
46TH ANNUAL MEETING



The North Texas Chapter of the American College of Surgeons

February 23 - 24, 2007

**Cityplace Conference Center
Dallas, Texas**

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Marcia McIntyre & Nonie Lowry

Lettuce Planet

PURPOSE AND EDUCATIONAL OBJECTIVES

To learn new treatments and diagnostic tools for general surgery, vascular procedures, oncology, urology and bariatric surgery.

SESSION 1

1. To determine the difference between laparoscopic vs. open cholecystectomy for older patients.
2. To determine the effects of differing needle size on accuracy of thyroid biopsy.
3. To define the role of laparoscopic esophagectomy.
4. To differentiate value of reinforced staple lines in gastric bypass.

SESSION 2

1. To define outcomes in young adults with adenocarcinoma of the colon.
2. To learn the feasibility and safety of the whipple procedure in a non-university setting.
3. The importance of circulating tumor cells in patients having surgery for Hepatic Metastases.

SESSION 3

1. To ascertain the safety in clamping chest tubes.
2. To discuss car surfing in trauma.
3. To review the outcomes for solid organ abdominal injuries at a Level 2 trauma center.

SESSION 4

1. To review of the value of CT Scans in small bowel obstruction.
2. To review the use stent placement in Esophageal and Duodenal obstructions.
3. To study the feasibility of different approaches to non-incisional cholecystectomy.

SESSION 5

1. To review the cost effectiveness of combined aortic debranching and thoracoabdominal aortic endovascular repair (TEVAR) surgery.
2. To learn about Aortic Reconstruction with Femoral-Popliteal Vein grafts.

SESSION 6

1. To discuss the role of adding an endoscopic service in general surgery training.
2. To describe and understand outcomes and usefulness of serial platelet function assay measurement in patients with traumatic intracranial hemorrhage.

ACCREDITATION STATEMENT

The American College of Surgeons is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

AMA PRA CATEGORY 1 CREDITS™

The American College of Surgeons designates this educational activity for a maximum of 13 *AMA PRA Category 1 Credits™*. Physicians should only claim credit commensurate with the extent of their participation in the activity.



ENDOWED LECTURESHIP FUNDS

THE HARRY M. SPENCE MEMORIAL LECTURESHIP FUND

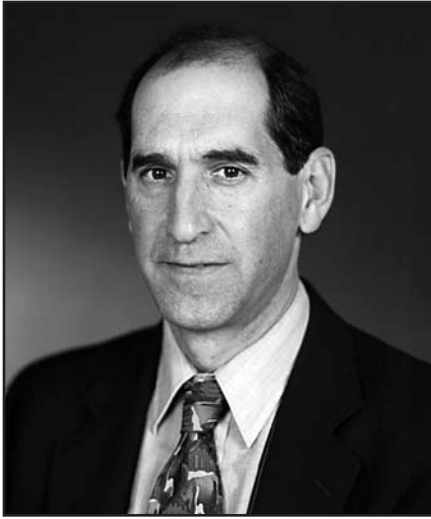
On February 17, 1990, during the annual business meeting of the North Texas Chapter of the American College of Surgeons, an annual lectureship was established to honor Harry M. Spence, MD. It was proposed that each year a distinguished guest speaker be invited to deliver the Harry M. Spence Lecture as a special feature of the annual chapter meeting.

Established at the outset as a permanent fund, the Harry M. Spence Endowed Lectureship had an initial goal of \$50,000. The fund reached its initial goal in December 1995, henceforth providing income used to support the lectureship. Further donations are welcomed and encouraged in order to guard against inflationary deterioration of this excellent endowment.

THE ROBERT S. SPARKMAN LECTURESHIP FUND

During the annual business meeting of the North Texas Chapter of the American College of surgeons on February 16, 1995, an annual lectureship was established to honor Robert S. Sparkman, MD. It was proposed that each year a distinguished speaker be invited to deliver the Robert S. Sparkman Lecture as a special feature of the annual chapter meeting. It was further proposed that a permanent fund with an initial goal of \$50,000 be established to provide an income to support this lecture.

The Robert S. Sparkman Fund was established as a permanent fund after reaching its initial goal in October 1996. The Council of the North Texas Chapter instructed that the fund remain in an open investment account until the close of the annual chapter meeting on March 1, 1997. Since that time, the fund has provided an income to support the lectureship. The friends, patients, pupils and colleagues of Dr. Sparkman are invited to participate with the Fellows of the North Texas Chapter in contributing the funds necessary to endow the Sparkman Lectureship. Donations of an size are welcome and are tax-exempt. The amounts of individual contributions will be kept confidential. Checks should be made payable to the **North Texas Chapter of the ACS**, and forwarded to the Chapter Secretary-Treasurer.



DAVID W. RATTNER, MD

Chief of the Division of General
and Gastrointestinal Surgery
Massachusetts General Hospital
Professor of Surgery
Harvard Medical School
Boston, MA

Dr. Rattner received his MD degree from The Johns Hopkins School of Medicine in 1978. He trained as an intern and resident in Surgery at The Massachusetts General Hospital from 1978- 1985. Dr Rattner

was then appointed to the staff of the Massachusetts General Hospital Department of Surgery. In 1999 he became the Chief of the Division of General and Gastrointestinal Surgery. He was made Professor of Surgery at Harvard Medical School in 2003. Dr Rattner has been active in numerous national surgical organizations. He is a trustee of The Society for Surgery of the Alimentary Tract (SSAT), President of the Boston Surgical Society, a former governor of The American College of Surgeons(ACS), and immediate Past President of The Society of American Gastrointestinal Endoscopic Surgeons (SAGES). He is also an active member of The American Surgical Association, The Society of Surgical Oncology, and The Halsted Society. Dr Rattner has authored more than 125 original publications and 50 book chapters. Dr Rattner was one of the founding members of the Massachusetts General Physicians Organization and currently serves on this organization's Board of Trustees. Dr Rattner was a founding member of CIMIT(The Center for Innovative Minimally Invasive Therapies). His areas of research include gastrointestinal disease, minimally invasive therapies and The Operating Room of the Future.

PAUL E. COLLICOTT, MD

Director of the Division of
Member Services
American College of Surgeons
Chicago, IL



Paul E. Collicott, MD joined the American College of Surgeons in November, 2001 as the Director of the Division of Member Services. Dr. Collicott is responsible for numerous activities and areas: Governor activities and committees, Chapter activities and committees, 12 specialty Advisory Councils, the Resident-Associate Society (RAS), the Central Judiciary Committee, the online Job Bank, seven other committees, affinity programs offering direct benefits to members, Research Integrity Officer, and membership recruitment and retention.

Prior to joining the College's staff, Dr. Collicott served nine years as a Regent of the College, a member of the General Surgery & Coding Reimbursement Committee, a member of the Committee on Trauma, Chair of the ATLS® subcommittee, National and International ATLS® Course Director, and was instrumental in introducing ATLS® in 1980. He has received numerous awards for his trauma endeavors.

Previously, Dr. Collicott was a community surgeon in Nebraska for 28 years specializing in peripheral vascular and trauma surgery. Dr. Collicott's involvement with organized medicine spans several decades. He has served as President of the Nebraska Medical Association and the Lancaster County Medical Society. Additionally, he was the Trauma Director and Chief of Surgery at Lincoln General Hospital and held Clinical Faculty appointments at both the University of Nebraska and Creighton University. He served eight years in the AMA House of Delegates for the Nebraska Medical Association and as a specialty advisor to the AMA/Specialty Society Relative Value Update Committee (RUC).

A Nebraska native, he received his BS and MD from the University of Nebraska and completed his surgical training at the University of Washington after serving in the United States Air Force during the Vietnam Conflict. He is a member of numerous surgical societies and has published several peer reviewed manuscripts and book chapters.



CLAUS G. ROEHRBORN, MD

Professor and Chairman
Department of Urology
University of Texas Southwestern
Medical Center
Dallas, TX

Claus G. Roehrborn, MD, was born and raised in West Germany. After attending medical school in Giessen, Germany, he began his residency in surgery and urology at the German Army Hospital in Gies-
sen. In 1984, he came to Dallas, Texas, and continued his urology residency at The University of Texas Southwestern Medical Center at Dallas. After finishing his residency in 1989 he won an American Foundation of Urologic Disease Scholarship and worked for 2 years with Dr. Jean Wilson in the field of androgen regulation of prostate development and growth. In 1992, he joined the urology faculty at University of Texas Southwestern, where he currently is Professor and Chairman of the Department of Urology.

Dr. Roehrborn's research interests are in the areas of benign and malignant prostate diseases, including medical and minimally invasive therapies for BPH, and markers for prostate cancer. In addition, he has a background in urological ultrasound and has chaired numerous postgraduate courses and lectured on a variety of topics in ultrasound imaging of the urinary tract. His basic, translational and clinical research has yielded over 250 peer-reviewed publications, more than 30 book chapters, and numerous other contributions to the literature. Aside from being invited to give lectures all over the world, Dr. Roehrborn has chaired or participated in many postgraduate courses and has been visiting professor at leading urological institutions in the United States, Europe, and Asia.

Dr. Roehrborn has been the lead researcher for the 1994 Agency for Health Care Policy and Research (AHCPR) BPH Guidelines and has been involved in the American Urological Association (AUA) Guidelines efforts from their inception. He has chaired committees at the WHO-sponsored Consensus Conferences on BPH from 1994 through 2005 and is cochairman of the AUA BPH Guidelines Committee producing an update of the 1994 AHCPR Guidelines in 2003.

Continues on page 8.

