh was associated with a significantly overall worse QOL score at 6 months [OR 2.7 (95%CI 1.3, 5.7)] and a worse pain score at 1 year [OR 2.5 (95%CI 1.04, 5.8)].

CONCLUSION: Patients in whom HW mesh was used tended to have more co-morbidities, while MW mesh patients tended to be younger. HW mesh was used for larger defects and was more often used in the suprapubic position. MW mesh was associated with fewer superficial SSI and shorter OR time and LOS. LW mesh was more commonly used when a component separation was performed. After controlling for location, smoking, component separation and pre-operative pain, LW mesh was associated with an overall worse QOL at 6 months and a worse pain score at 1 year.
4. TRANSANAL ENDOSCOPIC MICROSURGERY (TEM) AND TRANSANAL MINIMALLY INVASIVE SURGERY (TAMIS): IS ONE TECHNIQUE SUPERIOR?
A Melin, DO, C Ternent, MD, S Kalaskar, MBBS, L Taylor, J Thompson, MD, S Langenfeld, MD
Omaha, NE

BACKGROUND: When compared to conventional local excision (LE) for rectal tumors, Transanal endoscopic microsurgery (TEM) has been shown to improve the quality and versatility of transanal resections, allowing for improved visibility and easier access to the proximal rectum. However, TEM is limited by expensive and specialized equipment, difficult patient positioning, and a steep learning curve. Overall utilization of TEM remains low in the United States. Transanal Minimally Invasive Surgery (TAMIS) was first introduced in 2009 as a less expensive alternative to TEM that uses conventional laparoscopic equipment and simpler patient positioning. The purpose of this study was to compare the short-term outcomes between TEM and TAMIS among experienced colorectal surgeons. We hypothesize that outcomes will be similar for the two techniques.

METHODS: A retrospective chart review was conducted for all TEM and TAMIS procedures performed between January 2012 and August 2015 by 7 colorectal surgeons in Omaha. All surgeons were experienced with TEM but inexperienced with TAMIS. The technique was chosen based on surgeon preference and availability at the different hospitals. Baseline patient demographics, operative variables, pathology results, and short-term clinical outcomes were assessed.

RESULTS: A total of 69 patients were identified (40 TEM, 29 TAMIS) with none excluded. Baseline patient demographics, tumor characteristics, and patient positioning were similar for TEM and TAMIS (Table 1). Operative time, blood loss, margin status, and postoperative complications were also similar for the two procedures. The volume of resection was significantly higher for TAMIS (p<0.001), and lymph node retrieval was achieved in 17.2% of TAMIS cases compared to 0% of TEM (p=0.01).

CONCLUSION: Despite our surgeons having less experience with the technique, TAMIS appears to have equivalent indications and outcomes compared to TEM. TAMIS is associated with a larger specimen size and a greater ability to obtain mesorectal lymph nodes.
5. IMPACT OF OBESITY ON POST-OPERATIVE 30-DAY OUTCOMES IN EMERGENT OPEN VENTRAL HERNIA REPAIRS

MM Mrdutt MD, Y Munoz-Maldonado PhD, JL Regner MD

Temple, TX

BACKGROUND: Ventral hernia repairs (VHR) have a high incidence of long-term recurrence, and obesity is a known risk factor driving long-term failures. Many surgeons opt to deny elective VHRs to the obese patient forcing many of these hernias to be repaired acutely. Anecdotally, this patient population has increased rates of complications compared to elective VHR. Our hypothesis is that obese patients are over-represented in emergent VHRs, and these patients suffered increased risk of 30 day complications compared to the elective population.

METHODS: The American College of Surgeons National Surgical Quality Improvement Program database (2011-2013) was queried for all patients age ≥18 undergoing open VHR (CPT codes 49560, 49561, 49565, 49566). Exclusion criteria were: disseminated malignancy, advanced liver disease, pregnancy or prior operation within 30 days as well as epigastric, umbilical and Spigelian hernias. Patients were stratified by World Health Organization Body Mass Index (BMI) categories of underweight, normal weight (NLWT), overweight (OVWT), and obesity classes I, II, and III, (BMI <18.5, 20-25, 25-30, 30-35, 35-40, and ≥40 respectively). 30 day post-operative complications (pneumonia, dehiscence, death, superficial, deep, and organ space surgical site infections) were evaluated across BMI groups for elective versus emergent VHR using chi-squared test. Linear regression adjusted for diabetes, smoking, COPD, and steroid use.

RESULTS: 39,822 patients met inclusion criteria: 92.7% cases were elective, 7.3% emergent. Obese (Class I-III) patients represented 55.8% vs. 68.1% of the elective vs emergent VHRs with the largest difference in the class III obesity (14.1% vs. 31.0%, p<0.0001). Overall complication rate was 5.8% for elective and 12.9% for emergent. The likelihood of experiencing at least one complication increased with each BMI category for both elective and emergent VHR with respect to NLWT elective repair (odds ratio OVWT elective 1.3 (1.1, 1.6), emergent 3.9 (2.2, 4.1); III elective 3.3 (2.7, 3.9), emergent 4.6 (3.6, 5.9)).

CONCLUSION: Selection bias exists against obese patients with ventral hernias. Delaying repair of VHR in the obese may result in emergent repairs with increased likelihood of complications. BMI cutoffs in the elective setting require further investigation to determine optimal timing of interventions.
6. MISDIAGNOSING ADULTS APPENDICITIS: CLINICAL, COST, AND SOCIOECONOMIC IMPLICATIONS OF NEGATIVE APPENDECTOMY
K Mock MD, Y Lu PhD, S Friedlander MPH, SL Lee MD
Torrance, CA

BACKGROUND: Misdiagnosing appendicitis may lead to unnecessary surgery. This study evaluates the clinical, financial, and socioeconomic factors associated with negative appendectomy (NA).

METHODS: Data were obtained from the California State Inpatient Database from 2005-11. Patients (≥18 years) who underwent non-incidental appendectomies (n=180,958) were evaluated with hierarchical and multivariate negative binomial regression analyses on outcomes including hospital cost, length of stay (LOS), and associated morbidity.

RESULTS: Overall, 97.3% had appendicitis (14.3% perforated) and 2.7% had no diagnosis of appendicitis (Table). The NA rate decreased from 4.0% in 2005 to 1.9% in 2011 (p <0.01). When compared with patients with non-perforated appendicitis, NA was associated with longer LOS (2.9 days vs. 2.9 days, p<0.01), higher morbidity (4.7% vs. 3.4%, p<0.01), and higher total hospital costs per stay ($11,011/patient vs. 9,311/patient, p<0.01). An average of $6.7 million in total hospital costs resulted from NA admissions in California per year. Multivariate regression demonstrated that African Americans (AA), younger age (18-29), and female gender were predictors of NA. AA also had higher morbidity and LOS. Conversely, Hispanics and patients with public or no insurance were associated with a lower NA rate; however, perforation rates were higher in these groups.

CONCLUSION: Despite a low incidence rate, NA is associated with higher cost, longer LOS, and higher morbidity compared to non-perforated appendicitis. AA had higher NA rates, morbidity, and LOS. Hispanics and patients with public or no insurance had lower NA rates but higher perforation rates suggesting a delay in presentation or treatment. Further research is needed to understand what drives such disparities and to inform efforts to improve quality of hospital care among low-income minority patients.
7. COMPARISON OF OUTCOMES OF PATIENTS WITH ACUTE APPENDICITIS BETWEEN AN ACUTE CARE SURGERY MODEL AND TRADITIONAL CALL COVERAGE MODEL IN THE SAME COMMUNITY
SM Schaetzel MD, RC Dirks PhD, JW Davis, MD
Fresno, CA

BACKGROUND: The Acute Care Surgery (ACS) model for coverage of emergency general surgery has been implemented at many hospitals. Outcomes of appendectomy for acute appendicitis following the implementation of an ACS model have conflicting results in regards to patient flow and complications. These have been single-institution comparisons prior to and following implementation of the ACS model. The purpose of this study was to compare outcomes, patient flow, and cost between an ACS model and a traditional general surgery call model in patients with acute appendicitis in the same community over the same time period.

METHODS: A retrospective review of patients who underwent appendectomy for acute appendicitis from 7/1/2012 to 6/30/2014 was performed. Comparisons were made between an institution with an ACS call model and an institution with a traditional general surgery call model (TRAD) in the same hospital system. Demographic data, operative approach, perforation rate and time intervals were compared. Time intervals included surgical consultation to operating room, operative time, time the procedure was performed (day: 0700 to 1700 hours, evening: 1701 to 2200 hours, night: 2201 to 0659 hours) and operation completion to discharge. Additional outcomes included surgical site infections and complications. Cost data was obtained from hospital accounting. Analysis was done using Mann Whitney U and Chi square tests for univariate analysis. Logistic regression analysis was used to adjust for confounding variables.

RESULTS: A total of 945 patients underwent analysis; 505 patients ACS, 440 patients TRAD. The ACS group had more perforated appendicitis on pre-operative CT scan (9% vs 3%, p < 0.001) as well as on pathology report (23% vs 10%, p <0.001). The TRAD group had a higher rate of negative appendectomies (6% vs 1%, p < 0.001). In patients with non-perforated appendix, the time to discharge after surgery was significantly shorter in the ACS group (16.4 vs. 30.2 hours, p < 0.001). The mean cost per patient was significantly less in the ACS group (p<0.001). Overall complications were similar between the two groups. Perforated appendicitis was the only independent predictor for conversion from laparoscopic to open appendectomy, longer operative time, and longer time from operation to discharge.

CONCLUSION: An Acute Care surgery model was superior for management of acute appendicitis to a traditional call model. The ACS managed patients had a shorter time from surgical consultation to operative intervention, shorter time to hospital discharge in patients without perforation, and decreased cost per patient in the same time period and community.
8. ATTRIBUTION 2.0: WHOSE COMPLICATION IS IT?
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BACKGROUND: Healthcare and its delivery continue to evolve. Payment models aimed at improving quality and curbing costs are being deployed. Recently, the Center for Medicare Services (CMS) introduced financial penalties to hospitals based on patient complications and proposed “never events.” This program has stimulated hospitals to evaluate complications more closely. To significantly decrease complications, hospitals must first “attribute” these complications to a responsible party. Traditionally, this has been to the admitting physician. As a result, trauma surgeons who admit and coordinate the care of patients involving many different specialties may be incorrectly ascribed complications beyond their control and purview. Our previously published Trauma-Director-Medical Director methodology decreased this error. Our current study employs a more rigorous and comprehensive approach to attribution.

METHODS: Complications over a 12 month period were identified and reviewed by a multidisciplinary panel composed of 5 different disciplines. In addition, other parties who contribute to the development of complications were incorporated into the current attribution model (patient, nurse, hospital). A point system was developed and assigned for each complication as adjudicated by the panel. Fractional points were given to complications with multi-specialty attribution when a clear cause-effect relationship could not be delineated.

RESULTS: After exclusions, 73 trauma patients with 125 complications were analyzed. When the traditional method was used the trauma surgeon was held accountable for the complication 100% of the time. Utilizing the panel method, complications were attributed as follows: 30% neurosurgery, 22% trauma surgery, 17% orthopedic surgery, 14% nursing, 10% plastic surgery, 3.8% hospital, 1.9% urology, 0.6% vascular, and 0.6% patient. Fractional points were assigned in 18% of reviewed complications.

CONCLUSION: More than 75% of complications were incorrectly ascribed to the trauma surgeon using the traditional method. Almost 20% of complications were deemed to be the result of factors outside the physician’s control (hospital, nurse, patient). Before we can begin to reduce complications we must first accurately identify their most proximate cause. The panel attributed complications in a thoughtful and rigorous manner while adding granularity to the process. Surgeons, not administrators, should take ownership of this data and lead the effort to improve quality and decrease complications.
9. CLINICAL PREDICTORS OF EARLY ACUTE RESPIRATORY DISTRESS SYNDROME IN TRAUMA PATIENTS

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BACKGROUND: Recent changes in the definition of acute respiratory distress syndrome (ARDS), together with the application of lung protective ventilation and balanced resuscitation strategies, have potentially altered the course and outcomes of ARDS in trauma patients. The objectives of this study were to examine the incidence and severity of early ARDS according to the Berlin Definition and to identify risk factors associated with the development of early post-traumatic ARDS.

METHODS: We performed a 2.5 year retrospective analysis of adult trauma patients who were admitted to the intensive care unit and required mechanical ventilation for >48 hours at our level 1 trauma center. Variables analyzed included demographics, injury severity, APACHE II score, injury patterns, and operative interventions. Ventilator settings, arterial blood gases, and imaging results during the first 48 hours were examined. Type and volume of blood products and intravenous crystalloids administered were recorded. The primary outcome measured was the development of early ARDS (<48 hours of injury). Secondary endpoints included severity of ARDS: mild (PaO2/FiO2 ratio [P/F] $\leq$ 300 mmHg); moderate (P/F $\leq$ 200 mmHg); severe (P/F $\leq$ 100 mmHg); and in–hospital mortality. Multivariate logistic regression was performed to identify independent predictors of ARDS and mortality.

RESULTS: Of 305 patients, 59 (19.3%) developed early ARDS: mild, 27 (45.8%); moderate, 26 (44.1%); and severe, 6 (10.1%). There were no significant differences in age, gender, ISS, or APACHE II scores between patients who developed ARDS and those who did not. Patients with ARDS had a higher body mass index (29 vs. 26, p=0.003) and received a greater volume of total blood products (2.9 L vs. 1.6 L, p=0.01); specifically, units of packed red blood cells (PRBC) and fresh frozen plasma (FFP) (both p<0.01). There was no significant difference in cumulative volume of crystalloids administered between patients with and without ARDS (p=0.47). Mortality was similar between groups (17.5% vs. 13.8%, p=0.28). On multivariate analysis, performance of a resuscitative thoracotomy (OR=8.0; 95% C.I.=1.3-47.9, p=0.02), blunt mechanism (OR=5.6; 95% C.I.=1.4-21.6, p=0.01), and FFP administration (OR=1.3; 95% C.I.=1.02-1.73, p=0.04) were independently associated with the development of early ARDS. On adjusted analysis, ARDS was not predictive of mortality.

CONCLUSION: Despite changes in the definition of ARDS and an improved understanding of the importance of hemostatic resuscitation, ARDS remains a common complication among critically injured patients. Given the potential association between FFP administration and ARDS, judicious FFP transfusion in trauma patients should be weighed against the potential for early ARDS.
10. TIME IS THE ENEMY: MORTALITY IN TRAUMA PATIENTS WITH HEMORRHAGE FROM TORSO INJURY OCCURS LONG BEFORE THE “GOLDEN HOUR”
San Antonio, TX

BACKGROUND: The concept of the “Golden Hour” has been a time honored tenet of pre-hospital trauma care, despite a paucity of data to substantiate its validity. Non-compressible torso hemorrhage has been demonstrated to be a significant cause of injury mortality in both military and civilian settings. We sought to characterize the impact of pre-hospital time and torso injury severity on survival. Furthermore, we hypothesized that time would be a significant determinant of mortality in patients with higher Abbreviated Injury Scale (AIS) grades of torso injury (AIS > 4) secondary to the fact that these injury patterns are commonly associated with hemorrhage.

METHODS: Data for this analysis was generated from a registry of 833,311 injured patients entered into the National Trauma Data Bank Research Data Set 2012. Patients with torso injury were identified utilizing Abbreviated Injury Scale (AIS) for a composite of body regions 4 (Thorax) and 5 (Abdomen). Utilizing a requisite inclusion criteria of pre-hospital time, torso injury and mortality established a cohort of 87,630 adult patients for analysis. Additional data collected included patient demographics, pre-hospital vital signs, and hospital outcome metrics. Patients with severe head injuries (AIS ≥ 3), age < 18, inter-faciility transfers, or those with any missing data elements were excluded.

RESULTS: The overall mortality rate of the study population was 3.2% (2,802 / 87,630). Torso AIS and pre-hospital time were noted to be strong independent predictors of patient mortality (p < 0.05). At all pre-hospital times, but most prominently > or = 30 minutes, the data demonstrated rapid incremental increases in mortality associated with torso AIS > or = 4 (See Figure). Controlling for injury severity, patients with pre-hospital times less than 15 minutes had a significantly lower risk of mortality (p < 0.05) compared to those with pre-hospital times greater than 15 minutes. This relationship was most prominent in patients with high grade torso injuries: AIS 3 (0.8% to 4.4%), AIS 4 (1.7% to 8.4%), and AIS 5 (8.2% to 25.9%) respectively. Analyzing the data set limited to field hypotension as manifest by pre-hospital systolic blood pressure (pSBP) < 110 mmHg, the mortality rate of this population was 8.5% (1,313 / 15,503). Once again, controlling for injury severity, patients with pre-hospital times less than 15 minutes had substantially lower risk of mortality (p < 0.05) compared to those with pre-hospital times greater than 15 minutes.

CONCLUSION: High grade torso injuries are associated with intra-cavitary hemorrhage. In patients with high grade torso injury, time matters. The objective to decrease the time from injury to definitive care is critical in these patients. However, realizing that pre-hospital times < 30 minutes are not achievable in rural or austere environments emphasizes the importance of developing innovative prehospital solutions to identify and treat these the patients that might increase survivability.
11. OUTCOMES IN ELDERLY FALL VICTIMS: WHAT HAPPENS AFTER HOSPITAL DISCHARGE?
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BACKGROUND: Falls are the leading cause of death elderly patients 65 and older. Currently, there is a lack of long-term outcomes after an elderly fall victim leaves the hospital. The purpose of this study was to therefore evaluate mortality rates within 12 months of discharge and causes of death within this time frame.

METHODS: A one-year retrospective review was conducted of all trauma patients aged 65 years and older who were admitted for a fall and subsequently discharged alive. Data collection included demographics, injury severity, injury patterns, hospitalization details and outcomes. A state death database and hospital records were queried to identify patients who died within 12 months of hospital discharge. Analyses were conducted to explore the relationship between severity of injury and injury patterns to 12-month post-discharge mortality.

RESULTS: Of 347 patients meeting inclusion criteria, 273 (78.7%) survived to 12 months post-discharge and 74 (21.3%) had died. Patients that died within 12 months of discharge were older than those who survived to 12 months (83.4 vs. 79.1 years, P<0.001). The groups were similar with regards to gender distribution, injury severity score, and vital signs and laboratory analyses on admission (P>0.05). Nearly all patients had co-morbidities (97.7%), but individual co-morbidities were more common in those who died (Alzheimer’s disease, 16.2 vs. 6.3%, P=0.006; history of dementia, 51.4 vs. 24.8%, P<0.001; cerebral vascular accident, 25.7 vs. 15.8%, P=0.048; coronary artery disease, 51.4 vs. 33.1%, P=0.004; congestive heart failure, 37.0 vs. 16.9%, P<0.001; atrial fibrillation, 47.6 vs. 20.3%, P<0.001; chronic obstructive pulmonary disease, 25.7 vs. 13.2%, P=0.009; and chronic renal failure, 27.0 vs. 14.0%, P=0.008). While the majority of patients were taking medications at the time of injury (93.8%), individual medication use was not different between the two groups. The majority of injury patterns were not predictive of post-discharge death. However, spinal injury was more common in those that died post-discharge (28.4 vs. 14.3%, P=0.004). Overall in-hospital complications were not different between the groups (died=6.8% vs. survived 8.1%, P=0.705). Intensive care admission (60.5%), ventilator use (3.2%) and hospital length of stay were similar between groups. Finally, hospital length of stay was similar between groups (died=4.7 vs. survived=4.8 days, P=0.932). In those that died, death most often occurred within the first 3 months post-discharge (58.1%).

CONCLUSION: Based upon our data, injury characteristics do not predict post-discharge mortality. However, pre-existing co-morbidities, including advanced age were predictive of post-discharge mortality. Further study including logistic regression analyses is needed to delineate how this information might be used in discharge planning and care in this population.
12. LAPAROSCOPIC REDO HIATAL HERNIA REPAIR, A SAFE PROCEDURE WITH HIGH PATIENT SATISFACTION AND LOW MORBIDITY
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BACKGROUND: Redo laparoscopic hiatal repair remains challenging and the advantages compared to open approach remain unclear.

METHODS: Retrospective chart review, clinic visit data and a follow up symptomatic questionnaire via phone

RESULTS: From 09/02/2010 to 10/26/2015 there were 50 redo hiatal hernia repairs in 47 patients. Values are presented as median and interquartile range (IQR). There were 10 males and 37 females with median age of 55 (49-66).

The initial operations included 40 Nissen, six Toupet, two Dor and two Hill fundoplication. Mesh was used in 14. The indications were herniated fundoplication in 45, slipped fundoplication in two and tight Nissen in three. The size of recurrent hiatal hernia was 5 (4-5) cm. The final redo procedures included 38 redo laparoscopic and 12 transabdominal open procedures.

The median length of operation was 216 (147-252) min for laparoscopic vs. 325 (276-394) min for open (p<0.0008). Vicryl mesh was used in 38. Two cm tension free esophageal length was obtained in all without need for Collis gastroplasty. Two in laparoscopic and four in open group received blood transfusions (p<0.01).

There were four conversions in the laparoscopic group: one due to gastroesophageal perforation. Multiple regression analysis showed no significant independent predictors of conversion.

The perioperative complications for laparoscopic vs. open group included: atrial fibrillation (one vs. two), pneumonia (one vs. two), Non STEMI MI (one vs. none), gastric distension or ileus requiring nasogastric tube (four vs. none), pulmonary emboli (none vs. one), pneumothorax requiring drainage (two vs. none), pleural effusion requiring drainage (three vs. five): p<0.03, leak (none vs. one) and re exploration for intra-abdominal hematoma (none vs. one). The length of stay was 3 (2-4) in laparoscopic group vs.10 (8-13) in open group (p<0.0001). There was no 30 day mortality. Reoperation for recurrent hiatal hernia was required in three in laparoscopic group at 6, 24 and 27 months.
In-person clinical follow up was obtained in 43/47 (91%) of patients at a median of 3 (1-11) months, 15 were on PPI, heartburn was reported in 2, regurgitation in 8, dysphagia in 12 and gas bloating in 3. The median weight loss was -8.5 (-13 to -3). There was no difference between the open and laparoscopic group.

The symptomatic questionnaire follow up via phone was completed in 36/45 (80%) at 21 (11-40) months (there were two cancer related deaths), 15 were on PPI, heartburn was reported in 6, regurgitation in 9, dysphagia in 3, gas bloating in 12, excessive gas in 14, and diarrhea in 7. The median weight change was 0 (-20 to +8), 30 could eat as desired, 17 were able to return to daily activity in less than two weeks: 14 in laparoscopic vs. 3 in open group, 24/36 (67%) were free of preoperative symptoms, 33/36 (92%) were satisfied with the operation and 30/36 (83%) would undergo the operation again, there was no difference between the laparoscopic and open group.

**CONCLUSION:** Redo laparoscopic hiatal hernia repair is a safe approach with high patient satisfaction and low morbidity. Tension free esophageal length can be achieved laparoscopically without Collis gastroplasty. The duration of the operation, blood transfusion, pleural effusion requiring drainage and length of stay are less in the laparoscopic versus open group.
13. POSTOPERATIVE ANTIBIOTIC USE AND THE INCIDENCE OF INTRAABDOMINAL ABSCESS IN THE SETTING OF SUPPURATIVE APPENDICITIS: A RETROSPECTIVE ANALYSIS
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BACKGROUND: Postoperative antibiotics are recommended in the setting of perforated and/or gangrenous appendicitis and considered the standard of care. Conversely, antibiotics are not continued postoperatively in patients with nonperforated acute appendicitis. However, there is no consensus on the use of postoperative antibiotics among patients with suppurative appendicitis (intramural infection without necrosis).

In this retrospective study, we aimed to analyze this subgroup of patients and determine whether postoperative antibiotic use had an effect on the incidence of intraabdominal abscess formation.

METHODS: This is a retrospective analysis of 1192 patients who underwent laparoscopic appendectomy for acute, non-perforated (suppurative) appendicitis at a single institution between August 2010 and August 2013. Of this group, 191 (16% of total) patients had suppurative appendicitis, defined by intraoperative findings described by the surgeon in the operative report, or as part of the discharge diagnosis. Eighty-eight received postoperative antibiotics for at least one week upon discharge home, 103 did not. The outcome of interest was the incidence of intra-abdominal abscess within one month of surgery. Fisher exact test was used to examine the association between the use of postoperative antibiotics use and the incidence of intra-abdominal abscess.

RESULTS: Of the 191 patients with suppurative appendicitis, 8 of 88 who received postoperative antibiotics came back with intraabdominal abscesses within a one-month period. Of 103 patients who did not receive any antibiotics upon discharge, four came back with intraabdominal abscesses. Fisher exact test result demonstrated a P value of 0.23, with statistical significance set at p<0.05.

CONCLUSION: Postoperative antibiotic use does not make a statistically significant difference in the incidence of intra-abdominal abscess in the immediate postoperative period, and may not be necessary in this particular patient population. However, a larger patient population needs to be evaluated to increase the power of this study. 
14. EFFICACY OF RETROPERITONEAL TRIPLE NEURECTOMY FOR REFRACTORY NEUROPATHIC INGUINODYNIA
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BACKGROUND: Refractory neuropathic inguinodynia following inguinal herniorrhaphy is a common and debilitating complication. This prospective study performed in a university hernia center evaluated long term outcomes associated with laparoscopic retroperitoneal triple neurectomy of the ilioinguinal, iliohypogastric and genitofemoral nerve trunks for the treatment of refractory inguinodynia.

METHODS: Fifty-eight consecutive patients (48 male; mean age, 47 years); all failing pain management; prior reoperation in 33, prior neurectomy in 19; average followup 696 days (range 90 d to 3 yr). Numeric pain ratings, dermatomal mapping, histologic confirmation, quantitative sensory testing, complications.

RESULTS: Mean numerical pain scores were significantly decreased (baseline score, 8.6) at all post-operative time points (POD 1, score 3.5; p<0.01; POD 90, score 2.5, p<0.01, POD 360, score 1.93, p <0.01) with durable and consistent efficacy seen in all patients from POD 90 (evaluation at POD 90, 180, 360, 540, 720, 1080; p <0.01). Quantitative sensory testing showed marked group-level increases of thresholds for detection of all quantitative sensory parameters for the immediate (p < 0.01) and late (p < 0.05) postop periods compared to baseline. Narcotic dependence decreased and activity level increased. There was one perioperative complication. Transient deafferentation hypersensitivity was reported by 18 patients, and 14 had residual nociceptive pain with 10 undergoing subsequent reoperation for mesh/tack removal or paravasal neurectomy.

CONCLUSION: Retroperitoneal triple neurectomy is an effective and durable treatment for refractory neuropathic inguinodynia and is now the preferred treatment for this debilitating herniorrhaphy complication.
15. A SINGLE CENTER EXPERIENCE WITH RECURRENT ACHALASIA: OUTCOMES OF REPEAT LAPAROSCOPIC HELLER MYOTOMY
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BACKGROUND: Achalasia is a motility disorder due to degeneration of inhibitory ganglion cells in the esophageal myenteric plexus resulting in dysphagia, regurgitation, and chest pain. Laparoscopic esophageal (Heller) myotomy has been established as the standard of care procedure for treatment of esophageal achalasia. Recurrence of symptoms after initial laparoscopic Heller myotomy have been treated by various interventions including botulinum toxin injection, pneumatic dilation, and repeat laparoscopic esophageal (Heller) myotomy. The objective of this study is to evaluate feasibility, etiologies of recurrence, and outcomes of repeat laparoscopic Heller myotomy for recurrent symptomatic achalasia.

METHODS: A single tertiary center retrospective review of all 340 consecutive patients that underwent Laparoscopic or Robotic assisted Heller Myotomy with Dor fundoplication was performed from 1997 - 2014 to identify treatment failures. Recurrence was identified by recurrent symptoms and objective finding on esophagogram, esophagoscopy, or esophageal manometry. Identified failures underwent salvage therapy with repeat laparoscopic exploration and repeat Heller myotomy, pyloroplasty, or hiatal hernia repair based on pre-operative and surgical findings. Data was maintained on Excel (Microsoft) spreadsheet. Analysis of data was performed based on paired t-test and independent t-test. Data was presented as mean with + standard deviation where appropriate.

RESULTS: A total of 14 patients were identified to have recurrent achalasia necessitating re-intervention. There were 8 females and 6 males. Mean age at initial surgery was 46.2 years old. Average pre-operative weight 80 kg for males and 75.3 kg for females. A total of 18 procedures were performed on 14 patients. All re-operations were performed laparoscopically except for one (n =1) open Heller Myotomy. Most common symptoms were dysphagia (n=14), weight loss (n = 7), chest pain (n = 7). Pneumatic dilation and botulinum toxin injection were common prior to first Heller myotomy and second Heller myotomy. Operative length of surgery was found to be shorter for re-operative procedures compared to initial laparoscopic Heller myotomy (108.4 vs. 141.8 minutes). The difference in length of surgery was found to be statistically significant (p-value = 0.04). Intra-operative determination of the cause of recurrent symptoms was performed. The most common cause of recurrence was peri-myotomy fibrosis (n = 9) and incomplete myotomy (n = 5). Less common causes of recurrence included hiatal hernia (n= 1), hiatal hernia with peri-myotomy fibrosis (n=1), and gastroparesis (n = 2). Length of time to recurrence for peri-myotomy fibrosis (43.4 + 46.6) and incomplete myotomy (17.5 + 13.6) was not statistically significant (p-value = 0.25) and limited by sample size. Length of hospitalization was shorter for the initial Heller myotomy (3.4 days) compared to repeat Heller myotomy (5.3 days). There were
no mortalities. No patients required salvage esophagectomy. Esophageal perforation occurred in one patient after initial repeat Heller myotomy (n = 1/14). Esophageal perforation occurred in one patient after second repeat Heller myotomy (n = 1/3)

CONCLUSION: Single center patient cohort shows recurrence rate after minimally invasive Heller Myotomy is an infrequent occurrence at 4.1% (14/340) which is consistent with reported literature. Repeat surgical procedures could be performed laparoscopically in all but one patient. Repeat laparoscopic Heller myotomy operative time was found to be significantly faster when compared to patient’s initial laparoscopic Heller myotomy. Most frequent etiology of recurrent symptoms are peri-myotomy fibrosis and incomplete myotomy. The correlation between time to recurrence and cause of recurrence was unable to be proven significant due to inadequate power. However, the trend was for early treatment failure to be result of incomplete myotomy with peri-myotomy fibrosis generally occurring as late recurrence. Repeat laparoscopic exploration with esophageal (Heller) myotomy can be accomplished expeditiously and safely for achalasia symptom recurrence.
16. SURGICAL OUTCOMES AND FAILURE TO RESCUE EVENTS AFTER COLECTOMY IN TEACHING HOSPITALS: A NATIONWIDE ANALYSIS
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BACKGROUND: There is growing interest in the effect of significant peri-procedural complications as markers for surgical quality. These specific complications or failure-to-rescue (FTR) events can be targeted as potential quality improvement initiatives for hospital systems. In addition, the relationship between surgical outcomes after FTR events among teaching hospitals (TH) and non-teaching hospitals (NTH) has not been well described. We sought to examine this relationship of FTR events after a common general surgical procedure (colectomy) in a large national database.

METHODS: Patients who underwent a colectomy (laparoscopic, open, partial, or total) were identified from the Nationwide Inpatient Sample (NIS) database between 2010 and 2012 using specific ICD-9 procedure codes. Data including demographics, comorbidities, post-operative wound complications, and hospital characteristics were collected. FTR events were labeled following the Agency for Healthcare Research and Quality (AHRQ) guidelines and included deep vein thrombosis (DVT) / pulmonary embolism (PE), sepsis, gastrointestinal (GI) bleed, acute myocardial infarction (MI), acute kidney injury (AKI) and shock. Outcome measures, including FTR events, mortality, hospital length of stay (LOS), were compared between patients who had a colectomy performed in teaching versus non-teaching hospitals.

RESULTS: We identified a total of 220,369 patients who underwent colectomy in the U.S. between 2010 and 2012; 50.2% of those were performed at teaching hospitals and 49.8% at non-teaching hospitals. Post-operative wound complications occurred in 7.2% of all cases and the overall mortality rate was 3.6%. Approximately 93.5% of deaths were attributed to at least 1 FTR event. Those who had colectomies in TH had slightly longer hospital LOS (10.1 vs. 9.2 days, p = 0.048). Unadjusted mortality was similar in NTH versus TH (3.7% vs. 3.6% respectively, p = 0.144). There was no difference in overall rates of FTR events accounting for mortality (93.9% NTH vs. 93.1% TH, p = 0.249). Patients who had FTR events in NTH had slightly higher rates of chronic diseases compared to their counterparts in TH (Table). When FTR events were analyzed, TH had higher incidences of DVT/PE, sepsis and AKI that lead to post-operative mortality. Similarly, NTH had higher rates of acute MI and GI bleed that resulted in mortality after colectomy.

CONCLUSION: A substantial proportion of mortality is attributed to FTR events after colectomy in both TH and NTH. Although overall rates of FTR events in TH and NTH are similar, TH have higher rates of DVT/PE, sepsis, and AKI that lead to death, in contrast to NTH where acute MI and GI bleed resulted in mortality. Further investigation targeting these specific complications in teaching and non-teaching hospitals is warranted to prevent adverse outcomes after colectomy.
17. HOLLOW SILICA NANOPARTICLES AS AN IN VIVO MARKER FOR NON-PALPABLE TUMORS USING A VX2 RABBIT MODEL
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BACKGROUND: Accurate intraoperative localization of early stage breast cancer lesions is critical for successful treatment and obtaining negative margins. Current marking strategies including the gold standard image guided wire localization have inherent flaws compromising precision. The external wire is vulnerable to displacement and associated with high positive margin rates while alternatively, radiolabeled seed utility is limited principally due to concern for radiation exposure. We aim to evaluate the potential for ultrasound visible biodegradable nanoparticles as an alternative localization method for non-palpable tumors in vivo.

METHODS: 16 New Zealand white rabbits were injected intramuscularly with VX2 tumor in bilateral rear thighs. 8 rabbits were injected approximately 72 hours later with additional VX2 to simulate satellite tumors. After an 8-10 day incubation period, each rabbit was marked utilizing ultrasound guided wire placement on one side to serve as the control. The contralateral thigh was marked with ultrasound guided intratumoral injection of approximately 1mL of 500 nm perfluoropentane (PFP) gas filled silica nanoparticles. This was performed based on previous studies demonstrating that (PFP) gas filled silica nanoparticles are effective as non-mobile, non-toxic, chemically stable ultrasound contrast agents. Subsequent survival surgeries were performed approximately 24 hours later to excise bilateral tumors with intraoperative color Doppler ultrasound for visualization of the particles. The rabbits were monitored for 3 additional weeks to monitor for recurrence. Binomial probability was used to evaluate for efficacy of the nanoparticles for tumor localization at p=.05.

RESULTS: All 16 rabbits survived the initial surgery; one rabbit was euthanized on post operative day 1 secondary to burn from equipment failure. No ill effects were observed from the injected particles. The nanoparticles were successfully utilized to visualize, localize and resect 100% of marked tumors intraoperatively. Despite careful placement and protection, 4 of 16 wires were displaced and unable to be utilized for tumor resection guidance. The nanoparticles were successfully confirmed within 100% of resected pathology specimens and the residual cavity was confirmed to be clean of nanoparticles. Overall the particles were found to be superior at consistent intraoperative localization of tumors (p= 0.01).

CONCLUSION: Localization of non-palpable tumors remains critical to effective surgery and thus treatment of early stage breast cancer. We have shown that preoperatively injected silica nanoparticles can be successfully utilized to mark non-palpable tumors in vivo more consistently than the current gold standard wire based platform in an animal model.
18. THE ROLE OF LATERAL NECK ULTRASOUND IN DETECTING SINGLE OR MULTIPLE LYMPH NODES IN PAPILLARY THYROID CANCER
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BACKGROUND: Lateral neck dissection (LND) for papillary thyroid cancer (PTC) transitioned from isolated lymphadenectomy or “berry picking” based on clinical examination to multi-compartment lymphadenectomy. This was based on the finding of multiple microscopic metastatic lymph nodes not detected on ultrasound (US) and clinical assessment. The clinical significance of microscopic metastatic lymph nodes is controversial. The sensitivity of US has improved with operator experience and advanced technology. The purpose of this study was to determine if US is an accurate predictor of pathological confirmed solitary or multiple lymph node metastases to the lateral neck in PTC.

METHODS: Patient demographics, ultrasound findings, type of surgery and final lymph node pathology were collected in patients with PTC who underwent a LND. Sensitivity and specificities of ultrasound at detecting single or multiple suspicious lymph nodes were estimated. Patient and ultrasound characteristics were correlated with test accuracy.

RESULTS: 462 patients underwent 590 LNDs with a preoperative US showing suspicious findings and metastatic disease confirmed on fine needle aspiration cytology or thyroglobulin washout. The mean age was 44 years (range, 10-91), and male to female ratio was 1:1.6. US showed a solitary lymph node in 179 cases (30%) and multiple suspicious lymph nodes in 411 cases (70%). Of those with solitary lymph nodes, pathology confirmed solitary disease in 76/179 (42.5%). 364/411 patients (88.6%) with multiple suspicious nodes on US had multiple nodes on pathology. The overall sensitivity, positive predictive value (PPV), and accuracy of an US showing a single node was 61.2%, 42.5%, and 74.6%. The overall sensitivity, PPV, and accuracy of an US showing multiple nodes was 77.9%, 88.6%, and 74.6%. Patient age, gender and lymph node size did not correlate with the accuracy of US in detecting a single node. A finding of a single node in level 2 had the highest accuracy at 87.5%, followed by level 3 (75.9%), level 4 (72.1%) and level 5 (50%). Patients with multiple lymph nodes on US had an increased correlation with multiple lymph nodes on path as the lymph node size increased (Accuracy: <10mm 69%, 10-20mm 72% and >20mm 88%, p=0.0002).

CONCLUSION: Lateral neck US is limited in the detection of solitary lymph node metastasis in the lateral compartment. Patients with PTC may have multiple lymph node involvement despite the finding of a single node. Care should be taken when considering a limited compartment dissection.
19. CENTRAL VENOUS PARATHYROID HORMONE MONITORING UTILIZING A NOVEL, SPECIFIC ANATOMIC METHOD ACCURATELY PREDICTS CURE DURING MINIMALLY INVASIVE PARATHYROIDECTOMY
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BACKGROUND: Measurement of quick intraoperative parathyroid hormone (PTH) levels is an important adjunct to confirm biochemical cure during minimally invasive parathyroidectomy. The PTH decay is typically measured in samples drawn from peripheral intravenous lines, which require additional effort to place and maintain. Few studies have compared PTH levels drawn from central veins with those drawn peripherally, or have evaluated the predictive accuracy of these levels. The purpose of this study was to evaluate a simplified anatomic technique for PTH sampling from the central veins through the minimally invasive neck incision, and to compare the predictive accuracy of central and peripheral PTH values.

METHODS: Clinicopathologic and biochemical data was prospectively collected for 44 consecutive patients undergoing minimally invasive parathyroidectomy by a single surgeon between July 2014 and October 2015, utilizing combined peripheral and central venous sampling for PTH levels. A standardized anatomic approach was employed for central venipuncture through the small incision, by accessing the internal jugular vein between the sternohyoid and sternothyroid muscles at a level cranial to the parathyroid venous drainage. Samples were drawn at baseline prior to entering or manipulating the central neck tissues, and at 10 minutes post-excision of all hyperfunctioning parathyroid tissue. In all patients, PTH levels were obtained simultaneously from peripheral and central veins at baseline and 10 minutes post-excision of the adenoma(s). The central and peripheral values were compared, while also comparing percent decay of central and peripheral values.

RESULTS: All central values independently predicted successful biochemical cure according to the Miami criteria. There was no significant difference seen when comparing the percentage decay of central and peripheral values, which were 83.38 ± 8.7% and 82.86 ± 8.6% respectively (p=0.60, paired t test).

CONCLUSION: Central venous sampling for PTH determinations obtained with a specific anatomic technique closely approximated peripheral values, and accurately predicted cure in all patients in the study cohort. This method facilitates minimally invasive parathyroidectomy by obviating the need to place, maintain, and troubleshoot peripheral venous access solely for PTH monitoring. This study provides the original description of a simplified technique for measurement of intraoperative PTH levels in the central veins with direct comparison to peripheral venous levels, and confirmation of accuracy in predicting biochemical cure when relying on centrally obtained values alone.
20. IS FORGOING CHEMICAL VENOUS THROMBOEMBOLISM PROPHYLAXIS FOR WOMEN UNDERGOING BREAST CONSERVING SURGERY FOR BREAST CANCER SAFE?
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BACKGROUND: Cancer patients have a 4-fold increased risks of venous thromboembolism (VTE) versus the normal population. Chest guidelines recommend no chemical VTE prophylaxis for women with a <1.5% risk for VTE, and a NSQIP analysis showed that the risk of VTE among women undergoing breast conserving surgery (BCS) is 0.13% (p<0.0001) albeit with no defined VTE prophylaxis regimen for this cohort. Our objective is to establish the VTE risk among women undergoing BCS who did not receive chemical VTE prophylaxis.

METHODS: From a prospective breast cancer database, 1000 consecutive patients who underwent BCS without chemical VTE prophylaxis and with mechanical prophylaxis (support hose and intermittent pneumatic compression devices) were analyzed for VTE occurrence within 30 days postoperatively. IRB approval was obtained.

RESULTS: The mean age was 65.4±11.7 years and mean BMI 27.3±5.7 kg/m^2. Most (81.9%) of the patients were postmenopausal. Median tumor size was 1.1 cm and 24.7% of patients had lymph node metastases. The 30-day rate of VTE was 0% [95% CI 0%-0.37%]. Hematomas requiring surgical intervention occurred among 0.6% of patients.

CONCLUSION: This cohort demonstrates that breast cancer patients undergoing BCS may be safely managed without chemical VTE prophylaxis because the risk with only mechanical prophylaxis is <0.4%.
21. EXPANDED SCREENING CRITERIA FOR BLUNT CEREBROVASCULAR INJURY: A BIGGER IMPACT THAN ANTICIPATED
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BACKGROUND: Expanded screening criteria for blunt cerebrovascular injuries (BCVI) have been implemented in an attempt to capture the 20% of BCVI patients that historically have not been identified with early imaging protocols. The purpose of this study was to determine if expanded screening criteria effectively identified BCVI patients not previously captured. We hypothesized that the implementation of expanded criteria would result in a 20% increase in the identification of BCVI.

METHODS: At our institution, screening criteria for BCVI were expanded in 2011 following the identification of injury patterns associated with BCVI that had not previously been codified (mandible fractures, complex skull fractures, TBI with thoracic injuries, scalp degloving, thoracic vascular injuries, upper rib fractures). The study population was divided into 2 periods: 1) the 4 years (2007-2010) prior to the adoption of the expanded screening criteria classified as CLASSIC, and 2) the 4 years (2011-2014) following implementation of the expanded screening criteria classified as EXPANDED. We compared the incidence of BCVI in the CLASSIC and EXPANDED study periods to determine the impact of our protocol change. Multislice CTA was the imaging modality used throughout the study period.

RESULTS: During the 8 year study period, 386 patients with BCVIs were identified. The mean age of the patient population was 39 ± 0.9 years (range 2-85 years) and the majority (61%) was men. In the CLASSIC period, 150 patients with BCVI were identified. In the EXPANDED period, 236 patients with BCVI were identified. This is a 36% increase in BCVI identification in the second time period. In the EXPANDED period, rationale for imaging was based on classic screening criteria in 155 patients and expanded screening criteria in 62 patients; 19 patients had imaging performed for other symptoms or injury patterns. The relative proportions of expanded criteria that triggered imaging and BCVI diagnosis were 21 complex skull fractures, 20 upper rib fractures, 6 mandible fractures, 2 scalp degloving, 1 great vessel injury or a combination of expanded criteria in 12 patients.

