



AMERICAN COLLEGE OF SURGEONS

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CONNECTICUT CHAPTER
of the American College of Surgeons
Professional Association, Inc.



2015 Annual and Scientific Meeting

Resident Paper Competition Abstracts

November 6, 2015

The Stamford Hospital is accredited by the Connecticut State Medical Society to sponsor continuing medical education for physicians. The Stamford Hospital designates this educational activity for a maximum of 8.0 AMA PRA Category I Credit(s)TM. Physicians should only claim credit commensurate with the extent of their participation in the activity.

The purpose of this meeting is to provide attendees with a forum for the latest information regarding clinical practice and research in the field of surgery. Surgical Residents have a continued need to improve the research skills and a forum to present their research. Rural surgeons have a need to learn about emerging technologies. There is an on-going need to enhance patient safety and quality of patient care.

All Sessions are open to all meeting attendees.

***Uniting Surgeons to
Advance Patient Care in Connecticut***

Table of Contents

see map on next page for room locations

Abstracts printed by session and in order of presentation.

Map of the Farmington Marriott.....	3
Order of Presentation - Summary.....	4
Disclosure Information.....	5
Trauma Competition.....	7
Clinical Oncology Competition.....	7
General Surgery 1 Competition.....	12
General Surgery 2 Competition.....	17
Plastic Surgery Competition.....	23
Bariatric Surgery Competition.....	23
Specialty Surgery Competition.....	28

Prizes awarded as follows:

	First	Second
Trauma	\$100 + Award	Award – Hon. Mention
Clinical Oncology	\$100 + Award	\$50 + Award
General Surgery 1	\$100 + Award	\$50 + Award
General Surgery 2	\$100 + Award	\$50 + Award
Specialty Surgery	100 + Award	\$50 + Award
Plastic Surgery	\$100 + Award	\$50 + Award
Bariatric Surgery	Award – Hon. Mention	None Awarded

Skills Competition Prizes

Intern: Loupes

Mid-level and Chief: *Operative Techniques in Surgery*, edited by Michael Mulholland.

Map of the Farmington Marriott

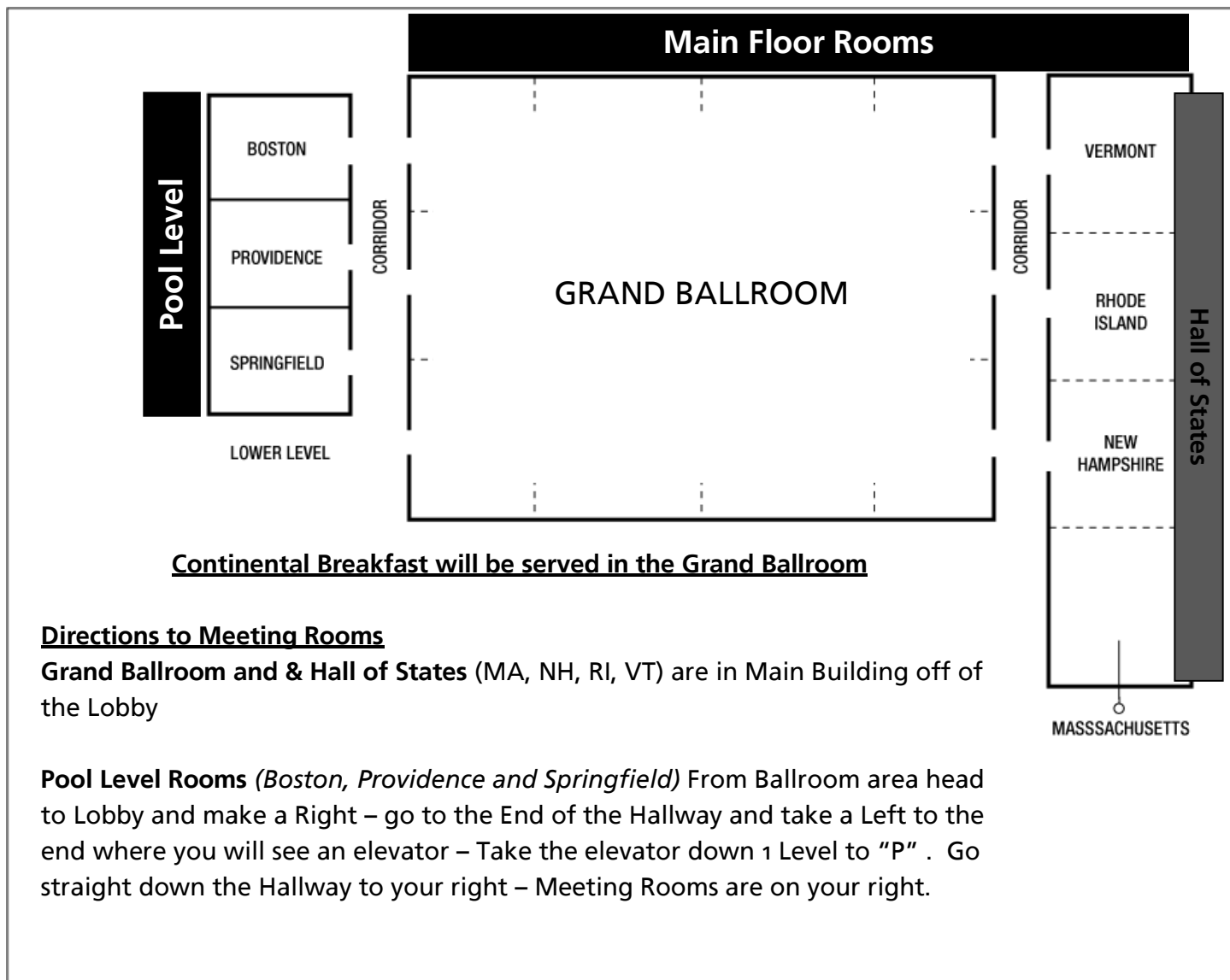
Cancer & Trauma: Vermont

Specialty Surgery: Rhode Island

General Surgery 1: Boston – Pool Level

General Surgery: 2 Providence – Pool Level

Plastic & Bariatric Surgery: Springfield – Pool Level



Order of Presentation - Summary

CTACSPA Annual Resident Paper Competition - 11/06/2015

Order of Presentation - Competitions at 2:00PM, Resident check-in by noon

General Surgery 1 - Boston Room

Vladimir Coca-Soliz, MD
Saint Marys Hospital
Hebroon Obaid, MD
Stamford Hospital
Michael Canfarotta, MD
Connecticut Children's Medical Center
Charles Drinnan, Ph.D.
University of Connecticut Health Center
Ann-Kristin Friedrich, MD
Saint Mary's Hospital
Rakesh Hegde, MD
Waterbury Hospital
Daniel Klufas, Medical Student
University of Connecticut Health Center
Kristin McCoy, PGY-1
Stamford Hospital

Introduction of the daVinci Robot and SSlS
Endometriosis of the Appendix
DICER1 Mutation Identified in a Female with Ovarian Sertoli-Leydig Cell Tumor and Multinodular C
Treatment of Hyperoxia-Induced Lung Injury with Patient-Specific, Neonatal iPSCs
Spontaneous Splenic Rupture in a Patient Treated with Enoxaparin: A Case Report
Impact of Surgical Site Infection (SSI) Control bundle implementation in reducing infection rate follow
Idiopathic Omental Bleed: A Case Report
The Black Cloud Phenomenon as a Surgical Resident

General Surgery 2 - Providence Room

Basil Nwaoz, MD
Stamford Hospital
Gregory Ricketts, MD
Waterbury Hospital
Ishna Shamra, MD
Connecticut Children's Medical Center
Gopi Ukani, MD
Saint Mary's Hospital
Aaron Gilson, DO
Waterbury Hospital
Todd Jensen, MSc
University of Connecticut Health Center
Kristina Ziegler, MD
Stamford Hospital
Jahnvi Kakuturu, MD
Saint Marys Hospital

Nwaoz Elective Blood Order
The Utility of Extra Mesenteric Lymph Node Dissection in Colorectal Cancer
Pancreatic Solid Pseudopapillary Tumor in Pediatric Population: Case Reports
Putting the Antibigram to Use to Decrease Surgical Site Infections
Collateral Damage from Ebola Virus Disease
Esophageal Tissue Engineering
A Rare Case of an Incarcerated Femoral Hernia Containing a Ruptured Appendix
Robotic vs Laparoscopic Colon Resections: Similar Costs, Better Robotic Outcomes

Plastic and Bariatric Surgery - Springfield Room

Andrew McGregor, MD
Yale University
Vipul Gargya, BMBS
University of Connecticut Health Center
Andrew McGregor, MD
Yale University
Basil Nwaoz, MD
Stamford Hospital
Andrew McGregor, MD
Yale University
Eduardo Sandoval, M.D.
Uconn Health/Hartford Hospital
Nicole Boone, PA-C
Connecticut Children's Medical Center
Melissa Santos, Ph.D.
Connecticut Children's Medical Center

Cranial Nerve Palsies: A Rare, Long-Term Complication of Radiotherapy for Nasopharyngeal Carcinom
Is Routine Pathologic Evaluation of Sebaceous Cysts Necessary? A 15-Year Retrospective Review of a 5
Fat Graft Survival Using Hyperbaric Oxygen Therapy in Nude Rats
Effectiveness of Pecs blocks for elective subpectoral breast augmentation: a case series
SPY vs. SPY: Cost Comparison of SPY® Elite system versus Mitaka USA Inc. Hamamatsu-Neo-Probe for
Massive Recurrent Rhinophyma Successfully Treated With Radical Excision and Skin Graft Coverage: A
Short Term Outcomes of Adjustable Gastric Binding and Sleeve Gastrectomy: A Retrospective Six-M
TweetChatting a Bariatric Surgery Procedure: The Impact of Social Media on Program Visibility

Specialty Surgery - Rhode Island Room

Michael Nowicki, MD - Resident
Waterbury Hospital
Jahnvi Kakuturu, MD
Saint Marys Hospital
Kamal Addagatla, MD
Stamford Hospital
Debbie Bakes, MD
Stamford Hospital
Marissa Novack, MD
Stamford Hospital
Muhammad Rishi, MD
Saint Mary's Hospital
Vladimir Coca-Soliz, MD
Saint Marys Hospital
Sandeep Sachidananda, MD
Waterbury Hospital
Mohamad Zanbrakji, MD
Stamford Hospital

Complete Aortic Dissection
An Unusual Presentation of Thyroid Cancer with Hemoptysis
Solitary Fibrous Tumor of the Pleura Masquerading as Intralobar Pulmonary Sequestration with an Ar
Effectiveness of Adding Transverse Abdominus Plane (TAP) Catheters to Patient-Controlled Analgesia
Endovascular embolization of an asymptomatic ruptured popliteal aneurysm
Adeno-HSA12B Delivery Improves Neovascularization in a Murine Model of Hind Limb Ischemia.
Autolysis of SFA because of Viabahn stent graft infection with Proteus - Case Report
Use of Adjunct Intraop Cone Bean CT (CBCT) with Real Time 3D Overlay
Management of Empyema and Bronchopleural Fistula after Completion Right Pneumonectomy

Trauma & Cancer - Vermont Room

Kristina Ziegler, MD*
Stamford Hospital
Ibnahwalid Saad, MD
Saint Mary's Hospital
Xuewei Zhang, MD
Stamford Hospital
Michael Nowicki, M.D.
Waterbury Hospital
Christian Cain, MD
Stamford Hospital
Laura Lamb, MD
University of Connecticut
Salim Abunnaja, MD
Saint Mary's Hospital
Aleksandra Ogrodnik, MD
Danbury Hospital
Xuewei Zhang, M.D.
Stamford Hospital
Andrew McGregor, MD
Danbury Hospital

Time in Target Blood Glucose Range is Associated with Survival in Trauma ICU Patients
Extraabdominal Bladder Rupture Presenting as a Pelvic Abscess: A Case Report and Review of the Liter
Lower Extremity Morel Lavallee Lesion: A Case Report
TOURNIQUET USE IN PREVENTION OF REPERFUSION INJURY DURING RESUSCITATION IN UNSALVAGA
Adrenal Incidentaloma: Masquerading Rare Retroperitoneal Schwannoma
Breast MRI: a retrospective review of the utility and pitfalls in newly diagnosed breast cancer
Primary Myeloid Sarcoma of the Small Intestine
Barriers to Completing Delayed Reconstruction after Mastectomy for Breast Cancer
Post Radiation Intra-abdominal Fibromatosis: A Case Report
Unicentric Castleman's Disease Masquerading as Peripancreatic Neoplasm

*First Place Winner



Disclosure Information

Connecticut Chapter of the ACS Professional Association, Inc – November 6, 2015

In accordance with the ACCME Accreditation Criteria, the Connecticut Chapter American College of Surgeons 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. Therefore, it is mandatory that both the program planning committee and speakers complete disclosure forms. Members of the program committee were required to disclose **all** financial relationships and speakers were required to disclose any financial relationship **as it pertains to the content of the presentations**. The ACCME defines a ‘commercial interest’ as “any entity producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on, patients”. It does not consider providers of clinical service directly to patients to be commercial interests. The ACCME considers “relevant” financial relationships as financial transactions (in any amount) that may create a conflict of interest and occur within the 12 months preceding the time that the individual is being asked to assume a role controlling content of the educational activity.

The ACCME also requires that CTACSPA manage any reported conflict and eliminate the potential for bias during the session. The planning committee members and speakers were contacted and the conflicts listed below have been managed to our satisfaction. However, if you perceive a bias during a session, please advise us of the circumstances on the session evaluation form.

Please note we have advised the speakers that it is their responsibility to disclose at the start of their presentation if they will be describing the use of a device, product, or drug that is not FDA approved or the off-label use of an approved device, product, or drug or unapproved usage.

The requirement for disclosure is not intended to imply any impropriety of such relationships, but simply to identify such relationships through full disclosure, and to allow the audience to form its own judgments regarding the presentation.