Dr. Roehrborn serves on the editorial board of many peer-reviewed journals, is associate editor of *Urology*, and coeditor of the comprehensive and authoritative *Textbook of BPH*. He is a reviewer for nearly all peer-reviewed journals in the field of urology. At present, Dr. Roehrborn continues to be involved in virtually all aspects of BPH research as well as translational and clinical research in prostatitis and prostate cancer.

Claus G. Roehrborn, MD, joined the urology faculty at The University of Texas Southwestern Medical Center in 1992 and is currently Professor and Chairman of the Department of Urology. Dr. Roehrborn's research interests are in the areas of benign and malignant prostate diseases, including medical and minimally invasive therapies for BPH, and markers for prostate cancer. His basic, translational and clinical research has yielded over 250 peer-reviewed publications, more than 30 book chapters, and numerous other contributions to the literature. He serves on the editorial board of many peer-reviewed journals, is associate editor of *Urology*, and coeditor of the comprehensive and authoritative *Textbook of BPH*. At present, Dr. Roehrborn continues to be involved in virtually all aspects of BPH research as well as translational and clinical research in prostatitis and prostate cancer.

FRIDAY

FEBRUARY 23, 2007

7:00am - 8:00am

Continental Breakfast & Exhibits

7:00am - 5:00pm

Registration

8:00am - 9:55am

Scientific Session I*Moderators: Peter Rutledge, MD and Ernest Dunn, MD***8:00am - 8:10am**

Introduction and Announcements

8:10am - 8:25am

1. Open is More likely than is Laparoscopic Cholecystectomy for Older Patients and for those with a Total Bilirubin Level. *SU Ahmed MBBS,[†] M Robinson MD, MS Wachtel MD, EE Frezza MD, MBA*

8:25am - 8:40am

2. Thyroid Nodule Sampling: Comparison of 22 Gauge Versus 25 Gauge Needles. *E Garza MD,[†] T Fisher RN, C Adair MD, J Lamont MD, J Kuhn MD*

8:40am - 8:55am

3. A Comparison of Anterior and Posterior Approaches for the Surgical Treatment of Pancreatic Pseudocyst Using Laparoscopic Cystogastrostomy. *R Ford MD,* MS Wachtel MD, EE Frezza MD, MBA*

8:55am - 9:10am

4. Comparison of Reinforced Staple Lines and Non-Reinforced Staple Lines in Laparoscopic Roux-En-Y Bypass Surgery. *CA Williams MD,* TL Fisher RN, LA Kerich PA, JA Kuhn MD*

9:10am - 9:25am

5. Laparoscopic Esophagectomy. *S Steen MD,* J Lamont MD, M Westmoreland MD, T Fisher RN, J Kuhn MD*

9:25am - 9:40am

6. Frameless Stereotactic Radiosurgery (Cyberknife) Therapy for Lung Tumors: An Early Clinical Experience. *JM Pool MD,* R Wood MD, B Berger MD*

9:40am - 9:55am

7. Feasibility and Safety of Pancreaticoduodenectomy (The Whipple Procedure) in a Non-University Based Referral Center. *R Rassadi MD,[†] A Vo RN, DR Jeyarajah MD*

9:55am - 10:00am

Coffee Break & Exhibits

10:00am - 10:15am

American Cancer Society Update*Sara Dameron, Director of Healthcare Systems, American Cancer Society, High Plains Division*

10:15am - 11:00am

American Cancer Society - Panel Discussion: Oncology

* = Presenter

† = Applicant for Resident Research Award

- 11:00am - 12:00noon Robert S. Sparkman Memorial Lectureship**
Natural Orifice Trans-luminal Surgery: Fantasy or the Future
David Rattner, MD, Chief of the Division of General and
Gastrointestinal Surgery, Massachusetts General Hospital,
Professor of Surgery, Harvard Medical School
- 12noon - 1:00pm Annual NTC-ACS Luncheon**
Digging In and Defending Our Gains
John Opelt, MD, Executive Director, Texas Alliance for
Patient Access
- 12:45pm - 1:30pm Resident Forum**
- 1:00pm - 1:30pm NTC-ACS Annual Business Meeting**
- 1:30pm – 2:30pm Scientific Session II**
Moderators: Peter Rutledge, MD and John Freese, MD
- 1:30pm – 1:45pm**
 8. Invasive Colon Adenocarcinoma in a Young Adult. *SS Wang MD,* JM Downs MD, R Stadler MD*
- 1:45pm – 2:00pm**
 9. Combined Effect of Apoptotic Biomarkers on Bladder Cancer Recurrence and Mortality after Radical Cystectomy. *JA Karam MD,*† Y Lotan MD, R Ashfaq MD, AI Sagalowsky MD, CG Roehrborn MD, SF Shariat MD*
- 2:00pm – 2:15pm**
 10. Nodal Sampling in Periampullary Cancer: Does it Change Your Approach? *R Rassadi MD,*† Jeyarajah MD*
- 2:15pm – 2:30pm**
 11. Circulating Tumor Cells in Patients Undergoing Surgery for Hepatic Metastases from Colorectal Cancer. *P Papavasiliou MD,* JA Kuhn MD, JJ Nemunaitis MD, SA Livingston MSN RN, JP Lamont MD*
- 2:30pm - 3:30pm Scientific Session III**
Moderators: Peter Rutledge, MD and Mark Watson, MD
- 2:30pm - 2:45pm**
 12. Clamping Chest Thoracostomy Tubes: A Heretical Notion? *GA Funk MD,* LB Petrey MD, ML Foreman MD, B Girard RN*
- 2:45pm - 3:00pm**
 13. Car Surfing: A Brief Look at the Physics and Trauma Associated With a Growing Dangerous Phenomenon. *SA Clark MD,*† AJ Mangram, JA Kilmer, EL Dunn MD*
- 3:00pm - 3:15pm**
 14. Recombinant Activated Factor VII in The Treatment of Trauma Patients with Coagulopathic Hemorrhage. *JA Aucar MD,* E Gambaro MD*
- 3:15pm - 3:30pm**
 15. A Retrospective Review of Trauma Outcomes for Solid Organ Abdominal Injuries at a Level II Trauma Center. *CF Sharp MD,*† A Mangram MD, E Dunn MD*
- 3:30pm - 3:45pm Coffee Break & Exhibits**

- 3:45pm - 4:15pm** **American College of Surgeons Distinguished Speaker**
 ACS Update
Paul E. Collicott, MD, American College of Surgeons, Chicago, IL
- 4:15pm - 4:45pm** **Resident Jeopardy - Round 1**
Moderator: Joseph Kuhn, MD
- 4:45pm - 5:00pm** **Wrapup and Adjournment**
- 6:30pm - 7:30pm** **Cocktail Reception**
- 7:30pm - 10:00pm** **Annual Banquet**

SATURDAY, FEBRUARY 24, 2007

- 7:00am - 1:00pm** **Registration**
- 7:30am - 8:00am** **Continental Breakfast & Exhibits**
- 8:00am - 8:55am** **Scientific Session IV**
Moderators: Warren Lichliter, MD and Alicia Mangram, MD
- 8:00am - 8:10am**
 Introduction & Announcements
- 8:10am - 8:25am**
 16. Esophageal and Duodenal Stent Placement for Malignant Obstructions of the Upper Gastrointestinal Tract. *GW Dittrick MD,** JP Lamont MD, DB Mallat MD*
- 8:25am - 8:40am**
 17. A Computed Tomography Scoring System Can Predict the Need for Surgery in Small Bowel Obstruction. *K Jones MD,** RA Lebron MD, AJ Mangram MD, L Nadalo MD, EL Dunn MD*
- 8:40am - 8:55am**
 18. Short-Term Survival Outcomes Following Transvaginal Notes Cholecystectomy Using Magnetically Anchored Instruments. *DJ Scott MD,* SJ Tang MD, MT Goova MD, R Bergs MS, DC Hogg BS, FJ Kehdy MD, JA Cadeddu MD, R Fernandez PhD*
- 8:55am - 9:30am** **Resident Jeopardy - Round 2**
Moderator: Joseph Kuhn, MD
- 9:30am - 9:45am** **Coffee Break & Exhibits**
- 9:45am - 10:45am** **The Harry M. Spence Memorial Lectureship**
 Chemoprevention of Prostate Cancer: Promise and Reality
Claus G. Roehrborn, MD, Professor and Chairman, Department of Urology, University of Texas Southwestern Medical Center
- 10:45am - 11:15am** **Scientific Session V**
Moderators: Warren Lichliter, MD and Eldo Frezza, MD
- 10:45am - 11:00am**
 19. Combined Aortic Debranching and Thoracoabdominal Aortic Endovascular Repair (Tevar) is Effective but at a Cost. *EH Murphy MD,** AW Beck MD, M Dimaio MD, RJ Valentine MD, GP Clagett MD, FR Arko MD*

11:00am - 11:15am

20. Aortic Reconstruction with Femoral-Popliteal Vein: Graft Stenosis Incidence, Risk and Re-Intervention. *AW Beck MD,** EH Murphy MD, J Hocking MPAS, JG Modrall MD, RJ Valentine MD, GP Clagett MD*

11:15am - 12:00noon Oral Poster Presentations

50. Preliminary Results of a Pilot Study of Circulating Tumor Cells in Patients Undergoing Surgery for Primary Breast Cancer. *T Dao MD, N Thepjatri MD, JA Kuhn MD, SM Knox MD, MD Grant MD, JJ Nemunaitis MD, SA Livingston MSN RN, JP Lamont MD*

51. Preoperative Micronutrient Deficiency in Morbidly Obese Patients. *JA Kuhn MD, R Leidner, DA Arnold, TL Fisher, TM McCarty*