CONCLUSION: At our level I trauma center, there was a 36% increase in the identification of BCVI following the adoption of expanded screening criteria. Utilization of these additional criteria when screening patients for BCVI results in identification rates greater than one might anticipate. Expanded screening criteria should be adopted for BCVI screening.
22. COMPARISON OF PREOPERATIVE AND PREDICTED POSTOPERATIVE PULMONARY FUNCTION TESTS AND PERIOPERATIVE OUTCOMES AFTER ROBOTIC-ASSISTED PULMONARY LOBECTOMY VS. SEGMENTECTOMY

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BACKGROUND: Lobectomy is considered the “gold-standard” resection of early stage non-small cell lung cancer (NSCLC), while segmentectomy has been shown to be safe and effective. Robotic-assisted video thoracoscopic (RAVT) surgery is relatively new for NSCLC resection, but data from RAVT lobectomy and RAVT segmentectomy have not been compared. We sought to compare preoperative (preop) and predicted postoperative (postop) pulmonary function tests (PFTs) for patients (pts) undergoing RAVT lobectomy (RAVT-LOBE) versus RAVT segmentectomy (RAVT-SEG). We then compared intraoperative (intraop) and postop complications related to RAVT-LOBE versus RAVT-SEG.

METHODS: We retrospectively analyzed prospectively collected data from 253 consecutive pts who underwent RAVT-LOBE (n=208) or RAVT-SEG (n=45) by one surgeon. We used the formula, “Predicted(PFT)=Preop(PFT) x (1-(Segments x 0.0556))”, where 0.0556=1seg/18seg, to predict postop PFTs. The majority of pts had no prior lung surgery, but for pts with prior resections, numbers of segments previously resected were taken into account by “1seg/(18-prior resection)”. Pts underwent RAVT-SEG instead of RAVT-LOBE based on tumor size and location, COPD, past cancer history, and pt preference. Unpaired-test and Chi-square tests were used to determine statistical significance (p≤0.05) of preop and predicted postop PFTs and of intraop and postop outcomes between these two groups.

RESULTS: Preop forced expiratory volume in 1 second (FEV1) % of predicted and DLCO % of predicted were statistically lower in RAVT-SEG pts, but predicted postop FEV1 and DLCO values did not differ significantly between the 2 groups. Predicted changes for FEV1 and DLCO with RAVT-SEG were significantly less than with RAVT-LOBE, which negates the differences in preop PFTs between the 2 groups of pts. There was no significant difference of intraop estimated blood loss between RAVT-LOBE and RAVT-SEG (283ml vs 200ml; p=0.88). Intraop complications between these 2 groups were also not statistical different (18/208 vs 4/45; p=0.993), but mean skin-to-skin surgery times with RAVT-SEG was longer than with RAVT-LOBE (4.9hrs vs. 3.8hrs; p=0.00003). Total postop complications were significantly higher with RAVT-SEG than with RAVT-LOBE (27/45 vs. 84/208; p=0.038). However, there were no significant differences between RAVT-SEG and RAVT-LOBE pts in terms of postop respiratory failure (3.5% vs. 1.9%), pneumonia (10.3% vs. 9.6%), hemothorax (3.5% vs. 2.4%), prolonged air leak (13.8% vs. 16.8%), hospital length of stay (4 vs. 5 days), or in-hospital mortality (1.7% vs. 1.4%).

CONCLUSION: Changes between preop and predicted postop PFTs were statistically lower with RAVT-SEG than with RAVT-LOBE, confirming that RAVT-SEG preserves lung function better than RAVT-LOBE. Major intraop and postop complications between RAVT-SEG and RAVT-LOBE were similar. Thus, RAVT segmentectomy may be considered a viable alternative to RAVT lobectomy.
23. LONG TERM OUTCOMES AFTER HAND-SEWN VERSUS CIRCULAR STAPLED (25 & 29MM) ANASTOMOTIC TECHNIQUE AFTER ESOPHAGOGASTRECTOMY FOR ESOPHAGEAL CANCER
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BACKGROUND: Anastomotic stricture following esophagogastrectomy (EG) can lead to significant dysphagia, necessitating interventions such as endoscopic dilatation. The long term impact of these post-operative complications gains importance with the increased rate of survival of patients after EG. The aim of this study was to assess the outcomes of both circular stapler (CS: 25mm and 29mm) and hand-sewn (HS) anastomoses after EG.

METHODS: A review of prospectively accrued data was performed from December 2004 to December 2014 identifying all patients undergoing EG for esophageal cancer. Immediate post-operative and long term complications were noted. Primary outcome measures included anastomotic leak and stricture, incidence of dysphagia, and need for dilations secondary to clinically significant dysphagia.

RESULTS: A total of 142 patients were identified for analysis. The method used for reconstruction was noted: CS-EEA-25mm (n = 30), CS-EEA-29mm (n = 30) and HS (n = 82). Demographics, tumor pathology, and tumor locations were similar in each group (table). All groups experienced similar rates of anastomotic leak, stricture, and dysphagia. Furthermore, post-operative dilations for symptomatic dysphagia were required in 3 (10%), 4 (13%) and 9 (11%) patients, p = 0.91.

CONCLUSION: In this cohort, the method of anastomotic construction had no bearing on the rate of complications after EG for the treatment of esophageal cancer. Furthermore, long term need for dilations for symptomatic dysphagia was equal among all groups.
24. HOW DOES A CONCURRENT DIAGNOSIS OF CANCER INFLUENCE OUTCOMES IN PATIENTS UNDERGOING EMERGENCY GENERAL SURGERY?
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BACKGROUND: A significant proportion of hospital admissions in the U.S. are secondary to emergency general surgery (EGS). Patients with a concurrent diagnosis of cancer undergoing EGS are potentially at a higher risk of poor outcomes due to the primary and systemic effects of the underlying disease process. The aim of this study is to quantify outcomes for EGS patients with cancer.

METHODS: The Nationwide Inpatient Sample (2007-2011) was queried for patients with a diagnosis of an EGS condition as determined by the American Association for the Surgery of Trauma (AAST). Of these, patients with a diagnosis of malignant cancers (ICD-9-CM diagnosis codes; 140-208.9, 238.4, 289.8) were identified. Patients with and without a diagnosis of a malignant neoplasm were matched across baseline characteristics (age, gender, race/ethnicity, insurance status, income, Charlson Comorbidity Index and year of admission) using propensity scores. Outcome measures of interest were all-cause mortality, complications (pneumonia, pulmonary emboli, renal failure, cardiac arrest, myocardial infarction acute respiratory distress, sepsis and septic shock), failure to rescue, length of stay (LOS) and index hospital cost. Multivariable logistic regression analyses for complications and mortality, and generalized linear models, with log linkage, to calculate mean predicted LOS and index hospital cost were used adjusting from among the following domains: hospital characteristics (location, rural location, teaching status and bed size), volume and disease severity [all payer refined diagnosis related group (APRDGR) risk of mortality]

RESULTS: Analysis of 4,092,322 EGS patients revealed a 10.2% (n=418,067) incidence of concurrent malignancies. Patients’ with cancer had a higher mean age [66.0 ±16.0 vs 55.1 ±22.2, years, <0.01] as opposed to those who were cancer free, and were predominantly female (52.1%). The most common EGS conditions, treated for, in cancer patients included gastro-intestinal bleeding (19.9%), intestinal obstruction (11.1%), and peritonitis (8.6%). Outcomes assessment revealed that EGS patients’ with cancer had lower odds of complications (OR 0.75, 95% CI 0.74-0.76), yet higher odds of mortality (OR 1.35, 95% CI 1.33-1.38) and failure-to-rescue (OR 1.48, 95% CI 1.45-1.53), as well as increased lengths of stay (predicted mean difference 0.6 days, 95% CI 0.56-0.64) and cost of care (predicted mean difference, 2015 USD 2,099, 95% CI 1,937-2,260).

CONCLUSION: Patients with concurrent cancer undergoing EGS have worse outcomes compared to patients without cancer after adjusting for disease severity, co-morbidity and hospital characteristics. This is likely due to failure to rescue once a complication occurs. Cancer patients undergoing EGS represent a high risk population and timely recognition and management of postoperative complications is imperative to improve on these outcomes.
25. EXTRA-MAMMARY FINDINGS IN DIAGNOSTIC BREAST MRI AMONG PATIENTS WITH KNOWN BREAST CANCER: INCIDENCE AND COST ANALYSIS

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BACKGROUND: Indications to consider breast MRI in patients with breast cancer include clarification of extent of disease, evaluation for a suspected occult primary breast cancer, and assessment of response to neoadjuvant therapy. While breast MRI focuses on a specific body region including the mammary gland, skin, and pectoralis muscle, abnormalities may be found in portions of the chest wall, lungs, mediastinum, neck, axial skeleton, and lymph node basins. Extra-mammary findings may result in additional diagnostic evaluation, consultation, and treatment.

METHODS: We conducted an IRB-approved single institution retrospective chart review of patients with any breast cancer diagnosis who received a breast MRI between January 2009 and December 2014 (N= 316) at a community based multidisciplinary breast center. We excluded patients who received diagnostic evaluation and treatment outside of our health system, MRIs conducted for screening purposes, and repeat MRIs. Data collected included MRI indication, frequency of incidental findings seen on MRI, clinical and pathologic stage, occurrences of additional consultations and diagnostic and therapeutic modalities based on MRI findings, and analysis of additional cost related to extra-mammary findings.

RESULTS: 316 patients (average age 56 years) underwent MRI evaluation during the study period. Most were Stage I-II (N= 216) followed by Stage III-IV (N = 44) and Stage 0 (N= 26). Most MRIs were performed to evaluate extent of disease (N=300) with the remainder to evaluate for response to neoadjuvant therapy (N=5) and for other various reasons (N=11).

Incidental findings were noted in 185 (59%) MRI studies; of these, 58 (31%) were known findings and 127 (69%) were new findings. Of these new findings, 99 were found to be benign (78%) and 28 malignant (22%). New benign findings included enlarged axillary nodes (N = 43), as well as multiple non-malignant lung, thyroid, liver, and spine findings. New malignant findings included 23 positive axillary nodes, 2 malignant thyroid masses, 2 malignant lung masses, and 1 positive internal mammary node. Initial N0 clinical status was upgraded to N1 or N2 status after breast MRI in 23% (N=56) of patients. N1 status was upgraded to N2 status after breast MRI in 5% (N=2) of patients. When comparing breast MRI N stage to conventional imaging N stage, the weighted kappa score was 0.34, with a CI of 95% (0.21-0.47), indicating low agreement and that MRI may overestimate nodal involvement.

The 316 breast MRIs performed resulted in 10 consultations, 37 procedures, and 100 imaging studies as a result of extra-mammary MRI findings. The mean total additional cost was $4654.17 per patient with an identified extra-mammary finding. There was no difference in total cost to the patient when stratified by initial clinical stage.

CONCLUSION: Incidental extra-mammary findings are common, and they are rarely clinically significant. The incidental MRI findings were associated with frequent need for additional imaging, consultation, or procedures as well as a significant cost burden.
26. TRENDS IN MASTECTOMY AND RECONSTRUCTION FOR BREAST CANCER; A TWELVE YEAR EXPERIENCE FROM A TERTIARY CARE CENTER
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BACKGROUND: Patients undergoing surgery for breast cancer have many options, including breast conserving therapy (BCT), mastectomy with reconstruction (MAST+RECON) or without reconstruction (MAST). Various methods of mastectomy and reconstruction include skin and nipple sparing approaches, as well as implant-based reconstruction versus autologous breast reconstruction. Long term results regarding oncologic outcomes are few and include primarily retrospective studies. We report on MAST+RECON trends and outcomes from a prospective database with long term follow up.

METHODS: A retrospective review of a prospectively collected database of patients undergoing breast surgery for breast cancer from 2002-2014 was performed. All patients with invasive breast cancer were analyzed regarding the resection performed, type of reconstruction, demographic and tumor variables. Patients were separated into three time periods for analysis: 2002-2005 (early), 2006-2009 (middle), 2010-2014 (late). Analyses included chi-square test for categorical variables and ANOVA F-test for continuous data. Recurrence outcomes were compared at 4 years between MAST+RECON patients.

RESULTS: From 2002-2014, 2076 patients with breast cancer were identified. The median age was 65 (20-97). Tumors were 83.8% ER positive, 72.1% PR positive, 14.8% had HER2 overexpression. 10.8% of tumors were negative for ER, PR, and HER2. 61.2% patients underwent BCT, 19.7% of patients had MAST, and 19.1% of patients had MAST+RECON. Patients were more likely to have BCT with smaller tumor sizes (median 1.2cm), compared to MAST+RECON (median 1.8cm), or MAST (median 2.1cm).

In patients who underwent MAST+RECON (n=397), 64.0% had implant-based reconstruction, 30.9% had abdominally-based autologous breast reconstruction. 91.5% had immediate reconstruction. 46.6% had a skin-sparing mastectomy (SSM); 28.7% had a skin and nipple-sparing mastectomy (NSM).

Over time, MAST+RECON increased in prevalence from 14.7% to 25.7% of cases; rates of BCT decreased from 66.2% to 55.4% of cases (p<0.001). MAST rates remained stable, comprising approximately 20% of cases. In the early group, autologous breast reconstruction was more common compared to implant-based reconstruction (58.3% vs 36.9% vs 4.8% other). This trend reversed in the late group, where implant-based
reconstruction was most common (80.4%). Overall, SSM/NSM rates increased from 59.8 to 89.4% over the study period, with a particular rise in NSM rates increasing from 0% to 49.0%. 4-year local recurrence-free rates were similar in the mastectomy groups (97.3% neither SSM/NSM, 97.7% SSM, 94.8% NSM, p=0.837).

CONCLUSION: Patients have many options regarding their oncologic surgery for breast cancer, with similar oncologic outcomes. Breast conserving therapy use has decreased, as MAST+RECON use increased with reconstruction trends towards immediate, NSM, implant-based reconstruction. Surgeons should be aware of changing trends of breast surgery to optimally offer patients their surgical options.
27. FLAT EPITHELIAL ATYPIA ON CORE NEEDLE BIOPSY: MUST YOU RE-EXCISE?
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BACKGROUND: Flat epithelial atypia (FEA) of the breast is an alteration of the terminal lobular units that is often associated with microcalcifications on mammography. FEA frequently coexists with premalignant and malignant pathology, and for this reason it is recommended to be further excised when diagnosed by core needle biopsy (CNB). Recent studies have suggested that isolated FEA has a very low association with carcinoma, and that these patients may only need close clinical and mammographic follow-up.

METHODS: We retrospectively reviewed 2,189 cases of breast CNB performed at a single institution between January 2007 and October 2015. Patient age, history, biopsy modality and pathology from the initial core biopsy and from further re-excision was evaluated. We isolated all cases with either pure FEA or FEA in combination with other high-risk factors including atypical ductal hyperplasia (ADH), atypical lobular hyperplasia (ALH) and lobular carcinoma in situ (LCIS).

RESULTS: A total of 77 patients had FEA. All patients with FEA were female. The average age was 54.9 yrs (38-76). There were 2.1 % (48/2189) pure FEA and 1.4 % (31/2189) concomitant FEA and ADH, ALH or LCIS. Biopsy modality was MRI in 16 patients, US in 3 and mammogram guided in 58 patients.

Of the patients with pure FEA, 95.8% (46/480) underwent subsequent excisional biopsies with the following findings: benign 87.0 % (40/46), ADH 10.9% (5/46), LCIS 4.3% (2/46), ductal carcinoma in situ (DCIS) 2.2 % (1/46) and no invasive cancer. All of the concomitant FEA and ADH/ALH/LCIS group were excised with: benign 83.9 % (26/31), DCIS 9.7 % (3/31), DCIS and LCIS 3.2% (1/31) and tubular carcinoma 3.2 % (1/ 31). The incidence of DCIS/invasive cancer in the FEA + ADH group is 16.1 % (5/31) vs. 2.2% (1/46) for the pure FEA group. This difference is statistically significant (p 0.0489)

CONCLUSION: These findings support those of recently published literature suggesting that pure FEA has a very low association with carcinoma. Patients with CNB demonstrating only FEA may not need re-excision, but instead be suitable for close clinical and mammographic follow-up. Based on the higher incidence of cancer in FEA combined with ADH, ALH or LCIS, we would still recommend re-excision in those patients.
28. PANCREATIC CYSTIC NEOPLASMS: A SINGLE INSTITUTION EXPERIENCE WITH UPDATED TREATMENT RECOMMENDATIONS
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BACKGROUND: Cystic lesions of the pancreas, once an uncommon pathology, are increasing in frequency; many are diagnosed incidentally after abdominal imaging, with a cited prevalence in the literature of 2.5%-13.5%. These neoplasms present a diagnostic and management challenge to the general surgeon, as the treatment is constantly evolving. This study describes demographic and clinical characteristics of patients diagnosed with cystic neoplasms (CNP) and provides a brief overview of the most current treatment guidelines.

METHODS: A retrospective chart review of 866 patients who underwent pancreatic resection at a single institution from January 2002-December 2013 was conducted. Patients were included in the study if they had pathology confirmed cystic neoplasms. Means and proportions were used to summarize the data. Univariate analysis comparing the different cystic neoplasm pathologies was performed using analysis of variance (ANOVA) for continuous variables and chi-square/Fisher’s Exact tests for categorical variables.

RESULTS: The prevalence of CNPs in our patient cohort was 14.6% (127/866). Of the 127 patients included in our study, intraductal papillary mucinous neoplasm (IPMN) was present in 71 patients (56%, national average 27-48%), 25 patients had mucinous cystic neoplasm (MCN) (20%, national average 11-23%), and 31 patients had serous cystic adenoma (SCA) (24%, national average 12-23%). These lesions were identified based on CT imaging in the majority of patients (50%, 43%, 69% respectively). Ductal dilation and chronic pancreatitis were more common in IPMN than other neoplasms (p<0.05). There was a male and older patient predominance for IPMN (p<0.05). Of the IPMNs, 18% were malignant and 48% were borderline malignant. MCN demonstrated 11% malignancy, 37% borderline malignancy, while the majority of SCNS are benign (87%). The most common postoperative complications were intraabdominal abscess (11%) and delayed gastric emptying (3%). Non-infectious complications were more common in the IPMN cohort, and infectious complications were more common in the remainder.

Current treatment recommendations are based on pathologic characteristics. IPMN, the most commonly diagnosed and resected cystic neoplasm, has varying recommendations based on association with the main pancreatic duct based on new Fukuoka guidelines: all main duct IPMN are resected and a select group of branch duct IPMN may be monitored without an operation. MCN comprise are resected based on malignant potential. SCA are resected based on symptoms as they pose very low malignancy risk.

CONCLUSION: Pancreatic cystic neoplasms represent an increasing cohort of patients presenting for pancreatic resection. While many lesions are diagnosed based on imaging characteristics, we demonstrate that a large cohort of patients harbor lesions with malignant potential and that early intervention may demonstrate survival benefit.
29. NON-OPERATIVE MANAGEMENT OF ADHESIVE SMALL BOWEL OBSTRUCTION - WHAT IS THE BREAK POINT?
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BACKGROUND: The current management paradigm for adhesive small bowel obstruction (SBO) is nonoperative unless there is evidence of bowel compromise or resolution failure; however, rates of recurrence seem to differ based upon the time interval between occurrences and the number of previous occurrences. Considering quality of life and cost raises the question of when one should offer surgery for those presenting with repeat SBO. Determining the optimal time to operate requires weighing the morbidity, mortality, cost, and quality of life impact of operative versus medical management. To aid in this decision making process, we conducted an economic analysis comparing the costs and outcomes associated with performing surgery after the 1st, 2nd, 3rd, 4th, or 5th SBO recurrence.

METHODS: We constructed a Markov model to evaluate costs, complications, and quality of life on a hypothetical cohort of 40-year-old patients after their first episode of medical management for post-operative SBO. We estimated a relative risk reduction of .55 with surgical intervention and a relative risk increase of 2.1, 2.9, and 5.7 after the non-operative management of the 2nd, 3rd, and 4th SBO. Probabilities of morbidity and mortality were derived from the literature and national databases. Cost estimates were obtained from Medicare reimbursement rates.

RESULTS: Surgery performed after earlier episodes of SBO was more costly but also more effective. For example, the cost difference between surgery after the 1st SBO recurrence versus the 2nd SBO recurrence was $1,643, with an increase of 0.135 quality adjusted life years (QALYs), resulting in an incremental cost-effectiveness ratio (ICER) of $12,170/QALY. These results suggest that earlier intervention is better for the treatment of SBO with only a modest cost increase, as operating after the 1st recurrence was more cost effective compared to operating after the 2nd recurrence, which was also more cost effective than operating after the 3rd recurrence.

CONCLUSION: Surgery after the first episode of SBO provides a small increase in QALY at a small cost since surgical intervention lowers the risk of recurrence.
30. RESUSCITATIVE ENDOVASCULAR BALLOON OCCLUSION OF THE AORTA (REBOA) FOR CONTROL OF NON-COMPRESSIBLE TORSO HEMORRHAGE
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BACKGROUND: Non-compressible torso hemorrhage is a leading cause of potentially preventable death in trauma and acute care surgery patients. These patients are at high risk of exsanguination before potentially life-saving surgical intervention may be performed. Temporary aortic occlusion is an effective means of augmenting systolic blood pressure (SBP) and perfusion of the heart and brain in these patients. Aortic occlusion temporarily controls distal bleeding until permanent hemostasis can be achieved. The traditional method for temporary aortic occlusion is via Resuscitative Thoracotomy (RT) with cross clamping of the descending aorta. While effective, RT is highly invasive and may worsen blood loss, hypothermia and coagulopathy by opening an otherwise uninjured body cavity. Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) achieves temporary aortic occlusion using an occlusive balloon catheter that is introduced into the aorta via endovascular access of the common femoral artery. For this reason it is thought that REBOA could provide a less invasive method for temporary aortic occlusion. Our purpose is to describe our experience with the implementation of REBOA at our Level 1 trauma center.

METHODS: A retrospective case series describing all cases of REBOA performed at a prominent level 1 trauma center between October 2011 and September 2015. The inclusion criteria were any patient that received a REBOA procedure in the acute phases following injury. There were no exclusion criteria. Data was collected from electronic medical records and the hospital’s Trauma Registry.

RESULTS: A total of 31 patients underwent REBOA during the study period. The median age of REBOA patients was 47 (IQR 27-63) and 77% were male. A majority (87%) of patients sustained blunt trauma. The median Injury Severity Score was 34 (IQR 22-42). The overall survival rate was 32% but varied greatly between subgroups (figure 1). Balloon inflation resulted in a median increase in SBP of 55 mmHg (IQR 33-60), in cases where the data was available (n=20). A return to spontaneous circulation (ROSC) was noted in 60% of patients who had arrested prior to REBOA (n=10). Overall, early death by hemorrhage was 28% with only 2 deaths in the Emergency Department prior to reaching the OR.

CONCLUSION: REBOA is an effective method for achieving temporary aortic occlusion in trauma patients with non-compressible torso hemorrhage. Balloon inflation correlated with increased blood pressure and temporary hemorrhage control in a vast majority of patients.
31. THE TIME IS NOW: VENOUS THROMBOEMBOLISM PROPHYLAXIS IN BLUNT SPLENIC INJURY
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BACKGROUND: Non-operative management (NOM) is the standard of care for treatment of hemodynamically stable patients with blunt splenic injuries. The safety and timing of pharmacologic venous thromboembolism prophylaxis (pVTEP) in this population has not been established. We hypothesized that early initiation of pVTEP does not increase failure of NOM in patients with blunt splenic injuries.

METHODS: A retrospective review of trauma patients with blunt splenic injury was performed at an ACS-verified level I trauma center from 7/07-5/14. Data collected included demographics, ISS, splenic injury grade, pVTEP, and need for intervention. Patients with brain injury, immediate splenectomy, transferred, or death were excluded. Patients receiving pVTEP were evaluated based on NOM failure (subsequent need for splenectomy or splenic embolization, or discontinuation of pVTEP for a decrease in hemoglobin). This group was then matched to patients who did not receive pVTEP, by splenic injury grade, ISS, and age. Statistics were performed using ANOVA and Chi-square with significance attributed to p value < 0.05.

RESULTS: Of 12,327 blunt trauma admissions, 708 patients had a splenic injury; 305 of these were excluded. Of the 403 patients, 260 did not receive pVTEP during hospitalization. In the pVTEP group of 143, failure rate increased with injury grade (p = 0.001), but was unaffected by age (p = 0.24) or timing of pVTEP initiation (p = 0.11). 106 patients were able to be matched. There were no differences in splenectomy (pVTEP: 5% vs no pVTEP: 3%, p = 0.47) or splenic embolization (pVTEP: 1% vs no pVTEP: 1%, p = 1.00) rates.

CONCLUSION: Challenges in NOM of blunt splenic injury include timing and safety of initiation of pVTEP. Early administration of pVTEP (< 48 hrs) is safe and should be utilized for patients undergoing NOM for blunt splenic injury.
32. THE EFFECT OF ANTICOAGULATION ON GERIATRIC FALL TRAUMA OUTCOMES
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BACKGROUND: Falls represent the most common cause of injury in the geriatric patient population, with an annual incidence of 33% in those > 65 years old and an astounding 50% in those >80 years old. In comparison to their younger counterparts, the majority of literature has indicated that elderly patients have a higher injury severity and higher mortality (up to 7% higher) with the same fall mechanism. Furthermore, this relationship has been observed in a linear fashion, such that the most elderly patients fare worse than the “younger” elderly patients (65-75 compared to >75 years old), starting as early as 50 years old. The reasons for this are numerous but one proposed culprit is the higher percent of the elderly population on anticoagulation, whether for cardiac stents, atrial fibrillation or prior cerebrovascular accidents. Particularly in the age of medicine in which new anticoagulants are being introduced at an increasing rate, it is essential as clinicians, particularly trauma surgeons, to understand the compounded risk of increased age and anticoagulation status on trauma outcomes. This research study aims to identify the effect of anticoagulation status on complications, hospital course, and outcomes among geriatric fall trauma patients.

METHODS: The study design is a retrospective cohort study, looking at fall trauma among patients age 60-80 from 2009-2013 at a university hospital in the United States. The statistical analysis, conducted with SPSS software with a threshold for statistical significance of p<0.05, was stratified by anticoagulation status and then further by type of anticoagulation (aspirin, warfarin, clopidogrel, Lovenox, Aggrenox Pradaxa or Xarelto). Outcomes variables include mortality, length of stay (LOS), complications, and intensive care unit (ICU) admission.

RESULTS: The total number of patients included in this study was 1121. Compared to patients not on anticoagulation, there was a higher LOS among patients on anticoagulation (6.3 ±6.2 versus 4.9 ± 5.2, p=0.001). A higher LOS (7.2 ± 6.8 versus 5.0 ± 5.3, p=0.001) and days in the ICU (2.1 ± 5.4 versus 1.1 ± 3.8, p=0.010) was observed in patients on warfarin. A higher mortality (7.1% versus 2.8%, p=0.013), LOS (6.3 ± 6.2 versus 5.1 ± 5.396, p=0.036), and complication rate (49.1 versus 36.7, p=0.010) was observed among patients on clopidogrel.

CONCLUSION: In this study, a higher mortality and complication rate was seen among clopidogrel and a greater LOS and number of days in the ICU was seen in patients on warfarin. These differences are important, as they can serve as a screening tool for triaging the severity of a geriatric trauma patient’s condition and complication risk. For patients on clopidogrel, it is essential these patients are recognized early as high-risk patients who will need to be monitored more closely. For patients on clopidogrel or warfarin, bridging a patient’s anticoagulation should be initiated as soon as possible in order to prevent unnecessary increased LOS. Lastly, this data also provides support against prescribing patients clopidogrel when other anticoagulation options are available.
QUICK SHOT ABSTRACTS
QUICK SHOT ABSTRACTS (cont.)

1. PROGRESSION OF INTRACRANIAL HEMORRHAGE IN CIRRHOTIC PATIENTS WITH TRAUMATIC BRAIN INJURIES DOES NOT ACCOUNT FOR INCREASED MORTALITY
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BACKGROUND: The progression of intracranial hemorrhage (PIH) after traumatic brain injury (TBI) occurs in approximately 40% of patients and can result in irreversible neurologic deterioration and death. Cirrhotic patients admitted with TBI have higher mortality compared to non-cirrhotic patients. Coagulopathy is significantly associated with PIH and may place cirrhotic patients at particularly high risk. We hypothesize that PIH contributes to the increased mortality observed in cirrhotic patients with isolated TBI.

METHODS: This is a retrospective review of all cirrhotic patients with isolated blunt TBI at an academic, Level 1 trauma center between 2001 and 2013. Patient factors studied included demographic data, injury mechanism, head abbreviated injury scale (AIS), admission Glasgow Coma Scale (GCS), type of intracranial hemorrhage, blood product transfusion and neurosurgical intervention. Primary outcomes were presence of PIH and death. A trained neurosurgeon determined PIH by comparing imaging characteristics including hematoma size and Marshall Score of the initial CT scan compared to a subsequent scan 6 hours later.

RESULTS: During the 12-year study period, 57 cirrhotic patients with isolated blunt TBI were identified. A majority of patients were male (80%), had a mean age of 57.0 ± 9.9 years and an injury severity score of 17.7 ± 6.2. Mean head AIS was 4.1 ± 0.8 while the mean admission GCS was 11.1 ± 4.8. There were 8 patients (14.0%) with catastrophic neurologic injuries on the initial head CT scan resulting in brain death or withdrawal of care. Seven patients (12.3%) underwent immediate neurosurgical intervention, the other 42 patients (73.7%) were observed with repeat imaging. Of the 42 patients treated with initial non-operative management, PIH was present in 15 (35.7%) patients, of which 2 had no identifiable injury on initial imaging. PIH(+) patients had a larger mean hematoma size on initial imaging than PIH(-) patients (32.5 vs. 21.5 cm³, p=0.23). There were 5 PIH(+) patients who subsequently required neurosurgical intervention (3 craniotomies, 1 intracranial pressure monitor placement, and 1 ventriculostomy). PIH(+) had no difference in types of intracranial hemorrhage, Marshall score (2.1 versus 1.9, p=0.3), injury severity, coagulopathy, MELD score, blood product units transfused, or use of prothrombin complex concentrate compared to PIH(-) patients. There was no difference in mortality between the PIH(+) and PIH(-) groups (0 versus 1, p=1.0).

CONCLUSION: PIH in cirrhotic patients occurs at similar rates as reported for non-cirrhotics and does not appear to account for the increased mortality observed after isolated TBI. Hematoma size on initial imaging may be a predictor of PIH in TBI patients with cirrhosis. Repeat imaging resulted in the discovery of new intracranial hemorrhage and/or prompted neurosurgical intervention in at least one third of PIH patients. Therefore, repeat imaging is advocated for cirrhotic patients with TBI.
2. TRAUMA PATIENTS: “I CAN’T GET NO (PATIENT) SATISFACTION?”
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BACKGROUND: The Center for Medicare and Medicaid Service (CMS) provides financial incentives to hospitals based on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) patient satisfaction survey. This data is made publically available on their website and is utilized by patients and insurers. Hospitals are profoundly interested in identifying patient populations that negatively contribute to overall patient satisfaction scores. Hospitals consider trauma patients high risk from a HCAHPS perspective, but there is no data in the literature to inform this opinion. The purpose of this study is to evaluate trauma patient satisfaction scores and their impact in the larger context of patient satisfaction.

METHODS: Three different analyses were performed. Group 1 was composed of ALL patients admitted to our hospital over an 18 month period who were administered a validated patient satisfaction survey by a 3rd party (ALL). Group 2 compares admitted patients with a trauma specific ICD-9 diagnosis (ICD). Group 3 consists of the three Level I Trauma Centers in our area (TC). Patient satisfaction data of trauma vs. non-trauma patients (ALL), trauma specific diagnoses (ICD), and HCAHPS associated satisfaction across Level I facilities in our area (TC) was analyzed using the appropriate statistical test.

RESULTS: In the ALL group, no differences in satisfaction were noted in 18/21 questions for trauma patients when compared to non-trauma patients at our hospital. Patient satisfaction in the ICD group was worse in patients who carry a diagnosis of spinal cord injury compared to other trauma diagnoses. No difference was found in HCAHPS associated satisfaction between the Level I Trauma Centers in our area (TC).

CONCLUSION: In contrast to the commonly held opinion, trauma patients do not negatively contribute to patient satisfaction in our facility. Certain injuries may offer opportunities for improvement. In the era of public reporting and financial penalties, surgeons should embrace patient satisfaction as it may be vital to the survival of the trauma center.
3. SURVIVAL IN PATIENTS UNDERGOING MASSIVE TRANSFUSION: AGE DOESN'T MATTER
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BACKGROUND: Massive Transfusion Protocols (MTP), defined as receiving greater than ten units of packed red blood cells (PRBC) in 24 hours, have become the standard for resuscitating the bleeding patient. Very little is written about the correlation between patients who underwent Massive Transfusion (MT) and patient age. We hypothesized that geriatric patients (≥65 years old) undergoing MT had a higher mortality than younger patients (<65 years old).

METHODS: The trauma database and blood bank transfusion records from January 2008 to November 2014 were accessed. All trauma patients who were transfused 10 units of PRBC over the first 24 hours were included. The patients were then divided into two groups, those ≥65 and those <65 years old. Injury severity, neurologic dysfunction, demographics, mechanism of injury, vital signs, and total numbers of blood products transfused were reported. The outcomes were mortality, hospital and intensive care unit (ICU) lengths of stay (LOS), and ventilator days. A subgroup analysis on survived patients and deceased patients was also performed.

RESULTS: There were 193 patients who underwent MT during this time period. The majority of patients were <65 years old (170) while 23 patients were ≥65. The average age of geriatric patients was higher (75 vs 37, P<0.0001). Geriatric patients were mostly Caucasian (87% vs 55%, p=.003) and sustained blunt trauma (96% vs 74%, p=.02). In the emergency department geriatric patients had a lower blood alcohol level (.02 vs .08, p=.03), lower heart rate (95bpm vs 113bpm, p=.01), and higher GCS (11 vs 8, p=.01). The two groups had similar admitting systolic blood pressure (100mmHg vs 89mmHg, p=.19) and rates of intubation in the emergency department (93% vs 83%, p=.09). Injury Severity Score for both groups were also similar (34 vs 31, p=.32) as were Abbreviated Injury Scale (AIS) head ≥3 (44% vs 48%, p=.70), AIS Chest ≥3 (64% vs 65%, p=.87), AIS abdomen ≥3 (61% vs 57%, p=.71), and AIS extremity≥3 (57% vs 74%, p=.12). There were no differences between the older and younger groups in mortality (65% vs 45%, p=.07), hospital length of stay (23 days vs 29 days, p=.42) or ICU length of stay (9 days vs 11 days, p=.39). There were no differences in the units of PRBC given between the two groups (18.1 vs 18.8, p=0.75) or in the PRBC to plasma ratio (1.6 vs 1.5, p=0.62). Geriatric patients received 33 total units (TU) of product (PRBC, plasma, and platelets) while younger received 32 TU, p=0.85. The units of platelets given were also the same (2.8 vs 3, p=.70). This was similar in survived patients, with no differences in TU (31 vs 32, p=0.89), PRBC to plasma ratio (1.2 vs 1.2, p=0.78), or platelets (2.1 vs 3.1, p=.17). For the deceased subgroup, there were again no differences in TU (34 vs 32, p=.78), PRBC: plasma ratio (1.8 vs 1.8, p=0.98), and units of platelets (3.1 vs 2.7, p=0.64).

CONCLUSION: While the mortality for older patients (65%) in this study is much higher than previously published results, there was no significant difference in mortality between the older and younger population who received a massive transfusion at our institution.
4. PRE-INJURY POLYPHARMACY PREDICTS MORTALITY IN ISOLATED SEVERE TRAUMATIC BRAIN INJURY PATIENTS

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BACKGROUND: The use of 5 or more medications is defined as polypharmacy (PPM). PPM is associated with increased comorbidities, lower admission GCS, increased hospital complications and lower functional outcome measures. No studies to date have investigated the impact of pre-injury PPM exposure on severe isolated traumatic brain injury (TBI) patients. We hypothesize that PPM is associated with increased mortality in patients with isolated TBI.

METHODS: A retrospective cohort study was performed at our academic Level 1 Trauma Center examining patients admitted with isolated TBI between January 2010 and December 2014. Isolated TBI was defined as an Abbreviated Injury Scale (AIS) head of 3 or greater with chest, abdomen and extremity AIS scores of 2 or lower. We conducted a chart review to determine pre-injury medication exposure. In-hospital mortality was the primary measured outcome.

RESULTS: There were 698 patients with isolated TBI over the 5 year study period. 177 (25.4%) patients reported pre-injury use of 5 or more medications simultaneously. There were 18 (10.2%) deaths in the PPM cohort and 24 (4.6%) deaths in the non-polypharmacy (NPM) cohort (p < 0.0001). The PPM cohort was older (70.2 vs 58.2, p < 0.0001) and had more patients with an ISS over 15 (60.5% vs 51.8%, p = 0.047). Admission GCS was the same between the two groups. After controlling for differences between the two cohorts, a stepwise logistic regression analysis revealed that there is a 2.3 times greater risk of mortality in the PPM cohort (p = 0.019). This increased risk of mortality was equivalent to those with an AIS head of 4 (p = 0.027).

CONCLUSION: Preinjury polypharmacy increases mortality in patients with isolated TBI. Patients who used 5 or more medications had the same risk of mortality as those with an AIS head of 4. A patient’s list of medications could provide more insight about a potential increase in mortality for the treating trauma surgeon, especially for those patients with TBI.
5. AN INTEGRATED MILITARY/CIVILIAN MODEL CONTRIBUTES TO OVERALL TRAUMA SYSTEM MATURATION: LESSONS LEARNED FROM TWO MAJOR REGIONAL CONFLICTS

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BACKGROUND: Although differences of opinion and controversies may arise, lessons learned from military conflicts as well as progress in civilian research often translate into improvements in triage, resuscitation strategies, and surgical technique. In contrast, our fully integrated national trauma system, providing total care for both military and civilian casualties, necessitates close cooperation between all aspects of both sectors. We theorized that lessons learned from two regional conflicts over 8 years, with resultant improved triage, reduced hospital length of stay, and sustained low mortality would aid performance improvement and provide evidence of overall trauma system maturation.

METHODS: We performed an 8 year, retrospective analysis of our National Trauma Institute’s prospective data base for all casualties presenting to level 1 and 2 trauma centers nationwide during an earlier conflict (W1) (8/14/06-7/12/06) and sought to compare results to those of a more recent war (W2),(8/26/14-7/8/14). Of particular interest were: casualty distributions, injuries/ISS, patterns of evacuation/triage, hospital length of stay, and mortality.

RESULTS: Data on 919 casualties was available for evaluation. Of 490 evacuated during W1, 341 (70%) were transferred to Level 1 centers, while the remainder (149, 30%) were transferred to level 2 centers. In W2, 429 total casualties were distributed to Level 1 (307, 72%) and level 2 (122, 28%) centers. In W2, significantly more severe injuries (ISS>16) were evacuated directly to level 1 centers (42, 76% vs. 20, 43% respectively; p=0.0007), and W2 vs. W1 saw a significant increase in evacuations using helicopter (219, 51% vs. 180, 37%; p<0.0001) and increase in ISS>16: (66; 15.5% vs. 55; 11%, p=0.057). In W2 vs. W1, less late inter-hospital transfers occurred :( 48, 11%, vs.149, 30%, p<0.0001); and there was a reduction in admission >7days (90, 22%, vs.154, 32%, p= 0.0009). In logistic regression analyses, when controlling for ISS, these results persisted: admission >7days: (OR= 2.3, 1.63 - 3.3 95% CI, p<.0001); late hospital transfers: (OR=3.9, 2.71- 5.68 95% CI, p<0.0001). For patients arriving with vital signs to the ED, mortality was not significantly changed either overall or for injuries with ISS >16: (1.2% in W1 vs.1.9% in W2, p=0.43; 10.9% in W1 vs. 10.6% in W2, p=0.96, respectively). When compared to civilian related (non-war) mortality during the same 8 year time frame, overall results were unchanged (1.6% both periods), although there was a noteworthy significant decrease in mortality over time for ISS >16 : 12.1 vs. 8.4 (p=0.0003), and a concomitant reduction in late inter-hospital transfers (9.8 vs.7.3,p<0.0001).

CONCLUSION: Despite more severe injuries in our most recent regional conflict, there were increased direct helicopter transfers to level 1 centers, reduced inter-hospital transfers, reduced hospital length of stay, and persistent low mortality. Although further assessment is required, these data suggest that via ongoing cooperation in a culture of improved preparedness, our integrated military/civilian national trauma network has also positively impacted our civilian results via reduced mortality in ISS>16 and reduced late inter-hospital transfers. These findings support continued maturation of the system as a whole.
6. CIRRHOSIS AND OPERATIVE TRAUMA: TRANSFUSION THRESHOLDS AND MORTALITY
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BACKGROUND: Patients with cirrhosis who experience trauma have a high mortality and morbidity and consume an inordinate amount of health care. Unfortunately no early markers of mortality exist to determine when care is futile in this fragile population. We hypothesized that quantity of blood transfused could be used as a marker of absolute mortality in the trauma patient with cirrhosis.

METHODS: We performed a multicenter retrospective cohort study over a ten-year period (2001-2011) at four tertiary Level I trauma centers. We included all patients with cirrhosis who underwent a laparotomy for trauma without cirrhosis diagnosed preoperatively. Data was collected from admission, at six, 24, and 48 hours after admission, and at time of discharge. We compared patients who died versus those who lived with regard to admission vitals, labs, blood products transfused, cause of, and timing of death.

RESULTS: Sixty-five subjects were included in our study. Thirty-one subjects died (47%) and 45% of deaths occurred within 24 hours of admission. MELD score was higher in patients who died (10.2 (IQR 6.6-12.1) vs. 7.8 (IQR 5.1-10.9)). Packed red blood cell (PRBC) administration at six hours was significantly higher in those who died versus those who lived (10 (IQR 3-22) vs. 2 (0-77) units, p<0.01), and if at six hours, a patient had received 6 or more units of blood, odds ratio (OR) for death was 7.08 [95% CI 2.38,21.1].

CONCLUSION: Trauma patients found to be cirrhotic during laparotomy should be considered to have a high chance of mortality after receiving more than six units of packed red cells. If during the resuscitation of a cirrhotic trauma patient, 17 units or more of blood is given, transition of care to comfort measures should be considered as death is imminent. Use of quantity of blood transfused as a prognostic indicator can equip surgical intensivists in delivering appropriate care to this high risk population.
7. UNDERREPORTED INCIDENCE OF UNNECESSARY EMERGENCY DEPARTMENT THORACOTOMY AT A LEVEL 1 TRAUMA CENTER
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BACKGROUND: The role of emergency department thoracotomy (EDT) remains controversial. The Western Trauma Association guidelines suggest that EDT should not be performed for traumatic code arrest (TCA) after blunt or penetrating trauma if a patient has been without vital signs for more than 10 or 15 minutes, respectively. Trauma surgeons often use reported pre-hospital downtimes to determine a patient’s candidacy for EDT. We hypothesized many patients with TCA had prolonged downtimes that were inaccurately reported, leading to unnecessary EDTs.

METHODS: We reviewed The University of Arizona Medical Center trauma registry (2009-2012) for all patients who sustained TCA. We reviewed pre-hospital run-sheets for paramedic response time, in-field vital signs, in-field procedures, transport time, downtime reported to the trauma surgeon, actual down time (time between initiation of cardiopulmonary resuscitation and arrival to trauma bay), emergency room (ER) vital signs, actions taken in ER, and clinical course. Our primary outcome measure was percentage of unnecessary EDT, defined as EDT performed > 10 minutes or > 15 minutes after blunt or penetrating TCA, respectively. Secondary outcome measures included patient survival rates, volume of packed red blood cell transfusions, and hospital costs.

RESULTS: During the study period, 100 patients sustained TCA; 71 underwent EDT of which 30 (42%) were deemed unnecessary. Of these, 13 (44%) were performed due to trauma surgeon preference while 17 (56%) were due to inaccurately reported downtimes. The mean difference between reported and actual downtime was 15 ± 10 minutes. Overall, four patient’s survived, but none were among those receiving unnecessary EDT. Each unnecessary EDT was associated with a median 2.5 unit packed red blood cell transfusion and $169,605 in hospital costs.

CONCLUSION: The incidence of unnecessary EDT is underreported. While some unnecessary EDTs are performed due to trauma surgeon preference, others are performed as a result of inaccurate downtime reporting, resulting in avoidable blood product utilization and hospital costs. We recommend the development of a more accurate method for recording and reporting patient downtimes after TCA and continued education of pre-hospital personnel regarding the criteria for the termination of resuscitation after TCA.
8. LONG-TERM ASSESSMENT OF SURGICAL AND QUALITY OF LIFE (QOL) OUTCOMES BASED UPON METHOD OF PERITONEAL CLOSURE IN LAPAROSCOPIC TRANSABDOMINAL PREPERITONEAL (TAPP) INGUINAL HERNIA REPAIR
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BACKGROUND: TAPP inguinal hernia repair (IHR) is a commonly-used approach that requires the creation of a peritoneal flap (PF). The PF requires closure at the completion of mesh placement. Our aim was to compare surgical and QOL outcomes among three of the most common peritoneal closure methods: tacks, suture and staples.