SPEAKERS / MODERATORS/ CHAIRS / DISCUSSANTS	DISCLOSURE?	DISCLOSURE (As it pertains to the content of the presentation)
Salim Abunnaja	No	
Kamal Addagatla	No	
Amanda Ayers	No	
Debbie Bakes	No	
Jennifer Bishop	No	
Nicole Boone	No	
Christian Cain	No	
Michael Canfarotta	No	
Vladimir Coca-Soliz	No	
Michael Deren	No	
Charles Drinnan	No	
John Dussel	No	
Ann-Kristin Friedrich	No	
Royd Fukumoto	No	
Eric Girard	No	
Rakesh Hegde	No	
Thomas Heleotis	Yes	Mallinckrodt Pharmaceutical, I receive honorariums for doing unbranded presentations
Jennifer Hubbard	No	
Todd Jensen	No	
Jahnvi Kakuturu	No	
Daniel Klufas	No	
Nathan Lafayette	No	
Laura Lamb	No	
Tariq Lescouflair	No	

Yuk Ming Liu	No	
Diana Lusas	No	
Alan Meinke	No	
Kristin McCoy	No	
Andrew McGregor	No	
Nissin Nahmias	No	
Marissa Novack	No	
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Basil Nwaoz	No	
Hebroon Obaid	No	
Aleksandra Ogrodnik	No	
Gregory Ricketts	No	
Muhammad Rishi	No	
Sandeep Sachidananda	No	
Eduardo Sandoval	No	
Melissa Santos	No	
Kevin Schuster	No	
Ishna Shamra	No	
David Shapiro	No	
Rekha Singh	No	
John Torello	No	
Gopi Ukani	No	
Mohamad Zanbrakji	No	
Xuwei Zhang	No	
Kristina Ziegler	No	
PLANNING COMMITTEE	NOTHING TO DISCLOSE	DISCLOSURE (All commercial relationships)
Amanda Ayers, MD, FACS	X	
Jonathan Blancaflor, MD, FACS	X	
Scott Ellner, MD, FACS	X	
Royd Fukumoto, MD, FACS	X	
Adrian Maung, MD, FACS	X	
J. Alexander Palesty, MD, FACS	X	
Brian Shames, MD, FACS	X	
David Shapiro, MD, FACS	X	
Rekha Singh, MD, FACS	X	

John D. MacArthur, MD, FACS

Trauma Competition

Moderator:

Kevin Schuster, MD, MPH, FACS, FCCM, BS
Associate Professor of Surgery (Trauma), Yale University School of Medicine,
New Haven, Connecticut Committee on Trauma

Judge:

Connecticut Committee on Trauma

Clinical Oncology Competition

Moderator:

Amanda Ayers, MD
Colon and Rectal Surgeons of Greater Hartford, Bloomfield, CT
Chair, Connecticut Commission on Cancer

Judges:

Connecticut Commission on Cancer

Trauma Competition

FIRST PLACE PAPER

Time in Target Blood Glucose Range is Associated with Survival in Trauma ICU Patients

Kristina Ziegler MD, James Krinsley MD, Kevin Dwyer MD
FACS
Stamford Hospital

Introduction: Time in targeted blood glucose range (TIR) 70-140 mg/dL has been shown to be independently associated with increased survival in a heterogeneous cohort of non-diabetic (NON) intensive care unit (ICU) patients. We hypothesize that TIR is associated with improved survival in a cohort of trauma ICU patients.

Method(s): We conducted a retrospective single-site review of 526 consecutive admissions to the trauma service of the 16-bed ICU of our university-affiliated hospital between 1/20/2007 and 9/12/14 with ICU length of stay (LOS) > 24 hours by abstracting information from the unit's comprehensive database. Blood glucose (BG) target was 90-120 mg/dL during this period. We stratified the groups by admitting diagnosis category: Non-operative head trauma (NH), n=261; non-operative body trauma (NB), n=144; operative head trauma (OT), n=52; and operative body trauma (OB), n=69. Patients within each group were also characterized as diabetic (DM) or NON. Patients who spent ≥80% of their time within the target blood glucose range were designated TIR HI. Those within the target blood glucose range <80% of the time were designated (TIR LO). Patients with at least one episode of glucose <70 mg/dL were HYPO and those with at least one value >140 mg/dL were HYPER. Odds ratios (OR) were reported with 95% confidence intervals (95% CI) where appropriate. We performed univariable analysis as well as multivariable regression including APACHE IV predicted mortality (APM), ICU length of stay (LOS), and TIR HI to evaluate the correlations with mortality (MORT).

Results: The median age of NON (n=485) and DM (n=41) was 55 and 82 respectively (p<0.0001). Mean APM was 12.29% vs. 21.37% (p=0.005) and mortality was 7.63% and 29.27% (p<0.001). The percentage of TIR HI for NON and DM was 51.8% and 9.8% respectively (p=0.0008); and TIR LO 48.3% vs. 90.2% (p=0.012). NON and DM patients were HYPO 15.1% vs. 43.9% (p=0.0007), and HYPER 37.1% vs. 85.4% (p=0.0009).

In the entire cohort of NON, TIR HI was associated with decreased mortality vs. TIR LO: MORT 4.4% vs. 11.1% (p=0.0159). Univariable analysis of NON revealed a decreased risk of mortality for TIR HI: OR 0.37 (95% CI 0.18 – 0.76) p=0.007. Multivariable regression analysis of MORT for the entire NON group controlling for APM, LOS, and TIR HI: OR 0.61 (95% CI 0.25 to 1.48) p=0.2715.

On subgroup univariable analysis stratified by admission diagnosis revealed the following: NH 0.55 (0.2240-1.3682) p=0.1974; NB 0.00 (N/A) p=0.0064 (only 5 mortalities in 134 total); OH 0.51 (0.0931-2.8051); OB no deaths. TIR HI was not independently associated with MORT on multivariable

analysis. The small number of DM patients precluded TIR analysis and these patients were not analyzed further.

Conclusion(s): In this cohort of NON ICU trauma patients TIR HI was associated with decreased mortality on univariable analysis. This association was not significant when controlling for factors such as APM and LOS, however, nor on subgroup analysis. This was a small patient group, but nevertheless these data are hypothesis-generating and suggest that improving TIR 70-140 mg/dL in NON patients may decrease mortality.

Extraperitoneal Bladder Rupture Presenting as a Pelvic Abscess: A Case Report and Review of the Literature

Saad I, MD, Hubbard JL, MD, Shaikh I, MD, Coca V, MD, Palesty A, MD, FACS
St. Mary's Hospital

Introduction: Extraperitoneal bladder rupture after blunt traumatic injury is a rare occurrence resulting in less than 0.15% of blunt trauma patients. The injury mechanism includes disruption of the pelvic ring, with shearing of the ligaments leading to avulsion of the bladder, in addition to penetration of the bladder by bony fragments. These two mechanisms are often seen with pelvic fractures and for this reason extraperitoneal bladder rupture after blunt trauma is highly associated with these injuries. Certain pelvic fractures are associated with bladder rupture. Pubic symphysis diastasis of greater than 1cm and obturator ring fracture with displacement of greater than 1cm have been independently associated with bladder rupture. We present an unusual case of an unrecognized extraperitoneal bladder rupture presenting 2 months later as a pelvic abscess in a 19 year old male who was also found to have a pubic symphysis diastasis which was not diagnosed at the time of injury.

Lower Extremity Morel Lavallee Lesion: A Case Report

XueWei Zhang MD, Marissa De Freese MD
Stamford Hospital

Morel Lavallee lesion is a separation of skin and subcutaneous tissue from the underlying fascia, often as a result of trauma and is detected by MRI. Patient is a 50-year-old male who presented with a seven-month old anterior thigh mass below the level of the greater trochanter. At the time of presentation, patient denied any trauma but had a history of engaging in vigorous exercise. MRI of the right thigh revealed an ovoid fusiform collection of 10.5 x 2.5 x 3.2 cm above the tensor fascia lata, concerning for Morel Lavallee lesion. The patient was taken to the operating room for surgical incision and drainage of the Morel Lavallee lesion with excision of its capsule. Intra-operatively, the lesion was filled with serous maroon color fluid and has a calcified firm capsule. The capsule was sent to pathology, which showed that the capsule has fibrous tissue with organized blood clot. Post-operatively, patient was discharged home. This case represents development of a rare lower extremity Morel Lavallee lesion following vigorous exercise.

TOURNIQUET USE IN PREVENTION OF REPERFUSION INJURY DURING RESUSCITATION IN UNSALVAGABLE ACUTE LIMB ISCHEMIA

M. Nowicki M.D., J. Dussel M.D., N. Kaur M.D., K. Shahmohammadi M.D.
 Waterbury Hospital

Introduction: Limb ischemia is irreversible when ischemia time is greater than 6 hours and/or there are findings of pulselessness, profound anesthesia and paralysis. If operative intervention cannot be performed immediately resuscitation measures should be undertaken to make the patient ready for amputation as soon as possible. Tourniquet can be applied to the affected limb to limit reperfusion injury and assist in resuscitation.

Method(s): A 24-year-old male with a history of extensive polysubstance abuse was found unconscious 10 hours post-binge. He was rapidly transported to the ED where on evaluation had a pulseless right lower extremity (rle) associated with profound paralysis and complete anesthesia below the knee. Labs revealed a hct of 62 and a potassium of 8.6. Large volume resuscitation was started but his vital signs worsened with the reperfusion. The decision was made to tourniquet the rle below the knee after which there was an immediate rise in the patient's blood pressure to within normal limits. After discussion with anesthesia dialysis was performed to prepare the pt for induction. The patient remained stable for the 4 hours of dialysis and was brought for above the knee amputation.

Results: The reason for amputation in a Rutherford class 3 acutely ischemic limb is the morbidity and mortality associated with reperfusion. Though there was no flow to the patient's rle, proven by bedside ultrasound, there was a dramatic rise in the patient's blood pressure on application of the tourniquet. This suggests that as his intravascular volume expanded, humoral mediators were being expressed leading to a distributive shock.

Conclusion: Application of the tourniquet allowed his care team to resuscitate him and prepare him for anesthesia. This has not been documented before but should be a tool in the vascular surgeons arsenal.



Pic.1. Preamputation limb with tourniquet in place, note catheter bag with dark urine reflecting rhabdomyolysis



Pic.2. Intraop Picture of amputated limb, note color discrepancy between well perfused anterior compartment and ischemic posterior compartment.

Clinical Oncology Competition

Adrenal Incidentaloma: Masquerading Rare Retroperitoneal Schwannoma

Christian D. Cain MD, Xiang Da Dong MD, Elijah Min MD
 Stamford Hospital

Introduction: Schwannoma is a benign neurogenic tumor arising from Schwann cells; the cells primarily responsible for production of myelin covering peripheral nerves. Tumors of this cell type are usually described as slow-growing. Visceral schwannomas may be located in the GI tract, liver, kidney, brain, heart, adrenal medulla, or retroperitoneum. Review of the literature sites 0.5 – 5% of all schwannomas are located in the retroperitoneum, comprises 1% of all retroperitoneal tumors, and only 0.2% of adrenal incidentalomas.

Case Description: This is a 59 year old female who presented to her primary care physician for evaluation of abdominal discomfort of 2 weeks duration. She received an abdominal ultrasound that demonstrated a left-sided abdominal mass. This prompted surgical consultation and an abdominopelvic CT was obtained that showed a 12.6 x 8.4 cm left retroperitoneal mass with mixed attenuation and heterogenous enhancement. Metabolic work up, including basic chemistry, urine metanephrines, urine free cortisol, all were within normal physiologic levels. A presumptive diagnosis of adrenal cortical carcinoma was made. Additionally, MRI suggested close proximity to distal pancreas, which would require distal pancreatectomy and splenectomy. The patient was taken to the operating room for exploratory laparotomy. A large tumor arising from the left retroperitoneum was removed en bloc with clear surgical planes separate from the pancreas/spleen. The tumor was then submitted for pathologic review.

Pathology demonstrated a large lesion distinct from surrounding organs, encapsulated with a fascicular growth pattern. Immunohistologic staining was strongly positive for S100 and negative for c-kit (CD117) – consistent with a diagnosis of Schwannoma.

Conclusion: Retroperitoneal schwannomas are indeed a rare entity. The lack of secreted hormones makes preoperative identification of these tumors difficult. Histology and immunochemistry analysis is used to definitively classify these lesions. As the incidence of abdominopelvic imaging increases, the incidence of adrenal incidentaloma will likely follow suit. Therefore, clinicians should be sure to include schwannoma in the differential diagnosis of incidentally found, nonfunctional abdominal masses.

References:
 Jakowski, J. D., Wakely, P. E., & Jimenez, R. E. (2008). An uncommon type of adrenal incidentaloma: a case report of a schwannoma of the adrenal medulla with cytological, histological, and ultrastructural correlation. *Annals of Diagnostic Pathology*, 12(5), 356–361.

Lau, S. K., Spagnolo, D. V., & Weiss, L. M. Schwannoma of the adrenal gland: report of two cases. *The American journal of surgical pathology* 630–634 (2006).
 doi:10.1097/01.pas.0000194739.80174.26

Mohiuddin, Y., & Gilliland, M. G. F. (2013). Adrenal schwannoma: A rare type of adrenal incidentaloma. *Archives of Pathology and Laboratory Medicine*, 137(7), 1009-1014.

Breast MRI: a retrospective review of the utility and pitfalls in newly diagnosed breast cancer

Laura C Lamb, MD, Kristen Zarfos MD FACS, Bethany Carr APRN, Jean Weigert MD, Anita Bourque MD, Rekha Singh MD FACS

The Hospital of Central Connecticut

Introduction: Breast cancer is the single most common female cancer, accounting for 25% of female cancers. One in eight women will develop breast cancer in their lifetime. Breast cancer accounts for 450,000 deaths annually worldwide. Screening has reduced mortality by 20-30%. We sought to investigate the preoperative usage of MRI to increase detection, improve sensitivity, improve pre-operative planning, and reduce reoperations.