52. Large Adrenal Teratoma in a Neonate. A Case Report. *CJ Blewett MD, GS Dhillon MD, JR Rinard MD, JC James BS, AJ Cecalupo MD, EE Frezza MD, MBA*

53. Lymphoepithelial Cyst of the Pancreas Tail. Case Report. *R Ford MD, MS Wachtel MD, EE Frezza MD, MBA*

54. Endoscopic Stitch Removal at the Gastrojejunostomy after Gastric Bypass for Morbid Obesity. *R Ford MD, M Robinson MD, MS Wachtel MD, EE Frezza MD, MBA*

55. Extended Laparoscopic Distal Pancreatectomy. *R Rassadi MD, DR Jeyarajah MD.*

56. Use of Harmonic Scalpel in Pancreaticoduodenectomy. *DR Jeyarajah MD, R Rassadi MD*

57. Transjugular Intrahepatic Portosystemic Shunt for Treatment of Radiation Proctitis. *AE Harzman MD, J Lopez MD, GA Sarosi MD, M Asolati MD*

58. Hard Operative Cost of Bariatric Surgery. *G Dhillon MD, A Barton BS, MS Wachtel MD, EE Frezza MD, MBA*

59. A Survey of the Southwest Surgical Congress Members' Practices in Inguinal Hernia Repair: What is Today's Procedure of Choice? *RC Mooty MD, AJ Mangram MD, EL Dunn MD*

12:00pm - 12:30pm Scientific Session VI

Moderators: Warren Lichliter, MD and Alicia Mangram, MD

12:00pm - 12:15pm

21. Residency Endoscopic Training. *J Fitzwater MD,* A Halldorsson MD, EE Frezza MD, MBA*

12:15pm - 12:30pm

22. The Use of Platelet Function Assay in The Management of Patients with Intracranial Hemorrhage. *MR Bower MD,** LB Petrey MD, ML Foreman MD, BU Girard MBA*

12:30pm – 1:00pm ACS Web Portal: A New Initiative

Eldo Frezza, MD

1:00pm – 1:30pm Resident Jeopardy - Final Round

Moderator: Joseph Kuhn, MD

1:30pm

Awards & Concluding Remarks

1. Open is More likely than is Laparoscopic Cholecystectomy for Older Patients and for those with a Total Bilirubin Level

SU AHMED MBBS, M ROBINSON MD, MS WACHTEL MD, EE FREZZA MD, MBA

Introduction: Laparoscopic cholecystectomy is standard of care for most patients, but open cholecystectomy is still required in many cases. Factors affecting this choice have not been fully evaluated.

Methods: The charts of 330 patients who underwent cholecystectomy were reviewed. Cases were eliminated if the pathology showed neoplasia or if age and sex were not readily accessible. Assessed were the affects of older age (above 60 years of age), gender, total bilirubin measurements, and amylase measurements, upon the likelihood of a cholecystectomy's being an open procedure. Poisson regression evaluated, adjusted for the total number of cholecystectomies, the counts of open procedures. A step forward approach with AIC selected the best model and assessed variables for interactions.

Results: Ten patients, two with open and eight with laparoscopic procedures, were excluded for lack of demographic data. Five patients, four with cancer, one with polyps, were excluded for neoplasia. Of the remaining 305 cases, 17 were open procedures. Amylase measurements and gender did not statistically-significantly effect changes in incidence rates. Patients over 60 more often had open cholecystectomies than were younger patients (incidence rate ratio 4.9, 95% c.i. 1.9 -13.1). Patients who had a total bilirubin measurement more often had open procedures than those without this test (incidence rate ratio 11.4, 95% c.i. 2.8 – 62.4), but hyperbilirubinemic patients were not shown more than patients with normal bilirubin to have open procedures (incidence rate ratio 0.8, 95% c.i. 0.2 – 2.4).

Conclusion: Surgeons more often perform open cholecystectomy on older patients and on those where concern with obstruction exists such that total bilirubin is measured.

2. Thyroid Nodule Sampling: Comparison of 22 Gauge Versus 25 Gauge Needles

E GARZA MD, T FISHER RN, C ADAIR MD, J LAMONT MD, J KUHN MD

Background: The technique of needle biopsy for thyroid nodules remains controversial. Historically a smaller gauge needle (25 gauge) was used to decrease blood contamination. Other investigators suggest larger needles (22 gauge) without aspiration in order to get a better sample. The patients under consideration for this review underwent routine collection of both specimens. The purpose is to assess the quality of specimens and determine the superior technique.

Methods: This study is a retrospective review of 10 patients undergoing ultrasound guided thyroid fine needle aspiration. These specimens were obtained using two different size needles, 22 and 25 gauge, with three passes per needle. The samples collected with 25 gauge needles had gentle aspiration applied while 22 gauge samples did not. All samples were reviewed by a single pathologist who was blinded to the size of needle used for collection. Samples were judged on amount of blood contamination, cellular quality, amount of colloid present, and specimen adequacy. Blood contamination, cellular quality, and amount of colloid present were graded high, medium, low, or none. Specimen adequacy was graded from 1 to 5 with 1 being the lowest score and 5 being the highest score. After review of each patient's slides, the pathologist marked which specimen provided the better quality or if both samples were equal in quality.

Results: Blood contamination was higher in 22 gauge specimens than 25 gauge specimens (90% vs. 80% with moderate – high contamination). Cellular quality was noted to be lower in 22 gauge specimens than 25 gauge specimens (70% vs. 40% receiving low ratings). Colloid was noted to be present in higher quantity in specimens from 25 gauge needles versus 22 gauge needles (60% vs. 40% receiving high rating). Lastly specimens were deemed more adequate from 25 gauge needles versus 22 gauge needles (50% versus 30% receiving high ratings). When overall specimen quality was compared using all parameters, 40% of the specimens viewed 25 gauge specimens superior, 40% of the total specimens were viewed as equal in quality, and 20% of the specimens favored the 22 gauge needle.

Conclusion: Thyroid nodules can be evaluated in many ways. A minimally invasive technique in evaluating thyroid nodules is fine needle aspiration with ultrasound guidance. This study suggests that a 25 gauge needle with gentle aspiration yields optimal cytologic material with less contamination when compared to a 22 gauge needle without aspiration.

3. A Comparison of Anterior and Posterior Approaches for the Surgical Treatment of Pancreatic Pseudocyst Using Laparoscopic Cystogastrostomy

R FORD MD, MS WACHTEL MD, EE FREZZA MD, MBA

Introduction: Preferable to open surgical drainage, laparoscopic treatment of pancreatic pseudocyst allows for definitive drainage with faster recovery. This paper compares the approaches, analyzing their potential benefits and pitfalls.

Methods: Seven female and one man underwent laparoscopic cystgastrostomy to treat pancreatic pseudocysts. The anterior approach was performed by opening the stomach anteriorly, localizing the pseudocyst ultrasonographically, draining the cyst with a needle, and, via the same opening, using a stapler to form a cystgastrostomy. The posterior approach was performed by directly visualizing the posterior gastric wall and the pseudocyst, opening and draining the cyst with a needle, and using a stapler and running sutures for closure.

Results: All patients had gallstone pancreatitis. Cystgastrostomy via the anterior approach was used in four and via the posterior approach in four. Dense adhesions required one attempted posterior cystgastrostomy be converted to an anterior approach. The anterior group averaged 38 years (range 18-58) of age and 6 days (range 4-8) hospital stay; the posterior group, 42 years (rang 40-44) and 3 days (range 2-4).

Conclusion: Although both approaches had good results with no complications and short hospital stays, the posterior approach is a safer dissection, with a more precise cyst visualization that permits more tissue to be sent for histopathologic examination. Furthermore, the posterior approach's larger anastomosis would seem to yield fewer occlusions, commonly seen with the anterior approach. The anterior approach is easier to learn, but it requires the opening of the anterior stomach and the use of ultrasound.

4. Comparison of Reinforced Staple Lines and Non-Reinforced Staple Lines in Laparoscopic Roux-En-Y Bypass Surgery

CA WILLIAMS MD, TL FISHER RN, LA KERICH PA, JA KUHN MD

Background: Circular stapled gastrojejunostomy anastomosis has become a standard technique in bariatric patients undergoing lap-RNY gastric bypass surgery (lap-RYGB). Circular staple line reinforcement with remodelable biomaterial has recently become available with the potential for decreased complications. The purpose of this study is to compare reinforced versus non-reinforced staple lines of the gastrojejunostomy.

Methods: A retrospective review of all patients undergoing lap-RYGB was performed to compare circular staple line reinforcement using Peri-Strips Dry® with Veritas® Collagen Matrix (Synovis Surgical Innovations) versus non-reinforced staples. The reinforced strips were placed on both ends of the 25 mm circular stapler. Study endpoints included technical success and postoperative complications including strictures, anastomotic leaks, bowel obstructions, fistulas, and bleeding.

Results: Five hundred twenty five consecutive patients were identified who had lap-RYGB and were treated using reinforced staple lines (n=55) or non-reinforced staple lines (n=470). Patients characteristics based on BMI, age, and gender were similar for both groups. The dislodgement of the anvil or cartilage staple reinforcement strip (2/55, 3.6% and 0/55, 0%) prior to stapler firing was infrequent. The complications for patients with reinforced versus non-reinforced staple included: strictures 7.2% (n=4) vs. 6.5% (n=31); anastomotic bleeding 3.6% (n=2) vs. 2.7% (n=13); leaks 0% (n=0) vs. 0.6% (n=3); and, gastrogastic fistulas 0% (n=0) vs. 0.2% (n=1).