METHODS: A prospective institutional hernia-specific database was assessed for all adult TAPP IHRs from July 2012-May 2015. Unilateral and bilateral patients were included with each hernia being analyzed separately. Demographics, operative characteristics and complications were analyzed using standard statistical methods. A p≤0.05 was significant on global tests, and using the Bonferroni correction, p≤0.0167 was significant on pairwise tests. QOL outcomes were evaluated at 2 and 4 weeks as well as 6, 12, 24 and 36 months as measured by the Carolinas Comfort Scale, a hernia specific QOL tool measuring pain, mesh sensation and movement limitation; “mild, but bothersome” or greater (a score of 2-5 on a 0-5 scale) was considered symptomatic.

RESULTS: A total of 466 patients underwent TAPP with 253 unilateral and 213 bilateral IHR for a total of 679 IHR. PF closure was performed using tacks in 36.7%, suture in 24.3% and staples in 39.0%. Patient characteristics that differed significantly among the groups include BMI, number of comorbidities (diabetes, hypertension, tobacco use), and previous abdominal surgery (all p≤0.01) (see chart). There was no difference in previous IHR. There was a significant difference in EBL, mesh size, OR time, OR charges, overnight observation, and the use of fibrin glue (all p≤0.02). Post-op, there was no difference in transfusions, MI, DVT, CVA, unplanned reoperations or readmissions, LOS, hematoma, seroma, wound infections, urinary retention, recurrences (only 1 in staple group) or 30-day mortality.

Evaluating QOL at 4 weeks, there was a significant difference among the groups in mesh sensation (11.3 vs 10.2 vs 24.6%;p=0.03) and movement limitation (14.6 vs 30.0 vs 26.9%;p=0.047) for tacks, sutures and staples, respectively; there were no further differences in QOL between 6 to 36 month follow-up. With further evaluation with pairwise testing, there was a trend at 4 weeks that the staple group had overall worse QOL scores compared to the other groups, but these differences did not reach statistical significance with the Bonferroni correction (all p>0.0167).

CONCLUSION: TAPP IHR using suture was generally done in patients with fewer comorbidities, but used the largest mesh and had the least EBL and highest cost. Staple use in TAPP IHR had the shortest OR time, the lowest cost and highest fibrin glue utilization. Each method of PF closure had similar post-op and QOL outcomes after 4 weeks.
9. ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY, MAGNETIC RESONANCE CHOLANGIOPANCREATOGRAPHY, OR LAPAROSCOPIC CHOLECYSTECTOMY: WHICH COMES FIRST?
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BACKGROUND: The ideal treatment algorithm for suspected choledocholithiasis is not yet well defined. Imaging options include magnetic resonance cholangiopancreatography (MRCP), endoscopic retrograde cholangiopancreatography (ERCP), and intraoperative cholangiogram (IOC). MRCP is diagnostic, while the other two modalities can also be therapeutic. Each of these modalities for diagnosis and treatment carries its own set of risks, benefits, and institutional costs. We chose to review our institution’s experience with these three modalities and to evaluate the impact that MRCP had on clinical decision making. We hypothesized that there would be a statistically significant difference between the biochemical profiles and characteristics of patients who undergo ERCP vs. MRCP vs. operative intervention as the initial choice of treatment/imaging modality.

METHODS: We performed a retrospective review of the electronic medical records for all patients with a diagnosis of choledocholithiasis from 2011-2014. The initial diagnostic modality was assessed for each hospital encounter. Patient demographic information, pre-procedure biochemical values and imaging characteristics were collected. Additionally, the predictive performance of MRCP as compared to fluoroscopic imaging of the biliary tree (ERCP, IOC) was analyzed.

RESULTS: Overall, 527 hospital encounters were identified. Initial intervention included ERCP in 63%, MRCP in 12%, and cholecystectomy in 25% of patients. Patient age and biochemical profile determined the decision to initially undergo MRCP, ERCP or laparoscopic cholecystectomy. Patients undergoing cholecystectomy first, compared to MRCP or ERCP, tended to have lower values for alkaline phosphatase (P<0.001) and AST (P=0.002) as well as be of younger age (P<0.0001). Of the patients that underwent MRCP as their initial procedure, 82% subsequently underwent either ERCP or laparoscopic cholecystectomy. In patients who underwent an initial MRCP followed by either ERCP or IOC, the predictive performance of MRCP was as follows: sensitivity=0.90, specificity=0.86, positive predictive value=0.97, negative predictive value=0.60, agreement (Cohen’s Kappa)=0.64.

CONCLUSION: There is a significant difference in the laboratory evaluation and demographics of patients undergoing ERCP, MRCP, and laparoscopic cholecystectomy. MRCP was followed with a more invasive test a majority of the time. Since MRCP did not change the management of patients with suspected choledocholithiasis, its utility in this patient population should be questioned. Further research is needed to better define the pretest characteristics which would predict which patients do not need further intervention after MRCP as well as defining the most cost-effective strategy.
10. CONTINUOUS END TIDAL CAPNOGRAPHY AFTER WEIGHT LOSS SURGERY FOR PATIENTS WITH OBSTRUCTIVE SLEEP APNEA ON THE WARD - IS IT SAFE?
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BACKGROUND: Morbidly obese patients have a high prevalence of obstructive sleep apnea and related peri-operative complication rates. Identification of this weight related comorbidity and appropriate post-operative management traditionally requires an intensive care setting. The use of new technology, including continuous end-tidal capnography on a surgical ward, may offer equally successful care with dramatically lower resource demand.

METHODS: A Continuous Respiratory Depression Monitoring Program (CRDM) was initiated at the Naval Medical Center San Diego by the Bariatric Surgery Program and Anesthesia Department in July 2014. Morbidly obese patients with obstructive sleep apnea scheduled for weight loss surgery were enrolled prospectively from July 2014 to January 2015. After standard recovery in the post-anesthesia care unit, these patients received continuous capnography, pulse oximetry monitoring and sedation scores were assessed on a surgical ward. The cost saved due to the avoidance of overnight post-anesthesia or intensive care unit admissions as well as the rate of patient rescue events were captured.

RESULTS: Forty morbidly obese patients with obstructive sleep apnea were enrolled in the Continuous Respiratory Depression Monitoring Program with an average of 4-5 per month. All patients were transferred to the surgical ward after a standard post-anesthesia care unit recovery. No patients required rescue events including rapid response team or code blue team activation. At a minimal cost of $1,522 per night in the intensive care unit, 40 patients saved the command over $60,000 and a minimum of 720 hours of critical care nursing workload towards the care of this patient population.

CONCLUSION: The CRDM program for post-operative weight loss surgery patients with obstructive sleep apnea is safe and offers significant resource and, therefore, should be considered the new standard of care for this patient population.
11. LAPAROSCOPIC DONOR NEPHRECTOMY: MINIMALLY INVASIVE GENERAL SURGERY EXPERIENCE AT A SINGLE INSTITUTION 1999-2013
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BACKGROUND: Laparoscopic donor nephrectomy (LDN) has become the standard of care for live donor nephrectomies. No large series reports have been published detailing the LDN experience of minimally invasive general surgeons from a single institution.

METHODS: We performed a retrospective review of 526 LDNs performed by MIS general surgeons at Baylor University Medical Center between 1999 and 2013. We collected information on patient characteristics, intra-operative data, post-operative complications, and recipient acute graft failure. Complications were graded on the modified Clavien classification system. The learning curve for individual surgeons was determined by number of cases and operative time.

RESULTS: The overall complication rate was 3.0%. One patient was converted to open (0.2%). One patient required transfusion (0.2%). We had 17 complications total. Conversion to open and transfusion were graded as Clavien 2a complications. Our remaining complications were classified as Clavien grade 1. Female donors had shorter operative time than males (141 vs 162 minutes, p<.0001). Warm ischemia time was significantly shorter with women donors and left kidney harvest. There was no statistical difference in operative time, warm ischemia time, or complication rate in patients with BMI above or below 30. There were six recipient graft losses within 30 days of the transplant. All 6 had vascular complications. Of note, 3 of the 6 recipient graft losses had donors with a BMI >35. The learning curve was analyzed and after 27 cases, the operative time plateaued.

CONCLUSION: Experienced MIS general surgeons using a standardized technique can learn and perform a new, unfamiliar procedure with excellent results. Women are easier to perform organ harvest than men. Organ harvest from obese (BMI > 30) patients can be safely performed, but there may be concerns about the quality of the kidney. More importantly, the long-term renal function of an obese donor has to be a concern and requires further study.
12. RETROSPECTIVE COMPARISON OF ROBOTIC VERSUS LAPAROSCOPIC VENTRAL HERNIA REPAIR: DOES ROBOTICS IMPROVE OUTCOMES?
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BACKGROUND: While robotic assisted laparoscopic surgery is increasing in popularity for General Surgery applications, a paucity of data is available for comparison with laparoscopic techniques. We performed a retrospective review comparing robotic assisted and laparoscopic ventral hernia repair to evaluate both outcomes and safety data.

METHODS: A retrospective review of 111 patients (78 robotic repairs and 33 laparoscopic repairs) over a 4 year period was completed at a large academic center. Primary outcome measures included recurrence, surgical site occurrences, and length of hospital stay.

RESULTS: Patient demographics and hernia specifications were found to be similar between both groups. No difference in recurrence (robotic 3.8% / laparoscopic 9.1%, p = 0.36), length of stay (robotic 1.5 days / laparoscopic 1.4 days, p = 0.83), time of operation (robotic 130.5 minutes / laparoscopic 131.3 minutes, p = 0.93), or perioperative narcotic utilization was observed. Robotic hernia repair was associated with a significant decrease in surgical site occurrences (14.1% versus 48.5%, p = <0.01) secondary to a decreased rate of seroma formation 10.3% versus 30.3%, p = 0.01). No difference in surgical site infection or hematoma was observed.

CONCLUSION: Robotic assisted laparoscopic hernia repair is an evolving technique that is gaining popularity in General Surgery. The increased degrees of freedom afforded by the robotic platform could potentially allow for more complex dissections such as hernia sac resection leading to decreased surgical site occurrences. Additional research is required to more clearly delineate the role and cost of robotics in complex hernia repair.
13. MENIN EXPRESSION IN MDR2 -/- MICE REGULATES HEPATIC FIBROSIS
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BACKGROUND: Primary Sclerosing Cholangitis (PSC) is a cholestatic liver disease of intra- and extrahepatic bile ducts resulting in significant biliary inflammation and fibrosis. Patients with PSC will ultimately develop cirrhosis and potentially cholangiocarcinoma (CCA). Novel targeted therapies are needed for affected patients. Previous work from our lab has shown cholangiocytes have neuroendocrine properties that provide potential therapeutic targets to reverse liver fibrosis. Mdr2 -/- mice provide an in vivo model of PSC with characteristic chronic inflammation of bile ducts and subsequent hepatic fibrosis. Menin is a protein encoded by the MEN1 tumor suppressor gene and is mutated in multiple endocrine neoplasia type 1. Menin expression is regulated by microRNA-24. The relationship between menin and the development of hepatic fibrosis in PSC has not been studied. We hypothesize that hepatic fibrosis is regulated through menin expression in Mdr2 -/- mice (model of PSC), and modulation of menin expression through miR-24 may significantly decrease liver fibrosis.

METHODS: Total liver samples and cholangiocytes were harvested from Mdr2-/- and FVB/NJ control (wild-type, WT) mice at various time points. Cholangiocyte samples were separated into pooled, small, and large specimens. Real-time PCR (rtPCR) and immunoblots were used to study the expression of menin in total liver samples and cholangiocytes from Mdr2-/- and WT mice. qPCR was used to show the expression of miR-24 in relation to menin expression in Mdr2-/- and WT mice. These studies were replicated in vitro using murine cholangiocyte lines treated with miR-24 hairpin inhibitor or miR-24 mimics. Menin and miR-24 expression was measured by rtPCR. Markers of fibrosis (FN1, Col1α1, TGF-α1, and α-SMA) were measured by rtPCR in the aforementioned biliary lines.

RESULTS: Menin expression was decreased in total liver samples from Mdr2 -/- compared to WT mice, which correlated with an increased expression of miR-24 in Mdr2 -/- liver. Menin expression decreased in mouse cholangiocytes treated with miR-24 mimic and increased in cells treated with miR-24 inhibitor. Markers of fibrosis correlated significantly with menin expression.

CONCLUSION: Menin expression is significantly reduced and miR-24 expression significantly increased in Mdr2 -/- total liver samples compared to WT mice. Expression of menin correlates with markers of fibrosis in cells treated with miR-24 mimic and inhibitor. Modulation of menin expression via miR-24 may provide targeted therapies to reduce hepatic fibrosis and development of CCA.
14. DO ACUTE CARE SURGEONS FOLLOW BEST PRACTICES FOR BREAST ABSCESS MANAGEMENT? A SINGLE INSTITUTION ANALYSIS OF 325 CONSECUTIVE CASES
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Dallas, TX

BACKGROUND: The breast surgery community has adopted needle aspiration as the standard of care for breast abscesses which have a size less than 5cm on ultrasound, no skin changes, and fewer than 5 days of symptoms. Our acute care surgery (ACS) service manages all breast abscess consults at our urban safety net hospital. We undertook this descriptive study to identify the rate of operative incisions and drainage performed by ACS surgeons which were not compatible with best practices for breast abscess management.

METHODS: We performed a retrospective review of the electronic health records of all patients on whom the ACS service was consulted for a breast abscess at our urban safety net hospital between January, 2010 and December, 2014. We collected data on patient demographics, breast skin characteristics, length of symptoms, ultrasound results, and treatment modality.

RESULTS: A total of 325 patients with breast abscesses were evaluated by ACS, of whom 21 met the breast community’s indications for needle aspiration. Of the overall 325 subject sample, 281 (86.5%) underwent I&D, and 44 (13.5%) underwent bedside needle aspiration. Of the 281 patients that underwent I&D, 269 (95.7%) met the breast surgery community’s indications for I&D due to either skin changes (n=90, 33.5%), abscess >5 cm on ultrasound (n=88, 32.7%), or symptoms >5 days (n=238, 88.5%). Of the 44 patients that underwent needle aspiration, only 9 (20.5%) met the current practice indications for aspiration. Of the 44 patients that underwent aspiration, 28 (63.6%) failed and went on to have an operation. The majority of these failed aspirations had symptoms >5 days (23 patients, 82.1%), or had skin changes at presentation (1 patient, 3.6%), or an abscess >5cm on US (5 patients, 17.9%).

CONCLUSION: As judged by best practices promulgated by the breast surgery community, ACS surgeons do not show excessive rates of operative I and D of breast abscess and in fact seem to over-utilize needle aspiration. To our knowledge, this is the largest single institution series of the management of breast abscesses by ACS surgeons in the literature.
15. THE EFFECT OF A STATEWIDE INITIATIVE FOR TRAUMA EDUCATION: AN ANALYSIS OF THE RURAL TRAUMA TEAM DEVELOPMENT COURSE

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Little Rock, AR

BACKGROUND: Implementation of an inclusive trauma system in Arkansas began in 2010. Recognizing the paucity of trauma knowledge in the state the Arkansas Trauma Education Research Foundation (ATERF) was created, one of its central undertakings was to educate providers in appropriate trauma care. One of the foundation classes taught throughout the state was the American College of Surgeon’s Rural Trauma Team Development Course (RTTDC).

The principles of the American College of Surgeon’s Rural Trauma Team Development Course (RTTDC) are that once injuries are identified that exceed the treatment capability and capacity of the first receiving hospital, the transfer process should begin. This paper studies the effect of the RTTDC on emergency department length of stay.

METHODS: Level IV trauma centers that received RTTDC training were analyzed to determine the effect of the course on emergency department length of stay (EDLOS). EDLOS was compared for the three months before the course and the three months after the course. Patients with significant injury were included for analysis. Significant injury was defined as those with hypotension (SBP < 90 mm Hg) or Glasgow Coma Scale (GCS) < 9 at the sending facility or Injury Severity Score (ISS) ≥ 16 at the definitive care facility.

RESULTS: Fifty-seven patients met inclusion criteria of being significantly injured and initially being treated at level IV trauma centers. Twenty-four (42%) were treated at center prior to RTTDC and 33 (58%) were treated after RTTDC training. There were no significant differences in terms of mechanism of injury, ISS, GCS, or SBP.

The mean and median EDLOS at the hospital before the course was taught were 196 and 184 minutes compared to 144 and 126 minutes after the course (p=0.03). The results of a linear regression model showed that the RTTDC was associated with a 49 minute reduction in the EDLOS when controlling for age, gender, and injury type (p=0.04).

CONCLUSION: The investment in trauma training, specifically, the Rural Trauma Team Development Course has resulted in decreased emergency department length of stay in significantly injured patients.
16. SURGICAL CLERKSHIP MEDICAL STUDENT MID-ROTATION SELF-ASSESSMENT DISPARITIES
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BACKGROUND: Self-perception of performance is used in medical education for determination of educational need, as well as a measure of outcomes. The purpose of our study was to determine if there were disparities in medical students’ self-evaluations according to gender during their surgical clerkship rotations at The University of Texas School of Medicine. We then determined if their self-evaluations correlated with that of the faculty.

METHODS: We analyzed the third year medical students’ self-evaluations completed at the midpoint in their surgical clerkship during academic year 2013-2014. Performance was assigned a point value from 1 to 5 per each of 13 criteria. Each student completed self-evaluations on three surgical rotations and was evaluated on each rotation by faculty. Numerical values of self-evaluations were compared between the genders and to surgical faculty evaluations with overlapping criteria on performance. Statistical analysis was performed using a student’s t-test and regression analysis.

RESULTS: A total of 158 (75 women/82 men) student evaluations were analyzed. On average, women rated themselves significantly lower than the men with an average of 3.80 vs. 3.96 out of a 5 point scale per performance criteria (p< 0.01). 45% of female and 37% of male students underestimated their performance when compared to their corresponding faculty evaluations. Furthermore, 63% of men and 53% of women overestimated their performance when compared to faculty evaluations. Only the male evaluations were statistically different from the faculty evaluations (p=0.0004).

CONCLUSION: Our data demonstrate that women evaluate themselves lower than their male counterparts during surgery clerkships. Men tend to overestimate their performance while more women underestimate their performance when compared to faculty evaluations. Further studies are warranted to help us understand how disparities in self-assessment affect students overall performance and their selection of a medical specialty.
17. A SYSTEMATIC APPROACH TO THE REVISION OF MORBIDITY AND MORTALITY CONFERENCE
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BACKGROUND: Morbidity and mortality (M&M) conference is a forum for residents and staff to discuss adverse clinical events amongst their peers in order to identify opportunities for individual performance enhancement and shortcomings of the delivery of care systems. The conference therefore is a rich environment for resident education and is appropriately required for surgical resident training by the Accreditation Council for Graduate Medical Education (ACGME). The format for this conference varies widely amongst institutions with few guidelines provided by the ACGME. In this study, we evaluate the results of the change of the M&M format at an academic medical center based upon faculty and resident feedback.

METHODS: A twenty-five item questionnaire was administered to all faculty and residents of the Department of Surgery at a large academic institution immediately prior to implementation of a new M&M format. Changes to the format included revolutionizing self reporting of adverse events by using a secure online database, standardized PowerPoint template for case presentations, root cause question analysis with evidence based answers supported by the literature, strategic conference scheduling to promote engagement and attendance, case presentation selection by an organized selection panel, and the inclusion of ACGME core competencies within presentations. One year after new format implementation the same questionnaire was administered. A Likert scale ranging from Strongly Agree to Strongly Disagree was employed on the questionnaire. The responses from the pre-test were compared to the one year post implementation test and trends were evaluated.

RESULTS: Comparison of aggregate Agreed and Strongly Agreed faculty and resident responses between the pre and post implementation surveys was performed. We found improvement from 31% to 58% for “M&M conference provides an unbiased way to learn from surgical failures,” 25% to 54% for “Faculty provide a good role model for dealing with surgical failure,” 21% to 60% for “Complications and deaths were discussed dispassionately without blame,” 19% to 47% for “M&M is a well attended conference,” and 12.5% to 43% for “Participants walk away from M&M conference with more confidence in managing a similar situation in the future.” See Figure 1.

CONCLUSION: Altering the format of M&M conference at our institution has significantly improved resident and faculty perception of the conference and its attendance. The new M&M conference not only improves resident education and satisfies ACGME requirements, it also provides an unbiased forum for staff and residents to critically assess cases to enhance surgical education and improve patient outcomes. We conclude that applying a systematic approach to the revision of M&M practices will achieve increased participation, satisfaction, and increase educational content, resulting in improved institutional outcomes.
QUICK SHOT ABSTRACTS (cont.)

18. MEDICAL STUDENT EXPECTATIONS FROM SURGICAL EDUCATION: A 2 YEAR INSTITUTIONAL EXPERIENCE
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BACKGROUND: The third-year surgical rotation is the first exposure medical students have to the fundamentals of surgical education. However, many have preconceived biases towards surgical specialties, whether that is in a positive or negative context. We seek to identify student’s experiences and expectations; specifically we were interested in students’ confidence levels before and after the rotation.

METHODS: An anonymous survey was conducted of third-year medical students while on the surgical clerkship. A questionnaire was provided at the beginning and end of the rotation with attention to analysis of both the students expectations and confidence level. An assessment of the students’ prior surgical experience and interests in surgical specialties was also conducted. Univariate analyses were performed, paired-t tests for continuous variables and Fisher exact test for categorical variables. All p-values reported are 2 tailed.

RESULTS: Over a 26 month period from July 2013-August 2015, 250 surveys were conducted. The average age was 25.25 years and 36.4% report prior experience in the operating room. In terms of confidence gained on the surgical rotation, students reported a statistically significant (p<0.01) increase in confidence in 15 different areas of interest. However, in terms of expectations, students reported discordance between anticipated experience and actual experience (p<0.05). Students’ responses indicate that students felt confident with their knowledge of diseases; however, they desire more involvement in complex patient care and procedural skills.

In terms of career choices, 38.9% of students identified an unchanged interest in surgical specialties. Of the patients who initially were not interested in surgery, 8.9% changed to a surgical specialty, while 6.5% changed their interests to a nonsurgical specialty and 46% maintained a nonsurgical interest (p< 0.001).

CONCLUSION: The third-year clerkship is the first exposure to surgery for many medical students. Surgical educators are tasked with providing a foundation for basic science education; however, students have expressed an expectation to be involved with complex patient care and management. Students desire involvement in bedside surgical procedures, explanations of anatomy while in the operating room and participation in critical care.
19. BECOMING A TRAUMA CENTER OVERNIGHT: USING SIMULATION TO TRAIN SEASONED YET TRAUMA-NAÏVE PROVIDERS PRIOR TO BECOMING TRAUMA PROVIDERS
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BACKGROUND: Transferring an established level 1 trauma center to a non-trauma hospital requires key training of existing providers. Simulation in trauma training improves provider skills, team management, and interpersonal communication. We hypothesized that multidisciplinary trauma simulation training is beneficial in preparing seasoned healthcare providers who are otherwise naïve to trauma care.

METHODS: Prior to the trauma center move to their established tertiary community hospital, 130 emergency department and ICU providers [34 physicians (MDs)/advance practice providers (APPs), 64 registered nurses, 10 medics, and 22 respiratory therapists] completed one half-day simulation training session using a SimMan 3G (Laerdal Medical – Stavanger, Norway). Sessions involved four randomized, 20-minute trauma and/or ICU scenarios of common acute conditions (hemorrhage, shock, tension pneumothorax, cardiopulmonary arrest etc.) that were video-recorded for debriefing and offline scoring. Before and after each session, participants completed a training effectiveness evaluation (TEE) assessing self-confidence/anxiety and a multiple choice question (MCQ) test assessing individual technical knowledge. Simulation videos were scored offline by 4 content experts using the validated Mayo High Performance Teamwork Scale (MHPTS) after independent normalization of scores for scenario difficulty and inherent chaos. Paired t-tests were used to compare before vs after scores (TEE and MCQ) and first vs last scenario reviewer (MHPTS) scores.

RESULTS: In ten sessions, overall TEE scores testing confidence/anxiety improved (3.5±1.2 to 3.7±1.1, p<0.01) for all participants. MCQ scores testing individual knowledge increased by an average of 9.1% (p<0.001) (Figure) after simulation training. When stratified by profession, MCQ scores increased significantly for RNs, medics, MDs/APPs. Independent MHPTS scores assessing teamwork significantly increased from first to last scenario (11.4±2.6 vs. 16.1±5.1, p<0.001) of training.

CONCLUSION: When transitioning a mature trauma center to an established non-trauma hospital, multidisciplinary simulation training improves confidence, knowledge, and teamwork performance in providers to be involved in trauma resuscitations. Simulation is a useful way of preparing trauma-naïve providers for the transferring of a trauma center at their existing hospital.
20. TRANSITION TO EPOSTERS: SURVEY OF AN ACADEMIC CONGRESS
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BACKGROUND: Paper posters have traditionally been used to communicate information at medical meetings. Paper posters are notorious for being difficult to generate and transport. Technology now allows for electronic posters (ePosters) to be utilized instead. There has not been an evaluation of the impact of this change on poster creators or viewers with regards to creation or ability to convey scientific information.

METHODS: During the 2015 Southwestern Surgical Congress, ePosters were utilized instead of paper posters. A survey was created to assess ease of creation and submission for poster authors. A second survey of congress attendees was created to assess ease of use and ability to convey information. Both surveys used paper posters as the standard to which ePosters would be compared. The survey was delivered via email to all registered attendees and all poster authors.

RESULTS: 18 poster authors and 56 poster viewers responded to the survey. 17 authors (94%) had created paper posters before. Only 3 (18%) had created an ePoster prior to the meeting. 17/18 (94%) felt the process of creating and submitting was easy. A majority (56%) did not feel it was easier to convey their scientific method, while 78% did not feel ePosters created more interest in attendee’s viewing posters. The majority of written comments were in favor of ePosters due to their ease of creation and submission.

Of the 56 viewers who responded, 55 (98%) previously attended a paper poster session, while only 18% had attended an ePoster session. 51 (94%) felt the format was easy to use. Similar to the authors, a majority viewers did not feel ePosters enhanced learning (30, 54%) while 27 (48%) felt it limited the ability to interact with the authors. Written comments again favored ease of use, in addition to better graphics and being able to view multiple posters from one location. 37 (66%) preferred the ePoster format over the traditional paper poster format.

Each group had similar suggestions for improving the experience, including grouping posters of similar topics, less posters/station, and bigger monitors.

CONCLUSION: ePosters are a technological advancement in the presentation of medical information. Based on this survey, they are easier to create and easier to use. Viewers like the improved graphics. While the format and arrangement of the ePoster session and location could be improved, overall satisfaction with the change was high. ePosters should be utilized as the new standard for poster presentation.
QUICK SHOT ABSTRACTS (cont.)

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San Antonio, TX

BACKGROUND: Despite the number of actively practicing physicians/surgeons in Texas increasing 44% over the past 10 years, Texas has remained 41st among states for the number of physicians/surgeons per 105 population. This was a result of the Texas population growth which was double that of the country (70% vs 35%) for the past 30 years. This study reviews the 2013 active patient care physician/surgeon and primary care physician workforce for five states with the largest population growth (2012-2013) and the 19 state Southwestern Surgical Congress (SWSC) membership

METHODS: Data were obtained from the 2013 State Physician Workforce Data Book of the Association of American Medical Colleges. Results were analyzed by Chi-Square.

RESULTS: The number of active patient care physicians/surgeons per 105 population was below the mean for the country in two (TX, NC) of five states with the fastest growing populations. (Table)

The number of active patient care physicians/surgeons per 105 population was below the mean for the country in two (TX, NC) of five states with the fastest growing populations. (Table) The number of active primary care physicians per 105 population was below the mean for the country in three (TX, FL, NC) of these five states. Texas has the second largest geographic area and population of the fifty states and the largest annual (2013) increase in population. However, it ranks 41st and 46th in the number of active patient care and primary care physicians per 105 population. Massachusetts, ranked #1 has 177% of active patient care physicians/surgeons per 105 population for one-fourth of the Texas population. Compared to Texas, Mississippi ranked 50th has 90% of active patient care physicians/surgeons per 105 population for 11% of the Texas population. The 19 state SWSC membership with a population of 112,897,569 (36% of U.S.) ranks 34th (11th – 48th range) for actively practicing physicians/surgeons and 30th (6th – 49th range) for primary care physicians per 105 population. Three of 19 states (CO, HI, W1) are above the mean for actively practicing physicians/surgeons and six of 19 (CA, CO, HI, NM, ND, W1) are above the mean for primary care physicians per 105 population. Three of the top five states (TX, CA, CO) with the fastest growing populations are member states of the SWSC.

CONCLUSION: The GMNAC report of 1981 which predicted a nationwide surplus of 145,000 physicians by 2000 was flawed since it did not account for rapid population growth in the United States. Future studies need to factor in accelerated population growth, especially in the Southwest region of the country.
22. THE EFFECTS OF REAL-TIME, INTRAOPERATIVE SPECIMEN RADIOGRAPHY IN RADIOACTIVE SEED LOCALIZED BREAST CANCER SURGERY
D Rhee MD, B Pockaj MD, N Wasif MD, C Stucky MD, R Gray MD
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BACKGROUND: Intraoperative specimen radiography (ISR) has not been studied among women undergoing radioactive seed localization (RSL) for breast cancer surgery.

METHODS: One hundred consecutive RSL segmental mastectomies among 98 patients using ISR were compared to 100 consecutive segmental mastectomies among 98 patients utilizing conventional radiography (CR) prior to the initiation of ISR. Segmental mastectomies which included other concurrent non-breast operations were excluded from the analysis of operative times. Oncoplastic segmental mastectomies were excluded from analyses involving specimen volumes. Final pathologic margins were considered to be 10mm for all cases of no residual disease after biopsy or neoadjuvant therapy, but such patients were excluded from analyses involving tumor size. All patients’ specimens were subjected to intraoperative pathologic consultation in addition to ISR or CR. Re-excision in this era was performed for any margin <2 mm.

RESULTS: The median age of the cohort was 65 years (range 36-97), and the median tumor size was 1 cm. There were no differences between the ISR and CR groups in age, tumor size, percentage of cases with only DCIS, and percentage of cases with microcalcifications. The ISR group had a statistically significant lower BMI (Table). Mean operative time from cut-to-close was not significantly different (ISR 77 min vs CR 76 min, p=0.75). There was no statistical difference in mean closest final pathologic margin (5.7 mm vs 5.7 mm, p=0.9). The percentage undergoing intraoperative margin re-excision (ISR 40%, CR 47%, p=0.31) and the mean total number of margins excised intraoperatively (ISR 0.9, CR 1.0 p=0.65) were similar. The rate of reoperation for any margin <2 mm was 14% vs 12% for ISR and CR, respectively (p=0.64). The mean specimen volume for ISR was 76cm3 vs 90cm3 for CR; this difference was not statistically significant (p=0.25). The ratio of segmental mastectomy volume to maximum tumor diameter was less for ISR (82.7cm2 vs 139.4cm2, p = 0.014).

CONCLUSION: ISR for RSL breast surgery, in the setting of routine intraoperative pathology consultation, does not significantly impact operative time, the rate or number of additional intraoperative margins excised, the number of reoperations for margins, or the width of final pathologic margins. ISR was associated with a decrease in the volume of segmental mastectomies relative to the tumor diameter.
23. RETROSPECTIVE REVIEW OF TRANSJUGULAR LIVER BIOPSY IN PATIENTS WITH LEFT LOBE ONLY LIVER TRANSPLANTS
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Las Vegas, NV

BACKGROUND: Transjugular liver biopsy (TJLB) is an accepted technique for obtaining histologic samples from patients when percutaneous biopsy is considered either technically very difficult or high risk. The transjugular biopsy technique reduces the risk of bleeding following biopsy since the sample can be obtained without puncturing the hepatic capsule. Therefore, TJLB is often used for patients who are at a higher risk for complications following standard percutaneous biopsy, which includes patients who are obese, have underlying bleeding disorders, or ascites. TJLB is frequently performed in patients who have undergone liver transplantation to assess for post-operative complications, including rejection, drug toxicity, graft ischemia, infection, and cholestasis. Furthermore, transplant patients with graft dysfunction frequently have risk factors (ascites, coagulopathy, thrombocytopenia) that can render percutaneous biopsy hazardous.

The most common approach in patients with whole livers is to sample the tissue via the right hepatic vein with an anteriorly directed needle pass, reducing the risk of puncturing the hepatic capsule.

In patients with left-lobe-only liver transplants, however, this approach is not possible and the technique must be modified to ensure a safe location and trajectory for a left lobe biopsy. It remains unknown whether the safety and efficacy of the TJLB procedure are similar for adults receiving a left-lobe transplant.

METHODS: With the increase in left-lobe-only transplant recipients in our practice, we retrospectively reviewed 28 left-lobe TJLBs performed via puncture of a left hepatic vein branch and compared them to 30 whole-liver right-hepatic vein TJLB procedures performed over a 4-year period. Cases were evaluated for procedural and post-surgical complications, hematocrit levels, liver function tests, pathology results (acute or chronic rejection), and biopsy adequacy (specimen size, number of passes, number of portal tracts). Data for our results was analyzed in Excel.

RESULTS: The pathology report revealed 21 left-hepatic vein samples containing portal tract information, 16 of which fulfilled the minimum requirement of ≥5 portal tracts (76%). Further, 14 of 21 samples provided a definitive diagnosis (67%). In contrast, 24 of 26 (94%) right-hepatic vein samples were identified with ≥5 portal tracts and 25 samples (96%) included a definitive diagnosis. Post-procedural complications following left-lobe TJLB included one case of bleeding with hematocrit drop and spiked fever as well as two patients who became febrile, one of whom was also positive for bacterial infection. Of the whole-liver TJLB group, one patient underwent bleeding complications and multiple infectious problems. Overall, our data revealed similar post-procedural results when comparing the left hepatic vein and right hepatic vein approaches, suggesting that the two procedures are equivalent in terms of major complications.

CONCLUSION: Despite the small sample size of our study, this suggests that a modified TJLB via the left hepatic vein is a safe and effective method in left-lobe only transplant patients where the traditional TJLB approach is not possible. Provided that the operator is aware of the patient anatomy and important changes are made to the standard TJLB, the left-hepatic vein approach yields adequate samples and appears to have a safety profile similar to the standard right-hepatic vein technique.
24. MALIGNANT MELANOMA IN A RURAL STATE: BIOPSY TECHNIQUE AND SUBSEQUENT CARE
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Grand Forks, ND

BACKGROUND: Background: The incidence of malignant melanoma has increased in the state of North Dakota from 15.7 cases per 100,000 population in 2006 to 27 cases per 100,000 population in 2011. Surveillance of suspicious skin lesions is performed by a variety of different provider types throughout the state. Adequate excision of melanomas whether achieved via initial excisional biopsy or appropriate referral for operative excision is vital to achieve optimal locoregional control on the disease. Depending on the thickness of the lesion, further management with sentinel lymph node biopsy or dissection may be warranted as well. This study evaluated the types of providers and initial biopsy results for malignant melanoma in a rural state. In addition the adequacy of treatment after biopsy was analyzed.

METHODS: Methods: All patients with pathologic diagnoses of malignant melanoma at a community hospital in a rural state between January 2012 and December 2014 were included in this study. Clinical records and pathology reports were analyzed for initial biopsy type and margins, final excision margins, provider performing excision, and follow-up care after initial excision. Final excision margins and follow-up care were compared to NCCN guidelines for appropriateness.

RESULTS: Results: 33 different providers performed a total of 86 biopsies which resulted in a new diagnosis of malignant melanoma during this time period. Five were eliminated from the study for the following reasons, metastatic lesion – 3, subsequent diagnosis of benign nevus – 1, inadequate pathology – 1. Of the 81 evaluable biopsies 31(38%) were performed by nurse practitioners or physician assistants in specialties of dermatology, family medicine, internal medicine and otolaryngology. The remaining 50 biopsies (62%) were performed by physicians in the specialties of dermatology, family medicine, general surgery, plastic surgery, internal medicine and podiatry. 44 (54%) of initial biopsies had positive margins. Two patients did not have follow-up data due to referral to an outside facility. Analysis of follow-up for 79 patients revealed that 71 (90%) had appropriate care as recommended by NCCN guidelines. 7 patients (9%) either declined appropriate care due to comorbidities (5, 6%) or were not offered appropriate care due to extremes of age and dementia (2, 3%). One patient (1%) was not documented to have been offered or receive appropriate care per NCCN guidelines.

CONCLUSION: Conclusion: Biopsies of malignant melanomas are performed by a wide variety of providers with more than one third performed by mid-level providers. Despite a high rate of margin positivity on initial biopsy almost all patients diagnosed with malignant melanoma in a rural setting received subsequent appropriate care as recommended by current NCCN guidelines.
**QUICK SHOT ABSTRACTS (cont.)**

25. **UTILIZATION OF EMERGENCY DEPARTMENT CARE BY CANCER PATIENTS IN THE UNITED STATES**
AA Shah MD, R Gray MD, B Pockaj MD, N Wasif MD MPH
Phoenix, AZ

**BACKGROUND:** Utilization of emergency department (ED) services by cancer patients has not been well studied. Our primary objective is to identify common reasons for ED visits in patients with cancer and identify predictors for subsequent admission.

**METHODS:** The Nationwide Emergency Department Sample (2009-2012) was queried for patients with a diagnosis of malignant cancers (ICD-9-CM diagnosis codes; 140-208.9, 238.4, 289.8) as a secondary diagnosis. Of these the five most common cancers in the United States, as identified by the American Cancer Society, were identified. Primary diagnosis codes were examined for common reasons for presentation to the ED. Descriptive analysis was then performed to describe patient demographics, payor status, discharge disposition, hospital characteristics and outcomes. Multivariable logistic regression analyses for inpatient admission were used to identify risk factors from among the following domains age, gender, insurance status, income, comorbidities and year of admission for all cancer patients and for each of the commonest cancers (Table).

**RESULTS:** A total of 2,279,822 records were analyzed representing 2% of ED visits and weighted to represent 10,178,361 visits nationally. Mean age was 63.9 (±17.9) with a slight female dominance. Medicare was the primary payor for 55.6% and Medicaid for 12.5%, whereas 24.1% had private insurance. Of the 5 most common cancers, patient with lung cancer comprised 11.8% of ED visits followed by prostate cancer (6.5%), breast cancer (5.7%), cancer of the colon and rectum (4.6%), and bladder cancer (1.9%). Around 65.0% were admitted to the hospital and 31.1% were discharged from the ED. Geriatric patients and those in the highest income quartile are at higher risk of hospital admission. However, female patients, the uninsured and those visiting on the weekends were less likely to be admitted to the hospital (Table). The five most common reasons for ED visits included pneumonia (3.5%), abdominal pain (3.5%), urinary tract infection (2.1%), acute exacerbation of chronic bronchitis (1.7%) and acute kidney injury (1.6%). Mortality was 0.4% and 4.0% in the ED and inpatient, respectively. Amongst the five most common cancers, patients with lung cancers (OR[95%CI]: 2.07[2.04-2.10]) had the highest odds likelihood of admission followed by patients with bladder cancer (OR[95%CI]: 1.71[1.67-1.75]) and colorectal cancer (OR[95%CI]: 1.50[1.47-1.52]).

**CONCLUSION:** Cancer patients represent an important patient demographic treated in the ED every year. The results of this study help identify the spectrum of clinical conditions cancer patients present with. Recognizing patients at risk for admission can help expedite ED triage to reduce wait times, ensure timely healthcare delivery and identify potentially avoidable admissions.
QUICK SHOT ABSTRACTS  (cont.)

26. TREATMENT PATTERNS, TRENDS, AND OUTCOMES OF OCTOGENARIANS UNDERGOING GASTRECTOMY PERFORMED FOR MALIGNANCY
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BACKGROUND: Our aim is to determine the outcomes of gastrectomy performed for malignancy and the variation of treatments associated with advanced age (≥80).

METHODS: Review of the National Surgical Quality Improvement Program participant user database was performed from 2005-2011. Patients who underwent gastrectomy for malignancy were identified using ICD-9 codes.

RESULTS: Of 2,591 cases, 487 patients were octogenarians. Octogenarians had higher 30-day mortality (7.2% vs 2.5%, p<0.01) and more major complications (31.4% vs 25.5%, p<0.01), though fewer octogenarians underwent total gastrectomy (24.0% vs 43.2%, p<0.01) and extended lymphadenectomy (10.1% vs 17.4%, p<0.01). On multivariate analysis, age ≥ 80 was associated with major complications (OR 1.3, 95% CI 1.03-1.6, p=0.03) and increased mortality (OR 3.0, 95% CI 1.9-4.9, p<0.01). Overall, 4.9% of patients had disseminated cancer. However, only 0.8% of octogenarians and 1.4% of non-octogenarians underwent a possible staging operation prior to gastrectomy.

CONCLUSION: Octogenarians experienced nearly 3 times the rate of 30-day mortality compared non-octogenarians. Diagnostic laparoscopy as a separate staging procedure is underutilized. Careful staging may reduce unnecessary operation in a population with high perioperative morbidity and mortality.
27. SURVIVAL IS INCREASED IN PATIENTS DEVELOPING SEVERE WEIGHT LOSS AND MALNUTRITION DURING CONCOMITANT CHEMOTHERAPY AND RADIATION THERAPY FOR ADVANCED OPERABLE STAGE III AND IV SQUAMOUS CELL CARCINOMA OF THE HEAD AND NECK

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BACKGROUND: Severe weight loss with calorie-protein malnutrition is a common complication of combined chemotherapy/radiation therapy regimens in advanced operable head and neck cancer. It is because of this therapeutic morbidity that enteral feeding tubes are placed frequently. However, whether or not nutritional derangements impair treatment is not clear from current literature. The objective of this study was to determine whether or not excess weight loss during chemo-irradiation adversely affects outcomes.

METHODS: Records of 49 patients with Stage III and IV, clinically operable squamous cell carcinoma of the head and neck (SCCHN) who underwent high-dose radiotherapy and concomitant chemotherapy (cisplatin, 20mg/M2 four consecutive days during weeks 1, 4, and 7 of radiotherapy) (CTRT) were examined retrospectively in two groups: <7.5% weight loss in three months (Adequate nutrition; n=9) and >7.5% weight loss (Inadequate nutrition; n=40), per NIH/ASPEN/AND definitions of severe malnutrition. Data included tumor site, grade, stage, CTRT toxicity, response (CCR = Clinical Complete; HCR = Histologic Complete with no residual tumor), surgeries performed, recurrence, survival, and Disease status upon expiration. Statistics were by Chi-squared, ANOVA, and Kaplan-Meier.

RESULTS: Per study design, % weight loss was significantly greater in the Inadequate group than Adequate (-17.23% ± 7.90% versus -2.11% ± 4.04%, p<0.0001). Pre-CTRT age, primary tumor site, Stage, tumor grade, and toxicity to CTRT did not vary significantly between Adequate and Inadequate. CCR was achieved in 5/9 (56%) of Adequate patients and in 30/40 (75%) of Inadequate. HCR was identified in 5/5 Adequate and 30/30 Inadequate CCR patients who underwent post-CTRT biopsy. Major cancer operations were required in 1/9 (11%) of Adequate patients, and in 2/40 (5%) of Inadequate. SCCHN recurred in 4/9 (44%) of Adequate and 12/40 (30%) of Inadequate patients. All recurrences were local. Median survival time was 12.5 months for Adequate patients and 83.8 months for Inadequate patients (p<0.002). Kaplan-Meier curves are displayed in the Figure.

CONCLUSION: The results of this study indicate that those patients who develop clinical malnutrition and severe weight loss during CTRT for advanced Stage III and Stage IV SCCHN have an increased Overall Survival as well as Disease Free Survival (p<0.002 for both). While the Overall survival is increased the need for radical surgery is not increased in patients with severe weight loss. Though not significant, CCR, HCR, and recurrence all were numerically superior among Inadequate patients than in the Adequate cohort. These findings suggest a biologic interaction between CTRT-related host malnutrition and SCCHN tumor viability.
28. THE EFFECT OF PREOPERATIVE NUTRITIONAL STATUS ON POSTOPERATIVE COMPLICATIONS AND OVERALL SURVIVAL IN PATIENTS UNDERGOING PELVIC EXENTERATION: A MULTI-DISCIPLINARY COHORT OF PATIENTS AT TWO LARGE INSTITUTIONS
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BACKGROUND: Pelvic exenteration (PE) is a radical procedure that removes most or all of the pelvic organs and is commonly reserved for patients with recurrent or locally advanced pelvic malignancies. The extensive nature of the procedure and the restrictive anatomic boundaries of the pelvis have resulted in high morbidity and mortality in previous studies. Optimization of nutrition has been recommended and associated with improved outcome for other oncologic procedures but has not been specifically studied in patients undergoing PE. The purpose of our study was to elucidate the effect of preoperative nutritional status on morbidity and survival in patients undergoing pelvic exenteration. Our hypothesis is that malnutrition is associated with increased complications and worsened survival.