Method(s): This was a single surgeon, single institution, retrospective analysis of women with newly diagnosed breast cancer. Ninety-six patients were sent for preoperative breast MRI from December 2013 through December 2014. Patients were excluded if they were opposed to surgical intervention or if they had a condition preventing them from obtaining an MRI, i.e. claustrophobia or a pace-maker.

Results: MRI's correlation to pathology, the gold standard was 64% overall, while the correlation for ultrasound was 43% and 44% for mammography. As breast density increased, MRI's correlation to pathology increased. For women with breast density of 25-50% there was a 27% correlation while for women with 51-75% density there was a 92% correlation. True positives were higher with the use of MRI with 42% of breast biopsies on MRI being positive for carcinoma. 38% patients had a change in operative plan based on their MRI findings.

Conclusion(s): MRI shows evidence for being a sensitive imaging modality which is most closely correlated to pathology, the gold standard. This accuracy of information was the source of 38% of patients having a change in their operative plan. Breast biopsies were more likely to result in findings of carcinoma when aided by MRI as well. While 25% of breast biopsies nationally found on mammography are positive for carcinoma, we found that 42% of our breast biopsies of lesions found on MRI were positive. The >50% breast density population in particular seems to benefit from the increased sensitivity of MRI as compared to ultrasound and mammography. Going forward MRI may be a useful modality when evaluating women with newly diagnosed breast cancer. Further studies are needed to confirm these findings and to further investigate the cost versus benefit of MRI as well as whether it improves long-term survival of these patients.

Primary Myeloid Sarcoma of the small intestine

Scott McCusker, John Trangucci, Salim Abunnaja MD, Anamika Katoch MD, William Frederick MD, Aziz Richi MD
Saint Mary's Hospital

Primary myeloid sarcoma is a rare extramedullary presentation of acute myeloid leukemia (AML). Typically, myeloid sarcoma presents after one has been diagnosed with AML or other myeloproliferative disorders. In contrast to this, primary myeloid sarcoma presents without any preexisting conditions, making it extremely difficult to diagnose. We discuss a case of a 22 year old female who was initially misdiagnosed with acute appendicitis and received an appendectomy. Postoperatively, she continued to be symptomatic and progressed to develop small bowel obstruction. A diagnostic Laparoscopy revealed multiple small bowel masses and multiple abdominal/pelvic lymphadenopathy. After extensive pathological review and with the assistance of immunohistochemistry and molecular studies, the proper diagnosis of myeloid sarcoma was made. This review will discuss the presentation, diagnosis, management, and prognosis of primary myeloid sarcoma.

Barriers to Completing Delayed Reconstruction after Mastectomy for Breast Cancer - Non-judged entry

Aleksandra Ogrodnik MD¹, Ted James MD², Susan MacLennan MD², Donald Weaver MD³
1 Department of Surgery, Danbury Hospital, 2 Department of Surgery, UVM 3 Department of Pathology, UVM

Introduction: Rates of breast reconstruction following mastectomy vary widely, and little is known about why women who originally express an interest in breast reconstruction do not receive it. Improved documentation of clinical decision making is one of the potential benefits of the electronic health record, and may serve as a tool to enhance patient-centered, clinical outcomes research. The goals of this study were to explore patterns in *delayed reconstruction* (DR), identify possible barriers to follow-through and to determine the adequacy of electronic health record documentation to provide information pertaining to decision-making for breast reconstruction.

Method(s): A retrospective electronic medical record review of women undergoing mastectomy from 2008 to 2012 in a single academic medical center in New England. Data included patient demographics, cancer stage, co-morbidity index, post-mastectomy reconstruction status, as well as documented decision-making regarding reconstruction.

Results: Of 367 women who had undergone a total mastectomy, 219 women were identified who did not receive immediate reconstruction. Of these women, 24.6% expressed no interest in DR, 21.9% expressed interest in DR but were still pending the procedure, and 5.9% had completed DR. 47.5% lacked any documentation of decision-making regarding breast reconstruction. Median follow-up was 34 months. Reasons for not following through with DR included poor-timing (25%), indecision (17%), desired method of reconstruction not available at treating facility (10%), persistent obesity (8.3%), continued smoking (4%), and reason not specified (35%).

Conclusion(s): Many women do not receive breast reconstruction despite expressing an interest in the procedure. Reasons were multi-factorial and consisted of both patient- and provider-related factors. Documentation regarding decision-making for breast reconstruction was inconsistent. Further exploration of potential barriers to

breast reconstruction and opportunities to enhance clinical decision-making may serve to improve patient experience and satisfaction following mastectomy.

Post Radiation Intra-abdominal Fibromatosis: A Case Report

XueWei Zhang MD, Eric Dong MD
Stamford Hospita

Patient is a 41-year-old male who presented with complaints of enlarging abdominal girth and abdominal discomfort. Past medical history is notable for seminoma previously treated with left orchiectomy and retroperitoneal radiation in his twenties. Initial workup revealed the presence of a large abdominal tumor filling the majority of his abdomen. The patient was taken to the operating room for surgical resection because of the compressive symptoms from the large tumor. Intra-operatively, the patient was found to have a giant tumor attached to his small bowel approximately 10 cm from the ileocecal valve. In addition to resecting the tumor, patient had a small bowel resection. The final pathology was consistent with desmoid tumor, or the rare intra-abdominal fibromatosis. The tumor weighted over 4kg and measured 25.0 x 20.5 x10.5 cm. Immunostains were positive for beta catenin and vimentin, and focally positive for SMA. Other stains such as Desmin, CD117, DOG-1, CD34, and S100 were negative, confirming the diagnosis of intra-abdominal desmoid tumor. Interestingly, the patient also had an incidental schwannoma separate from the intra-abdominal desmoid tumor, and it was resected during the same operation. Post-operatively, patient had an uncomplicated hospital course and was discharged home several days later. This case represents a rare giant intra-abdominal desmoid tumor following radiation treatment for seminoma.

Unicentric Castleman’s Disease Masquerading as Peripancreatic Neoplasm

Andrew McGregor MD1, Daniel Kleiner MD1 , Bryce Hatfield MD2, Nusrat Pathan, MD2
1Danbury Hospital, Department of Surgery , 2Department of Pathology and laboratory Medicine

Introduction: Castleman’s disease or giant lymph node hyperplasia is a lymphoproliferative disorder characterized histologically by regression of germinal centers, abnormal vascularity, hyaline vascular changes, and polytypic plasma cell proliferation. It is mostly found in the mediastinum, but occur in the axilla , retroperitoneum , and in association with abdominal organs. .Pancreatic Castleman’s disease is a rare phenomenon with only 19 cases documented worldwide. The exact pathogenesis of Castleman’s disease is unknown and is thought to be due to an excess of interleukin-6 (IL-6). We present a case of a woman with an incidental pancreatic mass found to be Castleman’s disease.

Method(s): Case Report Citing important Clinical finding

Results: A 40 year old female was transferred to our hospital with possible acute cholecystitis.A CT scan performed at an outside facility revealed an 5.9 x3.7cm mass that abutted the duodenum, gallbladder, pancreas,

and liver. Ultrasound of the gallbladder was done at our institution which was negative for signs of cholecystitis. An MRI of the abdomen was then done which showed the mass associated with the head/uncinate process of the pancreas with central calcification and hypervascularity. A CT angiogram was performed at this time to further assess the vascular nature of the mass, which showed the same results as the MRI. Gastroenterology was consulted for EUS , and they felt that the tumor was too vascular to biopsy safely. At this time, it was thought that this was a neuroendocrine tumor or lymphoma. The patient was scheduled for an exploratory laparotomy with possible Whipple procedure. At the time of operation, the mass was noted to be peripancreatic. It was wedged off of the pancreas and was sent to pathology. Pathology showed Castleman’s Disease, hyaline vascular type. Patient HIV/HHV-8 status was negative. She was followed up with surgery and oncology, who recommended no further treatment at this time.

Conclusion(s): This case demonstrates the clinical rarity of pancreatic Castleman’s disease.



Figure 1: CT angio of 6 x 4 cm pancreatic mass



Figure 2: Gross Pathology of peripancreatic mass measuring 7.5 x5.5x 4.0 cm

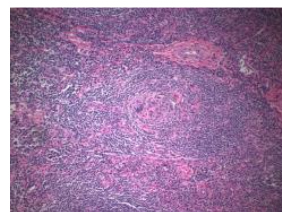


Figure 3: H+E Stain of peripancreatic mass displaying “Onion Skinning” typical appearance of Castleman’s Disease

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General Surgery 1 Competition

Moderator:

J. Alexander Palesty, MD, FACS
Assistant Professor, University of Connecticut
School of Medicine, Farmington, CT, Director, Program
in Surgery, St. Mary's Hospital, Waterbury, CT

Judge:

Adrian Maung, MD, FACS
Associate Professor of Surgery (Trauma),
Yale University School of Medicine

Introduction of the daVinci Robot and SSIs

Vladimir Coca-Soliz M.D., Salim Abunnaja M.D., Jennifer Hubbard M.D., Philip Corvo M.D. F.A.C.S.
Saint Mary's Hospital, Waterbury CT

Introduction: Robotic surgery is a rapidly advancing and evolving field. With substantial progress in the ability and availability of robotics made in the last few years, the field of robotic surgery has expanded. Robotics is unique in that it is not centered on the primary surgeon, but rather a multidisciplinary team approach with contributions by the surgeon, the scrub technician, the bedside assistant, and others. As a result, the new and complex surgical approach should be subject to critical review. Specifically, this paper looks at the most common robotic procedures in our hospital, and reviewed the perioperative complications, especially surgical site infections. This study is part of an ongoing review of prospectively collected data comparing the rate of surgical site infections (SSI) in laparoscopic vs. robotic operative cases, using our NSQIP and Midas databases

Methods: NSQIP and MIDAS reviews of all patients who underwent laparoscopic and robotic surgery from 2012 to 2014 at Saint Mary's Hospital were collected and examined for SSIs. From these, the most common procedures performed in both arms were selected for review: cholecystectomy, sleeve gastrectomy, and hysterectomy. The only exclusion criterion was those patients who had more than one procedure performed at the same time.

Results: A total of 606 laparoscopic procedures and a total of 1220 robotic cases were performed and analyzed from 2012 to 2014. The majority of laparoscopic cases were cholecystectomies (496). The majority of robotic cases were hysterectomies (741). The laparoscopic group had 2 SSIs, while the Robotic group had a total of 10 SSIs. Seven of these 10 SSIs were hysterectomies.

Conclusion: The above data suggests an increased incidence of SSI in the robotic hysterectomy cases. This could be related to the learning curve by the surgeons or operative staff involved in the robotic procedures. Also, the extended length of time involved in setting up and performing robotic cases could play a role in the increased SSI rate. Further analysis of the data demonstrated that most of the SSI were in 2013 and, this same year saw double the volume in robotic cases as compared to 2012. This volume may be explained by an increase number in surgeons being trained in the use of robotics or new personal hired for the purpose of robotic surgery. Further, ongoing research is needed to determine the reason for increased surgical site infections. However, this retrospective study suggests that the learning curve for these cases might impact the rate of patient SSI.

	2012	2013	2014	TOTAL
LAP. CHOLECYSTECTOMY	133	181	182	496
LAP SLEEVE GASTRECTOMY	15	22	25	62
LAP HYSTERECTOMY	13	16	19	48
				606
RAS CHOLECYSTECTOMY	25	153	161	339
RAS SLEEVE GASTRECTOMY	9	57	74	140
RAS HYSTERECTOMY TOTAL	184	287	270	777
				1256

SSI	2012	2013	2014	TOTAL
LAP CHOLECYSTECTOMY	1			1
LAP SLEEVE GASTRECTOMY				0
LAP HYSTERECTOMY			1	1
RAS CHOLECYSTECTOMY		1	1	2
RAS SLEEVE GASTRECTOMY		1		1
RAS HYSTERECTOMY		7		7

Endometriosis of the Appendix

Hebroon Obaid, MD, Joey C. Papa MD
Stamford Hospital

Introduction: Appendectomies are one of the most common general surgery procedures performed yearly in the United States, according to data accrued by the Healthcare Cost and Utilization Projected. These operations are typically performed emergently on patients with an appropriate clinical syndrome and acute abdomen. Appendectomies can also be performed as staged procedures, in the setting of a diagnostic laparoscopy or even to resect lesions noted intraoperatively. It is important to consider a broad range of pathologies that may trigger a surgical resection of the appendix, including inflammation, neoplasms, or even a benign process that may prove hard to discern from a malignant one. Specifically, appendectomies can be performed to remove masses discovered incidentally. Most notably, in female patients, some benign gynecologic processes may mimic more sinister pathologies, as is noted in the following case.

Case Description: The patient is a 50-year-old female who presented to the surgeon's office, a referral from her colorectal surgeon. She had recently undergone a colonoscopy for lower GI bleeding and was found to have a small mass noted along the appendicular orifice. At that time, the report from the colorectal surgeon hinted the mass looked like a benign mucocele or more worrisome, a possible small carcinoma. The patient and the surgeon discussed multiple outcomes, including the need for an interval right colectomy, which would be an oncologic procedure. The patient's planned laparoscopic appendectomy with partial cecectomy was carried out without any complications. The appendix did not appear hyperemic or distended at the time of the procedure. A small mass was palpated along the base of the appendix, after the specimen was removed from the patient. The specimen was sent for pathology; the report provided a histologic diagnosis of endometriosis of the appendix.