Conclusion: These data suggest that successful placement of the staple reinforcement strip is very high (96%-100%) and associated with a slight but non-significant decrease in leak rates. There was no increase in stricture rates or other complications.

5. Laparoscopic Esophagectomy

S STEEN MD, J LAMONT MD, M WESTMORELAND MD, T FISHER RN, J KUHN MD

Background: Recent reports suggest that minimally invasive esophagectomy using laparoscopic and thoroscopic technology can be performed with good outcomes. Concerns regarding laparoscopic esophagectomy, however, include the adequacy of resection, adherence to oncologic principles, and overall morbidity and mortality. The purpose of this study is to examine the success rate and complications associated with minimally invasive esophagectomy at our institution.

Methods: A retrospective chart review was conducted on all patients who underwent minimally invasive esophagectomy at a single institution. All patients had laparoscopic gastric mobilization and tubularization with transabdominal partial esophageal mobilization. Pyloroplasty was not performed in any of the minimally invasive approaches. The thoracic and/or cervical portions of the cases were variable. We reviewed patient demographics, hospital stay, leak rate, complications, and pathology.

Results: Seven patients underwent minimally invasive esophagectomy at Baylor University Medical Center between May 2005 and the present. Demographics included four males, three females, with an average age of sixty-one (45 – 76). Preoperative diagnoses include high grade dysplasia (1), adenocarcinoma (4), squamous cell cancer (1), and recalcitrant strictures of the esophagus (1). The abdominal portion of the procedure was performed laparoscopically in all patients. Five of seven had stapled intrathoracic esophagogastric anastomosis, one had a hand sewn intrathoracic anastomosis, and one a stapled cervical anastomosis. Mean operating room time for the abdominal portion of the case is 1.5 hours. Hospital stay ranged from ten to sixty-seven days. Minor complications included atrial fibrillation and pleural effusions requiring drainage in four of seven. Overall, four patients had post operative anastomotic leaks. These leaks were all contained radiologically and none required reoperation. One died of fulminant sepsis during hospitalization from pneumonia. The average number of lymph nodes obtained was 4.2 (range 1 – 9). Four of the seven were R0 resections with proximal/distal/radial margins all negative for tumor on final pathology.

Conclusions: Minimally invasive esophagectomy is technically feasible. The laparoscopic portion of the surgery can be performed in a timely fashion without abdominal complications. The thoracic portion of the procedure represents the greatest potential for complications, which affects the length of stay and outcomes. Esophagectomy remains a complex procedure with inherent underlying risks that may not be significantly reduced with a minimally invasive approach.

6. Frameless Stereotactic Radiosurgery (Cyberknife) Therapy for Lung Tumors: An Early Clinical Experience

JM POOL MD, R WOOD MD, B BERGER MD

Introduction: Lung cancer remains a formidable medical burden, the leading cause of cancer-related death in both men and women in the United States. While surgical therapy is the standard of care for localized disease, patients with advanced disease or prohibitive medical comorbidities have had no consistent therapeutic solution. Frameless stereotactic radiosurgery (Cyberknife) is an emerging alternative to conventional therapy which utilizes stereotactic methods and real-time beam correction to achieve optimal tumor targeting. We present our early experience using the Cyberknife system to treat lung tumors.

Methods: A retrospective review of patients diagnosed with lung tumors that were treated using the Cyberknife system between March 2005 and August 2006. All patients either refused conventional surgery or were determined to be inoperable according to medical conditions or tumor characteristics. Fiducials were placed near the target area percutaneously using fluoroscopic guidance in the OR suite. Patients thereafter received high dose fractionated radiation in 1 to 4 doses.

Results: A total of 36 patients with biopsy proven lung tumors were identified. Primary lung cancer was seen in 32 patients, while metastatic disease was seen in 4 patients and consisted of breast (2), melanoma (1), and carcinoid (1) tumor types. Median patient age was 70 years. Mean follow-up was 179 days. Favorable tumor response, defined as tumor shrinkage or decreased enhancement on imaging, was seen in 74% of patients. No response, defined as tumor growth or no demonstrable change in appearance on imaging, was seen in 26% of patients. PET scan imaging was used to monitor metabolic tumor dynamics in selected patients. Radiation treatment was well-tolerated initially, with 1 patient reporting chest wall pain in the immediate peri-procedural period. Fiducial placement proved the most complicated aspect of the treatment scenario, with pneumothorax observed in 12 patients.

Conclusions: Early results indicate that Cyberknife radiosurgery is a viable and effective alternative to conventional methods in the treatment of inoperable lung tumors. Both primary lung tumors and metastatic lesions appear to respond to this treatment. While these results are encouraging, additional patients and extended follow-up periods are needed to better understand this emerging method.

7. Feasibility And Safety of Pancreaticoduodenectomy (The Whipple Procedure) in a Non-University Based Referral Center

R RASSADI MD, A VO RN, DR JEYARAJAH MD

Introduction: Pancreaticoduodenectomy is a complex abdominal surgery and usually is performed in a university setting. The purpose of current study is to evaluate whether pancreaticoduodenectomy (PD) can be safely performed in a high volume community center with results comparable to a high volume university setting.

Method: Retrospective review of 45 consecutive pancreaticoduodenectomies performed by a single surgeon in a community center over 13 months. Morbidity, mortality, final pathology, margin and lymph node status were analyzed.

Results: five PDs were performed for benign preoperative diagnoses. There was one postoperative death (2.2%). There were 18periampullary cancer, 12 intrapapillary mucinous neoplasm (IPMN, 4 benign adenoma of ampulla or duodenum, 1 neuroendocrine tumor, one solid pseudopapillary tumor and 2 cystadenoma/cystadenocarcinoma. 8 patient had a positive margin(17.7%) and 14 patient had a positive nodal status(31.1%).

Conclusion: Volume-outcome relation has been reported previously and regionalization of PD has resulted mostly in academic settings. Here we report the safety and feasibility of performing PD in a high volume community center with outcomes comparable to high academic centers. We propose that such a center can be safely assigned as a regional center for PDs. The experience of surgeon and familiarity of hospital team members play a key role in achieving these outcomes.

8. Invasive Colon Adenocarcinoma in a Young Adult

SS WANG MD, JM DOWNS MD, R STADLER MD

Introduction: The incidence of colorectal cancer in patients less than age 40 has been reported to be up to 4%. We present a twenty-six year old male with sporadic invasive colon adenocarcinoma to illustrate features often found in this young colon cancer population; later stage at diagnosis, negative microsatellite instability consistent with sporadic colon cancer, and mucinous histological feature associated with poorer prognosis.

Method: Case Report--A twenty-six year old male presented with one week history of obstipation and increasing abdominal distension. Physical examination demonstrated a distended abdomen with local tenderness in the left upper abdomen. WBC at admission was 13,000/ μ L. A free air series revealed right colon dilation. Subsequent CT scan of the abdomen and pelvis demonstrated an obstructing mass at the descending and sigmoid colon junction. An ensuing colonoscopy demonstrated a large polypoid obstructing mass at the distal descending colon; the endoscope could not be advanced beyond this mass.

Results: Biopsy to the obstructing mass revealed adenomatous epithelium with villos architecture. Exploration of the abdomen revealed an obstructing distal left colon mass without gross metastatic disease. A subtotal colectomy with an ileo-distal sigmoidostomy was performed because of our patient's young age and concern for both synchronous and future metachronous colon cancer in the setting of an unprepped obstructed bowel. Final pathology was low grade invasive adenocarcinoma extending through muscularis propria into the subserosa with mucinous component. Two out of 44 lymph nodes were positive for metastatic adenocarcinoma; pT3, pN1, cM0 (stage IIIB). Immunostains for mismatch repair proteins including hMLH1, hMSH2, and hMSH6 were negative for microsatellite instability. Patient was discharged on postoperative day ten with further adjuvant therapy planned.

Conclusion: Presenting symptoms in colorectal cancer patients less than age 40 are similar to older patients. There is often a delay in diagnosis due to general low suspicion with subsequent later disease stage and poorer prognosis. Practitioners must be mindful that sporadic colorectal cancer affects patients under age forty. We must subject these patients to full workups including a complete colonoscopy when indicated in order to improve earlier detection and ultimately their prognosis.

9. Combined Effect of Apoptotic Biomarkers on Bladder Cancer Recurrence and Mortality after Radical Cystectomy

JA KARAM MD, Y LOTAN MD, R ASHFAQ MD, AI SAGALOWSKY MD,
CG ROEHRBORN MD, AND SF SHARIAT MD

Introduction: To investigate the association of bcl-2, caspase-3, p53, and survivin expression with oncologic outcomes of patients treated with radical cystectomy for urothelial cell carcinoma of the bladder (UCCB).

Methods: Bcl-2, caspase-3, p53, and survivin immunostaining was performed on serial tissue microarrays containing cores from 226 consecutive patients treated with radical cystectomy for UCCB (median follow-up: 36.9 months). Expression of p53, bcl-2, Survivin was considered as altered when $\geq 10\%$ of cells were immunopositive. Caspase-3 expression was considered altered when $\geq 10\%$ of cells were immunopositive.

Results: Expression of bcl-2, caspase-3, p53 and survivin was altered in 32.3%, 49.1%, 53.1%, and 63.5% of patients, respectively. Altered expression of caspase-3 and p53 was associated with higher pathologic grade ($p=0.002$ and $p=0.001$, respectively). Altered expression of all four markers was associated with higher pathologic stage ($p=0.032$). 9.9% of the tumors exhibited normal expression of all markers; 24.3% exhibited altered expression of one marker; 32.4% of two markers, and 33.3% of ≥ 3 markers. Altered expression of each marker was associated with an increased probability of disease recurrence ($p=0.029$) and bladder cancer-specific mortality ($p=0.001$). The risk of disease recurrence and disease-specific mortality progressively increased with increasing number of altered biomarkers ($p<0.001$). Alteration of three or four markers was independently associated with higher rates of disease recurrence and worse disease-specific survival in multivariate analysis.