METHODS: A retrospective chart review was performed in patients who underwent pelvic exenteration at the University of Colorado and the Ohio State University from January 2000 to January 2014 and from January 2002 to January 2015, respectively. Patient demographics, operative characteristics, postoperative morbidity, mortality and overall outcome was recorded. Overall survival was calculated using the Kaplan-Meir method. Chi-square test was used on clinicopathologic characteristics and multivariate analysis was performed with Cox proportional hazards. A p < 0.05 was considered statistically significant.

RESULTS: One hundred ninety-seven patients underwent pelvic exenteration with 61 (31%), 78 (40%), and 58 (29%) patients having colorectal, gynecologic, and urologic histology, respectively. Forty-eight patients (24) were male with a median age of 55 years. The median length of follow-up was 13 months (range 1-152 months). Poor nutritional status (albumin < 3.5 mg/dl) was associated with increased incidence of any postoperative complication (87.1% vs 72.4%, p=0.022) but it was not associated with 90-day mortality (9.7% vs 6.0%, p=0.362). Albumin < 3.5 mg/dl was also associated with improved long-term survival (HR 1.74; 95% CI 1.15-2.64). Median overall survival following pelvic exenteration was 25 months with 1-year, 2-year, and 5-year overall survival of 66.7%, 51.4%, and 33.5%, respectively.

CONCLUSION: Poor preoperative nutritional status is associated with increased complications and decreased overall survival in patients undergoing pelvic exenteration. More study is needed to determine the potential benefit of nutritional optimization in patients undergoing radical pelvic surgery.
29. PROTOCOL DRIVEN MANAGEMENT OF SUSPECTED COMMON DUCT STONES REDUCES LENGTH OF HOSPITALIZATION RN
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BACKGROUND: Options for the diagnosis and management of common bile duct stones are varied. In addition, the choice and timing of these approaches are employed with variable results. Our own Acute Care Surgery group had significant variation in use of preoperative magnetic resonance imaging, timing of endoscopic evaluation, and intra-operative cholangiogram for the management of suspected common duct stones. In 2015, our group adopted a standard approach of initial laparoscopic cholecystectomy with intra-operative cholangiogram followed by postoperative endoscopic evaluation and management for all patients with common duct stones identified on intraoperative cholangiogram. Exclusions to this approach included admission bilirubin >4 mg/dL, clinical suspicion of malignancy based on pre-operative imaging, and surgically altered anatomy precluding endoscopic management (i.e. gastric bypass).

METHODS: A retrospective comparison of protocol and pre-protocol (historical control) patients was performed with regard to demographics, presence of pancreatitis, elevation of liver function tests, elevation of bilirubin, comorbidities, length of hospitalization, postoperative morbidity and readmission. The two groups were analyzed for continuous variables as described with mean (standard deviation; if approximately normal) or median (min-max; if not normal). Exact Chi-square tests were used to compare nominal variables by treatment group. Exact Kruskal-Wallis tests were used to compare ordinal variables by treatment. A two-sample t-test was used to compare normal variables by treatment. Wilcoxon-Rank-Sum test were used for comparison of non-normal variables.

RESULTS: There were 45 protocol and 46 baseline patients with a mean age of 54 years (SD +/-19) and 50 (SD +/- 21) years respectively (p=0.3033). There were no significant differences between baseline and protocol patients with respect to preoperative comorbidities, pancreatitis, elevation of liver function tests, bilirubin, common duct size, and postoperative morbidity. There were fewer endoscopies in protocol patients: 16(35%) vs 23(50%), but not statistically different. Length of stay was shorter following adoption of the protocol (mean 2.89 +/-2; median 3, lower quartile 2, upper quartile 4) compared to baseline patients (mean 3.87 +/- 2.54; median 3, lower quartile 2, upper quartile 5) (p<0.0240).

CONCLUSION: Protocol driven management of patients with suspected common duct stones resulted in a significant reduction in length of hospitalization, but no change in postoperative outcomes. This approach has the potential to decrease cost of care without affecting quality of care.
30. THE DIFFICULT GALL BLADDER: OUTCOMES FOLLOWING LAPAROSCOPIC CHOLECYSTECTOMY AND THE NEED FOR OPEN CONVERSION
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BACKGROUND: Surgery for the difficult gallbladder (DGB) is associated with increased risk compared to more routine laparoscopic cholecystectomies (LC). Laparoscopic “damage control” methods including cholecystostomy, fundus-down approach and subtotal cholecystectomy have been proposed to avoid conversion to open. We hypothesized that completion LC for DBG can be accomplished safely with an acceptably low conversion rate.

METHODS: All patients that underwent LC from January 2005 – June 2015 were retrospectively reviewed. Cases met criteria for DGB if they were necrotic/gangrenous, involved Mirizzi syndrome, had extensive adhesions, were converted to open, lasted more than 120 minutes, had prior tube cholecystostomy or known GB perforation.

RESULTS: A total of 2212 patients underwent LC during the study time period, of which 351 (15.8%) met criteria for DGB. Of these cases, 213 (60.7%) were admitted from the emergency department and 67 (19.1%) underwent urgent/emergent cholecystectomy (within 24 hours). Additionally 18 (5.1%) had pre-operative tube cholecystostomies. Seventy patients (19.9%) were converted to open. Indications for conversion included severe inflammation/adhesion (n=31, 46.3%), difficult anatomy (n=14, 20.9%) and bleeding (n=6, 9.0%). Predictors for conversion included urgent/emergent intervention (OR, 0.80; 95% CI 0.351-3.881, p=0.032), previous abdominal surgery (OR, 2.18; 95% CI, 1.181–4.035, p=0.013) and necrotic/gangrenous cholecystitis (OR, 1.92; 95% CI, 0.918-4.044, p=0.033). Comparing the completion LC and the conversion groups, mean operative time and length of hospital stay were significantly different; 147±47 minutes vs 185±71 minutes; p<0.005 and 3±2 days vs 5±3 days; p=0.011, respectively. There was no significant difference in postoperative hemorrhage, subhepatic collection, cystic duct leak, wound infection, reoperation and 30 day mortality. There was no bile duct injury in either group.

CONCLUSION: Completion laparoscopic cholecystectomy can be safely performed in difficult gallbladder situations with a lower conversion rate than previously reported. Possible predictors of conversion include urgency, necrotic gallbladder and history of prior abdominal surgeries. For patients converted to open, similar morbidity and mortality can be expected.
31. PREDICTORS OF EMERGENCY HERNIA REPAIR
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BACKGROUND: Emergency hernia repair increases patient morbidity and mortality when compared to elective hernia repair. However, little is known about which hernia features place patients at increased risk for acute incarceration. We hypothesize that (1) large hernias do not present acutely due to potential bowel complications (incarceration, strangulation, or obstruction) and (2) radiographic features can identify hernias at risk for acute presentation.

METHODS: This single institution, case-matched study assessed all patients who underwent emergent hernia repair due to potential bowel complications from 2009-2015. These cases were matched 1:1 with randomly selected elective controls. Demographic data and comorbidities were recorded. CT scans within one year prior to surgery were reviewed to determine hernia width, length, area, smallest angle between the fascia and hernia sac (hernia angle) and sac height. Univariate and multivariable stepwise logistic regression analyses were performed to identify variables associated with emergent surgery.

RESULTS: A total of 145/2181 (6.6%) patients underwent emergent hernia repair of which 88 (61%) were for potential bowel complications. The study cohort (n=176) consisted of these 88 patients and their matched controls. On univariate analysis, older age, higher American Society of Anesthesiologists (ASA) score, elevated body mass index (BMI), cirrhosis and ascites, larger hernias (hernia width, length, and area), small hernia angle, and taller hernias were associated with emergent surgery. On multivariate analysis, elevated BMI, cirrhotic ascites, larger hernia area, smaller hernia angle, and taller hernias were independently associated with emergent surgery (Table 1).

CONCLUSION: The traditional teaching that large defects do not present acutely due to bowel involvement is not true; hernias of all sizes can present emergently with potential bowel compromise. Both patient characteristics and radiologic features of the hernia, such as greater hernia sac height and smaller hernia angle (mushrooming hernia) may be associated with acute presentation. Early elective repair should be considered for patients with hernia features concerning for an increased risk of bowel incarceration, strangulation, or obstruction.
32. ACUTE CARE SURGERY: TRAUMA, CRITICAL CARE, EGS.....
AND PREVENTATIVE HEALTH?
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BACKGROUND: Acute care surgeons routinely care for a unique set of patients who may have limited access to the healthcare system outside of emergency encounters. These patients may not participate in typical preventative screenings/interventions (PSI’s) such as mammography (MO), colonoscopy (CO), or pneumococcal vaccinations (VA). In this study, we sought to investigate the compliance rate with nationally established PSI’s at our urban Level I trauma center, identify any related barriers, and determine if acute care surgeons have an opportunity to facilitate the long term care of this patient population.

METHODS: Over the study period, all patients evaluated by the acute care surgery service were considered for inclusion in the study. Patients who met national PSI inclusion criteria were prospectively enrolled after informed consent was obtained. Surveys were administered to patients to assess their compliance with PSI recommendations and identify any barriers to participation.

RESULTS: During the study period, the overall compliance rate with PSI’s was 59%. Individually, the compliance rate for MO, CO, and VA were 66%, 53%, and 66% respectively. Patients without a primary care physician had a compliance rate of 32%. The most commonly cited reason for non-compliance was lack of knowledge of the PSI recommendations (41%). Cost was not a significant barrier (16%). Males were twice as likely to be noncompliant when compared to females.

CONCLUSION: At our urban Level I trauma center, acute care surgeons evaluate a large number of general surgery and trauma patients. These patients frequently only access the healthcare system for emergencies, do not have primary care physicians, and are non-compliant with or unaware of national PSI recommendations. The acute care surgeon-patient encounter may represent a valuable opportunity for education and improved PSI compliance. Additional research should focus on developing interventional strategies and evaluating their impact on patient outcomes.
33. INDICATION-SPECIFIC OUTCOMES FOR DAMAGE CONTROL LAPAROTOMY: A DESCRIPTIVE STUDY
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BACKGROUND: Indications for damage control laparotomy (DCL) have become more liberal as evidenced by rates of DCL approaching 36% in large, single-center studies. Indication-specific outcomes for indications other than packing have not been reported.

METHODS: Following IRB approval, a retrospective cohort study was conducted for all patients admitted from January 1, 2011 through June 30, 2015 who underwent emergent laparotomy – defined as initial laparotomy with admission to the operating room directly from the emergency department (ED) or interventional radiology (IR). We then evaluated those patients undergoing DCL and grouped them according to the documented indication for DCL. Once grouped, the indication-specific outcomes were determined.

RESULTS: Over the time period, 935 patients underwent emergent laparotomy, with 304 (33%) undergoing DCL. This group was young (median age 37 years, IQR [24, 51]), mostly male (76%), and mostly suffered blunt trauma (70%). The breakdown by documented indication for DCL was: 186 (61%) packing, 45 (15%) hemodynamic instability, 42 (14%) second look, 16 (5%) expedite ICU/CT, 8 (3%) contamination, and 7 (2%) abdominal compartment syndrome (ACS) prophylaxis. Hemodynamic instability had a heterogeneous definition with the most severely ill being defined as having persistent hypotension (15 patients, mortality 80%). Other definitions include ongoing transfusion (5 patients, mortality 20%), acidosis (21 patients, mortality 10%), and unclear (4 patients, mortality 25%). DCL for a second look was most commonly used to evaluate for delayed intestinal ischemia. Additional small bowel ischemia was found in 5/28 (18%) cases and the eventual suture line failure rate for those with and without additional ischemia was 33% and 0%, respectively. Additional large bowel ischemia was found in 4/20 cases (20%) with an eventual suture line failure rate of those with and without ischemia 67% and 14%, respectively. Sixteen patients underwent DCL to expedite transfer to CT or the ICU, all of which were performed due to concern for (12 [75%]) or known head injury (4 [25%]). Of all these patient, 1 (13%) had no TBI, 2 (25%) had non-survivable TBI, and 9 had an ICP monitor placed, only one of which required significant medical therapy for elevated ICP. None underwent emergent decompression. Of the 8 who underwent DCL for contamination, 4 (50%) developed an organ/space surgical site infection (3 contaminated cases, 1 dirty case). Of the 7 who underwent DCL for ACS prophylaxis, none developed ACS and all 7 underwent delayed fascial closure.

CONCLUSION: In patients undergoing DCL for indications other than packing, the indications second look, to expedite transport to CT/ICU, and contamination appear to provide questionable indication-specific benefit. The indication ACS prophylaxis appears to result in consistently beneficial indication-specific outcomes. Hemodynamic instability is variably defined, but patients requiring continuous vasopressors and having persistent hypotension at the end of the case appear to be the most physiologically deranged and have the highest mortality.
34. SURGICAL COMPARED WITH CONSERVATIVE TREATMENT FOR BILIARY TRACT DISEASE IN PREGNANCY
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BACKGROUND: Biliary tract disease secondary to cholelithiasis is a common occurrence during pregnancy. Cholecystectomy, particularly if performed during the second trimester, is a safe treatment option associated with less recurrence of symptoms and return emergency department visits than conservative non-operative approaches. Our objective was to compare outcomes among pregnant patients with biliary tract disease managed surgically versus conservatively.

METHODS: We performed a 6-year retrospective cohort analysis of pregnant patients undergoing evaluation for biliary tract disease by the acute care surgery service at a university-affiliated medical center.

RESULTS: There were 54 patients identified: 23 (43%) patients had acute cholecystitis, 20 (37%) had symptomatic cholelithiasis, 5 (9%) had gallstone pancreatitis, and 6 (11%) had choledocolithiasis. There were significantly more patients in the surgical treatment group than conservative treatment group with complicated biliary tract disease, defined as those with acute cholecystitis, gallstone pancreatitis, or choledocolithiasis, (87% vs. 53%, P=0.03). Five patients (12.5%) initially treated conservatively eventually required cholecystectomy during pregnancy, and 11 (32%) of the remaining patients underwent cholecystectomy within a year of delivery. There was a trend toward decreased emergency department visits in the surgical treatment group, (1.3 vs. 1.7, P=0.09). There were no significant differences in patients’ presenting clinical factors, laboratory values, or ultrasound characteristics. Four patients eventually underwent operation in the 1st trimester without complication, 10 in the 2nd trimester with one conversion to open, and 6 in the 3rd trimester of which 2 were open, one required emergent C-section postoperatively due to fetal bradycardia, and one was re-admitted due to poor pain control.

CONCLUSION: Patients presenting with complicated biliary tract disease were more likely to undergo cholecystectomy. Furthermore, cholecystectomy in the first 2 trimesters appears to be safe, while in the third trimester data is not convincing. Conservative treatment may be a reasonable option in patients with complicated biliary tract disease presenting in the third trimester or in those presenting at any time with symptomatic cholelithiasis.
35. A RETROSPECTIVE CHART REVIEW OF A NOVEL BIOSYNTHETIC POLY-4-HYDROXYBUTYRATE MESH IN THE REPAIR OF GRADE 3 AND 4 ABDOMINAL HERNIAS

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BACKGROUND: Abdominal hernia repairs are associated with high rates of infection and recurrence. These rates are further increased in the setting of Grade 3 and 4 hernias, and with higher surgical wound class. Biologic mesh is often selected for use with hernias in the setting of contamination. Although biologic mesh resists infection, absorbable characteristics predispose to hernia recurrence as compared to synthetic mesh. A novel poly-4-hydroxybutyrate (P4HB) mesh may provide improved strength while resisting infection.

METHODS: Thirty cases of abdominal hernia repair with a P4HB mesh over a 30 month period were retrospectively analyzed for short-term clinical outcomes. Each case was assigned a hernia grade according to the Ventral Hernia Working Group (VHWG) system. They were assigned a surgical wound class by Centers for Disease Control and Prevention (CDC) guidelines and a preoperative physical status according to the American Society of Anesthesiologists (ASA). We analyzed our dataset for comorbidities and postoperative complications. Wound infections were categorized by the CDC definitions of surgical site infection (SSI). Fisher exact probability test was used for analysis of nonparametric data.

RESULTS: Patients had a mean age at surgery of 65.2 (sd 11.5) years. Women accounted for 57% of the patients. Mean BMI was 27.7 (sd 5.9). Mean follow-up time was 5 months (sd 7). A stoma was present in 66% of cases during mesh placement. Patients were ASA 1, 2, 3, or 4 in 3.3%, 63.3%, 20%, and 13.3% of cases, respectively. Thirty-three percent had a smoking history. Cases were clean, clean-contaminated, contaminated, and dirty in 6.6%, 23.3%, 60%, and 10% of cases respectively. VHWG grade was 90% grade 3 and 10% grade 4. Hernias were ventral, perineal, and parastomal in 57%, 13%, and 30% of cases, respectively. There were no mesh erosions. SSI occurred in 0% of the ventral hernia repairs, 33% of parastomal hernia repairs, and in 25% of perineal repairs (p=0.03). Site of infection was superficial in 50%, deep in 25%, and at the organ space level in 25%. The overall SSI rate was 13%. All SSI occurred in patients with a stoma present at the time of mesh placement although this was not significant (p=NS). Mesh did not require explantation for SSI. Hernia recurrence was 6.6% identified at an average 13 months after placement. Mesh was replaced for recurrence in 3.3%.

CONCLUSION: A P4HB mesh can be used for hernias in the setting of contamination. SSI occurred more frequently in perineal and parastomal hernia repairs compared to ventral hernia repair. P4HB mesh did not require explantation for SSI despite use in frequently contaminated conditions. There were no mesh specific morbidities. Short-term hernia recurrence and explantation were low. Further studies must be conducted to assess the long-term outcomes of this novel biosynthetic mesh.
36. THROMBELASTOGRAPHY AND PLATELET RESPONSE TO ASPIRIN IN HEALTHY ADULTS
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BACKGROUND: High maximum amplitude (MA) values on thrombelastography (TEG) reflect hypercoagulability and increased clot strength. These factors are associated with increased risk for pulmonary embolism (PE) after trauma. Current prophylaxis drugs target plasma proteins in the early stages of clot formation but do not address the platelet contribution. As platelets are dominant contributors to clot strength, there may be a larger role for the early use of antiplatelet therapy for thromboprophylaxis in trauma patients. In this study we measured changes in coagulation and platelet function in healthy adults following a single dose of aspirin.

METHODS: Healthy adults were randomly assigned to receive a single dose of either 81mg or 325mg non-enteric coated chewable aspirin. Blood samples were collected immediately before and 90 minutes after aspirin was taken. Coagulation was measured using rapid TEG and platelet function was measured after arachidonic acid-induced platelet aggregation using Multiplate® aggregometry.

RESULTS: Fifteen subjects participated in the study; 8 received aspirin 81mg and 7 received aspirin 325 mg. A treatment effect and dose-response with aspirin was observed (p<0.05) with aggregometry. Area under the curve was reduced by 48% with 81 mg (61.8 vs. 32.2; p=0.003) and 83% with 325 mg (64.0 vs. 11.0; p=0.002). No significant changes in coagulation were detected in MA at either dose.

CONCLUSION: Antiplatelet agents inhibit platelet aggregation and have proven effective in reducing morbidity and mortality in cardiovascular disease. As expected, rapid TEG MA was not sensitive for measuring aspirin-mediated platelet inhibition. However, Multiplate® aggregometry demonstrated a dose-response effect to aspirin within 90 minutes of administration. Multiplate® aggregometry may be a valuable tool to help guide future therapy with antiplatelet agents as part of a multimodal approach to thromboprophylaxis in high-risk trauma patients.
37. OUTCOMES FOR ELDERLY TRAUMA PATIENTS WITH TRACHEOSTOMIES: AS GOOD AS THEIR YOUNGER COUNTERPARTS
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BACKGROUND: Aging Americans are a growing demographic in Trauma Centers around the United States and the need for tracheostomy placement in that population is met with some hesitation from patients, family members, and clinical providers as outcomes in this population have never been well described. We wanted to examine our trauma population, specifically those 65 and older as compared to their younger cohorts, to better understand their clinical outcomes to help patients and families make the most informed decisions about their care.

METHODS: We queried our trauma database as well as the electronic medical records for all trauma patients who underwent tracheostomy from 2005 to November 2014. We compared two groups of patients, those 65 and older (65+) and those less than 65 (<65). We compared demographic data, injury mechanism and severity, as well as specific injury patterns and severity by body part, most notably head, face, and chest. We also compared each group's clinical outcomes, most notably mortality, ICU and hospital length of stay (LOS), ventilator days, discharge location, as well as payor mix for each group. Statistical analysis was done with SAS (version 9.3).

RESULTS: 499 patients underwent tracheostomy, 419 patients <65, 80 patients 65+.
The younger group of patients had worse clinical presentations than the older group, most notably GCS (8 vs 11, p<.0001), ISS (32 vs 26, p=.0001), ISS >=16 (91% vs 78%, p=.0002), Abbreviated Injury Scale (AIS) Head (3.7 vs 2.3, p<.0001), AIS Face (.87 vs .28, p=.0001), and intubation in the ED (92% vs 83%, p=.005). The average age of the younger group was 38 vs 75 in the older group, p<.0001. The older group spent more time in the ICU (19 vs 16 days, p=.03), but no more time on the ventilator (13 days vs 11 days, p=.22), and spent less overall time in the hospital than the younger group (25 days vs 33 days, p<.0001). There was no difference in mortality between the groups. The groups had the same percentage of self-pay patients (13% vs 14%, p=.85) but the older group had a much higher percentage of Medicare/Medicaid-covered patients (46% vs 10%, p<.0001) and were more likely to be discharged to an acute care facility or residential facility than the younger group (62% vs 38%, p<.0001).

CONCLUSION: Elderly trauma patients who undergo tracheostomy have a similar survival and spend less overall time in the hospital than their younger counterparts. Tracheostomy in elderly trauma patients is a safe procedure with a low mortality and may contribute to a decreased hospital stay.
39. DISTRACTING INJURY DEFINED: DOES AN ISOLATED HIP FRACTURE CONSTITUTE A DISTRACTING INJURY FOR CLEARANCE OF THE CERVICAL SPINE?
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BACKGROUND: Clearance of the cervical spine in trauma patients is a well-validated topic in current literature. Use of the National Emergency X-Radiography Utilization Study (NEXUS) Low-Risk Criteria has been developed to prevent unnecessary cervical spine imaging in low-risk trauma patients. The concept of a distracting injury, which is one of the clinical rules in NEXUS, is not well defined. This study’s objective is to determine if an isolated hip fracture constitutes a distracting injury which would require further imaging of the cervical spine.

METHODS: Data was prospectively collected on 90 trauma patients admitted between April 1, 2015 and October 27, 2015. Patients were included if they had femoral neck or shaft fractures without other significant injuries. The patients were compared to a national cohort of blunt trauma patients with an established rate of cervical spine injury determined by the NEXUS validation study. Injury severity score (ISS), age, and mechanism of injury were analyzed and the absolute risk reduction and number needed to treat were calculated based on the prior study.

RESULTS: Patients with isolated hip fractures were on average 78.0 +/- 16.9 years old, and 92.3% of these injuries occurred from a fall from standing or sitting. The average ISS was 9.31 +/- 1.07. There was only one patient with both a hip and cervical spine fracture. Of note, this patient met no other NEXUS criteria to necessitate cervical imaging. When compared to the established rate of cervical spine injury of 2.4% amongst 34,069 blunt trauma patients in the NEXUS validation study, the absolute risk reduction was 1.3% (95% CI: -0.85% to 3.45%). If obtaining cervical spine imaging on every patient with an isolated hip fracture and no other NEXUS criteria, 77 computed tomography scans would need to be conducted to capture one cervical spine injury.

CONCLUSION: Cervical spine injury has a low incidence in blunt trauma patients and even lower incidence among trauma patients with a low impact mechanism of injury. In our study, almost all of the isolated hip fracture patients had a low impact mechanism of injury and only one sustained a cervical spine injury. Further studies are needed to define the concept of a distracting injury. Based on our initial results, cervical spine imaging may be reserved for patients with isolated hip injury who also meet other NEXUS criteria for further workup.
QUICK SHOT ABSTRACTS (cont.)

40. DEMENTIA AS A PREDICTOR OF MORTALITY IN ADULT TRAUMA PATIENT
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BACKGROUND: Elderly trauma patients with multiple co-morbidities are at increased risk of severe disability and mortality. However, the specific contribution of dementia towards mortality in trauma patients is not well defined. The purpose of the study was to evaluate dementia as a predictor of mortality in trauma patients when compared to case-matched controls.

METHODS: A 5-year retrospective review was conducted of adult trauma patients with a diagnosis of dementia at an American College of Surgeons-verified level I trauma center. These dementia patients were matched with non-dementia patients on demographics (age group, race) and injury severity. Data included demographics, past medical history and comorbidities, medications on admission, injury severity score, GCS on admission, vital signs, injury details, complications, ICU admission, ICU length of stay, need for mechanical ventilation, ventilator days, need for tracheostomy, need for gastrostomy or PEG tube placement, comfort care, hospital length of stay, and mortality.

RESULTS: A total of 390 patients met study inclusion criteria. Mean age for dementia patients and non-dementia patients was similar (84.5 ± 7.5 vs. 83.8 ± 7.9 years). Median ISS was 9 for both populations. GCS at admission was 14 for dementia patients and 15 for non-dementia patients. Comorbidities were comparable between both groups. Non-spinal surgery was required in 15.4% and 17.6% in dementia and non-dementia patients, respectively. Regarding interventions: tracheostomy was required in only 1% of patients in either group; G-tube in 0.5% and 1% of patients in dementia and non-dementia groups, respectively; and PEG tube required in 3.6% of dementia patients and 5.7% of non-dementia patients. Complication rates were similar between groups (11.8% vs. 12.4%), with no differences in MI, DVT, PE, Pneumonia, or ARDS. Comfort care was initiated in 14.9% and 10.8% of dementia and non-dementia patients, respectively (P>0.05). ICU admission was similar for dementia patients and controls (66.2% vs. 59%, P>0.05). Median length of ICU stay was 2 days for both groups. Mechanical ventilation was required in 7.2% of patients for both groups. Mean ventilator days were higher in the control group with a median of 4.5 days compared to 1 day in dementia group (P=0.031). Hospital length of stay was similar with a mean of 3 days for both groups. Finally, mortality between both groups was the same (5.1%, P>0.05).

CONCLUSION: In our study, a diagnosis of dementia did not portend to higher mortality in the trauma patient population. Additionally, there does not appear to be any increased risk of complications, major morbidity, ICU days, need for mechanical ventilation, increased ventilator days, or greater hospital length of stay compared to case matched controls. It is possible that the extreme age of our population normalized our findings. Further studies are required to further delineate the significance of dementia in trauma populations.
41. GERIATRIC FOCUSED TRIAGE CRITERIA: IMPACT ON UNDERTRIAGE RATES AT AN URBAN TRAUMA CENTER
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BACKGROUND: Due to unique physiologic considerations and injury patterns, geriatric trauma patients (TQIP definition age ≥ 66 years) represent a challenging population. Difficulty in recognizing which patients need advanced care has resulted in a tendency toward undertriage. The objective of this study is to evaluate the impact of geriatric focused triage criteria on under-triage rates at an urban trauma center.

METHODS: A prospective study was performed to evaluate undertriage rates 6 months pre- (July 2014 – January 2015) and post-implementation (January 2015 – July 2015) of geriatric focused triage criteria at a level I urban trauma center. New activation criteria included: level 1 (full) – systolic BP < 110 mm Hg in patients age ≥ 65 years and level 2 (partial) all patients age ≥ 66 years with signs of traumatic injury.

RESULTS: Over the study period, 3908 critically injured trauma patients (pre – 1959 and post – 1949) were admitted to the hospital. Level 1 activations were 540 in the pre-period and 502 in post-period; level 2 & 3/no activations 1419 in pre-period and 1377 in post-period. The volume of level 2 activations doubled after changing activation criteria: level 1 = 542 patients (pre) and 502 patients (post) and level 2 = 375 patients (pre) and 698 (post) patients. There was no difference in overall undertriage rates in the pre- and post-change periods (269/1959, 19% vs. 261/1377, 19%, p=0.99) with median ISS = 22 in both groups. However, undertriage rates for geriatric patients increased from 14% to 22% (p=0.02). In undertriage geriatric patients, falls (pre- 66% vs. post-58%) and motor vehicle collisions (pre- 16% vs. post 30%) were the most common injury mechanisms. Traumatic brain injuries (TBIs) accounted for the majority of injuries in the undertriaged geriatric patients although there was no statistical difference in the cohorts before and after activation changes (21/38, 55% vs. 33/57, 58%, p=0.80, respectively). However, undertriaged patients with TBIs were nearly double in the geriatric group compared to patients < 65 years of age (64/204, 31% vs. 33/57, 58%, p< 0.01).

CONCLUSION: Age-specific trauma activation criteria alone may be inadequate to appropriately triage geriatric patients. In this study, geriatric focused triage criteria resulted in an increase in the level 2 activation volume but did not improve undertriage rates.
42. OUTCOMES IN PATIENTS AGES 65 AND OLDER WITH TRAUMATIC BRAIN INJURY
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BACKGROUND: Traumatic Brain Injury (TBI) is a devastating injury among the elderly population with mortality rate shown to be between 38-65%. Age has consistently been linked to higher mortality, but the association of GCS and comorbidities is less clear. This study attempts to evaluate the impact of age, GCS, ISS and comorbidities on mortality and discharge destination.

METHODS: A five-year retrospective review of the National Trauma Database (NTDB) was performed to identify patients 65 years of age and older who suffered a head injury with bleed. Data collection included demographics, hospitalization details and outcomes, and discharge destinations. Multinomial regression was used for the data analysis.

RESULTS: Of the 154,432 patients included in the study the majority were female (50.2%), Caucasian (87.6%), non-Hispanic (92.9%), with age distribution of: 65-74=31.0%, 75-84=41.4%, and ≥85=27.6%. The majority were moderately injured (ISS 1-15=31.2%, 16-24=42.3%, ≥25=26.6%) with high GCS scores (GCS 3-8=13.9%, 9-12=5.8%, 13-15=80.3%). Types of bleed were as follows: subdural hematoma=48.0%, subarachnoid hematoma=19.9%, epidural hematoma=1.9%, diffuse axonal injury=1.9%, intraparenchymal hemorrhage=0.9%, and other=27.5%. The most common comorbid conditions reported were: hypertension=47.4%, impaired sensorium=13.2%, respiratory disease=8.3%, diabetes mellitus=5.1%, bleeding disorder=2.6%, obesity=1.7%, congestive heart failure=1.5%, stroke=1.4%, history of myocardial infarction=1.1%, alcoholism=1.1%, requiring or on dialysis=0.2%, history of angina within 1 month=0.1%, and no comorbidity was reported for 13.6%. Overall mortality was 17.2%. Mortality was highest in patients that were older (age ≥85, 19.8%), more severely injured (ISS ≥25, 40.9%) and with lowest GCS (GCS=3-8, 64.4%). Mortality of those without any co-morbidities was lower (16.5%) than those with co-morbidities (requiring or on dialysis=32.6%, history of angina within 1 month=23.6%, bleeding disorder=23.1%, congestive heart failure=22.9%). Of those discharged to skilled nursing, mortality was increased due to history of angina within 1 month (31.5%), stroke (27.9%), or congestive heart failure (27.6%) as compared to those without comorbidity (18.3%). Predicted mortality was highest in those who were severely injured (ISS ≥25, 54.1% [95% CI 48.6% to 59.6%]), head injured (GCS=3-8, 60.0% [95% CI 54.6% to 65.4%]), older (age ≥85, 39.7% [95% CI 34.2% to 45.2%]), requiring dialysis=44.8% [95% CI 31.2% to 58.5%], with angina within 1 month=38.2% [95% CI 16.4% to 59.9%], with congestive heart failure=37.1% [95% CI 32.0% to 42.2%], and with history of heart failure=35.7% [95% CI 30.0% to 41.7%]. Predicted mortality increased with progressively lower GCS score.

CONCLUSION: Increased mortality was significantly associated with lower GCS after adjusting for age, ISS and four of the comorbidities studied. These factors should be considered in discussions with family in relation to treatment.
43. TAKE OUT THE TUBE! PATIENTS WITH AN OPEN ABDOMEN CAN BE SUCCESSFULLY EXTUBATED
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BACKGROUND: Modern care of the open abdomen has achieved high levels of fascial closure through serial operations. Many patients, by nature of their injuries, are quite ill and require prolonged intensive care, including mechanical ventilation. However, a subset of patients, require multiple operations to achieve abdominal closure but are otherwise stable. Concern for diminished respiratory mechanics and increased fascial tension had previously mandated intubation and sedation until fascial closure. For hemodynamically stable patients, we hypothesized that liberation from mechanical ventilation with an open abdomen would be safe and well tolerated.

METHODS: All trauma patients requiring an open abdomen at our academic, regional Level I trauma center from 2010-2014 were reviewed. Demographics, operative cases, intensive care unit management, and outcomes were analyzed for patients who were extubated prior to fascial closure. Patients extubated after placement of mesh or split thickness skin graft were excluded.

RESULTS: During the 5 year study period, 123 patients necessitating open abdomen management were identified. Seven patients were extubated prior to abdominal closure and comprised the study population. The mean age was 33 years (range 16-62). All 7 were trauma patients with a blunt mechanism in 4 and penetrating mechanism in 3. Mean ISS was 32 (range 16-59). Mean number of laparotomies was 4 with a mean of 3 occurring prior to extubation. Mean ventilator days were 3.6 (range 2-7). Six patients had partial closure of their fascia prior to extubation. At time of extubation, the laparotomy wounds were managed in all patients with white wound vac sponge over the viscera followed by overlying black wound vac sponge. Five patients had sutures placed in the fascia over the white sponge to prevent fascial retraction. Six patients achieved primary abdominal closure with one patient undergoing vicryl mesh reconstruction secondary to a traumatic abdominal wall hernia. No patient required reintubation and no patients had evisceration. All patients were discharged alive and discharge destination was home for five patients, acute rehabilitation for one patient, and a skilled nursing facility for one patient. At short term follow up, no patient that had a clinically identified hernia.

CONCLUSION: Extubating selected patients with an open abdomen appears to be safe with no incidences of reintubation. Six out of seven patients were able to achieve primary fascial closure. Further emphasis on extubating stable patients with an open abdomen is warranted, along with further study of specifics of closure technique, patient variables that portend successful extubation, and whether there is a reduction in pulmonary morbidity using this approach.
44. INITIAL SAFETY AND FEASIBILITY OF PRE-HOSPITAL TRANEXAMIC ACID IN TRAUMA PATIENTS.
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BACKGROUND: Trauma is one of the leading causes of death amongst people aged 16-35. First responders have limited resources for resuscitation of hemorrhagic shock. Tranexamic acid is an anti-fibrinolytic that inhibits the activation of plasminogen to plasmin, an enzyme that dissolves blood clots. Earlier administration of tranexamic acid to decrease trauma related mortality has been established by several trials. As an inexpensive pharmacologic agent, it may have a practical use in the pre-hospital setting of trauma-related hemorrhage.

METHODS: Our study was a prospective multi-center trial across San Bernardino and Riverside County to observe the immediate side effect profile of pre-hospital tranexamic acid administration as well as practicality of administration. Per our research driven protocol, emergency healthcare workers were trained and provided with the following inclusion criteria for tranexamic acid administration: blunt or penetrating trauma with signs and symptoms of hemorrhagic shock; any sustained blunt or penetrating injury within three hours; systolic blood pressure of less than 90 mmHg; estimated blood of loss equal to or greater than 500 ml; bleeding not controlled by direct pressure; or major amputation of any extremity above the wrist or ankle.

The first dose of tranexamic acid (1 gram over 10 minutes intravenous or interosseous drip) was administered en route to hospital. Upon arrival, the trauma team would reassess the need for tranexamic acid and continue a second 1 gram dose over eight hours. We examined the incidence of adverse side effects focusing on the following thromboembolic events: deep vein thrombosis, pulmonary embolism, and stroke.

RESULTS: Our study included 68 patients over an eight-month period. The mean age of the patients was 40.9 years and were 79.4% were male. Prehospital providers, both ground and air ambulance, identified these patients which 50.0% subsequently received a second dose after assessment by the trauma team. There was no incidence of the immediate adverse side effects from administration of tranexamic acid. There was one patient with a history of seizures, who had a seizure two hours after the second dose was started. Single event of pulmonary embolism, deep vein thrombosis, and stroke in separate patients was recorded in this population.

CONCLUSION: With support from regional trauma agencies, standard education and supervision on indications, it is feasible to train pre-hospital health care providers in the administration of tranexamic acid. Pre-hospital administration of tranexamic acid may be safe with a low incidence of immediate side effects. This allows for a coordinated trauma care system where first responders can provide earlier administration of tranexamic acid, which may lead to better patient outcomes.
45. BOARDING ICU PATIENTS: ARE OUR ROUNDING PRACTICES SUBPAR?
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BACKGROUND: Surgical Intensive Care Unit (SICU) patients “boarding” in ICUs other than the designated home unit have been shown to suffer increased rates of complications. As a potential explanation for this finding, we hypothesized that ICU rounding practices and communication among house staff and nurses are different when SICU patients are housed in home vs. boarding ICUs.

METHODS: SICU rounds conducted in an academic, level 1 trauma center were observed and timed over 43 days involving 192 unique patients (532 patient-days). ICU service phone records were examined for number of calls and total minutes spent speaking to home and boarding ICUs. For study purposes, time spent rounding per patient was defined as a fraction of the overall mean rounding time spent per patient for that day (normalized rounding time, NRT). Rounding order rank and percent of team members present on each individual patient’s visit on rounds were recorded. The association between boarder status and rounding time was assessed using a multivariate linear regression model.

RESULTS: 532 patient-days were evaluated (boarders: n=77; non-boarders: n=455). On these days, no difference in age, gender, admission APACHE II, or vasopressor use was seen between study groups. Boarding patients were most often seen at the end of rounds (71 vs. 13%, p<0.001, Figure). Relative to days with a single boarding patient, days with ≥ 3 boarders on the service resulted in, on average, 8.7 more house staff phone calls (p=0.01) and 17 more phone minutes speaking to home and boarding units (p=0.007). After controlling for age, post ICU admission day, family presence, admission APACHE II, vasopressor use, and mechanical ventilation, boarder status was independently associated with a 10% decrease in rounding time per patient (NRT 0.90 vs. 1.02, p=0.03) (Table).

CONCLUSION: Surgical ICU patients boarding in non-home units are often seen at the end of rounds, result in a greater reliance upon telephone communication, and receive less bedside attention from ICU provider teams. Rounding and communication practices in boarding patients merits further study to improve outcomes and quality of ICU care.
46. EFFECT OF EMPIRIC ANTIBIOTICS ON THE DEVELOPMENT OF EARLY ONSET PNEUMONIA IN TRAUMA PATIENTS WITH SUSPECTED ASPIRATION

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BACKGROUND: Aspiration is a frequent occurrence among trauma patients who present with a depressed level of consciousness. Studies examining the utility of empiric antibiotics on the prevention of early onset pneumonia following an aspiration event are limited. Traditionally, antibiotics are withheld in the setting of aspiration pneumonitis and only initiated when clinical symptoms and signs of pneumonia develop. The objective of this study was to examine the role of empiric antibiotics on the development of pneumonia. We hypothesized that the administration of empiric antibiotics would not reduce the incidence of early onset pneumonia in at-risk trauma patients.

METHODS: We performed a 5-year retrospective cohort analysis of adult trauma patients with a Glasgow Coma Scale <=8 who required intubation and mechanical ventilation for at least 48 hours. Patients who received empiric respiratory antibiotics were compared to those who did not. Variables analyzed were patient demographics, mechanism, Injury Severity Score (ISS), chest Abbreviated Injury Severity (AIS) score, location and number of attempts at intubation, suspected or witnessed aspiration, admission Clinical Pulmonary Infection Score (CPIS), and microbiologic results. The main outcomes measure was the development of early onset pneumonia (defined as pneumonia diagnosed within 48 hours). Secondary outcomes were duration of mechanical ventilation, intensive care unit and hospital length of stay (LOS), and mortality. Multivariable logistic regression analysis was performed to identify independent predictors of early onset pneumonia.

RESULTS: Of 239 patients, 64 (26.8%) received antibiotics and 175 (72.3%) did not. Patients in the antibiotics group were younger (41 vs. 47 years, p=0.04) and more likely to present following a penetrating mechanism (25% vs. 6%, p <0.01). ISS and chest AIS were similar between groups, as was the incidence of a suspected or witnessed aspiration event at the time of intubation (39% vs. 30%, p=0.1). Although admission CPIS score was higher among patients who received antibiotics (4.3 vs. 3.6, p=0.04), there was no difference in the incidence of early onset pneumonia between groups (30% vs. 26%). LOS and mortality were likewise similar. On multivariate analysis, after controlling for demographics, CPIS score, and witnessed aspiration, empiric antibiotics were independently associated with a decreased risk for early onset pneumonia (OR=0.55;95% CI=0.26-0.78, p=0.01).

CONCLUSION: In this single institution study, empiric antibiotics were associated with a decreased incidence of early onset pneumonia in trauma patients requiring mechanical ventilation. Further prospective studies are potentially warranted to examine the risks and benefits of empiric antibiotics in trauma patients at-risk for aspiration pneumonia.
47. UNDERREPORTED INCIDENCE OF TUBE DISLODGEMENT IN PULL PEG (VS. PUSH PEG)
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BACKGROUND: Percutaneous endoscopic gastrostomy (PEG) complications are often underreported in the literature, in particular the incidence of tube dislodgement (TD). TD clinical consequence can be as benign as a simple tube replacement, or it can be as disastrous as a necrotizing fasciitis of the abdominal wall or a generalized peritonitis. We hypothesized that the incidence of TD was underreported and that “pull” PEG had a higher incidence of TD than “push” PEG.

METHODS: We performed a chart review of our prospectively maintained acute care surgery database for patients who underwent PEG tube placement from July 1st, 2009, through June 30, 2013. Age, gender, body mass index (BMI), indications (trauma vs. non-trauma), and complications (including TD) were recorded. Procedural-related complications were classified as either major if patients required an operative intervention, or minor if they did not. Primary outcome was the incidence of TD. The secondary outcomes were the TD-associated major and minor complications.

RESULTS: During a 4-year study period, 267 patients underwent “pull” and 57 underwent “push” PEGs. Age, gender, BMI, and indications were similar between the 2 groups. The overall complications (major and minor) were similar (“pull”, n=53, 20% vs. “push, n=13, 22%; P = 0.61). The overall incidence of TD was 14% (n = 37) but it was higher in “pull” PEGs but not statistically significant (n = 32, 12% vs. n = 5, 9%, P = 0.49). However, the incidence of TD that was associated with major complication was statistically significant higher in “pull” vs. “push” PEG (n = 18, 56% vs. n = 0, P = .02).

CONCLUSION: We reported a 14% incidence of TD in PEG placement. Although the incidence were comparable between “pull” vs. “push”, but “pull” peg had a higher TD-associated major complications. One must be cognizant of this underreported complication and takes the step to prevent it.
QUICK SHOT ABSTRACTS (cont.)

48. RIB FIXATION USING THE MUSCLE SPARING MINIMALLY INVASIVE THORACOTOMY TECHNIQUE IS ASSOCIATED WITH IMPROVED PULMONARY FUNCTION
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BACKGROUND: Rib fractures are associated with significant short and long term morbidity. We advocate rib fixation using the Muscle Sparing Minimally Invasive Thoracotomy (MSMIT) technique. There is no consensus regarding early rib fixation using a MSMIT approach as the surgical option of choice. Also there is limited data available on post-operative Pulmonary Function. The purpose of this study was to investigate patient outcomes and pulmonary function with MSMIT.