Discussion: Endometriosis of the appendix is reported to have an incidence of 0.2-1.3% in literature, making it an extremely rare diagnosis of appendiceal disease. Though it is uncommon, it is important to consider endometrial disease when working up a female patient with an appendiceal mass—especially if the patient has a known history of endometriosis at other sites. In fact, because the diagnosis of endometriosis may be missed during gross visualization of the appendix intraoperatively, it is recommended in gynecologic literature to perform appendectomies in those procedures for resection of known endometrial disease. No laboratory tests or even imaging studies are available to make the diagnosis of

endometriosis of the appendix, and surgical excision of the mass, as well as pathologic evaluation, is necessary to make this diagnosis. Thusly, resection of the appendix, even possible ileocectomy or right colectomy, prove to be both diagnostic and therapeutic; this procedure allows for continuity of the bowel and prevents future obstructive disease of the appendix. Moreover, a multidisciplinary team should manage endometriosis of the appendix, as it may portend disease of bowel or other intra-abdominal sites.

DICER1 Mutation Identified in a Female with Ovarian Sertoli-Leydig Cell Tumor and Multinodular Goiter

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Connecticut Children's Medical Center

Introduction: DICER1 is a member of the ribonuclease III (RNase III) family that is involved in the processing and maturation of micro-ribonucleic acids (miRNAs). miRNAs are noncoding, double stranded, regulatory RNAs that modulate gene expression post-transcriptionally. Impaired function of DICER1 results in subsequent dysregulation of target oncogenes, ultimately leading to enhanced tumorigenesis. To date, 45 different germline mutations have been described not only in association with multinodular goiter with and without ovarian Sertoli-Leydig cell tumors, but also cystic nephroma, pleuropulmonary blastoma, primitive neuroectodermal tumor, cervix embryonal rhabdomyosarcoma, and Wilms tumor. Herein, we report a case of an 11-year-old female with a history of ovarian Sertoli-Leydig cell tumor resection and known DICER1 mutation presenting with an incidental thyroid nodule found to have a 5-15% chance of malignancy on fine needle aspiration biopsy.

Method(s): Retrospective chart review.

Results: Total thyroidectomy was performed and intraoperative pathology showed multiple, well-circumscribed nodules without cellular atypia consistent with multinodular goiter.

Conclusion(s): Patients with a known DICER1 mutation presenting with a thyroid mass should undergo full evaluation of the nodule. Although more frequently associated with multinodular goiter, reports of thyroid carcinoma have also been described. This case highlights the challenges faced by the surgeon with atypical cells found on fine needle aspiration biopsy in conjunction with a known DICER1 mutation.

Treatment of Hyperoxia-Induced Lung Injury with Patient-Specific, Neonatal iPSCs

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University of Connecticut Health Center

Introduction: In the US, more than 500,000 infants are born prematurely and conventional therapy may cause hyperoxia induced lung injury. Unfortunately, these under-developed lungs cannot recover from this early damage, and this condition could benefit from novel regenerative medicine

techniques. An exciting strategy proposes use of stem cells to treat hyperoxia damaged lungs. Previous studies have had mixed success in animal models utilizing human mesenchymal stem, cord blood, and amniotic fluid stem cells and their respective conditioned media. The goal of this study is to explore the benefits of induced pluripotent stem cells (iPSCs) to mediate damage and provide a regenerative cell population for acute hyperoxia injury of neonatal lungs in a murine model.

Method(s): Fibroblasts from neonatal foreskin (IRB# FINC003364HU) were infected with an excisable lentiviral vector in order to generate iPSCs. Cells were treated with cre-recombinase in order to generate transgene-free iPSCs. These cells were then differentiated for 21d utilizing specific growth factors and a commercially available small airway growth medium. NSG pregnant mice were allowed to deliver normally, and neonatal mouse pups were exposed to 75% oxygen environment for 24-72 hours within 12 hours of birth. iPSCs were then intra-tracheally injected and allowed to engraft for 24 hours. Controls consisted of hyperoxia alone, normoxia, and PBS injected.

Results: Mice exposed to hyperoxia and PBS injections had significant lung damage. Injection of iPSCs into hyperoxic mice demonstrated improvement in histology and morphometric measurements.

Conclusion(s): We conclude that differentiated patient-specific human iPSCs are a potential therapeutic option for the treatment of hyperoxia induced lung injury. Furthermore, this option provides an autologous approach to cell therapy, therefore circumventing the need for immunosuppressive treatment. Further studies will be needed in order to evaluate the engraftment efficiency and long term effects of administering these cells.

Spontaneous Splenic Rupture in a Patient Treated with Enoxaparin: A Case Report

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Saint Mary's Hospital

Introduction: Rupture of the spleen in the absence of trauma is a rare occurrence that is often missed. It is most commonly associated with malignancy, vascular abnormality, hematologic or infectious diseases. Enoxaparin therapy has previously been associated with spontaneous splenic ruptures in rare cases.

Method(s): Case report.

Results: A 68 year old Caucasian female with a past medical history of stage III ovarian cancer and prior pulmonary embolism, for which she was treated with enoxaparin, presented to the hospital with a chief complaint of syncope after the sudden onset of abdominal pain. The patient was in profound hemorrhagic shock upon presentation. Workup revealed free intra-abdominal fluid on CT scan, suspicious for a splenic rupture. She was taken to the operative room after she failed to stabilize with appropriate resuscitation, and underwent an open splenectomy. Final pathology showed no sign of malignant involvement of the spleen.

Conclusion(s): Spontaneous rupture of the spleen associated with enoxaparin use is still a rarity. Adequate resuscitation is needed in these scenarios to allow for appropriate time to diagnose and treat. In the setting of otherwise unexplained hemorrhagic shock, a high index of suspicion by the treating physician is absolutely warranted to manage this rare and life-threatening disease. As enoxaparin therapy is becoming more frequently used, we can expect to see more of its uncommon side effects.

Impact of Surgical Site Infection (SSI) Control bundle implementation in reducing infection rate following Colorectal Surgery a Single Centre quality improvement study

Rakesh Hegde MD, Cynthia Kohan MS, CIC, Neha Nanda MD, Zhongqi Zhang MD, PhD, FACS, Waterbury Hospital

Introduction: Surgical site infection following colorectal surgery is reported to range between 18 to 30%. Waterbury Hospital has participated in the American College of Surgeons National Quality Improvement (NSQIP) study since 2014. The risk adjusted SSI outcomes from participating hospitals is expressed as an observed versus expected ratio(O/E). A O/E ratio more than 1 indicates that hospital has more SSI than would be expected. Data on SSI following colorectal surgery showed need for quality improvement at our institution.

Method(s): The study design was a prospective implementation of a colorectal SSI control bundle with a comparison to retrospective analysis of previously collected data. The data was gathered from January 2014 to present for all patients undergoing colorectal procedures, including preoperative , intraoperative and 30 day postoperatively. This data was then analyzed against quarterly NSQIP data.

Results: 129 patients were analyzed in the first two quarters of 2014 demonstrating a >1 O/E ratio. After implementation of the SSI control bundle there was a statistically significant drop in SSI rate. Observed to expected ratio falling within acceptable range.

Year	N=# of procedures	number of infection	Expected #	SIR Standardized infection ratio observed	SIR 95% CI
2014 Q1	31	5	1.640	3.048	1.117,6.756
Q2	21	4	1.067	3.749	1.191,9.043
Q3	30	3	1.638	1.831	0.466,4.984
Q4	29	2	1.4	1.5	0.243, 4.786
2015 Q1	18	1	0.9	Number too low to calculate	0

Conclusions: Implementation of a SSI bundle, even in a single moderate volume center, is an effective strategy to decreasing SSI in colorectal surgery.

Idiopathic Omental Bleed: A Case Report

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²Department of Surgery, Hartford Hospital, Hartford, Connecticut

Introduction: An intra-abdominal hemorrhage from an omental artery is a rare, but potentially life-threatening condition. Potential causes include penetrating or blunt trauma, neoplasms, omental torsion, varices, aneurysms, vasculitides, and complications of anticoagulant therapy. However, spontaneous bleeding from the omentum is rare. Here we discuss a case of a 65-year old man with idiopathic omental bleeding, which required emergency exploratory laparoscopy and partial omentectomy.

Method(s): Not applicable. Case report developed using patient’s medical record and medical literature search.

Results: A 65-year-old Caucasian male with a history of Lyme disease, GERD, asthma, hypertension, gout, and hyperlipidemia presented to an outside hospital with severe abdominal pain, diaphoresis, and subsequent collapse. The patient described the pain as sudden in onset, localized to the left lower quadrant, and sharp. The patient denied any nausea, vomiting, diarrhea, bloody stools, chest pain or shortness of breath, dysuria or hematuria, fever, or chills. He also denied any trauma to the abdomen. A CT scan was performed at an outside hospital which revealed dense fluid within the abdomen suggestive of hemorrhage. At this point, the patient was transferred to our hospital for further evaluation. The patient’s CT scan was reviewed by a radiologist who noted abnormal appearing omentum in the left abdomen where the hemoperitoneum was most dense. Upon further questioning, it was determined that the patient was taking multiple herbal supplements at home in addition to his other home medications. Following consent from the patient, a diagnostic laparoscopy was performed. A large amount of blood was visualized in all four quadrants of the abdomen and in the pelvis. Blood clots were evacuated from the pelvis and abdomen and the area was thoroughly irrigated. No evidence of active bleeding could be seen from the spleen, however, the omentum adjacent to the splenic flexure appeared abnormal and boggy. Upon opening the omentum, a large clot was found within the omental layers, indicating the most likely source of bleeding. Two liters of fresh and clotted blood were evacuated from the peritoneal cavity. A partial omentectomy was performed. Pathology of the omentum was unremarkable. The patient recovered well and was discharged home on postoperative day two and advised not to restart his herbal supplements.

Conclusion(s): Omental bleeding is a rare condition that can cause hemoperitoneum. It can occur due to a variety of

reasons, none of which were identified in the described patient. The underlying etiology in our patient is unknown; however, it is possible the patient's hypertension may have contributed to the hemorrhage. We can also postulate that the patient's herbal supplements may have contributed in some unknown manner. It is also possible that the patient failed to admit to trauma, however, there were no signs of soft tissue contusion or solid organ injuries on visual inspection or imaging.

The management of any patient with an intra-abdominal hemorrhage should begin with stabilization of the hemodynamically unstable patient. Computed tomography is the most sensitive and specific modality in imaging of mesenteric and omental injury as compared to ultrasonography and peritoneal lavage. Omental bleeding can take on many appearances in imaging ranging from minimal fat stranding and hemoperitoneum to a large hematoma. Hemoperitoneum can be differentiated from ascitic fluid on CT via Hounsfield units. However, given the rarity of omental bleeding, especially when idiopathic, it is often misdiagnosed preoperatively as acute appendicitis, perforation of digestive tract, peritonitis or intra-abdominal abscess.

Nonetheless, swift treatment of spontaneous omental bleeding is necessary for a good prognosis, especially if the hemorrhage is massive. While TEA may be a less invasive treatment than surgery, it requires prior identification of an active bleeding site and accurate pre-procedural identification of the spontaneous omental bleed. Due to the difficulty of pre-operative diagnosis, exploratory laparotomy is often mandatory, followed by suture ligation or resection for omental bleeding, clot evacuation, and irrigation.

In conclusion, we demonstrate here a rare occurrence of a spontaneous omental hemorrhage as well as the proper steps necessary to diagnose and effectively manage this condition. The aforementioned patient was evaluated in a timely and methodical manner using CT imaging and physical exam findings, which ultimately resulted in surgical treatment and a full recovery.

The Black Cloud Phenomenon as a Surgical Resident

Kristin McCoy, Kosta Poulkidis, Mohamad Zanbrakji
Stamford Hospital

Introduction: In American culture we often tend to believe in superstitions and even begin to engage in repetitive habits based on these superstitions. In surgical residency these superstitions are oftentimes even more evident. This study analyzes the "black cloud phenomenon" or jinxing oneself based on mentioning the feared "trauma alert or "consult." The purpose of this study is to demonstrate that there is no statistical significance between the jinxed and non jinxed residents.

Method(s): The methods used for this study were survey based. Each resident on call before the call started was to open an envelope stating whether to read "I hope it is a good day and we have no traumas" aloud or not to read it aloud. During each 24 hour call each surgical resident would log the number of consults, admissions, trauma alerts and trauma codes. We compiled the data over several months to analyze the results.

Results: Based on the pooled data we used statistical analysis with T testing to determine if the jinxed residents had more consults/admissions/trauma alerts/trauma codes. Analysis demonstrated no statistical difference between jinxed and non jinxed residents in terms of the parameters described above.

Conclusion(s): This study concludes that the idea of jinxing oneself does not truly affect the amount of consults, trauma alerts, trauma codes and admissions. There was no significant between reading the statement aloud vs. not reading the statement aloud. This study demonstrates the ever present superstition of surgical residency and demonstrates the black cloud phenomenon as we refer to it simple just feeling jinxed.

Of note: Additional statistics will also be run on this project prior to October 2015 comparing mid-level vs senior residents and the black cloud phenomenon.

General Surgery 2 Competition

Moderator:

Royd Fukomoto, MD, FACS

Western Connecticut Health Network, Danbury Campus, Danbury, CT

Judge:

Rekha Singh, MD, FACS

Surgery Chief, The Hospital of Central Connecticut,
Clinical Instructor, University of Connecticut School of Medicine,
New Britain, CT

Elective Surgical Blood Order Schedule (ESBOS): Creating an efficient system for preoperative blood screening and ordering for specific surgical procedures in a Community Hospital.

Basil Nwaoz, MD, Diane Durgan, MD, Basil Nwaoz, MD

Stamford Hospital

Introduction: With healthcare costs on the rise, there is a large emphasis from healthcare providers to find ways to be more cost effective without jeopardizing quality of service. Optimizing and standardizing the process of preoperative blood ordering has been shown to improve operating room efficiency, increase patient safety and decrease hospital costs in several publications. The Elective Surgical Blood Order Schedule (ESBOS) is our institution's version of the Maximum surgical blood order schedule (MSBOS) first described in the 1970's. Briefly, it was a list of recommended preoperative blood orders for various types of surgical procedures. Several problems exist with applying the MSBOS in today's healthcare practice. Some important concerns are that it's recommendations are outdated, based on opinion and not evidence, and it does not take into account newly developed surgical techniques. The ESBOS will be based on institution specific data obtained from surgical cases performed at our institution. The ESBOS should be able to reduce unnecessary preoperative blood ordering and reduce overall healthcare cost.