Conclusions: Bcl-2, caspase-3, p53, and survivin have a cooperative effect on bladder cancer progression. Evaluation of combined apoptosis marker status and number of altered apoptosis markers in patients after radical cystectomy provides prognostic information that could help identify patients who would benefit from adjuvant treatment.

10. Nodal Sampling in Periapillary Cancer: Does it Change Your Approach?

R RASSADI MD, DR JEYARAJAH MD

Introduction: Lymph node status in periapillary cancers has been discussed as a way to avoid proceeding with pancreaticoduodenectomy at an early stage in exploration. Common hepatic artery and common bile duct nodal groups (lymph node groups of 8 and 12 respectively according to Japan Pancreas Society Classification) are among the first nodal groups that are exposed during initial exploration for pancreaticoduodenectomy. Although lymph node sampling and the idea of sentinel lymph node biopsy have been proposed as a guide for treatment selection, the predictive value of lymph node sampling has not been addressed.

Methods: 45 patients underwent pancreaticoduodenectomy in a single institution and by a single surgeon between September 2005 and September 2006. 36 patients had a diagnosis of periapillary tumor and had regional node sampling at the beginning of the procedure. In a retrospective analysis, we evaluated the predictive value of regional nodal sampling on overall nodal status.

Results: Of the 36 patients with diagnosis of periapillary tumor, 23 had both negative nodal sampling and final regional nodal involvement for metastatic tumor; 9 patients had a negative nodal sampling but positive final nodal involvement; 4 patients had both positive nodal sampling and final nodal involvement for metastatic tumor (see table).

Conclusion: Sampling of common hepatic artery and common bile duct nodal groups has a negative predictive value of (0.718) and positive predictive value of (1) in evaluating regional pancreatic nodal status. Therefore, decision regarding performing a pancreaticoduodenectomy and prediction of final nodal status can not be based on initial nodal sampling.

11. Circulating Tumor Cells in Patients Undergoing Surgery for Hepatic Metastases from Colorectal Cancer

P PAPAVALIIOU, MD, JA KUHN MD, JJ NEMUNAITIS MD,
SA LIVINGSTON MSN RN, JP LAMONT MD

Objective: Identify the frequency of circulating tumor cells (CTC's) detected pre-operatively, intraoperatively, and postoperatively in patients undergoing surgery for colorectal hepatic metastases.

Background: Patients with colorectal liver metastases are at risk for intrahepatic and extrahepatic recurrent disease following the surgical treatment of their disease. CTCs have been detected in patients with a variety of metastatic cancers, including colorectal. The detection of CTCs may be a significant prognostic variable in patients with liver metastases.

Methods: Patients undergoing surgical excision or ablation of liver metastases from a colon or rectal primary tumor were prospectively enrolled in this trial. Four 7.5 cc vials of peripheral blood (total volume 30 cc) were drawn pre-operatively (PreOp) and at 2 weeks post-operatively (PostOp). An additional 30 cc blood draw was obtained mobilization of the liver or at the beginning of radiofrequency ablation. The samples were centrifuged and the sera combined to a final volume of 7.5 cc, and the CellSearch (Veridex, LLC) system was used to identify circulating epithelial cells. Data was collected on other prognostic factors including morbidity, carcinoembryonic antigen level (CEA) and the Fong preoperative risk assessment score.

Results: 10 patients were enrolled on the trial. There were 6 males and 4 females. Mean preoperative Fong criteria score was 0.9 (range 0 to 3). Eight patients were treated with preoperative systemic chemotherapy. Patients underwent hepatic ablation (n=3, 30%), hepatic resection (n=3, 30%), or resection and ablation (n=4, 40%). Eight patients (80%) had peripheral CTCs identified preoperatively. The mean number of CTCs per 30cc blood was 1.3 (range 0-3). Postoperative levels were drawn in 9 patients and 4 had identifiable CTCs (44%). Mean postoperative CTCs was 1.6 (range 0-9). 3 patients with PreOp CTCs had no CTCs PostOp. Eight patients (80%) had CTCs identified in peripheral blood during liver or tumor manipulation with a mean value of 10.9 (range 0-51). At a median follow up of 7 months (range 1-9), no patients have been diagnosed with recurrent disease.

Conclusions: Circulating tumor cells are present and quantifiable in many patients with colorectal hepatic metastases. Peripheral CTCs are present in greater quantity during intraoperative liver manipulation. The significance of CTCs on the risk of recurrence is uncertain. Further study on the prognostic significance and molecular characterization of CTCs is ongoing.

12. Clamping Chest Thoracostomy Tubes: A Heretical Notion?

GA FUNK MD, LB PETREY MD, ML FOREMAN MD, BEVERLY GIRARD RN

Introduction: Both pneumothoraces and hemothoraces are well-recognized injuries resulting from a variety of traumatic events, quite often requiring placement of one or more chest thoracostomy tubes. With few exceptions, general sentiment regarding chest tube management condemns the practice of clamping chest tubes out of concern for the possibility of developing tension pneumothoraces. A prospective protocol was designed to increase the rapidity of chest tube removal and decrease patient length of stay based on clamping of the chest tube with a subsequent radiograph to prove absence of recurrence prior to removal. This was developed under the premise that, should a recurrent pneumothorax or tension pneumothorax develop, it was possible to simply unclamp the tube rather than place a new thoracostomy tube. The purpose of the report is to summarize the safety and complications of a chest tube clamping trial.

Methods: Review of the trauma registry from January 2000 to May 2006 identified 243 patients sustaining a pneumothorax, hemothorax, or combination thereof. Of this population, 134 patients had their chest tube clamped during their treatment course. The patients were differentiated by age, gender, race, mechanism of injury, and type of injury. Clamping was allowed if there was no identifiable air leak, no existing pneumothorax, and minimal output. A post-clamping chest radiograph was obtained after six hours prior to removal. Safety and effectiveness was compared based on compliance with the existing clamping protocol and mechanism of injury.

Results: The demographic characteristics of the patients undergoing clamping according to the protocol (55.1%, n=134) as compared to those not following the clamping protocol (44.9%, n=109) were similar based on age, gender, and mechanism of injury. The frequency of pneumothoraces, hemothoraces, and combined hemo/pneumothoraces were also similar for the clamped and unclamped patients. Subsequent radiograph showing recurrence or patient symptoms were noted in thirteen patients (9.7%), requiring unclamping. Nine patients (6.7%) who had passed the clamping trial prior to discontinuation required reinsertion of a chest tube secondary to recurrent pneumothoraces. One clamped patient required urgent insertion of a second chest thoracostomy tube secondary to occlusive thrombus within the residing chest tube. No deaths have been documented as a result of the protocol.

Conclusions: The clamped chest tube allows for more definitive assessment of persistent occult air leaks based on a six-hour chest radiograph and avoidance of premature removal (9.7% in this study). Chest thoracostomy tube clamping does not appear to have any adverse effects on patient safety. Further refinements may be needed as there were still some patients who required re-insertion despite an absence of pneumothorax after a six-hour clamping trial (6.7% in this study). Given this data, we believe that a prospective study with clamping is warranted to evaluate whether or not such a system can increase the speed with which chest tubes are removed while maintaining patient safety.

13. Car Surfing: A Brief Look at the Physics and Trauma Associated with a Growing Dangerous Phenomenon

SA CLARK MD, AJ MANGRAM, JA KILMER, EL DUNN MD

Introduction: Car surfing is a dangerous new pastime for American youth. Car surfing is an activity that is defined as standing (or lying) on a vehicle while it is being driven. The amount of gee forces generated by a moving vehicle at high speeds can become extraordinarily high. When these gee forces are applied to the human body, it frequently results in severe injuries that often require significant surgical intervention. Despite its destructive nature however, there are many internet sites that encourage this behavior and view it as amusing. As a result car surfing is becoming increasingly popular.

Methods: We conducted a retrospective chart review of all patients injured as a result of car surfing over the last 4 years at our Urban Level II trauma center. Data collected included Injury Severity Score (ISS), Revised Trauma Score (RTS), age, gender, injury pattern, surgical intervention, and length of stay. Physical analysis of force inflicted on the human body was studied by measuring various gee forces.

Results: Eight car surfers were identified. The average age was 17. The average Revised Trauma Score was 6.8 with an average Injury Severity Score of 16.9. Five patients were admitted to the ICU. Four of these five patients needed to be intubated for ventilatory support. Five of the eight patients had significant intracranial injuries. Two patients had epidural hematomas that required evacuation. Two other patients had subdural hematomas that were treated non-operatively, and one patient had a subarachnoid hemorrhage that was also treated non-operatively. Four of the eight patients required surgical intervention. It was appreciated that speed of only 25 mph can yield gee forces that cause significant bodily harm. There were no deaths in this study.

Conclusions: Car surfing leads to severe injuries that can result in morbid injuries and expensive health care bills. Information outlets such as the internet need more regulation and surveillance to prevent the exposure of dangerous activities to impressionable youths.

More attention, on a national level, should be paid to educating American youth of the dangers of car surfing in an attempt to stop this phenomenon.