METHODS: Retrospective chart review of consecutive adult patients with multiple rib fractures secondary to blunt trauma who underwent rib fixation at two trauma centers between March 2014 and December 2014. Patient variables were, demographics, injury mechanisms, fracture patterns, days to fixation, pulmonary function tests (PFTs), complications, ventilators days, length of stay (LOS), mortality and discharge disposition. Data were summarized by descriptive statistics. Paired Student’s t-test was used to compare baseline PFTs with values from the same patient at post-operative days 2 and 5; p<0.05 was considered statistically significant.

RESULTS: 66 out of 67 patients underwent rib fixation using the MSMIT technique; the operation was not completed in 1 patient due to significant arrhythmia occurring just prior to incision. Median age was 56 years (IQR=42-62), 27% were female (N=18). All rib fractures were due to blunt mechanisms: fall (32%), motorcycle (27%), motor vehicle collision (20%), pedestrian struck (11%) and other (10%); median injury severity score was 18.5 (IQR=16-25.5). The median number of ribs broken was 8 (IQR=6-9) and the median number fixed was 4 (IQR=3-5.2). Fractures occurred asymmetrically: 70% left side, 21% right-side and 9% on both sides; incidence of flail chest was 27% (18). The median time to fixation was 2 days (IQR=1-4). Forced expiratory volume (FEV1) was 29.8 cc/sec at pre-operative baseline compared to 32.6 on post-operative day 2 (p=.084) and 43.7 on day-5 (p<.001). Similarly, forced vital capacity (FVC) was 31.2 at pre-operative baseline vs 33.6 on post-operative day2 (p=0.181) and 44.0 on day-5 (p=.001). Complications noted were: abscess (2), arrhythmia (1), hemothorax (1), pulmonary embolism (1), pleural effusion (1), seroma (2). 57 patients (86.4%) had no complications. 3 patients (4.5%) had tracheostomy, 24 patients (36.4%) received epidural analgesia, 37 patients (56.7%) received On-Q catheters. Median hospital LOS was 11 days (IQR= 8-16). Median ICU LOS was 5 days (IQR= 2-12). Discharge disposition was: home (41), acute rehab (16), skilled nursing facility (6), long term acute care hospital (2), expired (1).

CONCLUSION: Rib fixation with MSMIT leads to clinically significant improvements in pulmonary function on post-operative day 5. Our results merit further studies of rib fixation as a management strategy for serious rib fractures through prospective randomized trials.
49. TROPONINS HAVE NO VALUE IN THE EVALUATION OF NEW ONSET ATRIAL FIBRILLATION IN THE TRAUMA POPULATION
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BACKGROUND: Atrial fibrillation (AF) with or without associated rapid ventricular response (RVR) is a common diagnosis in trauma patients, especially in an aging population. Troponin levels have been used recently to evaluate for myocardial ischemia or frank MI in the AF population. We hypothesize that obtaining troponin levels rarely influences clinical decision making and is fiscally wasteful.

METHODS: All trauma patients diagnosed with AF (new-onset and or acute RVR) at our ACS-verified Level I trauma center from 2013-2014 were retrospectively reviewed using the institutional trauma database. Diagnoses were confirmed by electrocardiography (EKG). Demographics, echocardiography (ECHO) findings, troponin levels, number of troponin tests ordered, and MI and/or PE diagnosis data were obtained. Standard univariate tests were used to compare data between patients with and without troponin values as well as between patients with positive (≥0.05 ng/mL) and negative (<0.05 ng/mL) values. Troponin-related charges were calculated from the average number of troponin tests ordered and the charge per test (US $298.05). Cases of possible MI or PE were reviewed by a board-certified cardiologist (JDS).

RESULTS: During the study period, 258 patients had AF that was confirmed by EKG. Of these, 133 were male (51.6%). 55 (21.3%) patients had new onset AF without RVR, 77 (29.9%) had new AF with RVR, and 126 (48.8%) had chronic AF with new onset RVR. Mean patient age was (74.5 ± 14.8 years). ECHO was used in 131 (50.8%) patients, and mean ejection fraction (EF) was 56.0 ± 12.1%. Cardiologist consultation confirmed none of the 5 suspected cases of MI or 4 suspected cases of PE. Troponin levels were obtained in 126 of the 258 patients (48.8%). Differences in patient characteristics and outcomes between the two groups (troponins and no troponins) are detailed in the accompanying table. In general, both cohorts had similar distributions of age, sex, AF type, EF, and rates of suspected PE (all p > 0.05). However, among patients in the troponin group, the use of ECHO nearly doubled, cardiology consultations increased, and the false positive rate of suspected MI increased (all p < 0.05). Nearly all (96.5%) patients in the troponin group had no concern for MI or PE, and the 3.5% of patients that had suspected events had false positive troponin levels. Between patients testing positive and patients testing negative for troponins, no differences were identified in age, sex, ECHO use, EF, cardiology consultation rate, or incidence of suspected MI or PE. However, a positive troponin result resulted in increased subsequent testing (p = 0.012). If troponin testing was performed, an average of US $603.20 was charged per patient for troponin testing.

CONCLUSION: Obtaining troponin values in this population resulted in increased per-patient charges, resource utilization, and specialist consultation with no discernible clinical efficacy. We conclude that troponin values should not be obtained on a routine basis.
52. TARGETING CANCER STEMS CELLS BY AUTOPHAGY INHIBITION IN Pancreatic Ductal Adenocarcinoma

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BACKGROUND: Although morbidity and mortality after pancreaticoduodenectomy for pancreatic ductal adenocarcinoma (PDAC) patients have declined significantly over time, overall survival of PDAC patients after surgical resection with curative intent remains dismal, despite aggressive adjuvant therapies. The presence of cancer stem cells (CSCs) and dysregulated autophagy, a self-degradative process as a survival mechanism for cancer cells under unfavorable environments, have been implicated as contributing factors for chemoresistance, early metastasis, and local recurrence of PDAC. Therefore, we aim to target CSCs in PDAC via autophagy inhibition.

METHODS: Primary and secondary tumorsphere forming assays were performed to quantify CSCs in 2 human PDAC cell lines, AsPC-1 and PANC-1, after treatment with 5 autophagy inhibitors: chloroquine, leupeptin, N-acetylcysteine, wortmannin, and 3-methyladenine. After combination treatment with the chemotherapeutic agent abraxane, a colony-forming assay was performed to assess cell viability in a 3D in vitro model.

RESULTS: After the treatment with 10 μM autophagy inhibitors, chloroquine, leupeptin, N-acetylcysteine, wortmannin, and 3-methyladenine, tumorsphere forming efficiency decreased in both AsPC-1 (p<0.05) and PANC-1 cell lines (p<0.05), indicating significant reductions in CSC populations. Furthermore, when given in combination with abraxane, chloroquine and 3-methyladenine further reduced cancer cell viability using 3D colony formation assay (p<0.05).

CONCLUSION: Our data demonstrates that autophagy inhibition can successfully eliminate CSCs in PDAC. Autophagy inhibitors are currently being evaluated as adjunctive anti-cancer agents in various malignancies. In PDAC, combination therapy with an autophagy inhibitor may improve the efficacy of current adjuvant therapies, conferring improved survival of PDAC patients after curative surgical resection. Currently, we are investigating the molecular mechanism of autophagy inhibitors leading to anti-cancer properties.
53. IMPLEMENTATION AND OUTCOME OF AN ENHANCED RECOVERY AFTER SURGERY PROGRAM FOR COLORECTAL SURGERY AT A COMMUNITY TEACHING HOSPITAL
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La Crosse, WI

BACKGROUND: Perioperative programs aimed at decreasing surgical stress to colorectal patients can reduce hospital length of stay (LOS) and morbidity while improving the patient’s perception of the surgical experience. Our goal was to transform patient care from a perioperative platform based on individual physician and nurse choice to a standardized evidence-based Enhanced Recovery After Surgery (ERAS) protocol for all patients undergoing elective colorectal resections. We hypothesized that successful adaption of an ERAS protocol would reduce LOS and postoperative complications after elective surgery.

METHODS: An IRB approved retrospective electronic medical record review was performed for the first 12 months of ERAS protocol-driven patient care in 2014 and compared to the prior year of individual choice managed care in 2013. Statistical analysis included Wilcoxon Rank Sum test and Fisher’s Exact test; P<0.05 was considered significant. A surgical champion introduced ERAS principles. Nurses, pharmacists, anesthesiologists, surgeons, and resident surgeons agreed to participate. Electronic order sets were used both pre and postoperatively. Areas of focused change included carbohydrate loading, intraoperative fluid administration and temperature control, alvimopam administration, minimizing narcotic and nasogastric tube usage, and early initiation of diet.

RESULTS: Ninety-nine patients and 92 patients underwent elective colorectal surgery in the ERAS and pre-ERAS period, respectively. Sex, age, pathology, laparoscopic surgery rates and operative time were similar between the two groups. ERAS patients received less intraoperative fluid (mean 2125±888 vs. 2562±1273 mL, P=0.009). Alvimopan use was higher preoperatively (82% vs 12%, P=0.001) and postoperatively (84% vs 14%, P<0.001) in the ERAS vs. pre-ERAS group. Patient controlled analgesia usage dropped from 76% to 45% from the pre-ERAS to ERAS group (P<0.001). The ERAS group experienced a shorter length of stay (4.9±2.7 vs 6.2±4.0 days, P=0.001), were more likely to advance to a general diet on POD 1 (72% vs. 9%, P<0.001), and quicker return of bowel function (2.3±1.8 vs 2.8±1.1 days, P=0.0001) compared to the pre-ERAS group. Thirty-day complications were similar between the ERAS and pre-ERAS group and included anastomotic leak (4% vs. 0%, P=0.120), SSI (4% vs. 8%, P=0.990), and abscess (3% vs. 3%, P=0.990). Eleven (11%) ERAS patients and 7 (8%) pre-ERAS patients were readmitted within 30 days postoperative (P=0.410).

CONCLUSION: We were able to implement change through a new system of care based upon standardized evidence-based ERAS protocols through the preoperative, intraoperative, and postoperative patient experience. In the first year of the ERAS program, patients experienced a reduced LOS without a significant difference in morbidity or mortality. We believe our protocol would be reproducible in a variety of practice settings.
54. SURGICAL OUTCOMES AFTER COLECTOMIES IN UNDERSERVED AREAS OF CALIFORNIA: THE EFFECT OF SURGICAL DESERTS
L Aquino BA, A Ko MD, A Do-Nguyen BS, DR Margulies MD, RF Alban MD
Los Angeles, CA

BACKGROUND: Geographic maldistribution of general surgeons in underserved and rural areas are known as surgical deserts. This disparity in distribution could result in decreased access to care for patients in need and overall worse outcomes. While this deficit has been quantified in terms of physician shortages, there is lack of understanding of its effect on surgical outcomes. Colectomies are commonly performed general surgery procedures and have been targeted as a potential source for disparities. We sought to examine outcomes after colectomies in surgical deserts (SD) within the state of California.

METHODS: The Nationwide Inpatient Sample (NIS) database and the American College of Surgeons Health Policy Research Institute (ACS HPRI) surgeon workforce atlas were queried for analysis of the state of California during 2010 and 2011. Surgical deserts were defined as counties serviced by 6 or less general surgeons per 100,000 population. Designation of counties as urban or rural was determined using U.S. Census Bureau definitions. ICD-9 procedure codes were used to identify laparoscopic and open colectomy cases. Data including demographics, payer type, median household income, hospital characteristics, complications (DVT/PE, sepsis, GI bleed, acute myocardial infarction (MI), pneumonia, acute kidney injury, respiratory failure, shock, wound complications) and outcomes such as hospital length of stay (LOS), total charges, and mortality were collected. Patients who had colectomy in SD were compared to those who had the procedure performed in a non-surgical desert (NSD).

RESULTS: A total of 14,661 colectomy cases were performed in California during the study period, of which 2,260 (15%) occurred in SD counties. Patients undergoing colectomies in SD were similar in age and gender as those in NSD. More patients in SD were covered by Medicare than those in NSD (54% vs. 45%, p<0.001), and a higher percentage of patients were in the lowest median household income level (20% SD vs. 11% NSD, p<0.001). Open procedures were performed more frequently than laparoscopic across both SD and NSD, with a higher rate in NSD (78.6% vs. 75.5% p<0.001), but there were no differences in hospital LOS or total hospital charges between the groups. Overall mortality was 3.7%, however SD had significantly higher mortality compared to NSD (4.8% vs. 3.5% respectively, p=0.01). Of those who died after a colectomy, patients in SD and NSD had similar complication rates except for acute MI (Table).

CONCLUSION: Although the large majority of colectomies are performed in NSD, there appears to be increased rates of mortality in SD in the state of California. A significant number of deaths in SD are associated with acute MI when compared to NSD. Targeted interventions preventing this complication might provide additional support for rescue after acute MI in these regions.
55. REVIEW AND ANALYSIS OF SURGICAL INFECTION RATES POST IMPLEMENTATION OF A SURGICAL SITE INFECTION BUNDLE IN COLON SURGERY PATIENTS
John Ashcraft DO, Jennifer Lu DO
Kansas City, KS

BACKGROUND: The national rate of surgical site infections (SSIs) associated with colon surgery is approximately 10-20%. The rate of colon surgery SSIs at our academic institute and length of stay (LOS) however, were higher than the national average, which prompted a review of perioperative management.

METHODS: In Mid 2013 interdisciplinary team workshops were held to spear head the rising number of SSIs and increasing LOS. These problems were tackled through a multifactorial approach, which included changes to the Small Bowel/Colon pre-op and post-op order sets, operative practices, clear goals on a timeline basis for both patients and providers, and coordination huddles created for multi-disciplinary teams to discuss individual patient care. Our institute’s Department of Organizational Improvement gathered statistics. Data was extrapolated from Epic and compared against a benchmark, from Jan 2013- March 2015.

RESULTS: Prior to the SSI bundle, the rate of SSIs was as high as 14.46 infections observed per 100 procedures and a standardized infection rate (SIR) of 1.7 from July 2013- Sept 2013. This rate remained high in 2014 with a peak SIR of 2.16 or 17.39 out of 100 procedures from Jan- March. The general trend however was a decrease in the number of SSIs. The high rate of infections post implementation of the SSI bundle can partially be attributed to difficulty implementing changes as demonstrated by below than goal utilization of order sets, ranging from 78.8% in Feb to as low as 50% in Jan and an average of 65.6% utilization during the first half of 2014. Improvement was seen from Jan- March 2015, with a SIR of 1.01, and a rate of 8.2 patients per 100 procedures. Correspondingly, the LOS decreased during the first half of 2015 with an average of 65.4% of patients meeting goal (7 days or less LOS) and an averages LOS of 8.29 days. This still remains below the benchmark value of 8.11 days for that same time period. Although our institution has a higher than expected LOS, our percent 30 day readmission was lower, with an average of 8.54 patients readmitted per month from Dec 2014- May 2015, compared to the benchmark average of 12.9.

CONCLUSION: The rate of SSIs at our institute decreased to a SIR of 1.01 in 2015, post implementation of the SSI bundle. The rise of SSIs in 2014 can partially be attributed to difficulty enforcing utilization of the SSI bundle, as demonstrated by our less than goal utilization of order sets. Correspondingly, there was a decrease in LOS during the first half of 2015. Although our institution has a higher LOS compared to the benchmark, our 30-day readmission is lower. A major limitation of this study includes the fact that the SSI bundle was implemented all at once, which makes it difficult to tease out which factors attributed to a decrease in SSIs versus anecdotal practice. In addition, there is variation amongst hospitals regarding the complexity of their surgical patient population and accuracy in reporting SSIs.
56. PREOPERATIVE CHARACTERISTICS OF POOR OUTCOMES IN LOCALLY ADVANCED RECTAL CANCER AT A COUNTY HOSPITAL:
IS THERE ROOM FOR IMPROVEMENT?
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Torrance, CA

BACKGROUND: Locally Advanced Rectal Cancer (LARC) is a difficult disease to cure. Currently a combination of chemotherapy, radiotherapy, and surgical therapy are used to attain remission. Unfortunately there is still a high rate of failure nationally. At our institution we sought to identify factors available pre-operatively that led to either unresectability at the time of operation, or failure with local or metastatic recurrence after resection.

METHODS: A retrospective review of medical records and CT imaging at a county teaching hospital was completed. All patients were operated on for curative intent with stage II or III rectal cancer between 2008 and 2014 and had at least one year of follow-up. All patients received preoperative neoadjuvant chemoradiation therapy. Curative resection and absence of disease at one year is considered a Successful Outcome (SO), while unresectability or recurrence, are considered an Unsuccessful Outcome (UO).

RESULTS: Ninety-eight patients were identified within the study period that fit our inclusion criteria. Eleven patients were excluded due to loss of follow up. Fifty-six patients had SO and 31 patients had UO. Overall age, male sex, and BMI were similar between both groups. Twenty-one patients with UO were due to recurrence and 10 patients were found to be unresectable intra-operatively. Our rate of UO was 35%, and rate of recurrence was 27%. Fifty-two percent of recurrences were associated with local disease while the remaining with metastatic disease. A shorter duration of symptoms, lower hemoglobin, lower albumin, and extension of tumor into perirectal fat were significant for UO; while African American race, a family history of colorectal cancer, and poor tumor differentiation trended toward UO.

CONCLUSION: Our review shows that there are preoperative factors readily available that can help predict outcome in rectal cancer. Given our high percentage of locally advanced rectal cancer patients with an unsuccessful outcome, more careful selection of patients and possibly additional imaging such as MRI should be done to identify patients that may require better surgical planning or additional cycles of chemotherapy to further downstage the tumor prior to surgical resection.
57. LAGGING LEFT TURN SIGNALS REDUCE INJURIES AND SAVE LIVES
Paul E. Basha, P.E., PTOE
Scottsdale, AZ

BACKGROUND: On urban surface streets, accidents at intersections produce the most severe injuries. It is estimated that left turns are responsible for forty-five percent of all accidents. Traffic engineers have tried to reduce these injuries by phasing lights at different intervals and measuring rates of accidents with leading and lagging left turn lights. This paper discusses how lagging left turn arrows reduce the rate of accidents when compared to leading left turn arrows.

METHODS: In 2007, Paul Basha, PTOE, Traffic Engineer for the City of Scottsdale, Arizona published an eight-year analysis of the “Tale of Two Cities” Scottsdale with lagging left turns arrows and Mesa, Arizona with leading left turn arrows. The cities were comparable with similar populations and most intersections at right angles. The equation: 1000 x Total LTHO Collisions (Years x Daily Conflicting Vehicles) calculates the annual left turn head-on (LTHO) collisions per daily 1000 conflicting vehicles. Conflicting vehicles are the sum of the left-turning vehicles and the opposing through vehicles.

RESULTS: Analyses of these data, using the Wilcoxon Ranked Sum test, found that accident rates were statistically less in Scottsdale with lagging left turn traffic signals. Intersection cartoons of leading and lagging left turns demonstrate the superiority of lagging left turn arrows.

CONCLUSION: This study is the most comprehensive analysis of left turn accidents published to date. It’s clear that lagging left turn signals produce less accidents and probably injuries. However, many traffic engineers are reluctant to change because of unfamiliarity, suspected or measured reduction in the efficiency of traffic flows and previous evidence that showing no improvement in accident rates. Sharing this information with physicians will help promote safety in other communities.
58. WHAT DRIVES THE COST OF TRAUMA PATIENTS? AN ANALYSIS USING A STATE-WIDE TRAUMA FINANCIAL SURVEY
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Little Rock, AR

BACKGROUND: What are the financial impacts and cost drivers of trauma care? We used the Arkansas state-wide trauma system, the ACS National Trauma Data Bank software, and a unique patient system identification number to conduct a state trauma financial survey (TFS) of individual patient costs and clinical factors across all four levels of trauma centers to help answer these questions.

METHODS: The TFS was conducted for FY2012, capturing over 75% of the patients in the state trauma registry for that year (13,215 of 17,539). Using the unique patient identification number to link data from the state trauma registry with data from the TFS, we calculated cost estimates by using the Medicare Cost Report and Cost-to-Charge Ratio. This allowed us to estimate uniform costs across the system. We used this data to correlate clinical factors with revenue and cost information for each patient. For this study, we focused on adult patients with major blunt or penetrating trauma (age > 14 years old, Abbreviated Injury Scale > 2, and hospital stay > 47 hours). A regression analysis was performed to determine the variables contributing to the cost of the trauma patients.

RESULTS: 4265 patients met inclusion criteria, roughly 1/3 of the TFS. For all levels of trauma center, each day of hospitalization (LOS) and intensive care unit (ICU) stay contributed a significant amount to the cost, while increased age was associated with lower cost. Injury severity as determined by Injury Severity Score (ISS) was a significant contributor at level 1 and 2 centers but did not reach a level of significant difference at level 3-4 centers. Patients insured by third party carriers had significantly more costs than self-pay patients at level 1 and 2 centers, but this difference was not significant at level 3-4 centers. Medicare and Medicaid insurance coverage, sex, and mechanism of injury were not significant contributors to total cost for all levels of trauma centers.

CONCLUSION: Previous work by our team demonstrated that higher level trauma centers care for more severely injured patients with resulting increased costs proportional to the injury level. In our current study we explored which patient factors are the driving contributors to this cost. We found that ISS, LOS, and ICU days all resulted in increased cost while older patients are less expensive. Several other factors were found to not contribute significantly to the cost of trauma patients, including financial class of the patient, with the exception of level 1 and 2 centers, where patients with third party coverage did show increased costs. This analysis offers better insight into the impact of patient factors upon cost at different levels of trauma centers. Improved knowledge of the factors affecting trauma expenses potentially leads to better allocation of financial resources within a trauma center and the trauma system as a whole, helping assure sustainability of our state trauma system.
59. OUTCOMES OF A SELECTIVE ANGIOEMBOLIZATION APPROACH TO HIGH GRADE BLUNT SPLENIC INJURIES
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BACKGROUND: Nonoperative management (NOM) of blunt splenic trauma is the standard treatment in hemodynamically stable patients without peritonitis. In the past, published NOM failure rates were as high as 20-75% for high grade injuries before the widespread use of splenic artery angioembolization. Angioembolization is indicated when active contrast extravasation is seen on CT (selective embolization). However, there are several recent publications proposing splenic artery embolization in all grade III-V injuries regardless of contrast extravasation (empiric embolization), with significantly lower failure rates. The purpose of this study was to investigate NOM success rates with the selective embolization approach to splenic injuries, in particular high grade (III to V) injuries,

METHODS: We retrospectively reviewed all NOM high grade blunt splenic trauma at an ACS verified level II trauma center from January 2010 to December 2014. Exclusion criteria were severe traumatic brain injury (TBI), emergency department (ED) mortality, or emergent operation. Data collected were demographics, injury severity score, splenic injury grade, presence of blush on CT scan, splenic artery embolization, complications, failure of NOM (delayed splenectomy) and mortality. We compared those that underwent embolization to those that did not. Statistical analysis was performed using Student’s T-test or Fisher’s exact test with the significance level set at p < 0.05.

RESULTS: There were 227 blunt splenic injuries during the study period; of those meeting the inclusion criteria, 48 were high grade injuries (grade III [30], IV [14], and V [4]). NOM plus embolization was used in 11 of 48 (22.9%) patients (all with CT contrast extravasation), the remaining 37 of 48 (77%) were managed by NOM without embolization. There was no significant difference in the failure rate was between NOM with and without angioembolization (9.1% [1/11] versus 13.5%[5/37], p=1.00). There were no mortalities in either group and there was 1 complication of hemorrhagic infarction requiring splenectomy 32 days after embolization in a patient that had a grade V injury.

CONCLUSION: The overall success rate of the selective angioembolization strategy was 87.5% for grade III to V splenic injuries. There was zero mortality among those undergoing NOM and low complication rate of angioembolization. Perhaps failure rates could be decreased even further with empiric embolization, but this will require prospective evaluation.
QUICK SHOT ABSTRACTS (cont.)

60. PENETRATING CARDIAC INJURIES IN AMERICA - PREDICTORS OF OUTCOME IN 2016 PATIENTS FROM THE NATIONAL TRAUMA DATA BANK
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BACKGROUND: Penetrating cardiac injuries are uncommon and lethal. Objectives of this study are to examine the national profile of cardiac injuries and identify independent predictors of outcome.

METHODS: The National Trauma Data Bank (NTDB) was queried for prehospital and admission data on all cardiac injuries. Data extracted included physiologic condition of patients, mechanism of injury and surgical interventions. Main outcome measure was survival. Statistical analysis: univariate and stepwise logistic regression.

RESULTS: 2016 patients with penetrating cardiac injuries were identified from 1,310,720 patients from The NTDB. Incidence: 0.16%. Mechanism of injury: GSW – 1264 (63%), SW – 716 (36%), Shotgun/impalement – 19/16 (1%). Mean RTS – 1.75, mean ISS 27 ± 23. Overall survival 675 (33%). 830 patients (41%) underwent ED thoracotomy, 47 survived – 6%. Survival stratified by mechanism: GSW 114/1264 (10%), SW 564/717 (76%). Predictors of outcome for non-survivability needed for: Field CPR, ED intubation, ED thoracotomy and aortic cross clamping (p<0.001). Stepwise logistic regression identified GSW (p<0.001; AOR 26.85; 95% CI 17.21 – 41.89), field CPR (p=0.003; AOR 3.65; 95% CI 1.53-8.69), absent spontaneous ventilation (p=0.008; AOR 1.0, 95% CI 1.02 – 1.14), ED airway (p=0.0003 AOR 1386.30; 95% CI 126.0-15251.71) as independent predictors of outcome for mortality. Overall predictive power of model: 93%.

CONCLUSION: Penetrating cardiac injuries are lethal. Overall survival rates are lower than most retrospective studies have reported. Data suggests that patients can be selected for salvage and outcomes predicted. Institutional decisions must be undertaken to direct salvage efforts including ED thoracotomy to patients presenting with signs of life in the field or upon arrival at Trauma Centers, to improve outcomes and decrease health care costs.
61. WHO OPERATES ON PEDIATRIC VASCULAR TRAUMA AT A FREESTANDING LEVEL I PEDIATRIC TRAUMA CENTER: CHANGES OVER TIME
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Little Rock, AR

BACKGROUND: There are no clearly defined practice guidelines for who should operate on pediatric vascular trauma injuries. We sought to establish which surgical specialists operated on pediatric vascular trauma injuries at a level I pediatric trauma center, and to determine changes over the past two decades.

METHODS: After IRB approval, we queried the hospital’s trauma database to identify all patients with a vascular trauma injury at a freestanding children’s hospital between 1993 and 2015. A retrospective chart review was conducted to collect information on mechanism, injured blood vessel(s), operation(s) performed, and specialty of surgeon operating on the patient. To determine changes over time, the surgical specialists performing the operative cases were compared before and after 2005 using a Fischer’s exact test with p-values <0.05 considered significant.

RESULTS: There were 101 pediatric vascular trauma operations comprising 94 patients, with 36 cases before and 65 cases after 2005. The median age was 12, with penetrating mechanism in 53 cases (56%) and blunt in 41 cases (44%). The brachial artery was the most commonly injured blood vessel in patients of all ages (n=20). Upper extremity injuries were most common (39.3%), followed by the lower extremities (30.4%), torso (25.0%), and head/neck (5.4%). Head/neck injuries were more common in patients younger than 12 (12.2% vs 1.4%; p=0.02). Grafts (autologous and synthetic) were the most commonly performed repairs (n=36), followed by primary repairs (n=20) and ligations (n=20). Ligations were more likely to be performed in older patients (23.9% vs 7.0%; p=0.02), while there were no age differences seen for primary repairs (16.9% vs 18.6%; p=0.81) or graft repairs (32.4% vs 30.2%; p=0.84). We found no differences in the specialty of surgeon operating on children younger versus older than 12. Of the three most commonly performed repairs, pediatric surgeons performed all three while vascular surgeons did not perform primary repairs, and orthopedic surgeons did not perform graft repairs. The percentage of cases completed by pediatric surgeons and vascular surgeons changed significantly over time, with the proportion of operations performed by vascular surgeons increasing and those performed by pediatric surgeons decreasing (Table). However, there were no changes in the percentages of cases carried out by other surgical specialists. Of the 58 vascular trauma procedures performed by pediatric surgeons, surgeons who completed their fellowship prior to 2000 performed 91% of these operations.

CONCLUSION: Pediatric vascular trauma encompasses a broad range of injuries managed by a variety of surgical specialists. Pediatric trauma centers must have a clear and consistent plan for surgical coverage of these different injuries. As integrated surgical specialty residency programs evolve and expand, the surgical specialists managing these patients in the future must be provided with operative training experience in both pediatric and vascular surgery.
62. PERCEPTION VERSUS REALITY: HELMET USE AMONG MOTORCYCLE RIDERS IN TEXAS
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Austin, TX

BACKGROUND: 4957 motorcyclists were killed in 2012, a 7% increase from the year before. Helmets have been shown to decrease mortality yet the trend is towards less enforcement of their use. One approach is advocating to riders themselves. Knowing their point of view as well as relevant outcomes data is crucial to do this effectively. We thought that asking local riders their opinions regarding helmet use and comparing it our trauma center database as well as medical examiner autopsy results would be a powerful way to compare perceptions and reality.

METHODS: The Republic of Texas (RoT) Rally is the largest motorcycle rally in Texas. We surveyed attendees to assess views around helmet use then compared biker opinions to outcomes of motorcycle trauma at our level 1 urban trauma center between January, 2010 and October, 2013. All motorcycle fatalities at the Travis County Medical Examiner (ME) were also analyzed to include accidents that did not make it to the hospital between January 1st, 2003 and December 31st, 2014.

RESULTS: 149 RoT Rally participants completed the survey. 51.4% said they wear a helmet “all the time” with 26.35% stating “most of the time.” The rate of reported helmet use varied by how often survey respondents rode a motorcycle. Riders that used their bike “all the time” or “often” were actually much less likely to wear a helmet all the time than those who rode less frequently (45.6% vs 70.6%). Also, frequent riders more commonly cited “personal freedom” (40.9% vs 28.9%) or helmet discomfort (18.2% vs 7.14%) as reasons why they chose to not wear a helmet. There were 817 patients at our hospital and 173 fatalities at the medical examiner. The helmeted and unhelmeted groups were similar in age, gender, and race for both data groups. As shown in prior studies, motorcycle helmet use decreased mortality (4% vs 9%, p=0.004), intensive care unit (ICU) length of stay (LOS) (1 vs 2 days, p=0.001), ventilator days (.55±2.7 vs 1.5±4.4, p=0.0002), and neurological impairment (GCS 14±3 vs 13±3, p=0.0001) in our hospital. It was also associated with lower Injury Severity Scores (15±11 vs 17±13, p=0.001). The ME data had a higher proportion of unhelmeted riders than those who made it to the hospital, 51.6% vs 39.8%. Also, there was no significant difference in spine or spinal cord injury between helmeted and unhelmeted riders (41% vs 32%, p=0.19 and 29% vs 20%, p=0.15).

CONCLUSION: Motorcycle helmet use is associated with improved outcomes and no increased risk of spine injury as again shown by our trauma center database and medical examiner autopsy results. A survey based approach to address rider hesitation about helmet use can dispel myths about why they choose to not wear a helmet, such as fear of spinal cord injury, and target topics to address, such as personal liberty issues or helmet comfort.
63. FIELD OF DREAMS OR FIELD OF INJURIES: THE INCIDENCE OF ACUTE INJURY IN YOUTH BASEBALL
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Cooperstown, NY

BACKGROUND: Baseball is the second most popular sport for children in the United States. While relatively rare, baseball-related injuries do occur, and sporadically include catastrophic traumas that lead to poor outcomes or death. There are numerous risk reductions strategies in the literature, including guidelines from the American Academy of Pediatrics and the American College of Sports Medicine. Our trauma center has a unique opportunity to analyze baseball trauma in a high volume and high level of play system.

METHODS: This study examines descriptive epidemiology and medical interventions for acute, baseball-related injuries in a closed population of children aged 8-12 who play competitive, high level baseball at the Cooperstown Dreams Park. These patients are almost exclusively treated within our medical network. A retrospective analysis was performed using data from our electronic medical record. Out of the area zip codes were used to identify these highly competitive young athletes, who are at higher risk for injury. We collected information on baseball athletes from the Cooperstown Dreams Park who presented to the emergency department (ED) over the past five years. Descriptive statistics were calculated for the mechanism of the injuries, type and location of traumas, age of athletes, medical interventions and outcomes.

RESULTS: 170 children (0.21%) out of a total of 81,120 of total baseball players during the last five years presented with baseball related injuries. A minimum of 27,000 games were played during the time frame. The majority (85%) of patient who were injured were age 12. Eighty percent of the patients received imaging, and 42 patients (24%) were found to have fractures. The most commonly injured body parts included hand/wrist in 58 patients (34%), head/face in 46 patients (27%), and arm/shoulder in 29 patients (17%). The most common mechanism of injury was being hit by the baseball in 81 patients (48%) followed by collision with another player in 24 patients (14%), sliding into base in 17 patients (10%) and pitching injuries in 12 patients (7%). While most (91%) of the athletes had ED interventions with good outcomes, only seven patients had catastrophic events requiring admission. This included two patients with blunt head trauma causing intracranial bleeds, which required transfer to outside facility for higher level of care. All of these patients were wearing a helmet at the time of injury. There were no significant chest impacts causing commotio cordis.

CONCLUSION: Given concerns raised by national organizations, the risk of significant injuries in high level of play is surprisingly low. This study adds to the growing field of epidemiological and injury surveillance research in baseball to promote evidence-based recommendations to reduce the burden of injuries in children who play competitive baseball.
FEATURED POSTER ABSTRACTS
1. COMPUTERIZED ALCOHOL SCREENING IDENTIFIED MORE AT-RISK DRINKERS IN A LEVEL II THAN A LEVEL I TRAUMA CENTER

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Orange, CA

BACKGROUND: Alcohol is recognized as a significant contributor to injury. It is therefore essential that trauma centers implement the screening and brief intervention (SBI) to identify patients who are problem drinkers. Although, the effectiveness of SBI in identifying at-risk drinkers have been widely studied in level I trauma centers, few studies have reported the results of SBI in level II centers. The pattern of alcohol drinking, demographic factors, and readiness to change scores between those screened in a level II and a level I trauma center were compared. Our aim was to evaluate the usefulness of SBI in finding at-risk drinkers and to investigate the pattern of alcohol drinking among level II trauma patients.

METHODS: This is a retrospective study of a convenience sample of trauma patients participating in computerized alcohol screening, brief intervention (CASI), and referral to treatment in an academic level I trauma center versus a nearby suburban community hospital level II trauma center. The Alcohol Use Disorder Identification Test (AUDIT) was used to screen patients.

RESULTS: A total of 3850 and 1933 admitted trauma patients were screened in level I and II trauma centers respectively. There was no difference in mean age, gender, and language between the two centers. More patients at the level II trauma center had some college/associate degree or advanced degree (p<0.01). Of those screened, 10.2% of the level I and 14.4% of the level II trauma patients scored at-risk (AUDIT 8-19). Overall, 3.7% and 7.2% of the level I and II trauma patients had an AUDIT score consistent with dependency (AUDIT>=20). Controlling for age, sex, education, and language, the odds of being a drinker at the level II center were two times those at the level I (p<0.01, 95% CI 1.75-2.3). When controlling for the same variables, the odds of being an at-risk or dependent drinker at level II were 1.73 times those screened at level I (p<0.01, 95% CI 1.5-2.0). Level II trauma patients were more likely to respond in the highest (score 8-10) and lowest (score 1-3) categories of the readiness to change ruler (p=0.02).

CONCLUSION: Findings suggest that SBI performed in level II trauma center was effective in identifying at-risk drinkers. With otherwise similar demographics, except differences in education, SBI was able to identify all drinkers, including at-risk and dependent drinkers at higher rates in level II versus level I trauma patients. Therefore, SBI at level II trauma centers is validated. Further studies to evaluate the effectiveness of SBI in altering drinking patterns among patients in level II trauma centers is warranted.
FEATURED POSTER ABSTRACTS (cont.)

2. THE CLINICAL AND ECONOMIC IMPACT OF OBESITY-MEASUREMENT BY A STATE-WIDE TRAUMA FINANCIAL SURVEY
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Little Rock, AR

BACKGROUND: Obesity’s increasing toll on the cost of American healthcare extends to negative clinical outcomes in trauma. Accurate estimations of obesity’s economic cost are difficult due to opaque cost reporting by hospitals. Thus, the overall impact of obesity on a statewide trauma system is unknown.

METHODS: We analyzed the cost impact of basal metabolic index (BMI) on trauma patients by a TFS that captured the trauma registry and hospital billing data for FY2012. The survey captured data on 75% of trauma system patients. Costs were calculated from the Medicare Cost Report for each hospital, by separately accounting for the embedded costs of trauma response and verification. Cost to Charge ratios were then recalculated and used to calculate costs for each patient, giving uniform estimates across the state. Of the 13,215 patients in the database, 5,508 had accurate height and weight measurements to calculate BMI. Of these, we selected the 1,764 patients who had significant trauma (ISS≥9, LOS≥2 days) to help understand how stratified BMI may affect cost/outcomes.

RESULTS: Table 1- Mean(±sd) values

CONCLUSION: Using a unique statewide TFS, we were able to compare uniform costs and outcomes across a trauma system. BMI over 35 is associated with statistically significant increase in charges, cost and cost/day. Further evaluation of profit margin and the influence of payer class provide additional insight.
3. COMPARING IN-111 PENTETREOTIDE SCANS AND 18F-FDG PET SCAN EFFICACY IN CARCINOID DIAGNOSIS
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BACKGROUND: Imaging of the uncommon neuroendocrine tumors including carcinoids is challenging. Diagnostic imaging modalities includes CT scan, MRI, and functional imaging modalities- 18F-FDG PET scan and somatostatin receptor scintigraphy. Carcinoids have relatively low metabolic activity and can have low uptake of Fluoro18-fluorodeoxyglucose (18F-FDG) in PET scans but an abundance of somatostatin receptors which accumulate in In-111 pentetreotide (a somatostatin analogue) imaging. The aim of this study is to determine if In-111 pentetreotide scans are more sensitive than 18F-FDG PET scans for localizing and identifying carcinoid or neuroendocrine tumors in patients.

METHODS: A retrospective review of patients with neuroendocrine and carcinoid tumors that underwent imaging with an In-111 pentetreotide scan (In-111 scan) or 18F-FDG PET scan (PET Scan). Patients were included if they had the scans at time of diagnosis or recurrence.

RESULTS: 25 patients were initially identified but only 19 patients had complete data and were included in the study. Patients were excluded due to multiple different cancers in same patient or no cancer ever found in follow-up. Average age was 60 (range 25-82), and 42% were male. Eleven (62%) had carcinoid tumors and 32% (n=6) had symptoms of carcinoid syndrome. Primary tumor locations were lung (4), small bowel (3), pancreas (3), gastric (1), kidney (1), liver (1), bile duct (1) and 3 unknown. Surgical resection was performed in the majority of patients, 58%.

Imaging workup included chest CT scan (8), abdomen/pelvis CT scan (14), MRI (8), PET scan (13), and In-111 pentetreotide (17).

Seven patients (64%) with a diagnosis of carcinoid tumor had both a PET and In-111 scan. Both modalities detected tumor in 5 patients (71%) whereas the tumor was only detected by the In-111 scan in the other 2 patients. 1 patient had only a PET scan, and it demonstrated the tumor. 3 patients only had an IN-111 scan and tumor was demonstrated in 2. Pet scan detected 75% of carcinoid tumors and In-111 scan detected 82% of tumors.

Four patients (50%) with a diagnosis of neuroendocrine tumor had both a PET and In-111 scan. Both modalities detected tumor in 2 patients (50%) whereas the tumor was only detected by PET scan in 1 patient and by neither study in 1 patient. 1 patient had only a PET scan and it demonstrated the tumor. 3 patients only had an In-111 scan and it was demonstrated in 2. PET scan detected 80% of tumors and In-111 scan detected 57% of tumors.

Median followup (n=17) was 44 months (range 5-96). Follow-up imaging was variable and included In-111scan (n=2), PET scan (n=6), CT scan (n=16) and MRI (n=5).

CONCLUSION: In this preliminary study, In-111 pentetreotide scintigraphic imaging detects carcinoid tumors and metastases at a slightly higher rate than 18F-FDG PET scan but the opposite was true for neuroendocrine tumor. Due to small numbers, further studies are needed to demonstrate their sensitivity, this is promising for detecting this low metabolically active tumor and may reduce unnecessary testing.
4. THE CLINICAL SIGNIFICANCE OF EARLY NON-HEMORRHAGIC LOW HEMOGLOBIN IN SEVERE TRAUMATIC BRAIN INJURY
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BACKGROUND: Many patients experience a mild to moderate early decrease in Hemoglobin (Hb) values after non-hemorrhagic trauma. While early anemia has been associated with poor outcomes in Traumatic Brain Injury (TBI), there is sparse literature examining early non-hemorrhagic anemia. The objective of our study was to characterize early changes in Hb and subsequent outcomes in isolated TBI.

METHODS: Utilizing our TBI registry, we identified all severe isolated TBI patients with ICP monitoring within the first 24 hours of admission. We excluded all patients that did not survive greater than 24 hours, those transfused after the admission Hb, or required urgent intervention for hemorrhage in another body area. Demographic, injury, admission physiologic, and crystalloid administration data were examined along with early Hb values. Outcome were early ICP data and in hospital mortality.

RESULTS: There were 134 patients included where 99 (73.9%) were male and 123 (91.8%) sustained a blunt injury. Mean age was 43 ± 21 and mean ISS was 23 ± 8. Mean admission Hb was 13 ± 2 g/dl while mean second Hb was 11 ± 2 g/dl. One-hundred and eight (81%) experienced a moderate percent decease in their initial Hb (mean change = -14 ± 11%) and 18 (16.7%) had > 25% decrease. Forty-five patients (34%) presented with anemia and 88 (66%) were anemic by the second Hb. Neither anemia on admission [41% v 31%, 0.315] nor a net negative change in Hb [79% v 81%, 0.843] was associated with death. Mean ICP trended lower in patients who had a net negative change in Hb values [12 ± 6 v 15 ± 13, 0.173].

CONCLUSION: There is a high incidence of non-hemorrhagic low hemoglobin in severe TBI. This might be iatrogenic or physiologic and likely does not require transfusion. The trend toward a lower initial ICP in patients with decreasing hemoglobin is hypothesis generating and may warrant future study.
POSTER
ABSTRACTS
5. THE UTILITY OF SURGEON PERFORMED INTRAOPERATIVE PELVIC ANGIOEMBOLIZATION IN THE UNSTABLE TRAUMA PATIENT: A CASE SERIES
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BACKGROUND: The utility of pelvic angiogram with embolization in the trauma patient is well known. Because of this, a number of guidelines have been established incorporating conventional angiographic evaluation with arterial embolization as part of the workup and treatment of patients presenting with blunt or penetrating pelvic trauma.

METHODS: Travel to the angiography suite with an unstable patient can be risky and has traditionally been discouraged.

RESULTS: Current guidelines have stressed operative intervention with resuscitation for those patients who are unstable.

CONCLUSION: As many patients deemed unstable would potentially benefit from angiographic embolization, we developed a hybrid strategy incorporating traditional surgical hemostasis with surgeon performed intraoperative pelvic angiography, and catheter-based arterial embolization
6. DELAYED RESPIRATORY FAILURE AFTER BLUNT CHEST TRAUMA: IS CLOSER MONITORING WARRANTED?

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BACKGROUND: Delayed respiratory failure (DRF) as a complication of rib fractures associated with blunt chest trauma is not well-described in the literature. Notably, DRF onset is often difficult to predict, and these subjects may require transfer to the ICU, attended by longer hospital lengths of stay (LOS), with increased morbidity and mortality due to a delay in diagnosis. The aim of this study was to identify the prevalence and clinical predictors of DRF in subjects who sustained rib fractures as a sequela of blunt chest trauma, to determine if this cohort may be best managed by closer monitoring.

METHODS: A retrospective registry review of all subjects admitted to an ACS Level II Trauma Center from 2009 to 2013 with at least 1 rib fracture after blunt chest trauma was conducted. All subjects with respiratory failure, defined as requiring endotracheal intubation and mechanical ventilation, were identified. Exclusion criteria included death on arrival or within 24 hours of injury, age <18 years, Abbreviated Injury Scale >2 in Head/Neck or Abdomen, spinal cord injury and Emergency Department (ED) disposition to the operating room. Respiratory failure occurring after the 2nd day of hospital admission was defined as DRF for the purposes of this study. Data collected included subject demographics, co-morbid conditions, mechanism of injury, associated thoracic injuries, Injury Severity Score (ISS), admission to the ICU from the ED, ICU LOS, Hospital LOS and mortality. Variables were analyzed between subjects with DRF compared to those with earlier onset respiratory failure. Fisher’s exact test or Chi square was utilized to analyze categorical variables; the Student’s t-test was used for continuous variables (p-value of <0.05 was considered significant).