Methods: All data will come from retrospective review of surgical patients within our database. We will create an ESBOS based on the historical surgical data obtained and implement changes to our preoperative blood ordering and transfusion processes. A comparison will be made between hospital costs, patient outcomes, and number of transfusions prior and post implementation of the ESBOS. An ESBOS directed preoperative blood ordering protocol should result in reduced hospital costs and unnecessary blood product ordering.

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4.[Steven M. Frank](#), M.D., [Michael J. Oleyar](#), D.O., [Paul M. Ness](#), M.D., and [Aaron A. R. Tobian](#), M.D., Ph.D. Reducing Unnecessary Preoperative Blood Orders and Costs by Implementing an Updated Institution-specific Maximum Surgical Blood Order Schedule and a Remote Electronic Blood Release System

Utility of extra mesenteric lymph node dissection in colorectal Cancer, a case report with review of current literature

Greg Ricketts MD, Rakesh Hegde MD, Zhongqiu Zhang MD, Phd, FACS
Stamford Hospital

Introduction: A patient presenting for the resection of a transverse colon mass underwent an excision beyond that typically employed in colon cancer. An 83 year old female was found to have a transverse colon mass during surveillance screening. She previously had undergone a laparoscopic right hemi-colectomy and adjuvant chemotherapy for what was a T3N1M0 cecal cancer. During her subsequent surgery for this transverse colon mass, the patient was found to have an enlarged para-aortic lymph node. The node was sent for frozen during the case and found to have necrotic adenocarcinoma similar in pathology to the patient's initial tumor. The patient at that time underwent a para aortic lymph node dissection. A para aortic lymph node dissection is a dissection beyond the typical complete mesocolic excision, CME. The utility of an extra mesenteric lymph node dissection was investigated.

Method(s): A literature search was performed to investigate the utility of doing para aortic lymph node dissection or extra mesenteric lymph dissection. The question whether an extra mesenteric lymph node dissection should have been utilized was investigated by doing a search of the current literature. Key words "Extramesenteric lymph node dissection in colorectal Cancer", "Para aortic lymph node dissection in colon cancer" and "Lymph node dissection in colon cancer" were used to investigate. Review of the current literature yielded case reports, case series and critical reviews. Mortality and morbidity for these reports were reviewed.

Results: The positive results for extra mesenteric lymph node dissection were limited to a few examples of case series. Data regarding morbidity was not included in the majority of the case studies. Mortality was shown to be affected in only a few of the case series in individual examples.

Conclusions: There is a lack of data to support an extra mesenteric lymph node dissection at this time. There are a few successful reports scattered throughout case reports, but to discern the data a randomized controlled trial would need to be conducted.

Pancreatic Solid Pseudopapillary Tumor in Pediatric Population: Case Reports.

Ishna Sharma MD. Shefali Thaker. Christine Finck MD.
Connecticut Children's Medical Center.

Introduction: Solid pseudopapillary tumor (SPT) is an extremely rare epithelial tumor, accounting for only 1-2% of exocrine pancreatic tumors. They usually present in young females in 2nd and 3rd decades of life, and are often asymptomatic at diagnosis, but can have associated vague abdominal pain, usually without any abnormalities on labs or tumor markers. SPT is more common in pancreatic tail. SPT has low malignant potential, and invasion of adjacent organs is rare. 10-15% of SPT has metastasized at time of presentation, most commonly to the liver, regional lymph nodes, mesentery, omentum, and peritoneum. The treatment of choice is surgical resection via distal pancreatectomy with or without splenectomy, or via

Whipple procedure, depending on the location of the tumor. 5-year survival rate for patients with SPT is 95%.

Method(s): Two patients with diagnoses of solid pseudopapillary tumor from the pediatric surgery service at CCMC were studied. All information was obtained via the CCMC electronic medical records.

Results:

Patient A is a 17 year old female who presented with a four-day history of right upper quadrant abdominal pain with nausea and vomiting which initially began after breakfast. She had associated intermitted nausea with some nonbloody emesis. Two days prior to presentation she began having chills. She subsequently visited her primary care provider and was found to be febrile with systolic blood pressure in low nineties, and was sent to the emergency department. She has recently had some vaginal spotting, which is abnormal for her. Patient's past medical history includes multiple sclerosis, right eye retrobulbar optic neuritis, and acute disseminated encephalomyelitis at age 6. At home she takes vitamin D supplements and Avonex injections. On exam her blood pressure was 98/56, pulse 83, temperature 36 degrees Celsius, respiratory rate 20, weight 99.4 kilograms, oxygen saturation 96% on room air. Her abdominal exam was soft, nondistended, with tenderness to palpation at the right upper quadrant, with a negative Murphy's sign, and no rebound or guarding. Abdominal ultrasound showed intrahepatic biliary ductal dilatation, a normal common bile duct, a 5.5 x 3.2 centimeter nonvascular pancreatic head mass. This mass had been seen on prior MRI studies of patient's spine 1 and 2 years ago, however was now increased in size. Patient was admitted to surgical service, made nothing-by-mouth, with intravenous fluids, and started on Unasyn. CT scan showed a solid low attenuation minimally enhancing mass in the pancreatic head measuring 4 x 3.2 x 4.7 cm, with no pancreatic or ductal dilatation, no peripancreatic inflammatory changes. Lipase was elevated at 64, amylase was within normal limits. LDH was elevated at 457. AST was elevated at 48. ALT was initially within normal limits but on day two was elevated at 105. White blood cell was 2.6. CRP was 2.02. Blood cultures were negative. Patient underwent EUS for pancreatic mass biopsy which initially appeared neuroendocrine, however 5-HIAA, chromogranin A, VIP, glucagon, somatostatin, pancreatic polypeptide, urine vanillylmandelic acid, homovanillic acid, gastrin, total insulin, Ca 19-9, and CEA were all within normal limits. Pathology revealed a solid pseudopapillary neoplasm of the pancreas. Patient subsequently underwent a Whipple procedure. Surgical pathology of specimen confirmed solid pseudopapillary tumor, with 1 cm resection margins. Intraoperatively a GJ tube was also placed. Postoperatively patient had pain and nausea which resulted in nasoduodenal feeding tube placement with tube feeds, TPN. Patient was also febrile a few days postoperatively, with question of intraabdominal infection versus bile leak, and patient was subsequently placed on IV antibiotics and octreotide. Patient improved and was subsequently discharged to home with feeds via GJ tube.

Patient B is a 15 year old female who presented with intermittent abdominal pain for 5 months, worsened in the week prior to admission. Patient also complained of fatigue, occasional nausea and vomiting, without any

weight loss. Patient had history of mononucleosis over six months ago. She presented to ED where she underwent abdominal ultrasound which showed a pancreatic mass with spleen involvement. CT scan showed an 11 to 12 centimeter mass in the pancreatic tail, extending into the spleen hilum. She had a CT-guided biopsy which showed solid pseudopapillary tumor of the pancreas. White blood cell, amylase, lipase, LDH, pancreatic polypeptide, gastrin, somatostatin, glucagon, fasting insulin, and liver function tests were all within normal limits. Patient subsequently underwent a distal partial pancreatectomy with en bloc splenectomy. Patient's postoperative course was uncomplicated.

Conclusion(s): SPT is a rare neoplasm that most commonly affects young woman, and should be on the differential for young female patients who present with vague abdominal pain. Though labs and tumor markers are usually within normal limits, they can be elevated. The recommended management for SPT is surgical resection.

Putting the Antibigram to Use to Decrease Surgical Site Infections

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Introduction: Surgical site infections (SSIs) are responsible for a significant portion of healthcare-acquired infections. Preventing surgical site infections has a direct impact on decreasing morbidity, mortality, and medical expenses. Preoperative prophylactic antibiotic administration, especially as per SCIP (Surgical Care Improvement Project) guidelines, has been shown to decrease the rate of SSIs; however, the prevalence continues to remain substantial. Given the hospital-acquired nature of the infection, surgical site infections remain a preventable condition and the current incidence rate is unacceptable.

Background: The purpose of this study was to analyze the antibiogram of each microbial species responsible for surgical site infections (in colorectal and gynecological surgery) during a one-year period at a single institution in an effort to improve rate of surgical site infections in the future.

Methods: A retrospective study using colorectal and gynecological SSI data from 2014 was initiated. Antibiograms for each responsible bacterium was compared to the prophylactic antibiotic administered preoperatively. Each antibiogram was also analyzed independently of the prophylactic antibiotic administered in order to determine which bacteria would potentially have been covered by an alternative preoperative antibiotic regimen.

Results: We had 19 colorectal or GYN SSIs for calendar year 2014 and grew out 36 distinct strains of bacteria. 10 patients grew out more than one type of bacteria, 8 grew out 3 or more, and 1 grew out 6 different bacteria. All patients who subsequently had infections received SCIP approved antibiotics preoperatively and appropriate re-dosing. Fifteen of the 19 patients grew bacteria that were, not

surprisingly, resistant to the antibiotic given. In an effort to improve our infection rate going forward, we then compared the bacteria that were isolated to our 2014 antibiogram, and surmised that adding gentamycin to the preoperative antibiotic regimen would have covered an additional 15 strains of bacteria.

Conclusion: While we cannot predict how many infections adding gentamycin to the preoperative antibiotic regimen may have prevented, we did demonstrate a significant increase in bacterial coverage using our own institution's susceptibility data. Subsequently, we have changed our antibiotic regimens for the coming year. This technique can be used universally.

Collateral Damage from Ebola Virus Disease

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Introduction: The epidemic of Ebola Virus Disease (EVD) has wreaked havoc in West Africa through both its direct effect and through the collateral damage caused by it. The countries of Liberia and Sierra Leone have been particularly hard hit by the disease, largely because they were both still recovering from the damage of civil war. As of October 15 2014, according to the Centers for Disease Control, 8997 individuals have been infected with EVD, of whom 4493 have died. It is recognized that numbers on incidence as well as mortality are likely a vast underestimation. Over half of the cases and deaths have occurred in Liberia. Starting in 2010, under the sponsorship of HEARTT (Health Education and Relief Through Teaching), the Waterbury Hospital surgical program has been making semi-annual surgical trips to John F. Kennedy Medical Center in Monrovia, Liberia to teach, operate, and learn; the last trip was in March 2014, just before knowledge of the EVD outbreak surfaced. In late June 2014 the Operating Rooms at JFK were closed due to concerns over patient and staff safety due to EVD. Over the 3 months of July through September 2014, hospitals and clinics in Monrovia struggled to stay open to care for the 1.5 million residents of the city. The minimal resources available were all directed toward dealing with the increasing volume of EVD, such that treatment for other illnesses was generally not available. As such, we hope to demonstrate the collateral damage of EVD on the availability surgical care in JFK Medical Center.

Method(s): To estimate the impact of EVD on surgical illness, we reviewed the operative case logs of JFK Hospital the year prior to the outbreak for July through September 2013. The numbers do not include the surgery performed by our team in the first 2 weeks of September.

Results: For the months of July through September 2013, 176 cases were performed, of which 128 were elective and 48 were emergent. Among the emergent cases, there were 33 operations for an acute abdomen, 7 for incarcerated/strangulated hernia, and 2 for Fournier's gangrene. Comparatively, there were zero cases performed

during this same time period one year later during the EVD epidemic.

Conclusion(s): The quite modest level of health resources available have been shifted to the fight against EVD, and as a result the treatment of other diseases such as malaria and typhoid has been shunted aside. Additionally, surgical disease went untreated, resulting in likely death for surgically treatable conditions such as typhoid intestinal perforation, acute appendicitis, and strangulated hernia for example.

Yet another example of the collateral damage of EVD is on medical manpower. A substantial number of healthcare workers have become infected as a result of caring for patients with EVD, and many have died. As of October 12, 2014 in Liberia, 207 healthcare workers had been infected, and 94 had died.

Once the epidemic is controlled, international assistance will still be needed to provide education and upgrade the infrastructure of these countries affected so that they are better able to deal with the next epidemic and continue to offer surgical care, minimizing collateral damage of an already devastating epidemic.

Esophageal Tissue Engineering

Todd Jensen, MSc; Charles Drinnan, PhD; Adam Mitchell, PhD; Wael Sayej, MD; Christine Finck, MD
University of Connecticut Health Center

Introduction: Esophageal atresia occurs in 1 in 3000 births. Typically, surgical repair includes reconnection of the esophagus or in cases where the esophagus cannot be reconnected, interposition of a piece of stomach or large intestine. These surgical options have significant morbidity, therefore, a tissue engineered esophagus offers an alternative strategy. Additionally, patients suffering from carcinoma or caustic injury would benefit.

Method(s): 6 epithelial esophageal biopsies per pediatric patient were obtained during routine endoscopy (CCMC IRB: 13-094) Esophageal epithelial cells (HEECs) were incubated in dispase, trypsin, minced and cultured on gelatin coated plastic in serum free epithelial medium. Synthetic scaffolding was generated by electrospinning with an 80/20 mix of PLGA/PCL. HEECs were seeded onto synthetic scaffolds and incubated for 7 days. HEECs were assessed for viability, proliferation and phenotypic expression of epithelial markers E-Cadherin and Cytokeratin 5.

Results: HEECs were shown to maintain viability with some proliferation over 7 days. Phenotypic expression of E-cadherin and cytokeratin 5 was maintained in the serum free media.