14. Recombinant Activated Factor VII in the Treatment of Trauma Patients with Coagulopathic Hemorrhage

JA AUCAR MD, E GAMBARO MD

Introduction: Hemorrhage, exacerbated by systemic coagulopathy is associated with increased morbidity and risk of mortality in acutely traumatized patients. Conventional therapy, consisting of crystalloid and blood component therapy is frequently inadequate to prevent exsanguination, even following mechanical control of injuries. Recombinant activated Factor VII (rVIIa), approved for treatment of hemophilia, has been reported to reduce traumatic bleeding in an animal model and in sporadic clinical cases. Our objective is to report our experience with the use of rVIIa to treat life threatening traumatic hemorrhage in clinical series of seven patients.

Methods: We report a retrospective case series of seven patients who received rVIIa as a component of treatment for ongoing hemorrhage in association with traumatic coagulopathy. The rVIIa was delivered in a dosage range between 50 and 105 micrograms per kilogram. All patients received the agent during or immediately after their first surgical intervention, on the day of presentation. Response was assessed by alteration in the Prothrombin Time (PT), International Normalization Ratio (INR), activated Partial Thromoplastin Time (aPTT) and clinical assessment for ongoing bleeding.

Results: One of the patients was less than 2 years old. The other 6 were adults with a mean age of 49.3 years. The mean ISS was 21.4 +/- 9.3. One patient was a Jehova's Witness with hepatic Cirrhosis. All patients had an elevated pre treatment PT (23.0 +/- 3.5 sec), INR (2.8 +/- 0.7), and PTT (58.8 +/- 18.2 sec). The mean decrease and standard deviation for each parameter as a number (and percentage of the pretreatment value) were statistically significant:

PT	10.9 +/- 3.6	(-53.4%)	p<0.001 paired t-test
INR	1.9 +/- 0.7	(-33.4%)	p=0.001 paired t-test
PTT	20.4 +/- 13.1	(-34.7%)	p=0.02 paired t-test

Red cell and plasma transfusions dramatically decreased following treatment with rVIIA. Four of the 7 patients in this series, including the cirrhotic patient survived (mortality = 43%) with an average length of stay of 20.3 days.

Conclusion: This retrospective series supports the use of rVIIa in the treatment of life threatening traumatic hemorrhage, on the basis of its effect on coagulation parameters. The study lacks the design and power to identify any survival advantage based on the use of rVIIa. Prospective comparative data to identify specific indications, dose response, and impact on survival are lacking.

15. A Retrospective Review of Trauma Outcomes for Solid Organ Abdominal Injuries at a Level II Trauma Center

CF SHARP MD, A MANGRAM MD, E DUNN MD

Introduction: An ongoing review of the quality of outcomes is central to today's community hospital practice. We sought to compare the outcomes of solid organ abdominal injuries at our high volume Level II trauma center with outcome data from the National Trauma Data Bank (NTDB).

Methods: A retrospective review of data on liver, spleen, and kidney injury and their outcomes was compared to the NTDB during the time period 1/1998 to 12/2005. We then further analyzed the cause of death of those who died within each group.

Results: There were 924 admitted patients with solid abdominal organ injury; 504 liver injuries, 424 spleen injuries, and 215 kidney injuries. Non-operative rate for liver injury was 77.1% for our institution and 85.6% for the NTDB. Failure of non-operative management of liver injury was 0.3% of the 389 patients with 16.9 % overall mortality in our institution, and 2.3% in the NTDB with 15.6% mortality. Non-operative rate for spleen injury was 60.3% for our institution and 71.3% for the NTDB. Failure of non-operative management of spleen injury was 3.9% of the 304 patients with 10.1% overall mortality in our institution and 5.2% in the NTDB with 13.7 % mortality. Non-operative rate for kidney injury was 88% for our institution and 88.4% for the NTDB. Failure of non-operative management of kidney injury was 0% of the 190 patients with 17.7% overall mortality in our institution and 1.1% in the NTDB with 13.1 % mortality.

Conclusion: Regular review and comparison of outcomes in the care of trauma patients, such as that provided by the NTDB, allows trauma centers to uphold and improve a high level of care reflected by the NTDB. Trauma care can be provided at comparable qualities at a level II trauma center. Where the catchment area demands such services, level II centers can help alleviate the overburdened Level I centers without compromise of outcomes.

16. Esophageal and Duodenal Stent Placement for Malignant Obstructions of the Upper Gastrointestinal Tract

GW DITTRICK MD, JP LAMONT MD, DB MALLAT MD

Background: Malignant obstruction of the upper gastrointestinal tract can severely impact quality of life in patients with unresectable malignancies. Enteral stents can be an effective palliative treatment for these disabling problems. This study evaluated the feasibility, safety, and patency of esophageal and duodenal stents for patients with upper gastrointestinal obstruction secondary to unresectable malignant disease.

Methods: A retrospective analysis was conducted examining the clinical outcomes of all patients who underwent esophageal or duodenal stent placement over the past 3 years at a single institution.

Results: Thirty-three patients underwent esophageal (n=16) or duodenal (n=17) stent placement for malignant obstructions. Patient diagnoses included: esophageal cancer (n=11), pancreatic cancer (n=11), gastric cancer (n=3), lung cancer (n=3), metastatic colonic cancer (n=2), metastatic breast cancer (n=2), and cholangiocarcinoma (n=1). Stent placement was successful in all patients. Mean age was 64 ± 12 years. A total of 42 stents (metallic, n=30 and plastic, n=12) were placed with 2 periprocedural complications (5%). Complications included one incidence of aspiration requiring respiratory therapy and one incidence of bleeding from tumor at the distal end of a metallic stent which was treated with photocoagulation. Ten patients (30%) required a subsequent procedure for stent failure or recurrent obstruction. Stent migration occurred with 4 stents (10%) at a mean of 91 ± 87 days. Two of these patients were treated with a second stent as a bridge and 2 patients had their stents removed. Obstructing tumor ingrowth occurred in 7 stents (17%) at a mean of 96 ± 89 days. This was treated with a second stent in 3 patients, laser ablation of tumor in 1 patient, and a combination of both in 3 patients. Stent collapse occurred with one stent (2%) at 35 days and was treated by additional stent placement. Mean survival after the initial procedure was 77 ± 68 days.

Conclusions: Enteral stents can be placed successfully with minimal morbidity in patients with malignant obstructions of the upper gastrointestinal tract. Stent failure occurs infrequently and can be treated effectively with repeat stenting and/or laser ablation. Enteral stenting is a reasonable palliative procedure in patients with limited survival.

17. A Computed Tomography Scoring System Can Predict the Need for Surgery in Small Bowel Obstruction

K JONES MD, RA LEBRON MD, AJ MANGRAM MD, L NADALO MD, EL DUNN MD

Background: Small bowel obstruction (SBO) is a common dilemma faced by general surgeons. A number of these patients have had multiple intra-abdominal procedures, as well significant co-morbid conditions making them poor operative candidates. A timely and accurate diagnosis is crucial, based on history, physical exam, and radiographic studies. Computed tomography (CT) has become an increasingly common diagnostic modality. Very little has been published correlating the radiographic findings of SBO with the treatment outcomes. The aim of this study was to define a set of CT criteria that may help determine whether a patient would require operative intervention.

Methods: A retrospective chart review was performed over an eighteen month period. Patients diagnosed with SBO or partial SBO (PSBO) who had a CT scan performed were included. Patients with malignant ascites, obstruction due to malignancy, and without CT evidence of SBO were excluded. The presenting history and physical (including types of previous surgeries and comorbidities), radiologic findings, therapeutic interventions and outcomes were examined. CT scans were then reviewed independently by a staff radiologist blinded to the clinical outcome. A scoring system based on seven radiographic criteria was then developed. The criteria included dilated small bowel, transition point, ascites, complete obstruction, partial obstruction, closed loop, and/or free air. Statistical analysis was performed on the data.

Results: From March 1, 2004 to August 30, 2005, 96 patients were found to have the diagnosis of SBO or PSBO and documented CT. Seventy-four patients had undergone prior intra-abdominal procedures, including 15 appendectomies, 31 hysterectomies, 22 colectomies, and 22 cholecystectomies. All patients were admitted to the hospital and CT scans were performed within 12 hours of admission. Fifty-five percent were taken to the operating room (OR) over an average of 1.9 days (range 1 to 12 days). Seventy-nine percent of these patients went to the OR within the first 24 hours. Lysis of adhesions was performed in 38%, small bowel was resected in 47%, and incarcerated ventral hernias were found in 11%. Ischemic bowel was found in 11% of the cases. The CT scoring system was then correlated with the actual treatment. A score of 8 or higher predicted the need for surgery 75% of the time. When looking at the criteria individually, patients with a CT reading of complete obstruction, dilated small bowel or free fluid were operated on 77%, 66% and 65% of the time, respectively. Additionally, those patients that had CT findings of complete obstruction in combination with dilated small bowel went to the OR 79% of the time, and those with a transition point and dilated small bowel were operated on in 76% of the cases.

Conclusion: A CT scoring system can successfully predict the need for surgery 75% of the time. Likewise, specific criteria, when present in combination, can predict the need for operative intervention in 79% of cases with SBO.

18. Short-Term Survival Outcomes Following Transvaginal NOTES Cholecystectomy Using Magnetically Anchored Instruments

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Introduction: Optimal techniques for Natural Orifice Translumenal Endoscopic Surgery (NOTES) are evolving. We previously reported successful transvaginal NOTES cholecystectomy in a non-survival porcine model using a Magnetic Anchoring and Guidance System (MAGS). The purpose of this study was to determine short-term survival outcomes following transvaginal cholecystectomy.