RESULTS: 1299 subjects admitted with blunt chest trauma and at least 1 rib fracture were identified; 469 were excluded based on pre-established criteria. 48 (5.8%) developed respiratory failure, and this comprised the study group. 12 of 48 (25%) met criteria for DRF. Demographic data is shown in Table 1. Mean time to intubation in the DRF group was 3.4 days (range 2-7). Admission directly to the ICU occurred in 91.7% with early and 41.7% with DRF (p=0.01). Patients with DRF had lower ISS (16.5 vs. 22.7, p=0.001), more bilateral rib fractures (66.7% vs. 28.7%, p=0.02) and fewer pulmonary contusions (16.7% vs. 50%, p=0.04). ICU LOS, hospital LOS, and mortality did not differ between groups.

CONCLUSION: In the present study, the prevalence of DRF associated with rib fractures sustained from blunt chest trauma was 25%. DRF occurred more frequently in subjects with bilateral rib fractures, who had associated lower ISS and no pulmonary contusion on admission, compared to subjects with earlier onset respiratory failure. These findings may help identify a cohort of subjects at risk for DRF who warrant admission to the ICU for closer monitoring and for the implementation of preventive strategies to abrogate the onset of respiratory failure.
POSTER ABSTRACTS (cont.)

7. UNTREATED PERITONEAL TUBERCULOSIS RE-PRESENTING 17 YEARS LATER AS SUSPECTED METASTATIC DISEASE
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BACKGROUND: Miliary tuberculosis causes nonspecific symptoms and can mimic other systemic diseases including cancer leading to incorrect diagnoses. Peritoneal involvement can manifest with changes in bowel function, abdominal pain, and distension from both granulomatous masses and tuberculous ascites. This case report describes a patient with presumed abdominal malignancy found to have peritoneal manifestations of miliary tuberculosis.

METHODS: (N/A. This is a case report)

RESULTS: Case Report

A 33 year-old female originally from the Philippines presented to the oncology service with one year of worsening diffuse abdominal pain, and two months of food intolerance, nausea, and vomiting. On exam, she was cachectic with multiple large palpable abdominal masses most notable in the right lower quadrant with extension to the left side of the abdomen.

Seventeen years previously, the patient presented with abdominal pain and a palpable abdominal mass, and underwent an exploratory laparotomy and right hemicolectomy. Intraoperatively, a mass was found in the right colonic mesentery that was negative for malignancy, but was composed of multiple granulomas. AFB smear and culture from the specimen were negative and the patient recovered from her surgery without incident. No further treatment was given.

At the time of the patient’s re-presentation, CT demonstrated pelvic and adnexal masses with calcification, diffuse peritoneal abnormalities, and perihepatic masses. The disseminated nature of the masses along with her constitutional symptoms were concerning for metastatic disease. The CA-125 was elevated and FDG-PET imaging disclosed innumerable hypermetabolic nodules. Image-guided needle biopsy was non-diagnostic. The samples also underwent PCR analysis for TB because of the patient’s history of granulomatous disease of the abdomen but no TB DNA was detected. To obtain a definitive diagnosis, diagnostic laparoscopy was performed and demonstrated diffuse intraperitoneal studding and dense masses throughout the pelvis which were biopsied for both pathologic and microbiologic analysis. The specimens were negative for malignancy but PCR-positive for Mycobacterium tuberculosis DNA. AFB smear and culture were again negative for TB. The patient is currently undergoing 4-drug anti-TB therapy and is receiving parenteral nutrition.

CONCLUSION: Peritoneal tuberculosis can be an especially difficult form of tuberculous disease to diagnose as it often mimics malignancies such as ovarian cancer, as demonstrated in this case. Routine methods of detecting TB such as AFB smear and culture may be negative and can mislead providers. If a high suspicion of TB exists, PCR testing should be employed. This case report not only highlights the importance of keeping infectious etiologies as part of a broad differential diagnosis, but also presents a rare example of untreated peritoneal tuberculosis re-presenting after a long latency of 17 years.
8. HOW DO RESIDENTS PERCEIVE THE ACGME ANNUAL SURVEY?
A CROSS SPECIALTY SURVEY
Anna Weiss MD, Stephen Hayden MD
San Diego, CA

BACKGROUND: The validity of the ACGME survey, residents understanding, answering honestly, has been questioned within the surgical literature. The current system utilizes a survey format with answers in scale 1-5. The aim of this study is to determine how residents in all specialties perceive the current ACGME survey.

METHODS: An 18 question survey was administered via the Graduate Medical Education office using survey monkey to all residents at University of California, San Diego. This was done via email and strictly in electronic format. IRB approval was obtained prior to survey administration (#130892). Two of these questions were free text response, soliciting comments or ideas for an alternative accreditation tool. The responses were de-identified, collected, and analyzed.

RESULTS: There were 154 respondents, a 17.5% response rate. 22% do not understand 1-10 of the ACGME survey’s questions. 82% reported survey importance was reviewed with them - 50% reported actual questions were reviewed and 26% felt coached. 37% were “less than truthful” on 1-10 questions. 85% know how the results affect their program; 49% believe the survey unfair to decide accreditation. Several responded that the 1-5 scoring, 3 meaning delinquent, is not a fair representation. Some suggested more frequent site visits should replace the annual survey. Some report that a survey should be used, but one that is reworded, with a scoring of 1-10, and specific to each residency. Furthermore, although the survey is de-identified, some respondents from programs with 1-2 residents felt that they could be identified with negative consequences.

CONCLUSION: The ACGME survey may be the only available tool to anonymously assess resident duty hour adherence and satisfaction. However, it may be beneficial to reword it, and score on a 1-10 system. Perhaps the perception of the ACGME survey will change with more direct interactions of the Clinical Learning Environment Review visits forthcoming.
9. IMPLEMENTING LEAN METHODOLOGY TO IMPROVE OPERATIVE EFFICIENCY IN CARDIAC SURGERY
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BACKGROUND: Use of lean methodologies to improve efficiency have long been used in the manufacturing world. Only recently have these methods been applied to the healthcare setting. Comparing our institution’s cardiac surgery operative times to the STS database revealed a considerable discrepancy in our total OR duration but not our clamp time. We report our experience applying Lean methodologies to improve OR times and efficiency.

METHODS: Five operations were analyzed with the lean team both in person and with video recordings to establish current-state value stream mapping. Team members consisted of MDs as well as scrub techs and nurses. Times were broken down into two phases: the time from patient OR arrival to skin incision (wheels in), and closure to patient departure from the OR (wheels out). Several areas of improvement were identified and processes were implemented to improve specific issues. Future-state value stream mapping was established and implemented with 3 month follow up on progress.

RESULTS: Overall decrease in total operative time by 50min. Decrease in time from “wheels in” to incision from 75 to 59min. Decrease in time from skin closure to “wheels out” from 57min to 17min.

CONCLUSION: Lean methods and value stream mapping successfully improved our operative duration. Success requires a coordinated effort from the entire operative team. While our specific strategies in efficiency may differ from other institutions, the methodology can be generalized to other centers looking to eliminate inefficiencies in their process.
10. COMPARISONS OF MEDICAL STUDENT KNOWLEDGE REGARDING LIFE-THREATENING CT IMAGES BEFORE AND AFTER CLINICAL EXPERIENCE

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BACKGROUND: No published evidence currently exists demonstrating the improvement made in traumatic radiographic education during medical students’ clinical rotations. Exposure to radiologic images during clinical rotations may improve students’ skill levels. This study aimed to quantify the improvement in traumatic radiographic interpretation gained during third year clinical clerkships (MS3).

METHODS: We used a paired-sample prospective study design to compare medical students’ accuracy in reading computed tomography (CT) images at the beginning (Phase I) and end (Phase II) of their third year clerkships. During Phase I, students were shown 11 CT images reflecting life-threatening injuries that included head, chest, abdomen and pelvic injuries. Each image was shown in a timed fashion, and students were asked to identify the life-threatening injury. De-identified answers were scored by two blinded trauma surgeons and tabulated for incorrect (0), partially correct (.5), and correct (1) responses. During Phase II, students were shown 10 CT images with life threatening injuries comparable to those shown in Phase I. Overall scores for Phase II were compared with Phase I, as well as sub-scores for each anatomical region: head, chest, abdomen and pelvis.

RESULTS: Only scores from students participating in both Phase I and Phase II (N=57) were used in the analysis. Due to the unequal number of CT images provided in each phase, a correction factor of 0.91 was applied to scores from Phase I. The mean score with standard deviation was calculated for the four anatomical regions tested in both sessions, as well as the overall score in each of the two Phases. After completing their MS3 clerkship, students scored significantly better overall and in every anatomical region. Mean scores for head CT images were 0.74 ± 0.56 vs. 1.83 ± 0.83 (p<.001) for Phase I and Phase II, respectively. Mean scores for chest CT images were 0.14 ± 0.44 vs. 1.45 ± 0.66 (p<.001) for Phase I and Phase II, respectively. Mean scores for abdomen CT images were 0.11 ± 0.34 vs. 0.83 ± 0.91 (p<.001) for Phase I and Phase II, respectively. Mean scores for pelvis CT images were 0.25 ± 0.43 vs 0.52 ± 0.49 (p<.001), respectively. Respective to Phase I and Phase II, overall mean scores were 1.16 ± 1.00 vs. 4.62 ± 1.75 (p<.001).

CONCLUSION: Significant improvement is made in the ability to diagnose life-threatening images on CT scan during the MS3 clerkship year. This study demonstrates statistically significant improvement throughout all anatomical regions tested. Students gained the most aptitude in diagnosing chest injuries after the MS3 clerkships. However, after the clerkship year, students accurately diagnose only 46% of life threatening images on CT scan in the trauma setting. These results indicate that enhanced education is needed in providing medical students the necessary education to interpret CT scans.
11. DIAPHRAGM DISEASE: AN UPDATED SINGLE INSTITUTION CASE SERIES
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BACKGROUND: Diaphragm disease is a rare enteropathy thought to be caused by non-steroidal anti-inflammatory drugs (NSAIDs). Given the widespread use of NSAIDs, diaphragm disease is likely underreported in the medical literature.

METHODS: A retrospective chart review was performed at a single institution for all patients with a preoperative diagnosis of small bowel obstruction, stricture or retained video capsule and with a histologic confirmation of diaphragm disease from 2000 to 2015.

RESULTS: There were 22 patients and 17 (77%) were female. The mean age was 62 years (range 32 - 77). NSAID use was confirmed in 15 patients (68%). Presenting symptoms included one patient with chronic anemia, eight bowel obstructions and 13 patients with both bowel obstruction and anemia. Five patients were incorrectly being treated for Crohn’s disease. The mean number of years prior to diagnosis was eight and patients underwent a median of five types of diagnostic testing including CT, enterography, small bowel follow through, angiography, endoscopy and video capsule. Seventeen (77%) patients had a video or patency capsule study, and 15 of those patients (88%) had a retained capsule prompting surgical intervention. The ileum was the most common location for diaphragms. Small bowel resection was performed in 20 patients while the other two patients had resection and strictureplasty. Intraoperative evaluation of the bowel lumen varied with enteroscopy in six cases, passage of a ballooned catheter in four, passage of steel balls in two and no intraluminal evaluation in the remaining 10 cases. Surgeon and pathologist agreement with respect to the number of diaphragms occurred in nine of 20 cases (45%). The surgeon both over and underestimated the number of diaphragms. The mean follow up was 38 months (range 0 – 150). Eight patients experienced a recurrence of symptoms, but none of the recurrences were pathologically confirmed as diaphragm disease. Five of these eight patients did not have intraluminal evaluation of the bowel during their surgery.

CONCLUSION: The diagnosis of diaphragm disease is often delayed and should be considered in patients with a history of small bowel obstruction and/or anemia, especially in those patients who use NSAIDs. Consideration should be given to intraluminal evaluation of the bowel during surgery as surgeon and pathologist concordance was <50%.
POSTER ABSTRACTS (cont.)

12. RADIATION THERAPY: PENETRATING TRAUMA PATIENTS ARE MORE LIKELY TO UNDERGO UNNECESSARY IMAGING COMPARED TO BLUNT TRAUMA PATIENTS
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BACKGROUND: There have been no published studies that have examined the relationship between different mechanisms of traumatic injury and the indications for imaging. Clear indications for imaging of the head and cervical spine in the evaluation of trauma have been well established in the literature. The objective of this study is to determine if penetrating trauma patients receive more unnecessary imaging of the head and cervical spine than their blunt trauma counterparts.

METHODS: Data was prospectively collected on 504 trauma patients evaluated between April 1, 2015 and October 24, 2015. Patients were divided into two groups based on blunt (n = 441) or penetrating (n = 63) mechanism of injury. Two clinical guidelines were used to evaluate the indications for head imaging: the New Orleans/Charity Head Trauma Rule and the Canadian Computed Tomography (CT) Head Injury/Trauma Rule. The guideline used to evaluate cervical spine imaging was the National Emergency X-Radiography Utilization Study (NEXUS) Low-Risk Criteria. The two groups’ age, Injury Severity Score (ISS), and the rates of total and indicated CT imaging were compared using the unpaired Student t test and Fisher’s exact test.

RESULTS: Blunt trauma patients were older (56.7 +/- 23.4 vs. 35.9 +/- 14.9, p < 0.001) but with similar ISS compared to their penetrating trauma counterparts (6.29 +/- 5.44 vs. 7.76 +/- 14.9, p = 0.13). They were more likely to obtain CT imaging of the head and cervical spine (72.6% vs. 14.2%, p < 0.001; 69.4% vs. 14.3%, p < 0.001). However, penetrating trauma patients were significantly more likely to undergo unnecessary imaging of both the head and cervical spine (55.1% vs. 9.5%, p < 0.001; 31.1% vs. 9.5%, p = 0.002).

CONCLUSION: Compared to blunt trauma patients, penetrating trauma patients are more likely to receive unnecessary CT scans of the head and cervical spine. Further studies are needed to determine if penetrating trauma patients also receive unnecessary CT scans of the body. More stringent use of the established guidelines for CT head and cervical spine are recommended in order to decrease exposure to ionizing radiation and decrease healthcare costs.
13. CAPSULAR CONTRACTURE IN PATIENTS UNDERGOING IMPLANT-BASED RECONSTRUCTION WITH ACELLULAR DERMAL MATRIX AND RECEIVING POST-MASTECTOMY RT

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BACKGROUND: The most common form of breast reconstruction is implant-based, but implant reconstruction is associated with high rates of capsular contracture for those women who undergo post-mastectomy radiation therapy (RT). In recent years, the use of an acellular dermal matrix as a component of breast reconstruction has become common. The effect of acellular dermal matrix use on the rate of capsular contracture among women undergoing post-mastectomy RT has not been well characterized.

METHODS: A retrospective review of a prospective breast cancer database was conducted to identify all women undergoing immediate breast reconstruction with acellular dermal matrix and tissue expanders/implants who received post mastectomy RT. Medical records were used to supplement the database to identify capsular contracture. Capsular contracture was as judged by a plastic surgeon at follow-up.

RESULTS: 31 patients underwent implant-based reconstruction including acellular dermal matrix and received post-mastectomy RT. The mean age was 49 years (24-71), and median follow up time was 13 months. Median tumour size was 3.1 cm (range 0.1-19 cm). Capsular contracture occurred among 5 patients (21%). Of the entire cohort, 11 patients (35%) had their implant or expander removed. The reasons for explantation were capsular contracture (2 patients, 18% of explantations, 6% of entire cohort), asymmetry (1 patient, 9%), infection (3 patients, 27%), implant rupture (1 patient, 9%), implant exposure (1 patient, 9%), and/or patient wishes (3 patients, 27%). Three patients who experienced capsular contracture retained their implants/expanders.

CONCLUSION: The rate of capsular contracture among patients who underwent implant-based reconstruction with acellular dermal matrix and received post-mastectomy RT was 21% with an explantation rate due to contracture of 6%. These rates, while in a small cohort with limited follow up and associated with other substantial morbidity, appear to be lower than the rates previously reported among similar patients without acellular dermal matrix. These findings warrant further study as the experience with acellular dermal matrix grows.
14. EFFECTS OF AGE AND BODY MASS INDEX ON RISK OF POSTOPERATIVE ATRIAL FIBRILLATION IN MEN VERSUS WOMEN AFTER ROBOTIC-ASSISTED VIDEO-THORACOSCOPIC PULMONARY LOBECTOMY

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BACKGROUND: Postoperative atrial fibrillation (postopAF) is common after various kinds of cardiothoracic surgery, but its incidence and prognostic factors in patients undergoing robotic-assisted thoracic surgery have not been established. We sought to study the link between postopAF and age, gender, and body mass index (BMI) in patients undergoing robotic-assisted pulmonary lobectomy.

METHODS: Prospectively collected data from consecutive patients who underwent robotic-assisted pulmonary lobectomy by one surgeon for known or suspected lung cancer were retrospectively analyzed. Patients were first divided into four age groups: less than 60 yr, 61-70 yr, 71-80 yr, and older than 80 yr. In each age group, the proportion of patients experienced postopAF was calculated. Patients were then grouped either with (AF) or without (non-AF) postopAF. BMI was then calculated by their height and weight recorded at surgery. Statistical significance (p<0.05) was determined by Chi-square test and Student's t-test.

RESULTS: Of 253 consecutive patients, mean and median ages of patients (70.4 yr and 70.0 yr, respectively) with postopAF were significantly (p=0.009) higher than those without postopAF (65.8 yr and 67.0 yr, respectively). Stratified by age, out of 51 patients aged 60 yr or less, 5 (9.8%) experienced postopAF. Sixteen out of 83 patients (19.3%) aged 61-70 yr experienced postopAF, whereas 11 out of 59 (18.6%) patients aged 71-80 yr experienced postopAF. In patients aged older than 80 yr, 46.7% (7 out of 15) patients had postopAF. Calculated by Chi-square test, the p-value is <0.05. There were 116 were men and 137 were women. PostopAF was more frequent (p=0.002) in men (n= 29, 25.0%) than in women (n= 14, 10.2%) during their hospital stays. BMI of men in the AF group (29.5kg/m2) tend to be higher than those of men in the non-AF group (27.5 kg/m2), although not significantly (p=0.055). BMI between women of the two groups did not significantly differ (p=0.75). When genders were combined, BMI of patients with AF (28.5 kg/m2) is slightly higher than those without (27.3 kg/m2), although not significant (p=0.156), probably due to higher numbers of female patients in our study.

CONCLUSION: Our study supports advanced age as a significant risk factor for postopAF after robotic-assisted pulmonary lobectomy. Not only is the average age significant higher in patients who experienced postopAF versus those who did not, but incidence of postopAF also increases progressively in older patients groups. Men had higher rates of postopAF than women after robotic-assisted pulmonary lobectomy. Although not significant, men with postopAF trend to have higher BMI than those without. However, a similar trend was not observed in women. When men and women are combined, with more women in this study, BMI was not significantly different between the two groups. Since postopAF rate is lower in women, larger sample sizes might be needed for further investigation.
15. ENTERIC FISTULAE READMISSIONS: NOT WHAT YOU WOULD EXPECT
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BACKGROUND: Hospital quality improvement and cost-containment strategies have recently focused on reducing 30-day readmission rates. Enterocutaneous fistula (ECF) is a complex surgical problem, and a lack of data exists regarding risk factors for hospital readmission. The aim of the current study was to define risk factors for readmission in patients with ECF.

METHODS: All adult patients admitted to the Acute Care Surgery (ACS) service from December 2009 to September 2015 with a diagnosis of an enteric fistula (ICD-9 codes 569.81 and 537.4) were retrospectively reviewed. Variables collected included demographics, pre-existing diabetes (DM) or chronic obstructive pulmonary disease (COPD), complications during index admission, insurance status, and discharge disposition. Primary outcome was 30-day readmission to the ACS service.

RESULTS: A total of 112 patients with ECF were treated. Sixty-seven (64%) were transfers from outside hospitals. Eight died before discharge and were excluded. Of the remaining 104 patients, 44 (42%) were readmitted within 30 days versus 60 (58%) who were not readmitted. Ninety-eight (94%) had an intestinal fistula vs. 6 (5.8%) had gastro- or duodenal-cutaneous fistula. For readmitted vs. not readmitted, there was no significant differences with respect to mean age, sex, race, pre-existing DM or COPD. Development of complications during the index admission such as venous thromboembolis, acute kidney injury, or pneumonia was not associated with higher readmissions. Insurance status or discharge disposition (Table 1) had no impact on readmission.

CONCLUSION: Previously identified risk factors for hospital readmission did not influence readmission rates for patients with ECF. However, we did identify a 42% 30-day readmission rate in patients with ECF. Further investigation is required to identify readmission risk factors in patients with ECF.
16. ACCESSING BIAS TOWARDS LEFT-HANDED SURGEONS IN A RIGHT-HANDED OR
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BACKGROUND: Left-handed persons are a minority of the population and being left-handed is associated with a historical stigmatization. Previous research has indicated that left-handed surgeons represent a consistent minority and experience difficulties in practice and anxiety about their handedness. Right-handed teachers and right handed instruments often results in left-handed residents teaching themselves procedures and techniques which deters from their operative training and surgical education. Our study sought to determine the percentage of left-handed residents and attendings in a large academic center. We hypothesized that there is persistent perceived difficulties in surgical techniques as well as lack of education targeted to their laterality or accommodation in terms of left-handed instruments as part of their educational experience.

METHODS: 43 surgical residents and attendings at a single institution were surveyed without identifying information. Participants were asked to self-report their dominant hand as well as answer 13 binary questions regarding their experiences while interviewing for residency as well as experience during residency with relationship to their dominant hand. These surveys were then compiled and analyzed. The data was analyzed with an unpaired t test to calculate the confidence interval and p value.

RESULTS: 12 of the 43 (28%) surveyed surgery residents and attendings were left handed. Self-reported left-handed surgeons were statistically significantly (p <0.05) more likely to have difficulties performing procedures or techniques(83.3% vs 9.7%), experience anxiety during such tasks(58.3% vs 9.7%), receive perceived negative feedback(50% vs 0%), encouragement to change handedness(83.2% vs 3.2%) and be ambidextrous based on handedness (100% vs 58%). Left handed surgeons reported more often that left-handed instruments would be of assistance to their technique in the operating room(75.0% vs19.4%) and were more likely to ask for advice regarding their handedness(41.7% vs 6.4%). No participants reported that handedness was discussed during residency interviews.

CONCLUSION: Our data indicated a significant number of left-handed residents and surgeons in the surgery department at our teaching hospital. A bias against left-handed surgeons during residency training including difficulty with technique, education, accommodations and appropriate instrumentation was found. This highlights a need for increased understanding of left-handed surgeons, as well as the provision of left-handed instruments both during residency and beyond formal training. Further studies to demonstrate effective implementation of strategies to facilitate left-handed surgeons is warranted.
POSTER ABSTRACTS (cont.)

17. OUTCOMES OF CYTOREDUCTIVE SURGERY AND HYPERTHERMIC INTRAPERITONEAL CHEMOTHERAPY (CRS-HIPEC) FOR THE TREATMENT OF RECURRENT GYNECOLOGICAL MALIGNANCIES WITH CARCINOMATOSIS-ONLY DISEASE AT A HIGH-VOLUME CRS-HIPEC INSTITUTION

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BACKGROUND: Cytoreductive surgery and hyperthermic intraperitoneal chemotherapy ( CRS-HIPEC) has been well established as a safe and effective therapy in the treatment of peritoneal carcinomatosis of appendiceal and colorectal origin. More recently, similar surgical strategies have been employed for the treatment of recurrent gynecological malignancies with carcinomatosis-only disease (rGM-C). However the safety and efficacy of such strategies has yet to be fully demonstrated. There is controversy regarding the efficacy of such methods and indeed at least one recent meta-analysis has questioned the benefits of CRS-HIPEC in recurrent ovarian cancer. Our institution has extensive experience with CRS-HIPEC in the treatment of appendiceal and colorectal carcinomatosis. Since 2012, the authors have utilized CRS-HIPEC for rGM-C. In an effort to better understand our surgical strategies and outcomes, we created a database to analyze a variety of parameters related to CRS-HIPEC. This study focuses on characterizing the patient population, surgical methods and immediate outcomes of patients with rGM-C who have undergone CRS-HIPEC at our institution.

METHODS: Retrospective analysis of patients who have undergone CRS-HIPEC surgery for rGM-C at a high volume academic institution between 2012 and 2015. Assessment of basic demographic information, gynecologic cancer origin, surgical methods, HIPEC drug and duration, complications and ICU length of stay.

RESULTS: Thirty-one patients underwent CRS-HIPEC surgery for rGM-C from 2012-2015. The average age was 62 (range 42-79). The primary cancer was ovarian in 83.8% (N=26), fallopian 6.4% (N=2), endometrial 6.4% (N=1), unknown 3.2% (N=1). Surgical procedures varied widely and often included bowel resections, extensive peritoneal stripping and visceral organ resections. All patient received oxaliplatin for 30 min dosed at 460 mg/sq m at an average temperature of 42 degrees Celsius. Average ICU stay was 4.2 days (range 2-15, mode 3). Three patients required reintubation in the ICU and 1 patient required cardiac catheterization for a myocardial infarction. Thirty-day and in-hospital mortality was 0.

CONCLUSION: At a high-volume institution, cytoreductive surgery and hyperthermic intraperitoneal chemotherapy for recurrent gynecological malignancies with carcinomatosis-only disease is safe and feasible. Continued use of a data bank, both retrospective and prospective, will help compare findings to patients who undergo CRS-HIPEC for appendiceal and colorectal cancer. Future studies will focus on long-term outcomes such as survival. Efficacy can ultimately be determined by large randomized prospective studies.
18. STAGING OF HIATAL HERNIA DEFECTS USING INITIAL LAPAROSCOPIC VIEW
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San Angelo, TX

BACKGROUND: Hiatal hernia defects contribute significantly to gastroesophageal reflux disease, yet reliable repairs have been difficult to accomplish. In order to further stratify factors that may be associated with hiatal hernia failure, we identified a five score rating system of a hiatal hernia defect demonstrated on first laparoscopic view.

METHODS: 7 surgeons were asked to review and score 45 patient videos demonstrating an initial laparoscopic view of the hiatus using these definitions.
- Type I = normal
- Type II = dilated hiatus without dimple
- Type III = dilated hiatus with dimpling of fascia/peritoneal covering
- Type IV = prolapse of fascia/peritoneum above diaphragm with gastroesophageal junction displaced but not cardia
- Type V = prolapse of fascia/peritoneum with displacement of gastroesophageal junction and cardia

Fleiss’ kappa statistical test was used to assess the reliability of agreement between the 7 surgeons to evaluate whether the rating system could be used reliably.

RESULTS: Across the 7 surgeons there was no statistical difference between the mean scores ranking from 2.98 to 3.40 (P>0.100 in all cases). All but one patient had a standard deviation of <1, with that one patient having a standard deviation of one. Out of the 315 ratings, only one rating was more than one stage away from the mean. The average Pearson Coefficient for all ratings was 0.92. Fleiss’ kappa revealed a moderate concordance between the 7 raters with an average kappa coefficient of 0.50, 95% confidence interval (0.47-0.54).

CONCLUSION: This 5 stage rating system is moderately reproducible within a one stage difference among 7 surgeons experienced in laparoscopic hiatal hernia repair. Further prospective studies should be done to confirm these findings among a larger population of surgeons to reliable use the system in outcomes study.
19. MEDICAL SUPPLIES EXPOSED TO AN ENVIRONMENTAL CONTROL SYSTEM FAILURE
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Grand Forks, ND

BACKGROUND: There was a power outage that resulted in an environmental control system failure in the operating rooms and in the medical supply storage rooms causing significant changes in the humidity and temperature levels. The supplies were deemed contaminated and no longer fit for use. The supplies were discarded which resulted in about a 1.5 -2 million dollar loss, including closure of the operating suites.

The question was raised as to whether the change in humidity and temperature levels could truly contaminate the supplies with the ability to host microorganism growth.

METHODS: The supplies were inspected for obvious external evidence of contamination. Those that did show external contamination were not included in the study. The samples were stored in a storeroom for about 6 months prior to the study while we waited for approval. Initially, 199 surgical and anesthesia samples were collected that were deemed contaminated. In the same storeroom environment, the selected items were swabbed using sterile technique and cultured on both blood and Sabouraud agar plates. The plates were then placed in an incubator and inspected for growth 24-96 hours later. Seventy-six similar items not affected by the system failure were collected. These unaffected items were split into two groups. Thirty-seven items were swabbed and cultured in the microbiology lab under a ventilated hood while the remaining 39 unaffected items were cultured in the same storeroom environment as the original series. One set of plates were left in the storeroom open to air without any items being swabbed as a control plate for 24 hours before placing in the incubator. Lastly, an additional 45 affected items were collected. Using sterile technique these samples were swabbed and cultured in the microbiology lab under a ventilated hood.

RESULTS: From the initial 199 affected items; 29 of these items resulted in either bacterial and/or fungal growth (14.6% growth). Our control plates that were left open to air also resulted in bacterial/fungal growth. From the 76 unaffected selected items; 37 items were swabbed and cultured under the ventilated hood yielding no bacterial/fungal growth. The remaining 39 unaffected items were cultured in the same storeroom environment as the initial affected items resulting in bacterial and/or fungal growth on 4 items (10.3% growth). Forty-five additional affected items were then collected, swabbed and cultured in the same sterile fashion under the ventilated hood. None of these affected supplies resulted in any growth.

CONCLUSION: Based on our findings, it was concluded that the environmental control system failure did not result in contamination productive of bacterial or fungal growth and our initial growth was the result of atmospheric contamination.
20. FACTORS INFLUENCING COSMETIC OUTCOME IN BREAST CONSERVING SURGERY FOR CANCER
A Chiu MD, A Chagpar MD
New Haven, CT

BACKGROUND: Cosmesis is an important outcome measure of breast conserving surgery, as post-operative body image satisfaction is known to improve quality of life. Factors associated with patient-reported cosmetic outcome after breast conserving surgery are poorly understood. We sought to determine which factors - including volume of tissue resected and complex closure - influenced postoperative cosmetic outcomes in a nested cohort study.

METHODS: Data from the SHAVE trial were analyzed. The sample included 235 women who underwent partial mastectomy for stage 0-3 breast cancers. Cosmetic outcomes were measured via a self-reported assessment of satisfaction at the first postoperative visit using a 4-point Likert scale (Poor, Fair, Good, and Excellent). Bivariate analysis of factors associated with cosmetic outcome was conducted.

RESULTS: In this cohort, the median patient age was 61, the median largest tumor size was 1.6 cm in diameter, and the mean volume of tissue resection was 129 cm³. Overall, 204 (89%) of patients reported their cosmetic outcome to be positive, defined as a rating of “good” or “excellent.” Bivariate analyses were then conducted to determine if any clinical or surgical factors correlated with cosmetic outcomes (see Table 1). None significantly influenced a patient’s reported positive cosmetic outcome.

CONCLUSION: The vast majority of women report having positive cosmetic outcomes following breast conserving surgery. Neither sociodemographic factors, volume of tissue removed nor usage of complex closure has a significant impact on patients’ initial postoperative impressions of cosmetic outcome.
21. TRAUMA READMISSION RATES: ASSOCIATIONS WITH PATIENT INSURANCE STATUS AND AGE
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Dallas, TX

BACKGROUND: Traumatic injury is the leading cause of death for people ages 1-44 in the United States and costs an estimated $585 billion per year, including health care costs and lost productivity. Hospital readmissions contribute substantially to this financial burden, as does the fact that many trauma patients are uninsured or underinsured. Because health insurance in the United States comes from both public and private payers, coverage tends to vary between elderly and non-elderly adults. Elderly patients are typically insured by Medicare, while younger primarily have private insurance or are uninsured. The purpose of this study was to examine the link between unplanned hospital readmissions, insurance status, and other patient variables.

METHODS: Data on hospital readmissions occurring between January 1, 2003 and June 30, 2015 were collected from Dallas-Fort Worth Hospital Council (DFWHC). Variables included dates of admission and discharge, admitting hospitals, diagnoses, insurance status, age, etiology of injury, and supplementary classification of external causes of injury and poisoning (E-Codes). Exclusion criteria included, at the time of hospital encounter: patient age <18 years, hospital transfers, planned readmissions, and encounters in outpatient, rehabilitation, long term acute care (LTAC), or skilled nursing facilities (SNF). Univariate analyses were performed to determine which factors were significantly associated with readmission.

RESULTS: A total of 21,231 trauma patients were analyzed, with an overall readmission rate of 21.1% (n=4,487). Patients ≥65 years old were significantly more likely to be readmitted than patients <65 years old (p < 0.0001). The most common cause of readmission was falls (29%). Analysis of insurance status at the time of readmission revealed 41% of patients were insured through Medicare, 28% were privately insured, 22% were uninsured, and 9% were insured through Medicaid.

CONCLUSION: A total of 21,231 trauma patients were analyzed, with an overall readmission rate of 21.1% (n=4,487). Patients ≥65 years old were significantly more likely to be readmitted than patients <65 years old (p < 0.0001). The most common cause of readmission was falls (29%). Analysis of insurance status at the time of readmission revealed 41% of patients were insured through Medicare, 28% were privately insured, 22% were uninsured, and 9% were insured through Medicaid.
POSTER ABSTRACTS (cont.)

22. IMPROVING COMMUNICATION AMONGST TEAM MEMBERS IN A SURGICAL INTENSIVE CARE UNIT; INCORPORATING SMARTPHONE TECHNOLOGY TO IMPROVE EFFICIENCY
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BACKGROUND: Communication failures in the healthcare setting can have devastating effects on patient care. This is of particular importance in the management of critically ill patients. Furthermore, in root cause analysis, it has been shown that most sentinel events were associated with poor communication. Despite significant advances in mobile telecommunications, many intensive care units continue to use conventional paging systems. A novel communication platform, the Voalte® One smartphone, has been developed as an alternative to traditional communication methods. The Voalte® One smartphone operates over a secure HIPAA compliant network and provides voice calls, text messaging, a visual directory of currently available staff, and the ability to see and address various patient alarms. Our primary objective was to determine whether this innovative technology would provide a more efficient flow of communication over a traditional paging system.

METHODS: A single-center prospective observational study during the second quarter of 2015 was performed in a 24-bed trauma/transplant/surgical intensive care unit at a quaternary medical center. Type of device utilized for communication, time of nursing communication to physician response, and time of physician response to physician intervention were recorded for analysis. The communication type, clinical system addressed, and the urgency of the communication were also gathered as data points. Continuous variables were analyzed with a Mann-Whitney U test and categorical variables with a Fisher exact test. The study protocol was approved by the institutional review board (IRB).

RESULTS: A total of 205 nursing to physician communications were recorded with 100 events in the Voalte® group and 105 in the pager group. The mean time to communication with the Voalte® phone was at least 2 minutes earlier, 1.4 minutes for Voalte® group versus 3.4 minutes for the pager group (p=<0.001), table 1. The mean time to intervention in the Voalte® group was also quicker, 1.4 minutes versus 2.2 minutes in the pager group (p=0.003), table 1. Most communication events were routine instead of urgent for both groups (90.5% versus 87%, p=0.5). Additionally, the Voalte® group had similar communication events related to clinical systems with the exception of hematological and other events (p=0.02 and p=0.001, respectively), table 1.

CONCLUSION: In the surgical intensive care unit, the Voalte® smartphone system offers a more efficient and easy-to-use HIPAA compliant alternative to the traditional paging system for nurse to physician communication. The use of the Voalte® smartphone allows for faster and better communication which allows for more time for patient care and offers a quieter environment for patients while they convalesce. In critically ill patients, the more time spent on patient care typically results in better outcomes and higher patient satisfaction.
23. UTILITY OF A CLINICAL DECISION RULE FOR INTENSIVE CARE UNIT ADMISSION IN PATIENTS WITH TRAUMATIC INTRACRANIAL HEMORRHAGE

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Wichita, KS

BACKGROUND: Recent literature suggests the majority of traumatic intracranial hemorrhage does not require operative or procedural intervention. Subsequently, the cost-effectiveness of routine intensive care unit admission as a standard of care is under scrutiny. One recently developed clinical decision rule was sensitive in identifying patients requiring critical care interventions in an urban setting. We sought to validate its effectiveness in our rural patient population.

METHODS: We conducted a one-year retrospective cohort study of all adult trauma patients with traumatic intracranial hemorrhage treated at our facility. The rule, based on age, initial Glasgow coma scale score (GCS), and presence of a non-isolated head injury, was applied to our sample to externally validate the previously reported findings. Critical care interventions included arterial catheterization, central line placement, intracranial pressure monitoring, mechanical ventilation, use of vasopressor, antiarrhythmic or anti-hypertensive drips, transfusion of blood products, the performance of advanced cardiac life support protocols, and therapeutic and surgical procedures such as interventional radiology procedures, craniotomy, skull fracture elevation, or Burr hole placement.

RESULTS: Patients (n = 341) were, on average, older (61.6 ± 22.6 years) and moderately brain-injured, as evidenced by a median GCS score at presentation of 15 and median Injury Severity Score of 10. Our population had a similar adjusted head injury severity score as that from which the rule was developed; however, subdural hematomas were far more prevalent (50.4 vs 37%) in our population. Intraparenchymal hemorrhages and subarachnoid hemorrhages were comparatively lower in our population. The rule displayed a sensitivity of 0.923, specificity of 0.251, positive predictive value of 0.393, and negative predictive value of 0.862. The area under curve was 0.587. Using the decision rule, eight patients were inappropriately identified as low-risk for requiring a critical care intervention. Of the eight, six underwent neurosurgical interventions. Of this group, 4 of the 6 presented more than 48 hours after the inciting event; the remaining two patients had focal depressed skull fractures requiring elevation.

CONCLUSION: Despite its decreased performance in our population, the decision rule may still have value in reducing unnecessary ICU admissions because of its simplicity. Care must be taken when applying this rule to patients with delayed presentations and skull fractures. Prospective evaluation and cost-savings analyses are appropriate subsequent investigations for the rule.
24. RESOURCE UTILIZATION AFTER SNAKEBITE TREATMENT PROTOCOL IMPLEMENTATION
AL Fowler PharmD, DW Hughes PharmD, MT Muir MD, EM VanWert PharmD, CD Gamboa PharmD, JG Myers MD
San Antonio, TX

BACKGROUND: The Snakebite Severity Score (SSS) is an objective tool for evaluation of severity and progression of Crotaline bites. A local protocol was implemented using the SSS to guide therapy after the initial antivenin (CroFab®) loading dose. The purpose of this evaluation is to determine if a difference in total cost of antivenin therapy exists between pre-protocol and post-protocol snakebite patients.

METHODS: In a single-center, retrospective review, patients with a diagnosis of “snakebite” were identified between January 1, 2010 and November 1, 2014. Demographic information, snake species, baseline SSS, antivenin usage, intensive care unit and hospital length of stay (LOS), and morphine equivalents used throughout LOS were compared between patients treated pre- and post-protocol implementation.

RESULTS: One hundred seventy three patients were included in the evaluation. Rattlesnake bites, n=100 (57.8%), were most common. One hundred thirty six (78.6%) patients received antivenin, n=70 (79.6%) in the pre-protocol group and n=66 (77.6%) in the post-protocol group. Total per-patient antivenin use was similar between pre- and post-protocol groups, 18 (12-26) vials vs. 16 (12-24) vials, p=0.34. Total per-patient antivenin cost was also similar between groups; $39,600 vs. $35,200, p=0.34. Protocol violations occurred in 27/66 (40.9%) patients who received antivenin in the post-protocol phase. Re-loading patients without an increase in SSS was the most common reason for protocol violation. Cost of treatment was significantly lower in the subset of patients with no protocol violations than that in the subset of patients with protocol violations, $22,000 (13,200 – 26,400) vs. $39,600 (26,400 – 52,800), p < 0.0001. Pre-protocol and per-protocol cost of treatment were also significantly different, $39,600 (26,400-57,200) vs. $26,400 (22,000-35,200), p=0.001.

CONCLUSION: Adherence to a snakebite protocol that utilizes a Snakebite Severity Score to guide antivenin administration results in a significant decrease in cost of antivenin therapy in snakebite patients. Further evaluation of the reasons for protocol violation is needed.
25. MEDITERRANEAN DIET CAUSES DECREASE IN SYSTEMIC INFLAMMATION IN GASTROPARESIS
A Barber MD, S Bessen BA, V Bui BS, M Ditmyer PHD
Las Vegas, NV

BACKGROUND: Gastroparesis (GP) is a chronic neuromuscular disorder of the upper gastrointestinal tract defined by dyspeptic symptoms, such as nausea, vomiting, and delayed gastric emptying in the absence of physical blockage. Current treatment, although helpful, results in continued alterations of diet and inflammation. Patients with GP often suppress eating, resulting in the insufficient intake of nutrients. Recent studies have recognized the Mediterranean Diet (MD) for reducing inflammatory biomarkers.

METHODS: Subjects were symptomatic adults diagnosed with GP by a nuclear gastric emptying study. After IRB approval, subjects were asked to resume normal eating habits and record daily for a week everything consumed in a provided food diary, along with their weight and any physical or emotional observations. After 1 week of normal eating habits and an interview regarding their current eating habits and quality of life, blood was drawn, and heights and weight measured to be used as control data. Participants were instructed on the MD (change to unsaturated versus saturated fat and increase fruits/vegetables) asked to complete food diaries for 6 weeks. After 6 weeks, participants had blood drawn and were interviewed again. Food diaries were analyzed for total calories, protein, carbohydrates, total fat, saturated fat, and poly- and mono-unsaturated fats. Blood drawn at the beginning and end of the investigation was analyzed for C-reactive protein (CRP) and pro- and anti-inflammatory cytokine levels.

RESULTS: RESULTS 11 subjects began the study, and 3 dropped out. Of the 8 remaining subjects, 5 complied with the diet and were used for analysis. There was a significant difference seen in the ratio of saturated fat to total fat in the first week. There was a significant difference seen in the ratio of saturated fat to total fat in the first week. There were no differences in CRP, IL-1?, IL-10, and IL-6. However, TNF-? and IL-18 levels were significantly decreased in evaluable subjects six weeks following initiation of the MD. 2 of the 5 patients lost weight (10-25 pounds) and 2 others were able to intentionally gain weight with increased food tolerance in the MD, while still decreasing saturated fat to total fat ratio. 3 of the 5 subjects had diabetes as the cause of GP and each reported decreased insulin requirement. The most dramatic difference was observed in quality of life descriptions. By gaining cognizance of food triggers of GP symptoms, subjects were able to avoid symptoms.

CONCLUSION: In this small group of patients with GP, both subjective (QOL) and objective improvements were seen with MD. As with all studies involving change of diet, compliance levels were low, with the best results observed within the first week. Patients with GP often develop poor eating habits in an attempt to control symptoms and are not compliant with diet change. In fact, all 11 subjects would have needed to complete the study to give it adequate power. With increased glycemic control and quality of life reported, efforts to change poor established eating habits in this population might be warranted.
26. A COMPARISON OF INJURIES SUSTAINED AND ALL TERRAIN VEHICLE TYPE
S.P. Olson, R. E. Szlabick
Grand Forks, ND

BACKGROUND: All-terrain vehicles (ATVs) have increased in size and horsepower over the last 45 years. Side-by-side configured models or utility-terrain models (UTV) have gained in popularity and have introduced heavier and higher horsepower models with additional safety features. The purpose of this study was to determine if the type of ATV has any relation to safety habits or injury patterns seen in ATV trauma.

METHODS: ATV-injured patients admitted to a level II trauma center were reviewed over the years 2009 - 2014. ATV Type, helmet/seatbelt use, and length of stay were recorded. These were compiled with existing data for age, sex, trauma activation level, protective devices, GCS, and alcohol use.