Conclusion(s): We demonstrate that esophageal epithelial cells obtained during routine endoscopic biopsy can be seeded onto electrospun scaffolds with preservation of the epithelial phenotype making them a viable autologous cell source for future tissue engineering of human esophageal tissue

A Rare Case of an Incarcerated Femoral Hernia Containing a Ruptured Appendix

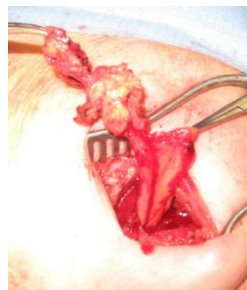
Kristina Ziegler MD, Kevin Miller MD, Kevin Dwyer MD
FACS
Stamford Hospital

Introduction: Discovering the vermiform appendix within an incarcerated femoral hernia is very rare, occurring in only 0.9% of all femoral hernias. There have been fewer than 100 cases published in the literature since it was first described in the 18th century. The presence of appendicitis within such a hernia is even rarer. Rene Jacques Croissant de Garengéot, a Parisian surgeon, was the first to define this condition in 1731.

Method(s): Case Report

Results: This is a rare case of a 78-year-old female with a known right inguinal hernia who presented twice within one week to the emergency department with incarceration of her hernia. On her first visit the hernia was reduced easily and she was discharged home. At her second visit a computed tomography (CT) scan revealed evidence of small bowel obstruction at the site of the hernia. Her appendix was normal and noted to be in close proximity to the hernia. At that visit her hernia was again reduced and she was again discharged home. One week later she was evaluated by the surgeon in a routine follow up office visit. She had a hard, palpable mass in her right groin with significant overlying skin changes. She denied any obstructive symptoms, fever, or pain. She was diagnosed with a strangulated right inguinal hernia and was taken urgently to the operating room for repair. Upon dissection through the inflamed subcutaneous tissues a large pocket of purulence was encountered. This was found to be the perforated tip of the patient's appendix, which was incarcerated within a femoral hernia. A stapler was fired across the base of the appendix and the hernia defect was closed primarily.

Conclusion(s): The presence of a perforated appendicitis within an incarcerated femoral hernia is an exceedingly unusual finding, occurring in only 0.08 to 0.13% of femoral hernias. There is a female predominance of this condition (13:1), likely reflecting the higher incidence of femoral hernias in female patients. Clinical findings are generally non-specific and the diagnosis is often made intra-operatively. However, CT scan and ultrasound have both been accurate in pre-operative diagnosis. Appendectomy and repair of the hernia is indicated. In cases of appendicitis, particularly of perforation with attendant contamination of the operative field, the use of a prosthetic mesh is likely unwise.



Robotic vs Laparoscopic Colon Resections: Similar Costs, Better Robotic Outcomes

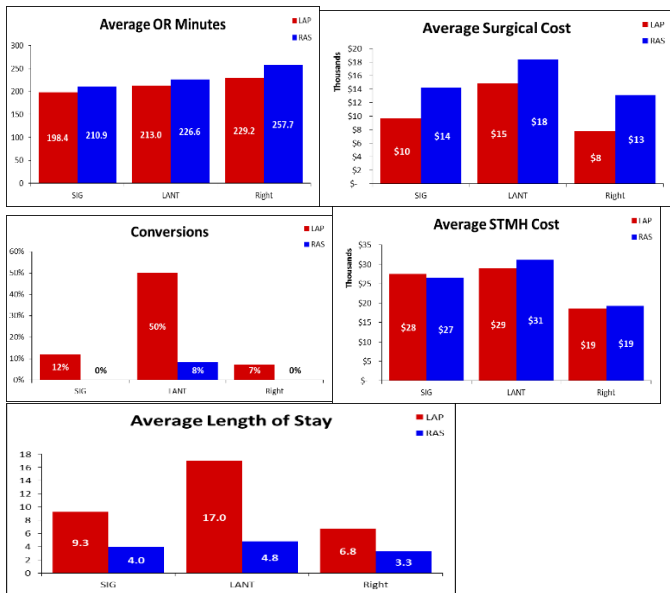
Jahnvi Kakuturu MD., Logan Brady MBA, Philip Corvo MD
MA FACS
Saint Mary's Hospital

Introduction: Indications and volumes for robotic assisted colon surgery procedures are increasing, but there are limited data on how these procedures compare to their open counterparts. We compared our robotic versus laparoscopic colon procedures in terms of OR cost and time, overall hospital cost and length of stay, and conversion rates.

Method: Utilizing Operating Room Management (ORM) software and our MIDAS, NSQIP and financial databases, we compared all robotic and laparoscopic right colectomies, sigmoid colectomies and low anterior resections during 2014 and 2015. We collected OR time in minutes, overall OR cost, overall hospital cost, hospital length of stay and conversion-to-open rates.

Results: The average OR cost for each type of procedure was, not surprisingly, higher when using the robot, and the average time for each procedure was essentially the same regardless of whether the robot was used or not. The average overall hospital cost was the same for each procedure, and the length of stay for each procedure was vastly lower for the robotic procedures. Additionally, the conversion-to-open rates were superior for the robot.

Conclusions: It is widely assumed that a robotic surgery is more expensive than its laparoscopic counterpart, and our data bears this out. However, it is also assumed that a robotic surgery takes longer than the laparoscopic version, and our data demonstrates this to not be true. In addition, the overall hospital cost is essentially the same for both procedures, and we surmise this to be because the length of stay is shorter for all procedures examined. The low number of procedures examined makes it difficult to make conclusions regarding conversion rates.



Plastic Surgery Competition

Bariatric Surgery Competition

Session Moderator:

Nissin Nahmias, M.D., F.A.C.S., F.A.S.M.B.S.

Saint Francis Medical Group, Inc, CT Chapter of the American Society of
Metabolic and Bariatric Surgery, Hartford, CT

Plastic Surgery Judge:

Yuk Ming Liu, MD

Burn/Critical Care Fellow, MGH Department of Surgery and DACCPM

Bariatric Surgery Judge:

CT Chapter of the American Society of Metabolic and Bariatric Surgery

Plastic Surgery

Cranial Nerve Palsies: A Rare, Long-Term Complication of Radiotherapy for Nasopharyngeal Carcinoma.

Andre Alcon MD, Erik Geiger MD, Amrita Pandit MD, Andrew McGregor MD, Deepak Narayan MD, MBBS, FRCS
Yale University School of Medicine

Introduction: Cranial nerves are believed to be relatively resistant to radiotherapy (RT), however, there have been case reports of cranial nerve palsy (CNP) following radiotherapy. We present a case of a gentleman with cranial nerve palsy of CN V and VII after radiotherapy for nasopharyngeal carcinoma (NPC).

Method(s): Case Report citing important clinical finding

Results: A 54-year-old Caucasian gentleman presented to our clinic with masticatory difficulty, facial hypoesthesia, and dysphagia. In 1998, he was treated with external beam radiation therapy for NPC. He underwent sural nerve grafting anastomosing his functioning hypoglossal nerve to the buccal branch of the facial nerve in an end to side fashion and direct implantation of a nerve graft from the spinal accessory to the masseter muscle. He unfortunately was unable to regain masticatory function postoperatively.

Conclusion(s): Cranial nerve palsies are severely debilitating to patients and difficult to treat. Radiation-induced CNP is important to consider in the differential diagnosis in patients previously treated for NPC

Reference: Kong L, Lu JJ, Liss AL, Hu C, Guo X, Wu Y, et al. Radiation-induced cranial nerve palsy: a cross-sectional study of nasopharyngeal cancer patients after definitive radiotherapy. *International journal of radiation oncology, biology, physics.* 2011 Apr 1;79(5):1421-7. PubMed PMID: 20605344

Is Routine Pathologic Evaluation of Sebaceous Cysts Necessary? A 15-Year Retrospective Review of a Single Institution

Vipul Gargya, BMBS
University of Connecticut Health Center

Background: A question arose in our practice of whether all cysts considered sebaceous should be sent for pathologic evaluation. To address this controversial topic, we performed a retrospective study of our single institution's histopathology database.

Methods: A natural language search of the CoPath database across the institution was undertaken using the diagnosis of *sebaceous cyst, epidermal cyst, epidermoid cyst, epithelial cyst, infundibular cyst, pilar cyst, trichilemmal cyst, and steatocystoma*. A surgical pathologic review of all specimens with 1 of these diagnoses preexcision was included in the 15-year retrospective study of 1998 to 2013. All slides were confirmed to have undergone histopathologic review, and the preexcision diagnoses were compared with the postexcision diagnoses.

Chart review was undertaken in instances of a diagnosis of malignancy.

Results: A total of 13,746 samples were identified. Forty-eight specimens had histopathologic diagnosis of malignancy, for an incidence of 0.3% and with the most common malignancy being squamous cell carcinoma. Chart review showed that for all cases, the surgeons reported uncertainty with regard to the diagnosis because of history or physical characteristics, or both. In addition, a comprehensive literature review showed results consistent with our data and illustrated 19 cases over the past 10 years in which the majority of the findings were SCC.

Conclusions: We propose the recommendation that routine pathologic evaluation of sebaceous cysts is necessary only when clinical suspicion exists.

Fat Graft Survival Using Hyperbaric Oxygen Therapy in Nude Rats

Andre Alcon, MD, Brando Sumpio, BA, Amrita Pandit, MD, Andrew McGregor, MD, Alain Kaldany BS, Stephanie Thorne, PhD, Albert Sinusas MD, Deepak Narayan, MD, MBBS, FRCS
Yale University School of Medicine

Introduction: Fat grafting has been a useful tool in the realm of plastic surgery to correct soft tissue defects, fill and shape the skin. Post mastectomy reconstruction using silicone or other prosthetic materials have shown a higher rate of cancer recurrence than autograph adipose grafts. The main disadvantage of fat grafts is the absorption of fat by the body itself. Hyperbaric oxygen (HBO) therapy has been used in fat grafting to demonstrate the model of survivability of the fat grafting in high pressure and high oxygen conditions. There has been evidence that the role of HBO therapy has significantly improved survival of fat grafts. We aim in this experiment to demonstrate better overall survival of fat grafts in nude rats using hyperbaric oxygen therapy.

Method(s): 10 nude rats were separated into two groups of 5. One arm of the experiment did not receive hyperbaric oxygen therapy, and the other arm received hyperbaric oxygen therapy. Human adipose tissue from panniculectomies were obtained. A 1cm incision was made bilaterally on the flanks. Roughly 5ml of minced adipose tissue was placed into a dissected subcutaneous pocket. The skin was closed with interrupted dermal sutures and a running skin suture. The experimental group was treated 2 hours after surgery with 100 % oxygen at 2 atm for 60 mins. This was continued for 5 days total. The control group received no therapy. All rats underwent SPECT-CT imaging at 3 and 6 weeks. The rats were then euthanized at 6 weeks with excision of fat pads of each group. The excised fat pads were stained with Hematoxylin/Eosin and factor VIII.

Results: At 3 and 6 weeks, SPECT-CT imaging was used to assess uptake of a blood perfusion marker Tc-99m measured in %ID/G. Overall growth of the fat pads were compared measuring the Hounsfield units (HU). Our results at 3 weeks showed an overall increase of the fat pads in HU in HBO treated group vs control (Figure 2), increase in %ID/G for the HBO treated vs. control group (Figure 3). At 6

weeks, SPECT-CT imaging showed no difference in overall size and no increase in %ID/G. H and E and Factor VIII staining of excised fat pads at six weeks show vascularity of the tissue but no significant difference in the HBO vs control group.

Conclusion(S): Hyperbaric oxygen increases fat graft survival during the critical postoperative period.

Figure 1 – Excised Fat Pad H and E/Factor VIII Stains of Control/HBO at high power view

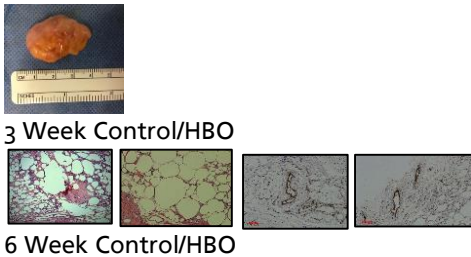


Figure 2

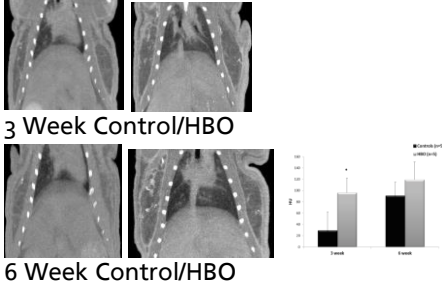
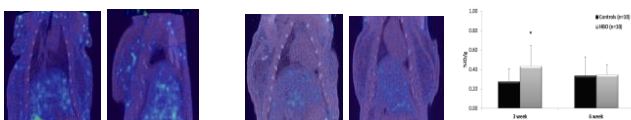


Figure 3



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Effectiveness of Pecs blocks for elective subpectoral breast augmentation: a case series

Vlad Frenk, MD, Sandra Margoles, MD, Basil Nwaoz, MD
Stamford Hospital

Introduction: Breast augmentation is one of the most common cosmetic surgical procedures. Even though the procedure is widely accepted, pain and post-operative nausea and vomiting (PONV) are undesirable but common in the postoperative period. There are various anesthetic techniques described to improve patient experience following breast augmentation. Some of them use anesthetic modification(1), but most of them involve perioperative analgesia with targeted injection of local anesthetic (2-5).

Pecs blocks were recently described as a novel technique for analgesia after breast surgery (6,7) and initial clinical data in patients undergoing breast cancer surgery were promising. This case series describes our experience of using pecs blocks with propofol anesthesia for elective breast augmentation

Methods: 7 patients had their procedure performed in the following manner: general anesthesia induced with propofol and LMA placed. Anesthesia was maintained with propofol infusion 120-180mcg/kg/min titrated to vital signs. After induction of anesthesia, bilateral pecs blocks were performed by an anesthesiologist as described by Fajardo, et al.: 30cc of bupivacaine 0.25% with epi 1:400,000 per side (total 60ml). On each side, 20ml were injected in pecs 2 position (between pec minor and serratus muscles at the level of the 4th rib), 10ml injected between pec major and pec minor muscles via single injection (Fig1). Valium 5 mg IV was administered before incision to prevent muscle spasms. Surgical procedure was performed with submammary incisions, and subpectoral saline prosthesis were placed. IV fentanyl was titrated throughout the case as needed. Each submammary incision was infiltrated with 10ml of at the end of the procedure. Each patient received 8mg of decadron and 4mg of ondansetron IV intraoperatively for PONV prophylaxis. All the patients were discharged home from the PACU and received a follow up phone call the following day.