Methods: Procedures were performed in pigs (n=3, 29-34kg) survived for 14 days. The abdomen, vagina, and perineum were prepped with betadine; sterile instruments were used. Through a vaginotomy created under direct vision, a rigid access port (20mm inner diameter, 50cm long) with integrated instrument tethers (electric, mechanical, and pneumatic) was inserted into the peritoneal cavity and used to maintain a CO₂ pneumoperitoneum. MAGS instruments were deployed through the port and held in place on the peritoneal surface using magnetic coupling via an external handheld magnet which was optionally exchanged for an 18ga percutaneous threaded needle anchor; instruments included 2 flexible graspers and a cautery dissector. A gastroscope was used for visualization, suctioning, irrigation, cystic duct and artery ligation (clips), and specimen retrieval. The vaginotomy was closed using running sutures under direct vision. Quantitative cultures were performed on peritoneal washings collected after port insertion, prior to port removal, and at autopsy.

Results: NOTES cholecystectomy was successfully performed in all cases with no intraoperative complications, equipment failures, or conversions. Operative time was 4.4 ± 0.4 hours; blood loss was minimal. All animals thrived postoperatively and displayed no signs of complications or infections; mean weight gain was 3.6kg. At autopsy, there were moderate gallbladder fossa adhesions, minimal intestinal or pelvic adhesions, and no inadvertent organ injuries, infections, or abscesses; all cystic duct and artery ligations were secure (no bile leaks) and all vaginotomy closures were intact. Aerobic and anaerobic cultures from peritoneal washings at all time points were negative.

Conclusions: Currently, the transvaginal approach may be optimal for NOTES since well accepted methods may be used to achieve effective sterility, safe peritoneal access, and secure entry point closure. Additionally, a large rigid access port simplifies engineering solutions for instrumentation and pneumoperitoneum maintenance. Our short-term outcomes support the safety and efficacy of transvaginal cholecystectomy using the MAGS platform. Further advancements are expected to foster improved operative efficiency and application of this technology to more advanced procedures.

19. Combined Aortic Debranching and Thoracoabdominal Aortic Endovascular Repair (Tevar) is Effective but at a Cost

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GP CLAGETT MD, FR ARKO MD

Introduction: Combined aortic de-branching and TEVAR (“hybrid repair”) has recently been reported as an effective method of management of complex aortic pathology in high risk patients. The purpose of this study is to review our experience with hybrid repairs and perform a cost analysis of this procedure within our institution.

Methods: A retrospective chart review was performed of 14 patients with complex aortic pathology managed with hybrid repair between November 2005 and September 2006. Patients were treated for disease of the aortic arch (4), the thoracoabdominal aorta (8), and the abdominal aorta (2). Aortic de-branching was performed with artificial conduit (5) or superficial femoral-popliteal vein (9), along with TEVAR with Gore-TAG grafts (10), Cook-Zenith/Cook extension grafts (3) or Dacron grafts (1). Follow-up CT scans were performed one month post-operatively.

Results: Mean age was 73.1 years (range 59-86). Pre-existing co-morbidities were seen in 13 (93%) including COPD (5), CAD (7), Diabetes (2), and Renal Failure (1). Five patients (36%) had a history of aortic surgery. Technical success, defined as surgical exclusion of the diseased aortic segment with adequate revascularization of debranched vessels, was achieved in all patients. On follow-up, type II endoleaks were observed in 3 patients (21%), none of which have required further intervention. Exclusion of the diseased segment required carotid bypass (6), mesenteric bypass (8) [including revascularization of the SMA (8), celiac (6), and IMA (1)] and renal artery bypass (6). There were no peri-operative deaths or spinal cord ischemia. Median hospital stay was 12.5 days (range 2-37), and median ICU stay was 4.5 days (range 1-37). Major morbidities included acute tubular necrosis (1), myocardial ischemic event (3), cardiac arrhythmia (2), peri-operative TIA (1) and peri-operative CVA (1). Mean direct hospital cost was 40,873 US dollars. Mean payment to the hospital was 32,884 US dollars.

Conclusions: Hybrid TEVAR provides a less invasive method of managing complex disease in high risk patients with resultant low peri-operative mortality. However, this new technology is expensive and ultimately comes at a significant cost to the hospital with a nearly 20% loss in revenue per case.

20. Aortic Reconstruction with Femoral-Popliteal Vein: Graft Stenosis Incidence, Risk and Re-intervention

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RJ VALENTINE MD, GP CLAGETT MD

Introduction: The purpose of this study is to identify specific risk factors predictive of graft stenosis after Neo-aorto-iliac reconstruction (NAIS) using superficial femoral-popliteal vein (SFPV) for graft infection and to determine the incidence of graft stenosis in our patient population.

Methods: A retrospective chart review was performed of 182 patients within our institution who have undergone NAIS repair for infected aortic grafts between February 1992 and December 2006. Patients were evaluated for incidence of vein graft stenosis, risk factors predictive of stenosis, rate of re-intervention and the type of intervention required to assist patency. Specific risk factors assessed include gender, SFPV graft size, smoking history, and medical co-morbidities.

Results: Of the 182 NAIS procedures performed, 11 (6.0%) patients required 13 graft revisions (two patients required second interventions) using open (9) or endovascular (4) techniques. This provided an assisted primary patency rate at 2 and 5 years of 92% and 89%. Median age of revised and non-revised patients was 56.5 and 58.5 years, respectively, and mean time to revision was 23.3 months (range 6.0-83.5 months). Median SFPV graft size in the non-revised patients was 7.8mm (range 4.0-11.35mm), and 6.58mm (range 4.65-8.70mm) in the revised group. Multivariate analysis revealed small vein graft size (<7.15mm) as an independent predictor of stenosis ($p=0.007$). Using a logistic regression model, with PYH of smoking and graft size as covariates, these factors were associated with graft stenosis, with $p=0.03$ and 0.01 , respectively. Patients with coronary artery disease (CAD) combined with small graft size were found to be at high risk for stenosis, with 7/35 (20%) requiring revision ($p<0.0001$ vs. patients without both factors).

Conclusions: Significant SFPV graft stenosis after NAIS is an uncommon occurrence. Patient risk factors including small graft size, history of CAD, and smoking are predictive of graft stenosis with need for intervention to maintain graft patency. Patients exhibiting these risk factors merit close post-operative surveillance and aggressive medical management for risk reduction.

21. Residency Endoscopic Training

J FITZWATER MD, A HALLDORSSON MD, EE FREZZA MD, MBA

Introduction: The American Board of Surgery now requires surgical training programs to provide instruction in gastrointestinal endoscopy. In some of the studies published, they found that despite the high number of endoscopies, only 71% of the trainees were able to perform endoscopy and 67% were able to perform colonoscopy in clinical practice. The aims of this paper are to evaluate the number of endoscopies performed by our residents, excluding the interns, to see if they will be proficient enough to be clinically active when they begin their profession.

Methods: We reviewed the upper and lower gastrointestinal endoscopies performed in our institution, both in the operating room and in our gastrointestinal lab by the surgical resident, together with the surgical staff. We evaluated a two-year period. We included upper endoscopy, lower endoscopy and flexible sigmoidoscopy.

Results: On average, 147.5 upper and lower endoscopies were performed per year. Our program encountered three categorical residents per year, for a total of 15 categorical residents; excluding the interns, we have 12 categorical residents. If we divide an endoscopy per resident, excluding the interns ($n=12$), each resident performs 12.3 endoscopies per resident per year. By multiplying this number by four years, we obtain a total of 49.2 endoscopies per resident at the end of the surgical residency.

Conclusion: There is a total of 50 endoscopies that need to be performed by the end of residency, according to the new standard. We need to build an endoscopic service to increase the number of cases. In our paper, we suggest the resident finishing with 49.2 cases, which accounts for 17.5 cases per resident per year, excluding the interns. More studies need to be performed to appropriately gage this number.

22. The Use of Platelet Function Assay in the Management of Patients with Intracranial Hemorrhage

MR BOWER MD, LB PETREY MD, ML FOREMAN MD, BU GIRARD MBA

Background: Abnormal platelet function caused by antiplatelet medications has been associated with poorer outcomes in patients with traumatic brain injuries. The effectiveness of platelet function can be objectively assessed by a platelet function analyzer (PFA-100, Dade International Inc., Miami FL). The purpose of this study was to analyze outcomes based on baseline and serial platelet function assay (PFA) measurements following traumatic brain injury for patients on antiplatelet medication. We also assessed the usefulness of serial PFA measurements in treating platelet dysfunction.

Methods: A retrospective review of patients older than 50 years of age admitted with traumatic brain injuries between January 1, 2000 and September 9, 2006 was performed. Patients with documented use of antiplatelet medications and/or elevated PFA values were selected. Attempts at treating the platelet dysfunction of these patients with DDAVP (desmopressin) or platelet transfusion were reviewed. Patient demographics and outcomes were also compared.

Results: There were 712 patients admitted with traumatic intracranial hemorrhages during the study period, and 118 (17%) met inclusion criteria: 5% (n=38) had an abnormal PFA and a known history of taking aspirin, clopidogrel, or both; 3% (n=24) had a documented use of antiplatelet medication and a normal PFA; and 3% (n=32) had an abnormal baseline PFA and no clearly documented use of antiplatelet therapy. Amongst patients on antiplatelet medication, 60% of the patients taking aspirin had an elevated PFA. 50% of the patients taking clopidogrel had an elevated PFA, and 82% of patients taking both aspirin and clopidogrel had an elevated PFA. The mortality rate for patients on antiplatelet medications with abnormal PFA values at baseline was 13%, and the mortality rate for those with normal PFA values was 8%. The mortality rate for those taking aspirin was 7%, for those taking clopidogrel was 20%, and for those taking both aspirin and clopidogrel 60%. The mean Injury Severity Scores for those with abnormal PFA (10.9) and those with normal PFA (11.4) was not significantly different. Also the mean Glasgow Coma scale score for those with normal PFA (12.2) and abnormal PFA (13.3) was not significantly different. The most common mechanism of injury was falling (64%, n=76) followed by motor vehicle collisions (18%, n=18). 55% (n=65) had isolated head injuries and no additional trauma.