RESULTS: The five year period produced 109 consecutive records for review, 74% of the patients were male, mean age was 33 years, 43% had alcohol involved, 19% were helmeted and 18% were seat belted. The review demonstrated that 61% of the patients were riding traditional 4-wheelers, 21% side-by-sides, 3% three-wheelers and 16% could not be determined what type of vehicle (ATV-NOS) was in operation. Helmet use was 33% for 3-wheelers, 25% for 4-wheelers, 14% of side-by-side and 6% ATV-NOS riders. There were significant differences between ATV type and alcohol use with none of 3-wheelers, 22% of 4-wheelers, 18% of side-by-sides and 29% of ATV-NOS (Chi2 p=0.0015). There were also significant differences between the triaged trauma level of 4-wheelers and ATV-NOS (Scheffé p-value 0.008), (ANOVA all groups 0.0035). Mean length of stay was 1.7 days for 3-wheelers, 22.8 days for 4-wheelers, 4.3 days for side-by-sides, and 4.5 days for ATV-NOS. Glasgow coma scale and lengths of stay were similar between all ATV types. Injury severity score was significantly higher for side-by-sides vs 4 wheelers (13.9 vs 7.4 Tukey HSD p-value 0.037) and ATV-NOS vs 4-wheelers (14.9 vs 7.4 Tukey HSD p-value 0.049).

CONCLUSION: No previous studies have examined injury patterns and differences between different ATV types. Our study is a small retrospective review from a single Level II trauma center. ATV type was able to be determined in the majority of cases. Injury severity scores are higher for Side-By-Sides when compared to 4-wheelers. Injury severity scores are also higher for ATVs NOS when compared to 4-wheelers. Additional metrics may reach significance with additional power.
27. ALCOHOL OR SUBSTANCE SCREEN DOES NOT PREDICT PTSD OR DEPRESSION AFTER TRAUMATIC INJURY
G Funk MD, EE Rainey MS, K Roden-Foreman BA, M Bennett PhD, AM Warren PhD.
Dallas, TX

BACKGROUND: Posttraumatic stress disorder (PTSD) and depression are increasingly recognized as both a serious psychological co-morbidity and a determinant of overall outcome in patients who sustain acute traumatic injury. Although some research has demonstrated a relationship between substance abuse and PTSD and/or depression, it is unclear whether or not patients who test positive for alcohol and/or other substances at the time of injury are at increased risk for development PTSD and/or depression. This study examined if alcohol and/or other substance use at time of injury predicted later development of PTSD and/or depression.

METHODS: of PTSD and/or depression.

This prospective cohort study included patients 18 years and older admitted to a Level I trauma center for ≥24 hours. Patients were divided into two groups based on the presence of alcohol or other illicit substances at time of hospital admission. Depression and PTSD were assessed at 3, 6, and 12 months. Demographic and clinical data were compared using t-tests or Wilcoxon tests for continuous variables, and chi-square tests for categorical variables. Adjusted analysis for the effects of age, sex, marital status, and injury severity was performed using generalized linear mixed models with a random subject effect to account for the dependency introduced by the repeated measures.

RESULTS: A total of 379 patients were included in this analysis. Of these patients, 90 were found to have positive screening tests for alcohol and/or other substances at the time of admission, 84 patients were found to have negative screening tests, and 205 were not tested. Overall, patients using substances at time of injury had a lower GCS score (p=0.04), higher ISS (p=<0.0001), greater number of days on mechanical ventilation (p=0.0008), and longer total length of stay (p=0.0014). Substance abuse was not predictive of depression or PTSD at any time point (p values all >0.05).

CONCLUSION: In this prospective study of 379 patients admitted following injury, alcohol and/or other substance use at the time of admission was not correlated with depression or PTSD at 3, 6, and 12 month follow-up. Routine testing for alcohol or other substances does not appear to have value in predicting those who will develop PTSD or depression in the 12 months post injury. Despite these findings, the inability of alcohol and substance use screening to predict the presence of other psychological sequelae does not detract from the usefulness of those screens; it instead indicates that the addition of screening specifically for PTSD and depression is warranted. Given the widely documented negative outcomes associated with the presence of these disorders, routine screening of trauma patients should still be considered as a crucial addition to the standard of care.
28. THE DIGITAL RECTAL EXAM HAS LOW SENSITIVITY AND SPECIFICITY AS A SCREENING TOOL FOR RECTAL INJURY
Julia Roberts MD, MPH, Clay Cothren Burlew MD, Ernest E. Moore MD
Denver, CO

BACKGROUND: The use of digital rectal exam (DRE) in the emergency department to determine the need for subsequent sigmoidoscopy evaluation to identify rectal injuries has historically been advocated. The utility of the DRE to identify rectal injuries, however, has not to our knowledge been systematically evaluated. The purpose of this study was to evaluate the role of DRE in rectal injury evaluation. We hypothesize DRE is useful as a screening tool to identify rectal injuries following blunt and penetrating trauma.

METHODS: All rectal injuries over a 5-year period (2010-2014) were identified from our trauma registry. Patient demographics, findings on DRE and sigmoidoscopy, type of rectal injury, and outcome were recorded for analysis. Pediatric patients under the age of 15 were excluded.

RESULTS: During the study period, 14 patients sustained a rectal injury. Mean age was 35 (range 18-60) years. The majority were men (72%), with 36% sustaining trauma by motor vehicle collision, 28% sustaining gunshot wounds, and 28% sustaining injury following a fall. Injuries included laceration or serosal tear at proximal rectum (n=9), perforation at the rectosigmoid junction (n=2), laceration at the distal rectum (n=2), and rectovaginal fistula (n=1). DRE results were concerning/positive in seven patients and all but one had adjunct imaging prior to the OR which identified a rectal injury, specifically laceration of the intraperitoneal (n=3) or extraperitoneal (n=2) rectum and rectovaginal fistula (n=1). Eight patients had a negative DRE and had immediate indications for operation; the rectal injury was consequently identified intraoperatively with evidence of a rectal hematoma, feculent peritonitis and/or bleeding from the rectum and rectal serosa. In our experience, DRE has a sensitivity of 60% and specificity of 43% for identification of rectal injuries.

CONCLUSION: DRE has a low sensitivity and specificity as a screening tool for rectal injuries. Clinicians should not rely on the DRE in patients at high risk for injury. Additional testing or imaging should be performed for patients who present with a high velocity trauma injury, specifically motor vehicle collision or gunshot wounds, as they are more likely to have a rectal injury, specifically a rectosigmoid or proximal rectal injury, despite negative DRE.
29. COMBINED LAPAROSCOPIC-ENDOSCOPIC DRAINAGE OF PANCREATIC PSEUDOCYST- A HYBRID APPROACH
JL Regner MD, SW Abernathy MD, LA Harmon MD, TS Isbell MD, RW Smith MD, CL Isbell MD, ML Davis MD, RC Frazee MD
Temple, TX

BACKGROUND: Pancreatic pseudocyst (PP) and walled-off pancreatic necrosis (WOPN) are part of a complex spectrum of complications from acute pancreatitis. Endoscopic management of PP can be effective, but does not treat the WOPN component. Laparoscopy may offer increased advantages for definitively debriding WOPN and decompressing PP. We performed a hybrid technique combining endoscopy and laparoscopy to treat PP and WOPN.

METHODS: Pancreatic pseudocyst (PP) and walled-off pancreatic necrosis (WOPN) are part of a complex spectrum of complications from acute pancreatitis. Endoscopic management of PP can be effective, but does not treat the WOPN component. Laparoscopy may offer increased advantages for definitively debriding WOPN and decompressing PP. We performed a hybrid technique combining endoscopy and laparoscopy to treat PP and WOPN.

RESULTS: Seven of the eight patients underwent successful laparoscopic-endoscopic cystgastrostomy. One patient was converted to open cystgastrostomy due to inadequate adherence of cyst and stomach walls. Two of the patients required repeat endoscopic therapy: One required evacuation of blood clot from the PP cavity, and the second needed further debridement of WOPN with abscess formation. Mean follow-up was 34.5 weeks (range 6-104 weeks). Average length of hospitalization 6.8 days (range 4-10 days). Average BMI 29.3 (range 23-46).

CONCLUSION: Laparoscopic-endoscopic hybrid approach to cystgastrostomy facilitates internal drainage of PP and effective debridement of WOPN. The technique is both safe and effective.
30. FABRICATION OF A 3D PRINTED BILIARY SYSTEM FOR TEACHING THE LAPAROSCOPIC CBD EXPLORATION
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Los Angeles, CA

BACKGROUND: Endoscopic procedures have been accurately simulated with expensive virtual reality techniques, but no good model for endoscopy of the bile ducts exists. We sought to develop low cost 3D printed models as the basis of a surgical simulation.

METHODS: Patient data obtained from MRCP scans were rendered and manipulated with Mimics software, translating the medical imaging datasets into 3D geometry files in stereo lithography format for 3D printing on a Formlabs Form1+ SLA printer with methacrylate resin.

RESULTS: Models from 3 patients were created at low cost. Several iterations were performed to improve the models. Models were submersed under water and instrumented with a flexible endoscope. Resistance improved with silicone spray. Solid colored models performed better than translucent ones. Navigation of the biliary tree was successful.

CONCLUSION: Current 3D printing techniques can be used to create low-cost teaching models for procedural simulation, which can be instrumented with surgical tools for increased realism. The efficacy of these devices as teaching modules needs to be determined.
31. IMPROVING ACCESS TO TENSION-FREE MESH INGUINAL HERNIA REPAIR IN PARAGUAY
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Los Angeles, CA

BACKGROUND: Inguinal hernias are among the most globally prevalent conditions requiring operations. Tension-free inguinal hernia repair performed with mesh is safe and effective. In Paraguay, mesh is limited due to lack of a direct supply chain and high cost and, as a result, tension-free repairs are not routinely practiced. We initiated a program to educate surgeons in tension-free inguinal hernia repair technique and to provide mesh donations to participating surgeons. We hypothesized that this program would increase patient access to tension-free inguinal hernia operations in Paraguay.

METHODS: Paraguayan surgeons were recruited for participation by partnership with the Paraguayan Ministry of Health. These surgeons completed a series of Lichtenstein hernioplasty training operations under the direction of 1 of 3 visiting hernia surgery experts or 1 Paraguayan expert between September 2013 and September 2015. Operations were offered to impoverished patients identified by local surgeons, and were provided at no cost to the patients. Local surgeons’ technical proficiency was evaluated using the Operative Performance Rating Scale (OPRS), with scores of 3 or greater indicating proficiency. Total operations and surgical complications over a 6-week postoperative interval were quantified. Mesh donations were provided to surgeons upon completion of training for use in future hernioplasties among impoverished patients. Surgeons documented subsequent operations performed independently and their complications. Those who continued to document these data received additional donations of mesh.

RESULTS: The Ministry of Health recruited 11 surgeons to participate in hernioplasty training. Trainees completed a median of 5 observed cases (range 3-6 cases per surgeon). By the conclusion of training, all 11 participants demonstrated technical proficiency. A total of 50 operations were performed for patients during the program. There were no complications. All 11 surgeons received an initial mesh donation, and 6 continued to provide data reports on their subsequent independent hernioplasties. Among them, 79 operations were reported using the donated mesh.

CONCLUSION: Our program increased capacity of effective tension-free inguinal hernia repair operations among underserved patients in Paraguay. We anticipate increased surgeon experience with mesh repairs will improve patient access to these operations over time. Our study invites a formalized process of surgical quality improvement and public health campaigns in Paraguay.
32. CLASSIFICATION AND SURGICAL MANAGEMENT OF SWEAT GLAND CARCINOMAS: A CASE SERIES AND REVIEW OF LITERATURE
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BACKGROUND: Sweat glands, distributed throughout the entire surface of the body, play a vital role in thermoregulation. Sweat gland carcinomas are rare, with an overall incidence of 0.005% and include hidradenocarcinomas, spiradenocarcinomas, and porocarcinomas. Sweat gland carcinomas frequently have delays in diagnosis due to their low incidence and subtle characteristics. We report a series of early stage sweat gland with diagnosis, management, and follow-up of this rare disease.

METHODS: After obtaining IRB approval, a retrospective review from 2009-2015 of the patients diagnosed with sweat gland carcinomas treated at a large academic institution was performed.

RESULTS: The series demonstrated variety in patient demographics at diagnosis but the details of disease presentation were similar. All 6 of the early stage sweat gland malignancies were initially misdiagnosed as a benign or more indolent process resulting in a delay of biopsy, most commonly for at least one year. All six patients began treatment, after a metastatic imaging evaluation, with a wide local excision with sentinel lymph node biopsy. Of the 5 patients who did not have metastatic disease to lymph nodes at presentation, median follow-up was greater than 4 years (52 months). Overall disease-free survival at 1, 3, and 5 years was 100%, and overall survival was 80%.

CONCLUSION: While literature describes the pathologic presentation of sweat gland malignancies, less is known about the treatment and long term prognosis of early stage sweat gland malignancies. This study is the largest case series with detailed descriptions of patient presentation and the longest actual follow-up of patients with sweat gland carcinomas routinely examined in an oncology clinic. In this series, the surgical management of early stage sweat gland carcinomas with wide local excision with sentinel lymph node biopsy resulted in a disease free survival of 100% with a median follow up of greater than 4 years.
33. ABDOMINAL LYMPHANGIOMAS: A CONTEMPORARY INSTITUTIONAL EXPERIENCE OF 12 PATIENTS
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Oklahoma City, OK

BACKGROUND: Rare congenital malformations of the mesenteric or retroperitoneal lymphatics, abdominal lymphangiomas present in approximately 1 in 20,000 pediatric admissions. Symptoms and physical examinations may be vague and misleading, and patients often undergo multiple abdominal imaging modalities before a diagnosis is obtained.

METHODS: After institutional review board approval, a retrospective chart review of patients who underwent surgical intervention for abdominal lymphangioma from 2005-2015 were included in this study.

RESULTS: Twelve patients were identified, ranging in age from 12 days to 13 years old (average 3.83 years). There was a female predominance (66%) and the majority of patients required multiple abdominal imaging techniques before they were referred for surgical intervention, average 1.5 imaging studies. Intervention consisted of bowel resection (33%) and cyst excision (66%). The average length of stay was 5 days (range 0-18days). Complications included bowel obstruction in two patients.

Abdominal lymphangiomas are found in the mesentery, omentum or retroperitoneum. These lesions can be difficult to diagnose on symptomatology alone, as nonspecific abdominal pain and progression are cited as the most common presentations in the literature. Patients occasionally present acutely, with fever and peritonitis. Rarely, patients will present with cyst hemorrhage after abdominal trauma. Definitive treatment is surgical excision; small bowel resection is required when the cyst wall is adherent to the serosa.

CONCLUSION: Abdominal lymphangiomas are a rare pediatric pathology. Surgical excision is recommended due to potential for mass effects including abdominal pain, bowel obstruction or torsion.
POSTER ABSTRACTS (cont.)

34. SODIUM POLYSTYRENE SULFONATE (KAYEXALATE) ADMINISTRATION AND ACUTE COLONIC NECROSIS: A CASE SERIES
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Torrance, CA

BACKGROUND: Intestinal necrosis is a rare but serious complication of sodium polystyrene sulfonate (SPS) administration. Concomitant sorbitol administration is a known risk factor for colonic necrosis. Our objective was to analyze our institution’s experience with this complication.

METHODS: A retrospective review of patients undergoing colectomy with a pathologic diagnosis of SPS crystal induced colonic necrosis over a 2 year study period was completed. All relevant information involving the perioperative visit was abstracted and analyzed.

RESULTS: Four patients were identified with a pathologic diagnosis of SPS associated colonic necrosis (table). All doses of SPS administered included 20 grams of sorbitol per 15 grams of SPS. Time from administration of SPS to onset of symptoms was an average of 3 days. Three of the four patients were on high doses of steroids. The patients presented with different combinations of abdominal pain, distension, and/or bloody stools. One patient died during the index admission after a prolonged hospitalization in the intensive care unit, ultimately succumbing to multisystem organ failure. Another patient died 18 months later after an episode of acute cholecystitis treated with a cholecystostomy tube, and ultimately multisystem organ failure.

CONCLUSION: SPS is a widely used treatment for hyperkalemia, and is more likely to be used in patients with renal disease. SPS induced bowel necrosis does not appear to be dose dependent however our institutional experience demonstrates a close association with sorbitol. In addition, the immunocompromised state may aggravate the initial injury caused by SPS crystals. More research needs to be done regarding etiology of SPS toxicity. Sorbitol containing SPS administration should be carefully considered especially in patients on steroids.
35. SYNTHETIC DRUG ABUSE AMONG ACUTE CARE AND TRAUMA ADMISSIONS: AN EMERGING THREAT
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Dallas, TX

BACKGROUND: Several studies have demonstrated drug and alcohol abuse as a significant contributor to trauma and acute care admissions across the United States. Unfortunately, traditional drug screens fail to detect synthetic drugs among trauma and acute care patients. Failure to detect synthetic drugs in the system can result in several complications during management of patients including myocardial infarction, myocardial ischemia, seizures, development of delirium and even death. Here we present a pilot study demonstrating the incidence of synthetic drug use among acute care and trauma surgery admissions (n=15) over a span of 3 months.

METHODS: Between June 2014 to September 2014, 15 acute care surgery patients suspected to have synthetic drug use were admitted to our care. Blood sample were assessed for presence of 52 synthetic cannabinoids. General demographics, general drug and alcohol screen, synthetic drug screen, clinical outcomes, 30 day re-admission and mortality were noted.

RESULTS: Results demonstrated 27% of acute care admits were positive for synthetic cannabinoid with 60% positive for cannabinoid use. Among the non-synthetic drug positive patients, 13% admitted to past synthetic drug use. All patients were discharged home with exception of one patient which was discharge to police custody. No re-admission or mortality was recorded at our facility among positive drug users.

CONCLUSION: Our preliminary results indicate our healthcare system is under capturing synthetic drug associated acute care admissions. Given the nature of drug and alcohol abuse, capturing re-admissions and mortality will require a multi-institutional collaboration. Future studies need to be conducted to determine the nature of synthetic drug use among acute care admits.
36. REFORMING A FUNCTIONAL GALLBLADDER AFTER PARTIAL CHOLECYSTECTOMY: REPORT OF TWO CASES AND A REVIEW OF THE LITERATURE
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Albuquerque, NM

BACKGROUND: Both laparoscopic and open subtotal cholecystectomy are procedures considered to be acceptable in difficult cholecystectomies for acute and chronic cholecystitis where inflammation and adhesions preclude safe removal of the entire gallbladder, namely the cystic artery and duct.

METHODS: We reviewed the charts of two patients requiring open subtotal cholecystectomy at our institution who months later developed symptoms of biliary colic and had radiographic evidence of complete gallbladders containing stones.

RESULTS: These patients had laparoscopic procedures converted to open with subtotal cholecystectomies. The infundibula were left in place with a drain. They had some bile leakage that eventually stopped. Subsequent studies indicated they had reformed what appeared to be a functioning gallbladder.

CONCLUSION: A recent case report published in 2015 describes a case of a laparoscopic subtotal cholecystectomy complicated by bile leak who subsequently developed biliary colic four months later and was found to have a completely intact gallbladder requiring a second, complete laparoscopic cholecystectomy. From our own experience and these reports, we believe there is evidence in the ability of the gallbladder to at least functionally regenerate if the cystic duct remains patent after subtotal cholecystectomy. Retrospective cohort studies would be a good next step in establishing the regeneration of the gallbladder as a known complication of subtotal cholecystectomy, and perhaps establish specific intra-operative techniques that have prevented it.
37. IMMEDIATE THORACOSCOPIC AND ROBOTIC-ASSISTED REPAIR OF INTRAOPERATIVE TRACHEOBRONCHIAL INJURIES

BM Enciso BS, MR Berkowitz DO, K Meredith MD, J Pimiento MD, C Chai MD, M Yamamoto MD, JR Garrett ARNP-C, CC Moodie PA-C, EM Toloza MD PhD
Tampa, FL

BACKGROUND: Intraoperative tracheobronchial injuries (TBI) are rare occurrences that must be managed immediately to avoid development of life-threatening complications, such as fistulae, mediastinitis, or empyema. Traditional thoracotomy approaches to repair TBI are associated with morbidity; thus, less invasive repair methods are needed. This report describes the use of video-assisted thoracoscopic (VATS) surgery or robotic-assisted VATS surgery as less invasive alternatives to TBI repair.

METHODS: We report 3 patients whose intraoperative TBI were immediately repaired minimally invasively. Robotic-assisted VATS surgery was used to repair TBI incurred in a 74-year-old patient (Pt#1) undergoing robotic-assisted right upper lobectomy and in a 66-year-old patient (Pt#2) undergoing robotic-assisted right transthoracic esophagogastrectomy. A VATS approach was used in a 72-year-old patient (Pt#3) to repair a TBI incurred during VATS right transthoracic esophagogastrectomy. Repair of the TBI was achieved using the same port incisions as the original VATS or robotic-assisted VATS procedures. A running locking stitch technique with barbed monofilament sutures was used to primarily close the TBI. Pleural flap buttress was sutured over each TBI repair, which was then covered by lung sealant for added pneumostasis. The original procedures were resumed after the repairs were completed.

RESULTS: All 3 TBI were successfully primarily repaired by VATS or robotic-assisted VATS surgery, with no air leaks from the TBI repair suture lines identified by submersion testing at the end of the procedures. Postoperatively, Pt#1 had a prolonged lung parenchymal air leak that required discharge on postoperative (POD)#14 with chest tube connected to Pneumostat valve, which were removed on POD#22. Pt#2 developed Enterobacter pneumonia requiring intubation and subsequent tracheostomy, C. difficile colitis, and atrial fibrillation, with discharge to long-term acute care facility on POD#36 and discharge to home on POD#72. Pt#3 had an uncomplicated recovery and was discharged to home on POD#10. None of the patients developed mediastinitis, empyemas, fistulae, or airway stenosis postoperatively.

CONCLUSION: Both VATS and robotic-assisted VATS surgery were successful in TBI repair and may offer the surgeon less invasive alternatives to posterolateral thoracotomy. Literature review suggests that other alternatives to thoracotomy include non-surgical and cervical approaches, the latter limited to TBI above the carina. In the cases reported here, VATS and robotic-assisted VATS surgery allowed minimally invasive access to TBI involving the distal trachea and mainstem bronchi. Postoperative complications notwithstanding in these 3 cases, robotic-assistance facilitated TBI repair over conventional VATS surgery due to 3-dimensional visualization and wristed instrumentation.
38. CHRONIC ABDOMINAL PAIN IN ADULTS WITH A HISTORY OF GASTROSCHISIS: SURGERY MAY HAVE A ROLE IN TREATMENT
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Albuquerque, NM

BACKGROUND: Gastroschisis is a congenital defect characterized by an abdominal wall defect usually to the right of the umbilicus. These patients are all malrotated due to the failure of the intestine to return to the abdomen and achieve normal fixation. This malformation has been increasing in frequency. Delayed onset of bowel function, sometimes for several weeks, is one of the major complicating factors in the management of these children. The introduction of TPN in the 1970’s significantly improved treatment of these children. With parenteral nutrition and improvements in neonatal care, the survival rate for children with gastroschisis is over 90%.

As with many congenital pediatric conditions, increased survival has led to new challenges for both pediatric and adult general surgeons. With improvements in neonatal care, adult general surgeons can expect to see increasing numbers of patients with a history of gastroschisis. As infants, surgical repair is done either primarily or as a staged procedure depending on the size of the abdomen and the appearance of the intestine. While care is taken not to twist the mesentery, the exact position of the bowel within the abdomen cannot be controlled due to the lack of domain and frequently edematous and shortened mesentery. Though they are malrotated they are generally considered to be at very low risk for volvulus due to adhesions as well as a lack of Ladd’s bands and a narrow mesentery.

METHODS: We describe two cases of adult patients born with gastroschisis who presented with chronic abdominal pain. Both patients were found to have abnormalities on imaging that were subtle and not immediately appreciated on initial review. Adhesions formed with the small bowel mesentery or colonic mesentery serving as the obstructing band. This led to internal hernias and chronic partial obstruction in both our patients. Lysis of adhesions and a Ladd procedure (appendectomy, relocation of the small bowel to the right side of the abdomen, large bowel to the left side of the abdomen) was performed. Both patients have had symptomatic relief which was noted immediately following surgery.

RESULTS: A 23 year old male with a history of gastroschisis presented with a three year history of increasing left sided abdominal pain which was described as cramping, severe, usually shortly after meals but sometimes without any aggravating factors. He reported having a bowel movement once every three days and frequent nausea without emesis. The limited history available from his family stated that his abdomen was closed on day 1 of life. He had seen numerous physicians and had a complete work up prior to referral to the University of New Mexico including a small bowel follow through, computed axial tomography (CT) scan, upper and lower endoscopy and abdominal ultrasound. His imaging demonstrated malrotation with failure of the duodenum to cross the midline. His CT scan was initially read as otherwise normal. We reviewed the studies with our pediatric radiologist and found mildly dilated proximal jejunal loops with fecalization. The distal small bowel appeared of normal caliber. The colon appeared to pass behind the superior mesenteric artery (SMA) and vein (SMV). Figure 1: CT scan showing the colon passing behind the SMA and SMV. At surgery, the small bowel mesentery was adherent to sacral promontory and the transverse colon was inferior to small bowel mesentery. This caused a partial colonic obstruction. There were numerous loops of small bowel adherent to the capsule of the liver. A complete lysis of adhesions and Ladd’s procedure was performed. At 3 month follow up, he reported marked improvement in pain. He had a bowel movement.
every day and had gained 15 pounds. He reported being able to participate in social activities and was seeking employment. Case 2: A 30 year old female with a history of gastroschisis presented with a ten year history of gradually increasing abdominal pain. The intensity and frequency of pain had gradually increased over the years. Her pain was in the left upper quadrant and epigastrium, described as “twisting”, cramping and associated with nausea and early satiety. She had lost 10 pounds over the previous year. History is not available as to when her defect was closed but her mother reports that it was several days after birth. She had a CT scan, colonoscopy and small bowel follow through that demonstrated malrotation. On our review of the imaging, there appeared to be small bowel passing below the abnormally positioned colon with evidence of dilation of the proximal bowel. She underwent an exploratory laparotomy. We found chronically dilated loops of proximal jejunum, and jejunum running under the transverse mesocolon with decompressed loops of distal jejunum to the right of the transverse mesocolon. Lysis of adhesions and Ladd’s procedure was performed. Large and small bowel were oriented correctly before closure of the abdomen. At three month follow up she reported complete resolution of pain and early satiety. She was able to resume work as a waitress.

CONCLUSION: There are several congenital anomalies associated with intestinal malrotation. Gastroschisis, omphalocele and diaphragmatic hernia are the most common of these and are a result of the intestines not returning to the abdomen during development. These patients do not generally have Ladd’s bands or a narrow mesentery, and so a formal Ladd procedure at the time of their surgery for gastroschisis, omphalocele or diaphragmatic surgery is not necessary to prevent volvulus. In the cases of omphalocele and open diaphragmatic hernia repaired through the abdominal approach, the bowel can be replaced into the abdomen in a manner similar to the technique of Ladd’s procedure. Children with gastroschisis have their bowel reduced through a small abdominal wall defect without laparotomy making the exact positioning of the bowel more difficult. This is especially true of children with matted bowel or who require a silo for slow reduction and delayed closure. It is accepted that their risk of volvulus is very low and so later surgery for malrotation is not indicated.

We believe that the inability to control the position the intestines in the abdomen at the time of reduction can lead to the two situations that we describe. In both cases the tethering of the bowel by adhesions, small, created essentially an internal hernia and what appeared to be chronic partial obstruction. It is possible that as the patient grows and the mesentery stretches over the entrapped bowel, this leads to chronic partial obstruction and resultant pain. Both our patients had numerous but flimsy adhesions which were easily lysed.

While malrotation allows the intestines to be in this pathlogic configuration, we feel that it is really the gastroschisis that is the underlying issue. The bowel is edematous and matted and upon reduction into the abdominal cavity, the exact position of the intestine cannot be controlled. This is especially true in cases where a silo is needed, as seems to be the case in the second patient. Conceivably this clinical presentation could also occur with the thoracoscopic repair of a diaphragmatic hernia, as the intestines are reduced back into the abdomen without the ability to control their exact position. This is not generally an issue in other congenital anomalies that are associated with malrotation such as omphalocele and open diaphragmatic hernia. In these conditions, the intestines are not edematous and matted when surgery is done and can be carefully placed back into the abdomen.
39. TRAUMATIC TRACHEAL INJURY FROM FOREIGN BODY IN THE NECK AFTER AIR BAG DEPLOYMENT: A CASE REPORT
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BACKGROUND: Occupant protection systems such as air bag deployment and seat belt use have been shown to reduce mortality and morbidity for drivers involved in motor vehicle collisions. In some cases however, airbag deployment may be the cause of serious injuries.

METHODS: We report a case of a 25 year-old female who was involved in a head on motor vehicle crash when a foreign body from the airbag lacerated her skin and thyroid cartilage and lodged in her trachea, occluding it. She presented to the trauma bay with blood and air bubbling from her neck and mouth, with the foreign body still present. An emergent airway was established in the trauma bay by inserting a 6-0 tracheostomy tube in the distal airway over a bougie through the tracheal laceration. She was taken emergently to the operating room to remove the foreign body and repair the tracheal and thyroid cartilage injuries primarily. The foreign body was a C-shaped piece of metal shrapnel. On post-operative day two, she returned to the operating room to reassess the injury with microlaryngoscopy, tracheoscopy, and tracheotomy. Her vocal cords were intact and the posterior wall of the trachea was not violated.

RESULTS: With immediate, appropriate surgical intervention and post-operative care, our patient survived a life-threatening injury. She was discharged to home on post-operative day nine, and she is doing well. Since airbags have been routinely installed in automobiles, mortality from motor vehicle collisions has been reduced by 31% in frontal crashes and 11% in all crashes. However, 50% of patients in crashes with air bag deployment suffer injuries. A constellation of injuries related to air bag deployment have been reported, particularly those that are ocular, cervical, chest, abdominal, craniofacial, and/or cerebral in nature. Our patient’s injury pattern, involving a lacerated trachea and disrupted thyroid cartilage from a dislodged foreign body from the patient’s air bag, has been rarely reported.

CONCLUSION: Tracheal injuries can be a life-threatening consequence of air bag deployment. Occupant protective systems significantly decrease the morbidity and mortality rates associated with head-on motor vehicle collisions, yet efforts should be made to reduce air bag related injuries. Improvement in the design of air bags and education for drivers about their use should be implemented as a possible solution.
40. LIMY BILE SYNDROME: A COMPARISON OF PEDIATRIC AND ADULT CASES IN THE LITERATURE
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San Diego, CA

BACKGROUND: Limy Bile Syndrome, also known as, “Milky Bile Syndrome” is a condition in which the gallbladder is filled with a thick, radio-opaque material typically diagnosed on plain abdominal x-rays. The material composed predominantly of calcium carbonate, and the etiology is thought to be chronic obstruction of the cystic duct. This condition is especially rare in children. In addition, there is no consensus in the literature on the treatment options which ranged from non-operative management to laparoscopic cholecystectomy. We present a case report and a review of the literature for this unusual biliary disease.

METHODS: A literature review of all pediatric and adult cases of limy bile syndrome was performed. A PUBMED search was performed for “Limy Bile Syndrome” and “Milky Bile Syndrome”. All reviewed articles were published in English. The presenting symptoms, complications, and outcomes of both adult and pediatric cases were compared.

RESULTS: Review of the literature revealed that the incidence of complicated biliary disease was higher in adults than pediatric patients. All cases reviewed reported resolution of symptoms regardless of treatment method. Treatment methods used included non-operative management and endoscopic therapy however the majority of the patients underwent cholecystectomy.

CONCLUSION: The incidence of complicated biliary disease in patients with limy bile syndrome appears to be higher in adults who present with symptomatic disease. This suggests that early laparoscopic cholecystectomy is indicated to prevent future complications.
BACKGROUND: We present an interesting case of 34 year-old male arriving from the scene of a motorcycle collision with severe abdominal pain and hypotension coupled with a focused assessment with sonographic for trauma found to be positive in the right upper quadrant. The patient responded well to volume resuscitation and underwent computed tomography which demonstrated grade 5 splenic laceration and distal pancreatic transection. Laparotomy was performed with splenectomy and distal pancreatectomy. Left paraduodenal hernia was discovered upon exploration, it was easily reduced and the defect was repaired with non-absorbable suture. Re-read of CT scan by radiology department confirmed presence of the paraduodenal hernia on the initial scan.

METHODS: Paraduodenal hernias, a type of internal hernia caused by malrotation of the midgut, are a relatively rare cause of intestinal obstruction, although they are likely underdiagnosed. Internal hernias of all types compose less than one percent of intestinal obstruction. Paraduodenal hernias account for nearly half of internal all hernias and are present in up to 2% of the general population at autopsy. Indeed, over half of all paraduodenal hernias progress to obstruction during a patient’s lifetime. Despite this, they remain difficult to diagnose likely due to vague, non-localizing symptoms (they may also present as chronic abdominal pain or be asymptomatic) and a relative minority which are able to be diagnosed on computed tomography studies.

RESULTS: Diagnosis of paraduodenal hernia was made after splenectomy and distal pancreatectomy for traumatic injuries. During further exploration, paraduodenal hernia was identified. The contents of hernia were manually reduced. Care was taken to avoid injury to the inferior mesenteric vessels. The bowel appeared viable and well perfused. Defect was closed with simple interrupted, permanent suture. Both closure of hernia defect and wide opening of the hernia sac to prevent obstruction have been described in the surgical literature. The postoperative course has been uncomplicated.

CONCLUSION: Although a relatively rare cause of intestinal obstruction paraduodenal hernias are often not identified as until surgical exploration, limiting preoperative planning for repair. Because of this, it is important to include paraduodenal hernia in the differential diagnosis of small bowel obstruction and to know and understand the role of the surgeon in the operative repair both obstructive and non-obstructive paraduodenal hernias.
42. MANAGEMENT OF CHOLEDOCHOLITHIASIS DURING PREGNANCY: THE DEBATE CONTINUES!
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BACKGROUND: Physiologic changes in pregnancy predispose to the formation of sludge and gallstones. Expectant management of pregnant patients with symptomatic cholelithiasis can be problematic. At best, a significant number of patients will continue to experience symptoms, and at worst, complications such as acute cholecystitis, cholangitis, or gallstone pancreatitis can occur. This can lead to increased morbidity and even fetal demise. Currently, there is no consensus on the optimal management of biliary disease, particularly choledocholithiasis, during pregnancy.

METHODS: This report highlights a case of a 35 year old female in the second trimester of pregnancy who presented with choledocholithiasis. Due to concern for the potential development of further complications, specifically cholangitis or pancreatitis, the patient underwent primary laparoscopic cholecystectomy with intraoperative cholangiography. Choledocholithiasis was indeed confirmed and treated successfully with transcystic common bile duct exploration. This led to complete resolution of the problem without the need for ERCP. A detailed review of the PubMed database focusing on strategies to limit exposure to radiation, anesthesia, and invasive procedures in the pregnant patient with complicated biliary disease accompanies this report.

RESULTS: Expectant management of choledocholithiasis is inappropriate in the pregnant patient. Retrospective studies suggest that laparoscopic surgery and fluoroscopy are safe in pregnancy if radiation exposure can be minimized. To protect the developing fetus, cumulative radiation dosage should be limited to 5-10 rads. Cholangiography using modern equipment with limited fluoroscopy results in exposure of 0.2-0.5 rads. Longer fluoroscopic times or use of older equipment can result in exposures of up to 20 rads, and ERCP exposure varies between 2-12 rads. Novel ERCP techniques exist that eliminate radiation exposure entirely; however, these endoscopic approaches do not address the remaining gallbladder and are not widely available.

CONCLUSION: Expeditious and accurate diagnosis and management of choledocholithiasis in the pregnant patient is paramount as delaying treatment can lead to serious consequences. Individualized management can be tailored based on available technology and provider skill sets, but the authors contend that laparoscopic cholecystectomy with cholangiography followed by laparoscopic common bile duct exploration if necessary strikes the optimal balance of minimizing radiation exposure, reducing anesthetic times, and limiting the number of procedures in the pregnant patient.
43. ACQUIRED HEMOPHILIA A IN THE POSTOPERATIVE SETTING: TWO CASES SUCCESSFULLY TREATED USING PLASMAPHERESIS AS AN ADJUNCT TO STEROIDS AND ANTI-CD20 MONOCLONAL ANTIBODY THERAPY

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BACKGROUND: Acquired hemophilia A (AHA) occurs in 1-2 persons/million population per year and is caused by development of a factor VIII (FVIII) inhibitor or neutralizing antibody. Patients with AHA can have both spontaneous or perioperative hemorrhage, although some are asymptomatic. We report two cases successfully treated with plasmapheresis, high dose steroids, and rituximab.

METHODS: A 70 year old male without significant history underwent exploration and then a palliative procedure because of metastatic pancreatic adenocarcinoma. On postoperative day (POD) 5, he had intra-abdominal bleeding with a negative CT angiogram. On POD 8, laboratory results revealed a prolonged aPTT, which did not correct on 1:1 mixing study. FVIII activity was undetectable and FVIII inhibitor titer was 4.5BU/ml consistent with AHA.

A 53 year old male initially underwent a small bowel resection for obstruction; however post-operative chronic abdominal pain and gastrointestinal bleeding with negative evaluations necessitated subsequent explorations. He had massive postoperative hemorrhage. AHA was diagnosed based on prolonged aPTT, undetectable FVIII levels, and FVIII inhibitor titer.

Both patients were initiated on high dose steroids (125mg methylprednisolone daily) and rituximab 375mg/m2. Plasmapheresis was also performed daily for five consecutive days with a 1:1 ratio of albumin to fresh frozen plasma replacement. The first patient received recombinant activated FVII (rFVIIa), but continued to hemorrhage. When the inhibitor titer had been sufficiently reduced by plasmapheresis, high-dose FVIII was administered, achieving hemostasis. The second patient received recombinant porcine FVIII (pFVIII) immediately after AHA was diagnosed, which led to adequate hemostasis.

RESULTS: Circulating FVIII inhibitor antibody levels decreased with full recovery of endogenous FVIII within 2-3 weeks of initiation of immunosuppressive treatment. They have not shown evidence of relapse/recurrence after three and four months. Both remain on low-dose prednisone with a planned slow taper. Both patients eventually required systemic anticoagulation for thrombosis (which occurred after recovery of endogenous FVIII activity) without subsequent bleeding.

CONCLUSION: AHA is a rare complication that can occur after surgery and should be suspected in patients with a prolonged aPTT and unexplained bleeding. Mixing studies are essential for the diagnosis. If these fail to correct, individual factor levels should be obtained and the deficient levels should be tested for an inhibitor. Therapy should be directed at hemostasis with human replacement (if inhibitor titer is < 5BU/ml), a bypass agent (rFVIIa or activated prothrombin complex concentrate), or recombinant pFVIII. In addition, immune suppression should be initiated to eradicate the inhibitor. As shown by these two cases, plasmapheresis can successfully be utilized to reduce titers during the initial phase of treatment.
44. DISTAL RECTAL SKIP-SEGMENT HIRSCHSPRUNG’S DISEASE AND THE POTENTIAL FOR FALSE-NEGATIVE DIAGNOSIS
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BACKGROUND: In “skip-segment” Hirschsprung’s disease (SS-HSCR), an aganglionic segment of bowel, which extends proximally from the distal rectum, is interrupted by a ganglionated “skip segment”. Skip segments are usually located far proximal to the rectum where they do not interfere with initial diagnosis, although the possibility of distal SS-HSCR should be considered during interpretation of intraoperative biopsies or patient’s with atypical post-operative courses.

METHODS: We report two cases of SS-HSCR with skip areas in the distal rectum, one of which led to a false-negative diagnosis by suction rectal biopsy. In addition, a review of prior cases of skip segment Hirschsprung’s disease is presented along with hypotheses as to the pathogenesis of the various skip segments reported in the literature.

RESULTS: We report two children with HSCR, whose otherwise completely aganglionic rectosigmoid segments were each interrupted by a small focus of distal rectal ganglion cells. A review of the literature indicates that these are the first reported examples of distal rectal skip segments.

CONCLUSION: These two cases of SS-HSCR, along with others in the literature, highlight the point that ganglionic skip segments can confuse clinicians and lead to inadequate bowel resection, diagnostic delay, or a false-negative diagnosis.
45. GALLBLADDER VOLVULUS: CASE REPORT AND CONTEMPORARY REVIEW OF THE LITERATURE
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La Crosse, WI

BACKGROUND: Gallbladder volvulus (GV), also known as gallbladder torsion, is a rare entity with a poorly reported incidence. It first appeared in the literature in an 1898 case report where Wendel described a “floating gallbladder” which he could palpate on physical exam in different locations on subsequent visits. GV results from an entirely extrahepatic gallbladder which is able to rotate on its mesentery along the axis of the cystic duct and artery. We performed an updated review of the literature and determined our institutional incidence of gallbladder volvulus.

METHODS: A systematic review of articles from MEDLINE and PubMed database searches for “gallbladder” and “volvulus” or “torsion” was completed. The search was limited to English language, human subjects, and those published from 2000-2015 to present a modern review of the literature. Patient characteristics, diagnostic modality, intraoperative findings, and postoperative complications were reviewed. Institutional incidence of GV was determined by polling current general surgeons and comparing this to the number of cholecystectomies these providers performed from 2000-2015.

RESULTS: A total of 111 articles were identified. After excluding review articles and those not reporting individual patient characteristics, 85 articles with 94 unique patients were analyzed. Two cases from our medical center were included for an overall sample of 96 patients. There were 78 (81%) female for a female to male ratio of 4:1. The median age at diagnosis was 80 years (range 3-99 years). Cholelithiasis was present in 29 patients (32%) on preoperative imaging with 80 articles reporting. Ultrasound (US) and computed tomography (CT) were the most common imaging modalities, with combined US and CT imaging in 31 (33%) patients. Additional imaging modalities included MRCP (n=11), HIDA (n=2), and ERCP (n=2). Operative approach consisted of open in 51 patients (60%), and laparoscopic in 34 patients (40%). Torsion was reported from 180-720 degrees in both clockwise and counterclockwise directions. Median length of stay was 6 days (range 1 – 41 days). Postoperative complications occurred in 8 patients with 3 mortalities. Our institutional incidence of GV was 2 per 4258 cholecystectomies performed (0.05%).

CONCLUSION: Gallbladder volvulus is a rare condition found in 0.05% of cholecystectomies performed at our institution. Similar to previous reviews, we found a female to male ratio of 4:1 and median age at diagnosis of 80 years but it can occur in patients as young as 3 years. Preoperative diagnosis can be quite difficult and a high index of suspicion must be maintained as CT and US findings are often equivocal and only 32% had cholelithiasis. Operative intervention with either open or laparoscopic technique effectively treats the condition. GV should be considered a surgical emergency and has a mortality rate of 3.2%.
46. AN UNUSUAL CAUSE OF PERSISTENT PANCREATIC FISTULA FOLLOWING PANCREATICODUODENECTOMY AND A NOVEL APPROACH TO ITS MANAGEMENT
C Hintzen MD, PA Stangl MD, R Raju MD, SA Young MD, HW Hollis MD, GE Kimm MD
Denver, CO

BACKGROUND: Postoperative pancreatic fistula occurs in 10-20% of patients undergoing pancreaticoduodenectomy. Placement of an internal pancreatic duct stent at the time of pancreaticojejunostomy to minimize this problem is a common but controversial practice. Stent migration can occur in up to 7.5% of cases, with distal migration being more common than proximal. Stent migration can result in ductal obstruction with subsequent abdominal pain, fevers, and fistula formation. It is typically managed with endoscopic retrieval, but this is not possible in 20% of cases. This report highlights a novel combined percutaneous and endoscopic approach for removal of an obstructing stent which could not be retrieved using endoscopy alone.

METHODS: A retrospective review of the patient’s electronic medical record including multiple imaging studies form the core of this report. A detailed description of a novel technique combining percutaneous cannulation of the pancreatic duct through a pancreaticocutaneous fistula tract was used to extract an obstructing pancreatic duct stent.

RESULTS: A 64 year old female required multivisceral resection including pancreaticoduodenectomy for recurrent colonic adenocarcinoma. Following an en-bloc resection which included partial colectomy, right nephrectomy and pancreaticoduodenectomy a persistent pancreaticocutaneous fistula developed. Imaging demonstrated retention and migration of a surgically-placed pancreatic duct stent and concomitant dilatation of the pancreatic duct resulting from a suspected anastomotic stricture. An unsuccessful attempt was made to remove the stent via endoscopic retrograde cholangiopancreatography (ERCP). The retained stent was ultimately removed by percutaneous duct access using fluoroscopy and contrast administered through the fistula tract. The pancreatic duct stricture was managed with a rendezvous procedure consisting of percutaneous guidewire cannulation of the pancreaticojejunostomy to assist in pancreatic duct stent replacement during subsequent ERCP. The details of this complex procedure are analyzed as they provide an additional strategy to treat pancreatic stent migration while avoiding reoperation.