Patients charts will be reviewed for the time to discharge, incidence of PONV, and post-op opioid utilization. Post-op phone call records are going to be reviewed for pain and PONV reports.

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SPY vs. SPY: Cost Comparison of SPY @ Elite system versus Mitaka USA Inc. Hamamatsu-Neo-Probe for Fluorescence Guided Imaging of Sentinel Lymph Nodes in Melanoma

Andrew McGregor MD, Sabrina Pavri MD, Deepak Narayan MD
 Yale University School of Medicine

Introduction: Sentinel lymph node biopsy for melanoma is indicated for thickness greater than 0.75mm. Traditional method of preoperative/intraoperative lymphoscintigraphy remains the gold standard for detection of sentinel lymph nodes. However, there is emerging data that shows effectiveness of indocyanine green (IDG) and imaging systems such as the SPY @Elite system (Novadaq) for identification of the sentinel lymph nodes. With the emerging use of indocyanine green for sentinel lymph node biopsies, we analyzed the effectiveness of two commonly used systems:SPY elite system (Figure 1) and Hamamatsu PDE probe (Figure 2) for ICG localization of sentinel lymph nodes.

Method(s): We studied the pricing systems of two companies that offer this modalities We obtained the cost of a new operating system, the cost of the indocyanine green and sterile system cover for each of these companies. The cost of indocyanine green alone was obtained from a hospital pharmacy. The two system prices were compared and a difference in cost was calculated. Medicare reimbursement rates were obtained for lymphoscintigraphy, intraoperative mapping of sentinel lymph nodes, and sentinel lymph node biopsy in an attempt to calculate amortization of the cost of the systems.

Results: The SPY elite system cost \$275,000. The cost of the additional sterile drape and indocyanine green kit was an additional \$275. There was no option to purchase the drape separately. The cost of IDG per vial alone was \$75.00. The Mitaka USA inc. Hamamatsu probe/system was priced at \$76,700. The option to purchase the drape cover alone was \$30.00 . A cost difference between operating systems was \$198,300.00. In our department, we averaged 6 cases/month for sentinel lymph node biopsies. All cases where SPY@ /Mitaka systems were used were able to correctly identify the sentinel lymph node in conjunction with the lymphoscintigram. Total Medicare reimbursement/yr for our department for sentinel lymph node biopsies was calculated to be \$40,055. Recurring cost for each system for \$275 for SPY elite and \$ 105 for Hamamatsu PDE. The pay off time for the SPY @ Elite system using monies from Medicare reimbursement was 6.9years, while the pay off time for the Mitaka USA inc. probe was 1.9 years. (Table 1) It was the subjective opinion of the senior author that advantage of the SPY@ Elite system offered superior visualization, but was a bulky machine to operate. The advantage of the Mitaka USA inc. probe was ease of use, but fair picture resolution.

Conclusion(s): Conclusions: Mitaka USA inc Neo Hamamatsu probe is a cost effective operating system for the use of sentinel lymph node biopsy in melanoma

Operating system	SPY Elite System	Mitaka PDE probe + monitor
Cost of operating unit	\$275,000.00	\$76,700.00
Cost of IDG/Drape	\$275.00	\$275.00
IDG per vial/Drape	\$75.00/N/A	\$ 75.00/30.00
Total Cost	\$275,350.00	\$77,050.00
Recurring Cost	275.00	105.00
Payoff time for device	6.9 years	1.9 years



Figure 1



Figure 2

References: Korn JM, Tellez-Diaz A, Bartz-Kurycki M, Gastman B. [Indocyanine green SPY elite-assisted sentinel lymph node biopsy in cutaneous melanoma.](#) *Plast Reconstr Surg.* 2014 Apr;133(4):914-22

Massive Recurrent Rhinophyma Successfully Treated With Radical Excision and Skin Graft Coverage: A Case Report and Review of the Literature

Eduardo Sandoval MD, Amanda Norwich MD, Alan Babigian MD, FACS
 Harford Hospital and University of Connecticut

Introduction: Rhinophyma is a condition where the nasal tip becomes large and bulbous, with prominent visible pores. It is often associated with rosacea, and can have a great psychological impact on a person due to its potential for disfigurement.

Method(s): We present here the case of a 59 year old gentleman who developed a case of massive, recurrent Rhinophyma. He reported a past history of cystic acne. His rhinophyma was previously treated with tangential excision and secondary healing. Because of the magnitude of his deformity, decision was made to perform radical excision of the entire soft tissue of his tip, with a full-thickness skin graft for coverage.

Results: The patient had his surgery performed as an outpatient. He tolerated his procedure well. He was seen multiple times as an outpatient for followup visits. He is now approximately 6 months after surgery. He is completely healed, has no signs of early recurrence, and is very pleased with his results. A review of pertinent literature, which will be presented, reveals very few rhinophyma cases of this magnitude.

Conclusion(s): Rhinophyma is a potentially disfiguring condition that is often treated with less invasive methods, but occasionally is enormous enough to require radical excision and skin grafting. Our patient has been successfully treated to date.



Bariatric Surgery

Short Term Outcomes of Adjustable Gastric Banding and Sleeve Gastrectomy: A Retrospective Six-Month Review of Four Case Studies in Adolescent Bariatric Surgery

Nicole Boone, PA-C, Christine Finck, M.D., Meghna Misra, M.D., Melissa Santos, Ph.D., and Shefali Thaker
Connecticut Children's Medical Center

Introduction: Adolescent obesity and obesity-related disease are on the rise in the United States. Obesity-related diseases seen in adolescents include hypertension, hypercholesterolemia, sleep apnea, insulin resistance, polycystic ovarian syndrome, and type 2 diabetes. Obesity-related disease in adolescence is likely to continue into adulthood if left untreated. Bariatric surgeons are challenged with identifying candidacy for surgery in obese adolescents, as well as identifying which procedure is most appropriate. At our institution, two procedures are performed; laparoscopic adjustable gastric banding (LAGB) and laparoscopic sleeve gastrectomy (LSG). Surgery is decided upon after the patient demonstrates compliance for at least six months in the bariatric program, including routine follow up appointments with endocrinology, nutrition, physical therapy, surgery, and psychology. In this case study we will evaluate four patients (two that underwent LAGB, two that underwent LSG) from pre-operative to approximately six months post-operative, and compare outcomes in regards to weight and body mass index (BMI).

Methods: Two adolescent patients underwent LAGB in July of 2014, and two adolescent patients underwent LSG in February of 2015. All four patients followed the pre-operative bariatric surgery protocol. A six-month post-operative review of these four patients was performed. Comparisons include weight loss and BMI reduction.

Results: The mean total weight loss amongst the LAGB group from first appointment to approximately six months post-operative was 6.1 ± 2.55 kg, and mean total BMI loss was 2.31 ± 1.41 . One patient underwent a routinely scheduled lap band fill in this six-month post-operative period, while the other patient did not due to post-operative wound infection. The mean total weight loss amongst the LSG group from first appointment to approximately six months post-operative was 31.3 ± 18.67 kg, and mean total BMI loss was 5.74 ± 1.48 .

Conclusions: While there was more variability in weight loss amongst the LSG group versus the LAGB group, the amount of weight loss was overall greater in the LSG group. There is great promise that the LSG may have a better outcome in short term weight loss, however, additional studies, as well as recruitment of more patients, are needed to better delineate this.

TweetChatting a Bariatric Surgery Procedure: The Impact of Social Media on Program Visibility

Melissa Santos Ph.D, Darren Tishler MD; Meghna Misra, MD; Shefali Thaker MPH ; Christine Finck, MD.

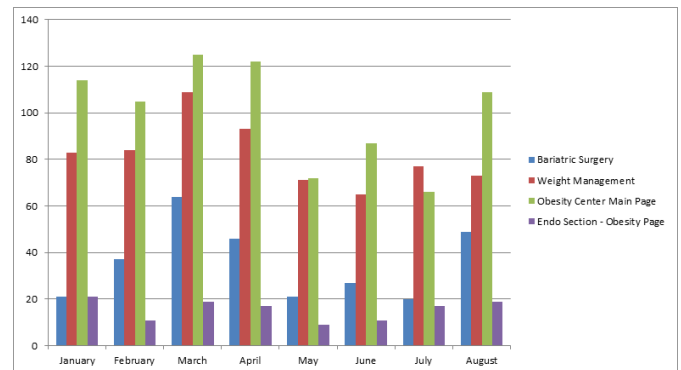
Introduction: Adolescent bariatric surgery is becoming an increasingly common intervention in the fight against childhood obesity. However, many families are not aware of programs being available and have many questions regarding their teen undergoing a surgery. Social media is one way to provide information more readily to families and increase a program's visibility. This abstract discusses one bariatric program's use of Twitter.

Method(s): A patient undergoing the gastric sleeve procedure was approached and consented to her story being used in a tweet chat. A group of stakeholders including surgeons, physicians, psychologists and media representatives created a list of tweets in advance of the surgery. They covered three areas: background on obesity and surgical interventions (tweeted while the patient was in the pre-op area), specifics about the gastric sleeve (while the patient was in surgery) and aftercare (when the patient was in recovery).

Results: An example of photos and tweets from the tweetchat are shown below



The tweetchat had 719,712 views on 124 tweets from 23 participants. In the months subsequent to surgery, web traffic to obesity related webpages at CCMC, increased. Chart below.



Conclusion(s): Social media is becoming an increasingly powerful vehicle to inform patients about new procedures and to publicize programs offered by institutions. This tweetchat allowed our program to provide information regarding an increasingly common surgical procedure: the gastric sleeve. The tweetchat led to increased program exposure both through our hospital's twitter feed as well as on our webpages.

Specialty Surgery Competition

Moderator:

Jennifer Bishop, MD, Stamford Health Integrated Practices,
Stamford, CT

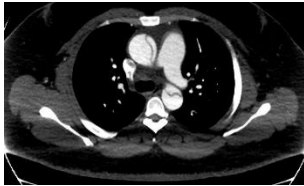
Judge:

Jonathan D. Blancaflor, M.D.
Section Chief, General Surgery; Director, Videoscopic Surgery Center
Middlesex Hospital, Middletown, CT

Complete Aortic Dissection

Michael Nowicki, MD
Waterbury Hospita

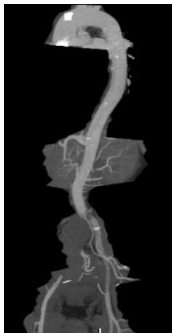
A 27 year old male presented to the emergency department with acute onset chest pain that awoke him from sleep and radiated down his lower back toward right leg, which had also become acutely numb. His comorbidities included obesity with obstructive sleep apnea, uncontrolled hypertension and chronic renal failure. At presentation he had significant hypertension 220/110, otherwise his vital signs were within normal limits. He was found to have no palpable or audible pulses on the right leg. A subsequent CT of his chest, abdomen, and pelvis was done with contrast run off into the lower extremities. This study revealed a type A aortic dissection of the thoracic and abdominal aorta (Panel A) extending from just above the aortic valve to the aortic bifurcation with occlusion of the proximal SMA (Panel B), and right common iliac artery extending into the external iliac (Panel C). His hypertension was controlled with labetalol and he was urgently brought to the operating room where a valve sparing aortic root and aortic arch replacement was performed. Following this there was reimplantation of the innominate, left carotid and left subclavian arteries, an axillo-bifemoral bypass, SMA cannulation and stenting, an exploratory laparotomy with an open stent graft to the end of the arch graft to descending aorta and LVAD placement. Despite heroic measures by the operative teams, 3 return trips to the OR and >100 units of blood products, he subsequently succumbed to his disease three days after presentation.



Panel A



Panel B



Panel C

An Unusual Presentation of Thyroid Cancer with Hemoptysis

Jahnvi Kakuturu MD, Leonidas Tapias MD, J Alexander Palesty MD FACS, Aziz Richi MD FACS, Jerome Sugar MD FAAOHS
Saint Mary's Hospital, Waterbury CT

Introduction: Thyroid cancer is the most common endocrine malignancy with increasing incidence due to widespread use of radiological investigations. Papillary subtype is the least aggressive subtype and has a very good prognosis. However, a small subset of patients may have more aggressive disease with distant metastases via hematogenous spread, most commonly to lung.

Method(s): We describe a 51 year old male who initially presented to the ER with hemoptysis and was found to have an actively bleeding left upper lobe lung mass that was not amenable to angioembolization. He was emergently taken to the OR for a thoracotomy and left upper lobe lobectomy.

Results: Final pathology was in favor of metastatic papillary thyroid carcinoma. There was also an additional focus of primary lung adenocarcinoma. He did have a history of a long-standing thyroid nodule and right thyroid lobectomy in the distant past for unknown reasons. He subsequently underwent completion thyroidectomy and pathology was consistent with papillary carcinoma.

Conclusion(s): Distant metastases from thyroid cancer significantly affect survival rates especially in older patients. This case highlights the importance of follow up in patients with vague history of prior thyroid disease and the possibility of harboring malignancies.

Solitary Fibrous Tumor of the Pleura Masquerading as Intralobar Pulmonary Sequestration with an Arterial Supply from the Abdominal Aorta

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Introduction: Solitary Fibrous Tumors of the Pleura (SFTP) account for less than 5% of pleural tumors and classically present as a large soft tissue mass. Location and vascular supply can often be detected by computed tomography (CT). However, it is a rarely reported occurrence for an SFTP to present with an aberrant arterial supply from the abdominal aorta. This finding can lead to an incorrect preoperative diagnosis of intralobar sequestration. To our knowledge, there are only a few reported cases of this unusual presentation of an SFTP with an aberrant arterial supply, mimicking pulmonary sequestration. A unique such case is presented here, including preoperative assessment, operative planning strategies, and post-operative course.