CONCLUSION: This report illustrates that proximal pancreatic stent migration with obstruction must be considered as a cause of persistent postoperative pancreatic fistula. General surgeons and surgical oncologists should be familiar with sophisticated percutaneous adjuncts for removal of obstructing pancreatic duct stents. A novel rendezvous procedure combined with endoscopic wire guided duct cannulation can facilitate removal of the obstructing sent and avoid reoperation in patients who develop pancreatic fistula secondary to stent migration after pancreaticoduodenectomy.
47. MANAGEMENT STRATEGIES FOR TUMORS OF THE PRESACRAL OR RETRORECTAL SPACE
C Price MD, EG Kimm MD, HW Hollis MD

Denver, CO

BACKGROUND: Tumors originating in the presacral or retrorectal space are rarely encountered in a typical surgical practice with approximately 1 case per 40,000 hospital admissions. The majority of these tumors occur in women. They can be subdivided into two broad categories: 1) teratomas and 2) developmental cysts, the latter being the most common. Of the developmental cysts, the most frequent are the epidermoid and dermoid cysts, which result from incomplete closure of the ectodermal tube. The purpose of this case report was to educate surgeons about this particular disease process and the management of it.

METHODS: This report highlights the case of a 35 year old female presenting with a large mass in the natal cleft. Photographic images provide a graphic view of this unusual lesion. A review of the current literature pertaining to epidermoid cysts of the presacral and retrorectal space from the Pub Med database and a table outlining various approaches accompanies this report.

RESULTS: A 35 year-old woman presented with a mass in the natal cleft that had been present for several years. Progressive enlargement and pain were the presenting symptoms. The patient reported normal micturition and defecation. Computed tomography confirmed the presence of two distinct masses in the presacral space. Subsequent MRI confirmed two large, well-circumscribed masses in the presacral space, without any rectal, vaginal or sacral plexus involvement. Resection was accomplished through a posterior approach. Both lesions contained chalky, gray-white material. Complete resection was accomplished and histopathology of both lesions was consistent with epidermoid cyst. The patient experienced no postoperative complications with complete relief of symptoms.

CONCLUSION: Presacral epidermoid cysts are benign congenital masses which typically enlarge if not excised. They are lined with stratified squamous epithelium that produces a keratin containing substance, but lack skin appendages, distinguishing them from dermoid cysts. These lesions are slow-growing and frequently undiagnosed until they become large enough to impinge upon adjacent structures or become infected. Complete surgical excision is recommended. Resection can be accomplished with a trans-peritoneal, posterior, or combined approach predicated on size and location.
48. DAMAGE CONTROL SURGERY FOR EMERGENCY COMPLICATIONS IN PATIENTS WITH THE ROUX-EN-Y GASTRIC BYPASS PRACTICAL CONSIDERATIONS
JC Jensen MD
Little Rock, AR

BACKGROUND: Morbid obesity remains a major US Health Problem, and surgical treatment remains highly effective. Acute Care Surgeons are often called upon to manage surgical emergencies in bariatric patients without access to bariatric surgery specialists.

METHODS: This abstract reviews the five year experience of management of bariatric surgery emergencies in an academic health center which is an emergency referral center but has no bariatric program or bariatric surgeons.

RESULTS: Intraoperative EGD is critical for successful emergency surgery for RYGB complications. Perforated duodenal ulcers have a very high morbidity; leaks are common with a standard omental patch. Intraduodenal and external drainage are effective in supplementing the patch. The defunctionalized gastric remnant should always be decompressed with a gastrostomy tube. Left sided perforations can be addressed with simple repair and patching. Symptomatic intussusceptions at the jejunoojejunostomy should be operated on promptly.

CONCLUSION: With understanding of surgical principles, basic surgical equipment and a review of fundamentals and special characteristics of bariatric surgery, acute care surgeons can safely and effectively manage bariatric surgery complications.
49. INTRA-ABDOMINAL HEMORRHAGE AND INGUINAL HERNIA: A UNIQUE PRESENTATION OF A COMMON SURGICAL DISEASE
Alyson Melin DO, Samuel Cemaj MD, Charity Evans MD
Omaha, NE

BACKGROUND: Spontaneous abdominal hemorrhage is a rare occurrence particularly in otherwise healthy patients. In most cases hemoperitoneum is related to trauma, intra-abdominal surgical or medical diseases. In only a single published case has it been reported in association with an inguinal hernia. We present a rare presentation and complication of a common surgical disease as well as propose a unique surgical approach to management.

METHODS: An otherwise healthy 25 year old male presented to the emergency room with worsening abdominal pain. He was noted to have diffuse pain on exam as well as a large, reducible, left inguinal hernia. Given his diffuse pain, CT imaging was performed to evaluate for intra-abdominal pathology. This depicted intra-abdominal fluid consistent with blood and a large left inguinal hernia containing omentum but not bowel. He was admitted to the hospital where serial hemoglobins and abdominal exams were performed.

RESULTS: The patient had persistent abdominal pain and the decision was made to take his to the operating room where he first underwent an open left inguinal hernia repair. His hernia was found to contain a significant amount of omentum with large hemoperitoneum. This was reduced and prior to placing the mesh, the abdomen was explored laparoscopically through a port placed in the hernia sac. After sufficient insufflation, examination depicted fresh blood and hematoma. Additional ports were placed, bowel evaluated and hemoperitoneum evacuated. However, blood appeared to re-accumulate, although not briskly and with without hemodynamic compromise. We were unable to determine an obvious source of the bleeding and we converted to a midline laparotomy for further exploration. Interestingly, there was a portion of omentum adhered to the inferior aspect of his spleen which appeared friable and intermittent bleeding. This area was cauterized and hemostasis was achieved. Given no other sources for bleeding, we hypothesize the significant amount of omentum contained in his left inguinal hernia placed excessive tension and tore the omentum adhered to his spleen causing intra-abdominal bleeding. Although not brisk, it was significant to cause peritoneal irritation and a drop in the patient’s hemoglobin. The patient’s inguinal hernia was formally repaired using the tension free Lichtenstein technique and the abdomen was closed. Post-operatively the patient did well. His diet was advanced and tolerated. He was able to void and ambulate. His pain was well controlled. His hemoglobin remained stable and his pain was much improved. He was discharged home on post-operative day three.

CONCLUSION: Although spontaneous intra-abdominal hemorrhage associated with inguinal hernia is not a common finding, one must consider alternative diagnoses when the patient’s presentation and symptomatology is not consistent with a single diagnosis. Physiologically, it is plausible that excessive tension on the omentum caused an avulsion leading to bleeding from a proximal omental blood vessel. Importantly, this was appropriately monitored and ultimately managed.
50. A RARE EXPERIENCE WITH URGENT OPERATIVE INTERVENTION ON A PATIENT WITH UNDIAGNOSED ACQUIRED FACTOR VIII DEFICIENCY
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Denver, CO

BACKGROUND: Acquired factor VIII deficiency is rarely encountered in surgical practice. This condition appears to be caused by autoantibodies to the factor VIII molecule. It is associated with autoimmune diseases, pregnancy, and reactions to various antibiotics. The incidence is reported to be less than 4 patients per million in the general population. Due to the rarity of this disorder, diagnosis is frequently delayed with mortality rates approaching 22%. Typically, patients present with spontaneous hemorrhage into skin, soft tissue, or muscle. Operative intervention prior to diagnosis predisposes to all the associated risks of hemorrhage which accompany the inherited form of factor VIII deficiency. The purpose of this manuscript is to make general surgeons aware of the acquired form of Factor VIII deficiency.

METHODS: This report details the case of a 52 year old man who developed severe hemorrhagic complications after exploratory laparotomy for suspected ischemic bowel. Persistent postoperative hemorrhage necessitated multiple returns to the operating room. Extensive hematologic evaluations were required to diagnose Factor VIII antibodies and confirm the diagnosis of acquired Factor VIII deficiency. The patient’s hemorrhage was eventually controlled after administration of factor VIII concentrate. This report alerts surgeons to this rare condition, explains the immunology and highlights strategies which have been effective in reducing post-operative hemorrhage.

RESULTS: Acquired Factor VIII deficiency is associated with an isolated prolongation of activated partial thromboplastin time (aPTT), with failure to correct in a plasma mixing study. The diagnosis can be confirmed subsequently by identifying a reduced factor VIII level with evidence of inhibitor activity. Treatment is focused on control of acute hemorrhage and long-term maintenance of inhibitor activity level. Acute hemorrhage is treated with bypassing agents, such as recombinant activated Factor VIII, or restoration of circulating Factor VIII levels with administration of human Factor VIII concentrates. Maintenance therapy includes attempts at eradicating inhibitor activity with immunosuppression.

CONCLUSION: Acquired factor VIII deficiency is a disorder characterized by unexpected, spontaneous bleeding caused by autoimmune antibodies against factor VIII. Despite recent advances in the understanding of postoperative coagulopathy, the diagnosis remains challenging. In surgical patients with persistent hemorrhage postoperatively, acquired factor VIII deficiency should be included in the differential diagnosis when a prolongation of activated partial thromboplastin time is noted in conjunction with failure to normalize in a plasma mixing study.
51. PELLET EMBOLISM TO RIGHT ATRIUM IN PATIENT WITH PATENT FORAMEN OVALE
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San Antonio, TX

BACKGROUND: Venous bullet embolization to the heart is a rare, but recognized complication of gunshot wounds. They are more common with small caliber bullets with lower kinetic energy and are associated with arterial and venous embolization. First described in 1834, the phenomenon of foreign body embolus has been documented in approximately 300 cases where 45.6% were arterial, 52% were venous and 2.4% were paradoxical emboli (1). These paradoxical emboli gain access to the arterial circulation by either a right to left intracardiac defect such as a patent foramen ovale or by a traumatic arteriovenous fistula. While arterial bullet embolus can progress to peripheral organ damage including myocardial infarction (MI) and stroke, venous bullet embolus can be asymptomatic if the bullet remains within the venous circulation. For this reason, management of venous bullet emboli remains controversial and often the risk associated with retrieval of the embolus outweighs risk associated with leaving it in situ. To our knowledge there have been only two cases of paradoxical bullet emboli (2,3). Both of these were discovered after the bullet had traversed the venous system into the arterial system. This case details an intravenous pellet embolus to the right atrium in a patient diagnosed with a patent foramen ovale as part of her initial evaluation. She underwent retrieval of the pellet via sternotomy with use of cardiopulmonary bypass given the risk of paradoxical embolic event and potential associated morbidity or mortality.

METHODS: A previously healthy 17-year-old female presented to our Level I trauma bay after sustaining a shotgun wound to her right buttock. She complained of buttock pain that radiated to her left lower extremity. Physical exam revealed tachycardia with HR 117 and normotension. She had one large central cavitary wound and multiple scattered satellite wounds. She denied any chest pain or shortness of breath. The routine trauma resuscitation chest x-ray revealed a punctate radiodensity projecting over the right heart.

A CT chest / abdomen was then performed and revealed small ballistic fragments near the right internal iliac vein and small metallic object within the dependent portion of the right atrium versus atrial wall consistent with an embolic ballistic fragment. There was no associated pericardial effusion or penetrating thoracic injury suggesting direct penetrating cardiac injury. A bubble cardiac echocardiogram was performed and its findings were concerning for a patent foramen ovale (PFO). With the potential for catastrophic complications of a paradoxical arterial embolization through the PFO, cardiothoracic surgery was consulted for further evaluation, possible surgical retrieval of the pellet and closure of the PFO.
RESULTS: After evaluation, the patient was taken to the operating room and underwent a sternotomy with cardiopulmonary bypass and cardioplegic arrest after periodic intraoperative fluoroscopic confirmation of the bullet’s continued presence in the right atrium and movement with the cardiac cycle. Upon opening of the right atrium, the pellet was visualized near the opening of what appeared to be a small patent foramen ovale in the limbus. The 2mm pellet was removed and the patent foramen ovale was closed. After cardiac closure, spontaneous rhythm ensued and an intraoperative transesophageal echocardiogram showed no residual interatrial shunt. The patient tolerated the surgery well and her immediate postoperative course was without incident.

CONCLUSION: Bullet embolization by nature is an uncommon phenomenon. For this to occur, a bullet must penetrate one side of a vessel and remain in its lumen, and the bullet diameter must be smaller than that of the vessel. These variables make this event extremely rare. In their literature review, Springer et. al noted that approximately 300 cases documenting this phenomenon have been reported, and 45.6% were arterial, 52% were venous and 2.4% were paradoxical emboli (1).

The overall prevalence of patent foramen ovale has been reported to be approximately 27%-29% (4,5), making paradoxical emboli through a PFO a rare occurrence. Though the size of patent foramen ovale was not measured in our case, the bullet measured to be 2 mm which is smaller than the reported 4.5 mm mean diameter of PFOs (5). No paradoxical embolism occurred in our case due to the immediate surgical management.

An algorithm for management of a bullet embolus was proposed by Miller et al (6); however, their proposal for management of patients with a venous embolus seems to preclude the presence of a known arteriovenous defect such as in the case of our patient with a PFO. We suggest that surgical retrieval of the foreign body with closure of the arteriovenous defect be pursued in this situation to prevent potentially catastrophic peripheral, cerebrovascular or cardiovascular complications.
52. HEMOCHOLECYST IN THE SETTING OF INTESTINAL METAPLASIA AND CHOLECYSTITIS - CASE REPORT OF A RARE DISEASE WITH AN ATYPICAL PRESENTATION

LN Godat MD, A Maawy MD, R Coimbra MD, PhD
San Diego, CA

BACKGROUND: Hemocholecyst is hemorrhage within or from the gallbladder. It is a rare condition most commonly associated with hemorrhagic acute cholecystitis. Other less frequent causes reported are gallbladder cancer, cystic artery pseudoaneurysm rupture, coagulopathy, steroids and post procedure. After an extensive review of the limited available literature to our knowledge this is the first case of Hemocholecyst in the setting of intestinal metaplasia reported.

METHODS: We present a case study to demonstrate the importance of surgical intervention in the case of Hemocholecyst.

RESULTS: An 87 year old male presented for an out-patient CT scan of a previously treated psoas abscess. Imaging incidentally identified a moderately distended gallbladder with an intraluminal contrast blush, demonstrating active extravasation of blood from the free edge of the gallbladder wall. Due to these findings the patient was taken to the emergency department for assessment and Acute Care Surgery consultation. Upon initial evaluation the patient denied any recent or current abdominal pain, and no symptoms of biliary disease. On examination he had no abdominal pain or distention, no palpable mass. Though hemodynamically stable after our review of the imaging the patient was taken to the operating room emergently for open cholecystectomy.

Over the short time course of booking the patient and transporting him to the operating room he had accelerated symptoms of intense right upper quadrant pain. On exam the gallbladder was now distinctly palpable. He developed increasing tachycardia with associated systolic blood pressure of 90-100mmHg.

Upon immediate entry into the abdomen through a right subcostal laparotomy, the tense distended gallbladder was encountered. The serosa of the gallbladder was dusky with venous congestion and ischemic changes. The gallbladder was removed in a standard top down fashion. After removal of the gallbladder and transfusion of 1 Unit of blood and 2 Units of fresh frozen plasma the patient stabilized.

Final pathology revealed chronic cholecystitis with intestinal metaplasia, reactive atypia, ulceration and granulation tissue with one benign lymph node.

CONCLUSION: Hemocholecyst with active hemorrhage into the gallbladder carries a risk for gallbladder rupture. We believe that if care was delayed, the gallbladder would have perforated which could have resulted in significant blood loss and morbidity.
53. BLOWN OUT: A CASE REPORT OF A RIGHT MAIN STEM BRONCHUS RUPTURE REPAIRED WITH ECMO
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Grand Forks, ND

BACKGROUND: Blunt trauma in the pediatric patients, especially thoracic trauma should always have a high suspicion of main stem bronchus rupture in those with pneumothorax. Even though this is a rare complication it can happen in patients with little sign of external injury but in fact have a complete disruption of the airway.

METHODS: Case study of a 10 year old male with blunt thoracic injury and a right main stem bronchus rupture. As well as a review of other bronchial ruptures in the last 10 years in the state of North Dakota.

RESULTS: Tear at the level of the carina that needed ecmo for repair. Only 2 other recorded bronchial ruptures in the last ten years. Discussion of their repairs compared with the 10 year old. Literature review of bronchial rupture repairs, outcomes, and complications.

CONCLUSION: A higher suspicion of pediatric patients with blunt trauma and a pneumothorax that does not resolve with chest tube placement.
54. RHABDOMYOLYSIS AND COMPARTMENT SYNDROME IN THE SETTING OF HYPOTHYROIDISM
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Baltimore, MD

BACKGROUND: Rhabdomyolysis and concomitant compartment syndrome is a potentially life-threatening condition that is characteristically associated with crush or compression injuries. Compartment syndrome is defined as critical pressure increase within a confined compartment space resulting in decreased perfusion to tissue. Timely recognition and early operative intervention are essential in preventing destructive injury to tissue and muscle. While hypothyroidism has a known correlation with rhabdomyolysis, the incidence of compartment syndrome associated with hypothyroidism is rare. We present a patient who was non-compliant with thyroid replacement medications and presented with rhabdomyolysis and right lower extremity compartment syndrome after participating in a 5K walk.

METHODS: We present a case study demonstrating an association between hypothyroidism and rhabdomyolysis induced compartment syndrome in a patient who engaged in light exercise prior to presentation.

RESULTS: GF is a 42-year-old female with a past history of hypothyroidism, medication non-compliance and several weeks of lower-extremity myopathy who presented with severe lower extremity pain, swelling, decreased range of motion, and limited sensation after participating in a 5K walk. Significant laboratory findings at admission were: creatinine kinase (CK) 26,400 units/L; myoglobin 750 ng/mL; TSH 70.6 mIU/L; free T4 0.6 ng/dL; free T3 1.1 ng/dL; creatinine 1.28 mg/dL. Physical exam findings included significant pain on dorsiflexion, warmth and tenderness of the anterior compartment, decreased motor function and decrease in sensation. She underwent an urgent two-incision four-compartment fasciotomy with findings of edematous muscle in all 4 compartments, with no evidence of necrosis. Post-operative care included negative pressure wound VAC therapy; hydration and thyroid replacement therapy. Partial delayed primary closure was performed on post-operative day 3 and the patient was discharged to home.

CONCLUSION: Light exercise is likely not sufficient cause for rhabdomyolysis and compartment syndrome. Thyroid disease is an atypical cause of compartment syndrome, but should be suspected as a possible trigger in cases in which the etiology is unknown. Although hypothyroidism is a common cause of myalgias and muscle stiffness, it rarely results in catastrophic rhabdomyolysis or compartment syndrome. The addition of external factors such as physical activity, infection and certain medications are implicated as associative factors. Screening for thyroid disease is a reasonable consideration in cases of compartment syndrome with unclear etiology.
55. SUCCESSFUL REPAIR OF BLUNT RIGHT ATRIUM RUPTURE
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Oklahoma City, OK

BACKGROUND: Traumatic Blunt cardiac rupture (BCR) carries a high degree of mortality; most patients rarely survive long enough to receive in-hospital care. Rapid transport, improvements in pre-hospital management, and advances in post-traumatic critical care appear to have increased the number of documented cases; mortality however remains high.

METHODS: We present a case of successful repair of Right Atrium (RA) rupture without the need of cardiopulmonary bypass.

RESULTS: A 67-year-old male arrived in extremis following a motor vehicle crash (MVC). His Glasgow Coma Score (GCS) was 8, demonstrated signs of tamponade physiology with a positive cardiac Focused Assessment Sonography for Trauma (FAST) exam. A pericardiocentesis resulted in evacuation of hemopericardium with prompt restoration of vital signs. In the operating room, exploratory laparotomy, pericardial window and median sternotomy were performed. A small rupture at the Superior Vena Cava/RA junction was identified and repaired with pledgeted prolene sutures. His associated injuries including pancreatic laceration, right renal laceration, bilateral rib fractures, shock bowel, ascending and descending aortic injury among others. His Injury Severity Score (ISS) was 41.

CONCLUSION: The small number of case series for BCR date back to the 1980s. These reported mortality rates between 80-85%, with the most common site of injury being the RA. These numbers appear unchanged in newer series with incidence of 0.04% among blunt traumas, and overall mortality of 89%. Young age, GCS ≤10 , an ISS 47 or lower appear to improve survival. MVC continues to be the most prevalent cause. Cardiac FAST has become a quick diagnostic tool, and pericardiocentesis can provide intermittent hemodynamic stability pending definitive operative intervention.

Early recognition is key for survival and improved outcomes. Even in the setting of successful and timely surgical repair, additional injuries and baseline medical conditions will add major morbidity, and increase overall mortality.
CONSTITUTION
AND
BYLAWS
CONSTITUTION

ARTICLE I: NAME
The name of the organization shall be The Southwestern Surgical Congress. It shall be incorporated as a non-profit organization under the laws of the state of Oklahoma unless otherwise directed by action of the members of the Congress. It shall have no capital stock or shareholders.

ARTICLE II: MISSION STATEMENT
The Southwestern Surgical Congress is an organization that promotes the advancement of General Surgery by representing the interests of academic, community and rural surgeons, surgical residents and medical students through education, advocacy, research and innovation. The goal of the Congress is to promote excellence in patient care and professional development.

ARTICLE III: MEMBERS
The members shall be known as Fellows of The Southwestern Surgical Congress. They shall be reputable surgeons and allied specialists residing in the states comprising this Congress, and other areas as approved by the Council of the Congress. Physicians shall be elected to membership according to the Constitution and these Bylaws. When the membership of any Fellow in the Congress terminates by resignation, death, or any other manner, all of his or her rights and privileges in the Congress terminate. None of the assets or privileges may be used to benefit such person or the representatives of his or her estate.

ARTICLE IV: COUNCIL
There shall be an Executive Committee of the Council composed of the President, the President-Elect, the Secretary-Treasurer, the Vice-President, the Recorder and the two most recent Past Presidents of the Congress.

There shall be a Council of the Congress consisting of the President, President-Elect, Vice-President, Secretary-Treasurer, Recorder, the two most recent Past Presidents, Chairman of the Program Committee, Associate Fellow Representative and all councilors from each of the states comprising the Congress area. State Councilors and the Associate Fellow Representative shall be appointed by the President-Elect with the approval of the Council of the Congress at the Annual Executive Session. The term of office of each Councilor shall be three years. A Councilor shall not serve more than two consecutive terms.
ARTICLE V: OFFICERS

The officers of the Congress shall consist of a President, a President-Elect, a Vice-President, a Secretary-Treasurer and a Recorder who are active Fellows of The Southwestern Surgical Congress.

The President-Elect shall be elected at the Annual Congress Business Meeting to serve for one year. At the expiration of that year, he or she shall become President and shall serve for one year or until his/her successor is elected and installed. If the President-Elect dies, resigns or becomes otherwise unable to complete the term and succeed to President, the Vice President shall assume the position and responsibilities of the President-Elect. The Congress shall elect both a Vice-President and President-Elect at the next Annual Congress Business Meeting.

All other officers shall be elected at the Annual Congress Business Meeting to serve for one year, except for the Recorder and the Secretary Treasurer who shall each be elected to serve for a term of 3 years, with a limit of no more than two terms.

ARTICLE VI: MEETINGS

Meetings of The Southwestern Surgical Congress shall be held and designated as follows:

(1) A Fall Council meeting at a site and date designated by the President.
(2) The Annual Council Meeting which is held immediately prior to the Annual Scientific Meeting.
(3) The Annual Scientific Meeting for presentation of the education program.
(4) The Annual Congress Business meeting during the Annual Scientific Meeting.
(5) The Council Executive Committee Meeting, held at the Annual Scientific Meeting and additionally as needed.

ARTICLE VII: RULES OF CONDUCT

The parliamentary conduct of the Congress and its component committees shall be governed by Robert’s Rules of Order (most recent edition).

ARTICLE VIII: FUNDS AND EXPENSES

Funds may be raised by annual dues and voluntary contributions or in any manner approved by the Council of the Congress. Funds may be appropriated by the Council to defray the expenses of the Congress, to carry on its work and for any other purpose approved by the Council in accordance with 501c3 requirements.
ARTICLE IX: AMENDMENTS
The Congress, at any Annual Congress Business Meeting of the Fellows, may amend any Article of this Constitution by a 60% vote of the members present, provided that a copy of the proposed Amendment has been furnished for each Active and Senior Fellow at least thirty days in advance of the Annual Congress Business Meeting.

ARTICLE X: DISSOLUTION CLAUSE
In the event of the dissolution of this organization for any cause, the Council of the Congress shall, after satisfying claims, direct the distribution of all funds and assets of The Southwestern Surgical Congress to such scientific, educational, or charitable organizations or purposes as two-thirds of the Council approves. No part of the assets or funds shall be given to any member or other individual.
CHAPTER 1: MEMBERSHIP

Section 1. The Council shall judge the qualifications of its applicants for Fellowship. Every reputable and legally-qualified surgeon or allied specialist who has attained certification by his/her appropriate Specialty Board may be eligible for Fellowship. Membership shall not be denied because of race, creed, color or sex. The Membership shall consist of Fellows recommended by the Council from the following states: Arizona, Arkansas, California, Colorado, Hawaii, Idaho, Kansas, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, Wisconsin and Wyoming.

Qualified and reputable surgeons residing in areas other than those included in The Southwestern Surgical Congress area who express a desire to become a member may request an application form from one of the State Councilors who will present the application to the Council for special consideration for membership. Fellows who have paid their dues and now reside in states outside of the area comprising the Congress may continue as Fellows with all duties and privileges.

Domestic: Every reputable and legally-qualified surgeon or allied specialist who has attained certification by his or her appropriate American Surgical Specialty Board (which is a member of the American Board of Medical Specialties) and who has graduated from a Medical School acceptable to The Southwestern Surgical Congress may be eligible for membership.

Foreign: Surgeons requesting membership in The Southwestern Surgical Congress who are foreign medical graduates are eligible if they possess the following qualifications: a) they are able to speak and write English. Application and supporting materials must be completed in English. b) Graduation from a Medical School acceptable to The Southwestern Surgical Congress. c) Certification appropriate to the applicant’s specialty practice by an American Specialty Board acceptable to The Southwestern Surgical Congress or appropriate specialty board certification by the Royal College of Physicians and Surgeons of Canada or documented proof of the completion of a minimum of five years of formal post-doctoral surgical education. d) A full and unrestricted license to practice medicine in the country and in the state or province where they are in practice.

Section 2. New states will be admitted to membership in The Southwestern Surgical Congress in the following manner: A surgeon who meets all of the qualifications for membership in The Southwestern Surgical Congress shall submit an application for the state he/she wishes to have included in The Southwestern Surgical Congress. He/she shall include with his/her application the name of surgeons who meet the qualifications and wish to become active members of the Congress. This application shall be submitted to the Council, and if approved, shall be presented to the Fellows of the Congress at the Annual Congress Business Meeting where a majority vote shall be required for inclusion as a new state.

Section 3. A candidate for Fellowship shall make application in writing on a form
BYLAWS (cont.)

provided by the Congress. The application form shall contain all specific information deemed important and pertinent by the Council. The requirement for an accompanying initiation fee is limited to application for active fellowship. The application must be approved and signed by the applicants State Councilor before consideration by the Council of the Congress.

Section 4. The Council shall have the right to accept or reject any application for Fellowship in the Congress. If approved by the Council, each application shall be signed by the Chairman of the Membership Committee of the Congress. If disapproved, the initiation fees will be returned.

Section 5. The membership of this Congress shall be designated as Active, Associate, Honorary, Senior and Inactive Fellows.

(A) Active Fellows
Active Fellowship may be conferred upon physicians who have been actively engaged in the practice of surgery for at least one year following the completion of an approved surgical training program, who are of good moral character and professional standing, duly licensed and who are certified by the American Board of Surgery or other appropriate Specialty Board. Extraordinary exceptions to these membership requirements may be recommended by the State Councilor and considered for approval by the Council of the Congress, after careful and complete review and approval by the Membership Committee.

(B) Associate Fellows
Associate Fellowship may be conferred upon physicians who are at any level of an ACGME approved surgical training program, who are of good moral character and professional standing and are duly licensed. Associate Fellowship will be limited to five years. Upon completion of Board Certification, the Associate Fellow is eligible for Active Fellowship, after 1 year of practice. Associate Fellows will be entitled to the same privileges as Active Fellows except the privileges of voting and holding office. Associate Fellows will pay no initiation fee but will pay a reduced membership fee as set by the Council and regular membership meeting registration fees. Associate Fellows who apply for Active Fellowship will have the initiation fee waived and pay the standard membership dues at that time.

(C) Honorary Fellows
Honorary Fellowship may be conferred by the Council upon surgeons who have distinguished themselves by outstanding achievement. Honorary Fellowship may be conferred upon surgeons living in states outside those included in The Southwestern Surgical Congress or upon surgeons living in countries other than the United States. Honorary Fellows shall pay no dues or initiation fees and may not vote or hold elective office. They may receive the official Journal upon payment of the members’ subscription fee.

(D) Senior Fellows
Upon the recommendation of the State Councilor, the Membership Committee and subsequent approval of the Council, an Active Fellow in good standing who has attained the age of 65 years and remains in active practice may continue as an Active Fellow with all the rights and responsibilities or may request change to senior status by applying to the Council. An Active Fellow in good standing who has retired from practice regardless of reason or age and is not using his/her professional credentials for employment shall be granted Senior Fellowship. Senior Fellows may receive the official Journal upon payment of the member’s subscription fee.

(E) Senior Fellows for Life:
Senior Fellow for Life status may be conferred by the Council upon surgeons who have retired from active practice and have held Senior Fellow membership status for at least one year. This status is intended for surgeons who wish to retire completely from the association but remain listed in the membership directory. Senior Fellows for Life may neither vote nor hold elective office.

(F) Inactive Fellowship
Inactive Fellowship may be granted by the Council upon request from Active Fellows while they are serving military duty, while engaged in full time postgraduate training, while actively engaged in missionary service or for other valid reasons as accepted by the Council. Upon conclusion of this period the member may resume his/her previous status of Active Fellow. Inactive Fellows are not required to pay membership dues but they may receive the official Journal upon payment of the members’ subscription fee. They may not vote or hold elective office. Inactive Fellows must inform the Central Office annually concerning their current status. Active members while serving active duty will continue to receive the Journal without a fee and interruption.

Section 6. Fellows shall be certified by the Congress and their certificates shall be signed by the President and the Secretary-Treasurer of the Congress.

Section 7. The privilege of holding any elective office and voting in the Congress shall be restricted to Active Fellows and Senior Fellows in good standing. Honorary, Inactive, Associate Fellows and Senior Fellows for Life shall not vote or hold office.

Section 8. Any member who is suspended from his/her local or state Medical Society, the American College of Surgeons, or who otherwise may be disqualified from fellowship in this Congress for any good or sufficient cause may have his/her membership in the Congress terminated, following review and agreement by the Council.
CHAPTER 2: MEETINGS

Section 1. The Congress shall hold an Annual Scientific Meeting. The time, place, and length of the meeting shall be determined by the Council. Appropriate registration fees for the Annual Scientific Meeting will be determined by the Council.

Section 2. Each individual attending the Annual Scientific Meeting shall register and secure a badge from the Secretary-Treasurer or designated representative. This badge is required for admittance to the educational program and all other events at the meeting.

Section 3. During the Annual Scientific Meeting, there shall be an Annual Congress Business Meeting of the Congress in order to elect officers and to transact other business. The time and place of this Business Meeting shall be announced in the Program.

Section 4. Distinguished individuals who are not Fellows of The Southwestern Surgical Congress may be invited by the Program Committee with approval of the Executive Committee to any Annual Scientific Meeting for the purpose of participating in the educational programs.

Section 5. Papers read before the Congress must not have been published or presented at a major regional or national scientific meeting prior to presentation at the Congress, except by arrangement with the Program Committee. The abstract form of such papers shall be completed and submitted to the Program Committee prior to their deadline in order to be considered for the Program. Such papers shall become the property of the Congress and, subject to the approval of both the Publication and Research Committee of the Congress and the Editorial Staff of the contracted Journal. The papers may be published in the Journal serving as the official organ of the Congress.
CHAPTER 3: ELECTION OF OFFICERS

Section 1. At the Annual Congress Business Meeting of the Fellows, the President-Elect and the Vice-President for the forthcoming year shall be elected.

Section 2. The Secretary-Treasurer shall be elected every third year, but if he/she is unable to complete his/her term of office, the Executive Committee may appoint a Secretary-Treasurer to serve on an interim basis until the next Annual Meeting, at which time his/her successor shall be elected for a three-year term.

The successor to the Secretary-Treasurer shall be elected at the Annual Meeting one year in advance of his/her assumption of duties to serve as an understudy to the outgoing Secretary-Treasurer. He/She shall attend all meetings of the Council and the Council Executive Committee without a vote.

Section 3. The Recorder shall be elected every third year, but if he/she is unable to complete his/her term of office, the Executive Committee may appoint a Recorder to serve on an interim basis until the next Annual Meeting, at which time his/her successor shall be elected for a three-year term.

The successor to the Recorder shall be elected at the Annual Meeting one year in advance of his/her assumption of duties to serve as an understudy to the outgoing Recorder. He/She shall attend all meetings of the Council and the Council Executive Committee without a vote.

Section 4. The report of the Nominating Committee shall be presented at the Annual Congress Business Meeting of the Congress. Additional nominations may be made from the floor.

Section 5. Elections shall be held by ballot, voice vote, or standing vote, as decided by the presiding officer. A majority vote of members present shall be necessary for election. In the event no one candidate receives a majority of the votes cast, the one receiving the smallest number of votes shall be dropped, the vote retaken, and the balloting shall proceed in this manner until a candidate receives such majority of the votes cast.
CHAPTER 4: DUTIES OF OFFICERS

Section 1. President

(A) The President shall preside at the Council Meetings, and at the Annual Congress Business Meeting, and shall perform such duties as custom and parliamentary usage may require. During the Annual Scientific Meeting, he/she shall deliver an address on such matters as he/she shall deem of importance to the Fellows of the Congress. He/she shall be Chairman of the Executive Committee of the Council, an ex-officio member of all other Committees, and may preside over Scientific Sessions.

(B) He/she shall appoint special committees, as the need for such committees arises.

(C) At the Annual Congress Business Meeting during the Annual Scientific Meeting, the President assumes his/her duties as President; he/she shall announce the following appointments:

1. Chairman of the Standing Committees as needed.
2. New members to the Standing Committees as needed. The senior member of each Standing Committee retires from the Committee each year, but may be re-appointed.
3. Regular or acting Councilors and Vice-Councilors as heretofore provided.

(D) The President may, at his/her discretion, call a meeting of the Council or any Committee for consideration of such business as may properly be brought before it. If a member of the Council is unable to complete his/her term of office, the President shall appoint a successor. The President may, by and with the advice and consent of the Council, relieve any member of any Committee of his/her duties. When a member appointed to serve on any Committee is unable to complete his/her term of duty, the President shall appoint a successor to complete the term. In the event any member of the Council is unable to attend any Council meeting, the President may appoint an alternate to serve for that meeting.

(E) On the President’s death, disability, resignation, or removal, the President-Elect shall succeed to the Presidency.

Section 2. President-Elect

(A) The President-Elect shall serve as a member of the Council of the Congress, and of its Executive Committee and shall assist the President in the performance of his/her duties, and shall preside in his/her absence or at his/her request.

Section 3. Vice-President

The Vice-President shall serve as a member of the Council of the Congress and its Executive Committee. If the Vice-President is unable to complete his/her term, the President shall appoint his/her successor to serve until the next election.
Section 4. Secretary-Treasurer

(A) The Secretary-Treasurer shall be a member of the Council and a member of the Executive Committee of the Council. He/she is an ex-officio member of all committees except when designated as a regular member of a specific committee. The Secretary-Treasurer shall be elected for a three-year term and may be re-elected to this office. If he/she is unable to complete his/her term of office, the President, with the approval of the Executive Committee or the Council, shall appoint a successor to serve until the next election.

(B) Duties of the Secretary-Treasurer are as follows:

(1) Under direction of the Council, he/she shall supervise the activities of the Congress and facilitate the workings of the various standing committees. He/she shall insure that minutes are recorded of Council meetings, Executive Committee meetings, and the annual or special meetings of the members. He/she shall supervise the maintenance of files and records of the Congress. He/she shall perform other duties as are incident to such office or as may be assigned to him/her from time to time by the Council. With the approval of the Council, he/she may delegate to the Business Manager such duties as he/she deems appropriate.

(2) Under the direction of the Council, he/she shall supervise the financial affairs of the Congress. He/she shall advise the Business Manager concerning billings and collections and management of all funds received by the Congress. Financial records and bank accounts shall be under the direction of the Business Manager, who shall render an annual report. The Business Manager will provide the Secretary-Treasurer with an annual report for presentation to the membership at the annual business meeting.

Section 5. Recorder

The Recorder shall be a member of Council, the Executive Committee, Chairman of Publication and Research Committee, an ex-officio member of the Program Committee and function as the liaison officer between the SWSC and the official journal of the Congress.

His/her duties will consist of determining with the Chairman of the Program Committee, the maximum number of scientific papers to be submitted for publication, collecting and editing the manuscripts and discussions at the Annual Scientific Meeting and editing them for publication in the official journal of the Congress. In addition, he/she will give a report at both the Council and annual Congress Business meetings regarding the activities of his/her office and of the Publication and Research Committee.
CHAPTER V. GOVERNANCE

Section 1: The Council
(A) The Council is the governing body of The Southwestern Surgical Congress. It shall authorize the purchase of property, stocks, bonds, and securities, make loans, and authorize and supervise the expenditures of the funds of the Congress.

(B) The Council shall meet as prescribed in Article VII of the Constitution, and as often thereafter as may be necessary. It shall be subject to called meetings as prescribed in Chapter 4, Section 1C of these Bylaws or on petition of five members of the Council.

(C) The President of the Congress shall preside at all meetings of the Council. In his/her absence, the President Elect shall preside. In the absence of the President and President Elect, the Vice-President shall preside. In the event of the absence of the President and President-Elect and Vice President, the Council shall elect a presiding officer. Seven members of the Council shall constitute a quorum.

Section 2. Council Executive Committee
The Executive Committee shall study the long-range goals of the Congress and formulate specific recommendations for future operations. This Committee shall represent the Council whenever a full meeting of the Council would not be possible, to consider and act upon such matters as would come before the Council, and report its findings and conclusions to the Council.

The Chairman for the Council Executive Committee shall be the President or the President-Elect in the President’s absence, or any member elected by a majority vote of the members present.

The Council Executive Committee may be called to meet by request of the President or upon written request of three of its members.

Section 3. State Committee
Each State Committee shall be composed of the State Councilor and Vice-Councilors. Each may serve up to two three-year terms. The Councilor for each state will recommend the Vice-Councilors. These appointments will be made by the President-Elect at the Annual Meeting of the Council.

The State Councilor must receive and consider all applications for Fellowship from his/her state, and must sign and approve the applications before they are submitted to the Membership Committee for action and referral to the Council for final approval.

The Vice Councilors are responsible for promoting membership within their region and assisting the State Councilor with his/her duties.
Section 4: Business Manager
The Council shall contract with a Business Manager hereinafter. The Business Manager shall be responsible for the operational management of the affairs of the Congress under the direction of the Executive Committee. The Business Manager may be a member of an association management firm. As primary custodian of the Congress’ funds the Business Manager shall be bonded in an amount sufficient to safeguard the financial assets of the Congress.

CHAPTER 5: STANDING COMMITTEES
The Standing Committees shall each consist of at least three members who may or may not be members of the Council. One member of each Standing Committee, or more as indicated, shall be appointed or reappointed by the President-Elect at the beginning of his/her term of office at the Annual Congress Business Meeting, to serve a three-year term, except for the Program Committee. The Chairman of each Committee shall be designated by the President-Elect for the following year. At least one former member shall remain on each Committee each year to provide continuity of purpose. Membership on a Standing Committee shall be limited to two consecutive terms.

An annual report shall be submitted by each Standing Committee to the Council, in writing and shall become a part of the minutes of that Council Meeting. A summary of the Committee reports shall be presented by the Chairman at the Annual Congress Business Meeting.

Section 1. Program Committee
The duty of the Program Committee is to select and arrange the Educational Program for the Annual Scientific Meeting. The Program Committee shall consist of the President, Recorder and six appointed members. The newly elected Vice President will annually appoint two individuals to serve a three-year term. One of these appointments will be designated to serve as Chairman of the Program Committee when the Vice President serves as President. The other members of the Committee will consist of two members serving their second year, two members serving their third year (one having been selected as Chairman). The Program Committee shall designate a CME Coordinator and obtain CME credit for the annual Congress meeting.
Section 2. Budget and Finance Committee
This Committee will review the financial transactions of the Central Office and suggest any indicated changes to the Council. It will advise the Secretary-Treasurer about financial transactions and investments. It will recommend the amount of the annual membership dues and initiation fees, commensurate with the requirements of the Congress for the ensuing year.

Section 3. Constitution and Bylaws Committee
It shall be the duty of this Committee to annually review the Constitution and Bylaws and to recommend any amendments or revisions as indicated.

Section 4. Publication and Research Committee
This Committee shall review all manuscripts presented at the Annual Scientific Meeting and select those of highest quality or greatest interest to be forwarded to the official journal for publication. Final selection of papers to be published will be determined by the Journal. The Recorder shall be the Chairman of this Committee. Any scientific surveys or research projects of the Congress membership shall be initiated or approved by this Committee.

Section 5. Nominating Committee
The Nominating Committee shall consist of the two living immediate Past Presidents with the most senior acting as Chairman and two members of the Council appointed by the President. They shall nominate candidates for President-Elect, and Vice-President and such other officers as required, and this committee shall report to the Council at the Annual Council Meeting immediately prior to the Annual Congress Business Meeting. Additional nominations may be made from the floor by Active or Senior Fellows during the Annual Congress Business Meeting. The Nominating Committee shall also appoint members to serve in the various Southwestern Surgical Congress representative positions in national organizations.

Section 6. Local Arrangements Committee
The chairman of the Local Arrangements Committee will be appointed by the President.

Section 7. Graduate Medical Education Committee
It shall be the duty of the Graduate Medical Education Committee to encourage the participation of surgical residents in the various programs of the Southwestern Surgical Congress programs. It shall also be the duty of the committee to encourage the participation and involvement of directors of surgical residencies in member states in the Congress and its various programs.
BYLAWS (cont.)

Section 8. Membership Committee
It shall be the duty of the Membership Committee to solicit from qualified general and specialty surgeons in member states of The Southwestern Surgical Congress applications for Fellowship in the Congress. It shall be the responsibility of the committee to evaluate each application for Fellowship to ensure that the surgeon fulfills the requirements for Fellowship as defined in Section 5 of Chapter 1 of these Bylaws. The committee will make its recommendation regarding Fellowship for each applicant to the Council of the Congress. The Graduate Medical Education Chairman shall serve as a member of this committee.

Section 9. State Councilor Committee
The State Councilor Committee shall consist of a State Councilor from each of the states, with both California and Texas having both a North and South representative. It will meet annually at The Southwestern Surgical Congress’ annual meeting. The committee will be responsible for electing the State Councilors-at-Large to serve on the Executive Committee for a two-year term (with a maximum of two consecutive terms allowed to be served). These positions will be staggered to enable one new Councilor-at-Large appointment each year. The Senior Councilor-at-Large shall serve as Chair of the State Committee. The Junior Councilor-at-Large will serve as an assistant. The Congress Vice-President should continue to be available to serve as a resource for this group and attend the State Councilor’s meeting.

CHAPTER 6: ANNUAL MEMBERSHIP DUES

Section 1. Annual membership dues shall be determined by the Council.

Section 2. Any Fellow whose dues remain unpaid for a period of one year shall have his/her membership discontinued. He/she shall be notified at least two months prior to this action. He/she may be reinstated upon payment of both the current and delinquent dues.

Section 3. Membership dues for each year shall be payable in advance, shall become due on December 31 of the preceding year, and shall become delinquent on January 1 of the year in which they apply.

Section 4. Newly elected Fellows of the Congress shall pay an initiation fee approved by the membership, based upon the recommendations of the Budget and Finance Committee and approved by the Council.
CHAPTER 7: AMENDMENTS

Bylaws may be amended at the Annual Congress Business Meeting by a 60% approval vote of the members present. A copy shall be provided for the voting members at least thirty (30) calendar days in advance.

(Adopted 1949, as amended through March 2012)