Description of Case Report: We report a case of a 38-year-old non-smoking female with no significant past medical history or recent trauma who presented to the Emergency Department with an acute onset of left-sided chest pain that started while sedentary. CT angiogram revealed a 14cm solid pleural-based mass with an isolated feeding

arterial supply originating from the suprarenal abdominal aorta crossing the diaphragm. Due to unrelenting pleuritic pain and discomfort, operative management was planned during the same admission with the presumptive diagnosis of intralobar sequestration. She underwent preoperative coil embolization of the feeding vessel on the morning of the surgery. Subsequently, she underwent a left thoracotomy with excision of a large free-floating mass connected to the left hemidiaphragm by an isolated vascular pedicle. The pedicle was stapled and divided, and the mass was sent for intraoperative pathologic examination, revealing a benign mesenchymal tumor.

Results: The patient was discharged on day four and recovered well with full resolution of her symptoms. Final pathology revealed an SFTP with less than 1 mitotic figure per 10 high-power fields. No further therapy is planned with the exception of radiographic surveillance.

Conclusion: This rare presentation of a solitary fibrous tumor of the pleura mimicking pulmonary sequestration serves as a reminder of the value of preoperative CT imaging with intravenous contrast to detect aberrant arterial supply of larger tumors. Recognition of this possibility may avoid catastrophic intraoperative bleeding. SFTP should remain in the differential diagnosis of a radiologically diagnosed intralobar sequestration. Larger tumors have a higher likelihood of being malignant, and require proper oncologic resection.

Effectiveness of Adding Transverse Abdominus Plane (TAP) Catheters to Patient-Controlled Analgesia (PCA) in Laparoscopic Colon Resections: a retrospective chart review

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Introduction: The control of postoperative pain has become a major issue in surgery awareness and it is considered an important measurement of patient satisfaction. Improvements in pain relief, including stopping pain before it starts (i.e. preemptive treatment) is of great benefit to the surgical patient. When pain is aggressively addressed, patients respond by recovering faster. The use of opioids remains the mainstay to minimize postoperative pain.

In patients undergoing abdominal procedures, adequate pain control remains an issue. Within colorectal surgery, a shift from conventional laparotomy incision to laparoscopic approach has reduced postoperative pain. It is known that innervation to the antero-lateral abdomen is provided by sensory nerves T7-L1, ilioinguinal and iliohypogastric nerves, which travel through the transverse abdominis muscle plane (TAP). Local anesthetic block of these nerves (TAP block) has been described and has shown to be effective for immediate postoperative pain control after laparoscopic surgery. In addition to pain control, Early Recovery After Surgery (ERAS) pathways in colorectal surgery reliably reduce length of hospital stay. There is no consensus on the optimal analgesia for patients undergoing laparoscopic colorectal surgery within ERAS. Post-operative analgesia may result in longer lengths of stay in the hospital, usually

due to narcotic-induced ileus. Our pilot data showed significant decrease in narcotic consumption and faster recovery in TAP catheter group compared to traditional management consisting of PCA only. Our initial hypothesis is that opioid sparing is the most important component of ERAS protocol and that TAP catheters allow patients to achieve that goal.

Methods: Medical records of all the patients undergoing laparoscopic colorectal resection at Stamford Hospital between January 2006 and December 2014 will be searched and examined. Inclusion criteria: Age 18-100 years, non-emergent primary laparoscopic colorectal resection. Exclusion criteria: opioid dependence, lap converted to open procedures, emergent or revision surgery.

Results: Our database includes 400 patients who underwent laparoscopic colectomies during January 2006 to December 2014. Demographic data, type of surgical procedure, time to flatus, time to first bowel movement, time to discharge, and in-hospital narcotic consumption are being recorded on an Excel spreadsheet database. We are comparing data points between two groups: group using TAP catheters with and without IV acetaminophen and group that does not (Standard Care).

Conclusion: Ongoing data collection is currently being done on all these patients. However, early results of this retrospective pilot study does demonstrate that the addition of a TAP catheter block with IV Acetaminophen to a PCA post-operatively in laparoscopic colectomy patients leads to less use of overall narcotic consumption, earlier passage of stool, and shorter length of stay.

Endovascular embolization of an asymptomatic ruptured popliteal aneurysm

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Introduction: Popliteal aneurysms are the most common peripheral aneurysms but are relatively rare in the general population, although the incidence has been steadily increasing due to improved imaging capabilities. Causes include atherosclerosis, trauma, prior surgery, and infection. Open surgery has been the mainstay of therapy but with the advancement of minimally invasive techniques, endovascular options have become increasingly popular, although the choice of treatment is still controversial and patient-specific. Presentation with acute pain secondary to rupture accounts for less than 5% of patients with approximately two-thirds of patients presenting with thromboembolism and acute ischemia.

Methods/Discussion: This is a case report of a 76 year old male with a past medical history of hypertension, hypercholesterolemia, coronary artery disease, cardiac valvular disease, and stroke who presented with an asymptomatic pulsatile mass posterior to his left knee. Furthermore, the patient was involved in a car accident 25 years ago for which he underwent left knee reconstruction and popliteal artery repair. Angiogram was performed which revealed a 7cm left popliteal aneurysm that

appeared to be thrombosed in the lower aspect as well as a geniculate collateral that arises in the distal superficial femoral artery and reconstitutes the left posterior tibial artery. The patient subsequently underwent successful endovascular embolization of the aneurysm using a plug with complete resolution.

Conclusion: Due to the association between popliteal artery aneurysms and rupture, it is crucial to maintain a high suspicion for anyone with a pertinent positive history that may place the patient at risk. The use of endovascular techniques in unique situations such as asymptomatic rupture provides a safe alternative to open surgical therapy and prevent limb loss.

Adeno-HSA12B Delivery Improves Neovascularization in a Murine Model of Hind Limb Ischemia.

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Introduction: Molecular chaperons/heat shock proteins play a critical role in angiogenesis. HSPA12B is a member of the HSP70 subfamily 12 and is predominantly expressed in endothelial cells and required for angiogenesis. In the present study we aim to investigate its role in a murine model of hind limb ischemia.

Method(s): Adult 8-12 week old C57Bl/6 mice were divided into two groups: (1) the control group (Ad.LacZ). and (2) the Adeno-HSPA12B gene treatment group (Ad.HSPA12B). Both groups underwent right femoral artery ligation to create a murine model of HLI. Immediately after surgery, mice in Ad.HSPA12B group received Ad.HSPA12B in a concentration of 1×10^9 PFU in both semimembranosus and gastrocnemius muscles of the right leg whereas the left leg was used as an internal control. The mice in control group received similar concentration of Ad.LacZ at the same muscle sites after right femoral artery ligation. The two groups underwent serial Laser Doppler imaging (LDI) both pre-operatively and post-operatively for 28 days to assess blood perfusion in the hind-limbs. Immunohistochemistry and Immunofluorescence were performed on post-operative day 3 and 28.

Results: Mice in the Ad.HSPA12B group showed a significantly increased perfusion ratio on postoperative day 21 [0.65 ± 0.04 (n=12) vs. 0.50 ± 0.04 (n=16); $p < 0.05$] and day 28 [0.71 ± 0.06 (n=12) vs. 0.55 ± 0.03 (n=16); $p < 0.05$] as compared to mice in the Ad.LacZ group. Mice in the Ad.HSPA12B group mice also showed significantly increased capillary density [1413 ± 70.25 (n=5) vs. 586 ± 26.39 (n=6); $p < 0.05$] and capillary myocyte ratio [1.81 ± 0.16 (n=5) vs. 1.29 ± 0.10 (n=6); $p < 0.05$] as compared to Ad.LacZ group at post-operative day 28. Ad.HSPA12B mice were also found to have significantly reduced fibrosis as compared to the Ad.LacZ group 28. Three days after femoral artery ligation, Ad.HSPA12B group showed increased [1.39 fold] Vascular Endothelial Growth Factor (VEGF) expression by immunofluorescence analysis as compared to Ad.LacZ group.

Conclusion(s): Taken together, our study demonstrates that targeted gene therapy with Ad.HSPA12B in the murine ischemic muscle enhances blood perfusion, reduces fibrosis

and improves neovascularization via VEGF expression. We anticipate that this molecule can be a future potential target for clinical trials and subsequently drug therapy in peripheral vascular disease management.

Autolysis of SFA because of Viabahn stent graft infection with Proteus - Case Report

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Introduction: The field of endovascular surgery has been changing radically since its inception. Infection is a major complication of any procedure, and endovascular surgery is no exception. Metallic stents have a low incidence of infections; however, its presence is associated with higher mortality rates and has been found to require more extensive vascular procedures when infected.

Method: Review of a single case of stent infection in a patient with peripheral vascular disease and a review of the last 10 years of published literature regarding infected vascular stents.

Results: Our literature review showed that the most common bacteria infecting metallic stents was staphylococcus. This is the first case of an infected Viabahn stent secondary to Proteus bacteria.

Discussion: Gore Viabahn, initially introduced in 1996 as Hemobahn in Europe, is an expanded polytetrafluoroethylene (ePTFE) lined endoprosthesis stent, which is the only FDA approved stent for SFA stenosis. In this case, patient received Vancomycin perioperatively prior to the Viabahn stent being placed. None-the-less, this patient returned to the hospital several months later with an infected graft growing Proteus. The autolysis around the SFA was impressive. In our literature review, we found only one similar case of autolysis, which was infected with MRSA.

While there is no data to support it, the Heparin Bioactive Surface unique to Viabahn may have contributed to the Proteus mirabilis infection in this case.

Use of Adjunct Intraop Cone Beam CT (CBCT) with Real Time 3D Overlay Improves Diagnostic Accuracy of Electromagnetic Navigational Bronchoscopy (ENB)

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Introduction: ENB is limited by diagnostic accuracy of 60-80% [1]. We hypothesize that using intraoperative CBCT with real time 3D overlay onto fluoroscopic images to confirm placement of biopsy tools in the lesion will increase the diagnostic accuracy of ENB biopsies.

¹ Wang Memoli JS, Nietert PJ, Silvestri GA. Meta-Analysis of Guided Bronchoscopy for the Evaluation of the Pulmonary Nodule. Chest. 2012;142(2):385-393. doi:10.1378/chest.11-1764

Methods: Patients with undiagnosed small pulmonary nodules (<20 mm) underwent biopsy where an initial CBCT of the chest under breath hold was performed, followed by a 3D model reconstruction of the lesions while the surgeon started the ENB. At the end of the bronchoscope navigation, the 3D model of the lesion was fused and automatically registered in real time over the 2D fluoroscopy, allowing an evaluation of the biopsy tool positioning in 3-dimensions. Multiple samples were collected after confirmation of the tool position using various oblique views.

Results: In our initial experience with 10 cases, CBCT acquisition, reconstruction and 3D-overlay was successful in all cases. This procedure enabled confirmation of biopsy tool position within the target lesion in all cases. In one case, the new information obtained successfully discriminated a diaphragm implant from what previously had been interpreted as a basilar parenchymal nodule. In a second case, CBCT reconstruction enabled biopsy of a 15mm lesion thought to be a solitary metastasis. The biopsy was interpreted as normal, albeit in clinical circumstances which were suspicious for malignancy. The patient elected non-surgical treatment of an esophageal primary, precluding definitive pathologic confirmation. A third case provided a biopsy interpreted as normal in a patient who ultimately proceeded to resection for growth of the nodule. While frozen section suggested a benign entity, final pathology demonstrated scattered elements of malignancy. In the remaining cases, CBCT and 3D overlay assisted in successful and accurate biopsy of nodules <20mm.

Conclusion: Intraoperative CBCT and real time 3D overlay onto fluoroscopic images to confirm appropriate positioning of the biopsy tools in the lesion during ENB is technically feasible. It effectively combines the advantage of real time CT imaging with the advantages of ENB biopsy. This has the potential to increase the diagnostic accuracy of ENB aided tissue diagnosis of small pulmonary nodules. This novel technique will facilitate early accurate diagnosis of lung cancer in small nodules with a minimally invasive approach.

Management of Empyema and Bronchopleural Fistula after Completion Right Pneumonectomy

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Introduction: Post pneumonectomy mortality can vary from 3 to 30% with a propensity for higher morbidity and mortality with right-sided pneumonectomy. This is primarily due to the higher incidence of broncho-pleural fistula, empyema, and pulmonary edema. The complication rates are even higher with completion right pneumonectomy due to adhesive disease and altered anatomy. One such incident involved a patient with a complex surgical history who underwent a completion right pneumonectomy that was complicated by an empyema and delayed bronchopleural fistula. The Fistula was successfully treated using a novel method employing an Amplatzer closure device.

Case report: This patient is a 70-year-old female past 45 pack-year smoker with a history significant for two metachronous non-small cell carcinomas who presents with recurrent life-threatening pneumonias. In 1999, she underwent a thoracotomy and right upper lobectomy for T2N1 SCC. In 2005, she underwent a redo-thoracotomy and right lower lobectomy for T1No adenoCA. The middle lobe was preserved. She now presents with end-stage bronchiectasis, and recurrent crescendo pneumonias involving the middle lobe. She underwent right completion pneumonectomy. She presented a month later with an empyema which was treated with a right open thoracostomy window. 6 weeks later, she presented with weakness and persistent cough and was found to have a bronchopleural fistula. Patient underwent successful endobronchial closure of the fistula using an Amplatzer device.

Conclusions: Post-pneumonectomy empyema is an uncommon but potentially life threatening complication. It is usually associated with bronchopleural fistula. Treatment of the empyema usually involves debridement and drainage of the pleural cavity. Bronchopleural fistula can be treated by a range of medical, surgical, and endoscopic techniques. Invasive surgical techniques may not be tolerated by debilitated post-operative patients. We describe a successful case of endobronchial closure of BPF using an Amplatzer device.