Platelet transfusions and administration of DDAVP were used to attempt to correct abnormal PFA's. 59% (n=70) were not treated because they either had a normal PFA (n=24) or were deemed neurologically stable and did not require treatment (n=46). Of the patients that were treated, 58% (n=28) had documented normalization of their PFA within 48 hours. The remaining patients either required greater than 48 hours

to correct (n=7), died before being corrected (n=3), or lacked documentation of PFA post treatment (n=10). Of the patients that were successfully corrected within 48 hours, 50% (n=14) were treated with DDAVP alone. The remaining 50% were either treated with platelets transfusions alone (21%, n=6) or a combination of platelets and DDAVP (29%, n=8). The mean number of platelet transfusions was 2.3 units

Conclusion: Abnormal baseline PFA in elderly trauma patients with traumatic brain injury predicts for an increased risk of mortality. In addition, the use of aspirin and clopidogrel in combination results in a significantly higher mortality risk in patients with head injuries. Baseline PFA should be measured in all patients with intracranial hemorrhage because it helps identify patients with unknown use of antiplatelet medication that have abnormal platelet function. Measuring PFA also helps avoid unnecessary treatment in patients on antiplatelet medication that have normal platelet function. Serial PFA measurements can provide a useful and accurate means of monitoring the correction of platelet function in patients with traumatic intracranial hemorrhage.

50. Preliminary Results of a Pilot Study of Circulating Tumor Cells in Patients Undergoing Surgery for Primary Breast Cancer

T DAO MD, N THEPJATRI MD, JA KUHN MD, SM KNOX MD, MD GRANT MD, JJ NEMUNAITIS MD, SA LIVINGSTON MSN RN, JP LAMONT MD

Introduction: Circulating Tumor Cells (CTCs) have recently been shown to be an independent predictor of progression-free and overall survival in patients undergoing treatment for metastatic breast cancer. This study is to evaluate the presence and significance of CTCs in patients undergoing surgical resection of clinically localized primary breast cancer.

Methods: Patients undergoing surgery for clinically localized primary breast cancer were enrolled in this prospective study. Patients receiving neoadjuvant chemotherapy or with inflammatory breast cancer were not eligible. Four 7.5 cc vials of peripheral blood (total volume 30 cc) were drawn pre-operatively (PreOp) and at 2 weeks post-operatively (PostOp). The samples were centrifuged and the sera combined to a final volume of 7.5 cc, and the CellSearch (Veridex, LLC) system was used to identify circulating epithelial cells. Data was collected on other prognostic factors including tumor size, grade, hormonal receptor status, proliferative index, HER-2 expression, and regional lymph node involvement.

Results: A total of 14 patients with primary breast cancer were enrolled at a single tertiary referral center. The mean age was 58 (range 36-88). Primary tumor size was <2cm (n=5), 2-5cm (n=8), and >5cm (n=1). Lumpectomy was performed on 4/14 (29%). Mastectomy was performed on 10/14 (71%). Sentinel node biopsy was performed on 11/14 patients (78%). Of those, 4/11 (36%) were positive, and axillary dissection was performed. In those patients who had a completion axillary dissection, 3/4 (75%) were found to have additional positive nodes.

Six patients (43%) had detectable CTCs PreOp, while 2 patients (14%) had them PostOp. Both patients with CTCs PostOp also had PreOp detectable CTCs. The mean number of CTCs in positive patients PreOp was 4.7 (range 1-21). Based on T stage, the likelihood of any detectable CTCs was T1: 2/5 (40%), T2: 3/8 (38%), and T3: 1/1 (100%). Based on N stage, the likelihood CTC detection was N0: 1/8 (12%), N1 or greater: 5/6 (83%). Of the 6 patients found to have CTCs PreOp, 2 (33%) had positive CTCs 2 weeks PostOp. Further CTC levels will be drawn following adjuvant chemotherapy in these 2 patients.

Conclusions: This preliminary data suggests that CTCs are present in patients presenting for breast surgery 43% of the time. The likelihood of detecting CTCs doesn't appear to correlate with T stage, but does appear to strongly correlate with pathologically positive nodes. Further study will allow correlation with other pathological variables such as MIB-1 fraction, Her-2 Neu, and hormone receptor status. Long term clinical follow up is required to determine the clinical significance of CTCs in patients undergoing breast surgery.

51. Preoperative Micronutrient Deficiency in Morbidly Obese Patients

JA KUHN MD, R LEIDNER, DA ARNOLD, TL FISHER, TM MCCARTY

Background: Preoperative nutritional status in morbidly obese patients is poorly understood. Baseline deficiencies of thiamine and Vitamin D have been reported. The current study was designed to analyze a broad range of intracellular vitamins and minerals in morbidly obese patients prior to weight loss surgery.

Methods: One hundred consecutive patients from a prospective IRB-approved registry underwent preoperative testing prior to a Roux-en-Y gastric bypass. Serologic measurements of B-12, iron, and folate were recorded. In addition a broad spectrum of vitamin, mineral, and other micronutrients were assayed using a functional analysis based on lymphocyte growth and DNA synthesis with in-vitro manipulation of individual nutrients in media (Spectracell, Inc.). Predictors of specific deficiencies were analyzed.

Results: The patient characteristics included twenty-two men and seventy-eight women, with an average age of 39.7 and an average BMI of 46.0. There were a total of 25 patients with diabetes and 75 patients without diabetes. Intracellular functional deficiencies included B-12 (34%), zinc (32%), Calcium (29%), vitamin D (24%), and folate (24%) Serological deficiencies were found in B-12 (6%) and iron (5%). There were no significant predictors for deficiencies based on gender, diabetes, age < 50, BMI > 50, or race.

Conclusion: Micronutrient deficiency in morbidly obese patients is common preoperatively when compared to normal patients. Serologic levels of B-12 and folate may underestimate the degree of intracellular deficiency when compared to an intracellular lymphocyte assay with in-vitro nutrient manipulation. Preoperative micronutrient supplementation may be beneficial in morbidly obese patients undergoing weight loss surgery.

52. Large Adrenal Teratoma in a Neonate. A Case Report

CJ BLEWETT MD, GS DHILLON MD, JR RINARD MD, JC JAMES BS,
AJ CECALUPO MD, EE FREZZA MD, MBA

Introduction: Teratomas most commonly occur in the pelvic and the sacrococcygeal regions. Retroperitoneal teratomas are extremely rare. To date, there have been no published reports of neonatal adrenal teratoma.

Here we report a presentation and surgical management of an adrenal teratoma in a 4-day-old child.

Case Report: A male child, weighing 3841 g, was delivered by elective cesarean section at 38 4/7 weeks gestation to a G2P2, 28-year-old Caucasian mother. Pregnancy and birth were without any complications. He required oxygen supplementation secondary to respiratory embarrassment due to a large abdominal mass. Ultrasound examination showed this to be 11 by 7 by 8 cm mixed cystic, solid lesion, located in the retroperitoneum. The dimensions and geometry of the mass were further evaluated by CT and MRI scans. Serum alpha-fetoprotein, urine homovanillic acid and vanillylmandelic acid levels were within normal range. The mass was completely excised. Pathological examination revealed a teratoma composed of multiple tissues including squamous enteric and respiratory epithelia, smooth muscle, cartilage, bone, mature and immature glial tissues. Abdominal-pelvic CT scan and serum AFP levels at 13 months of age showed no evidence of recurrence.

Conclusion: Teratomas are an uncommon tumor. If they are aggressively treated with surgical and oncological methods, they have a good rate of success.

53. Lymphoepithelial Cyst of the Pancreas Tail. Case Report

R FORD MD, MS WACHTEL MD, EE FREZZA MD, MBA

Introduction: Lymphoepithelial cyst (LEC) of the pancreas is a lesion that comprises a stratified squamous epithelial lining atop dense lymphoid tissue.

Methods: This is a 56-year-old man presented with recurrent abdominal pain. A CAT scan showed a cystic lesion between the spleen and the pancreas. A distal pancreatectomy with splenectomy was performed. All pancreatic tissue was submitted for histologic examination. The patient recovered on the floor and the drainage was taken out postoperative day 2 after the patient started eating an advanced diet.

Results: The cyst comprising benign stratified squamous epithelium atop dense lymphoid tissue is consistent with LEC.

Conclusion: Lymphoepithelial cyst of the pancreas, often an incidental radiologic finding, may, as in this case, cause symptoms that require surgical correction. For cysts near the splenic hilum, distal pancreatectomy and splenectomy are indicated. This case is important because it demonstrates that close cooperation between the pathologist and the surgeon may be required to document the cyst and to exclude cancer.

54. Endoscopic Stitch Removal at the Gastrojejunostomy after Gastric Bypass for Morbid Obesity

R FORD MD, M ROBINSON MD, MS WACHTEL MD, EE FREZZA MD, MBA

Introduction: Gastric bypass (GBP) is a common bariatric procedure that most often includes a gastrojejunal anastomosis (GJA) with either staples or stitches, most often nonabsorbable. Nonabsorbable sutures, when rejected, produce symptoms that require medical attention.

Methods: We retrospectively reviewed all patients that were diagnosed with foreign body at the GJA that required stitch removal in the last 2 years. All patients presenting with complaints of recurrent heartburn, epigastric pain, difficult digestion, and gastritis.

After endoscopic visualization with a double lumen endoscope, visible stitches were cut and retrieved.

Results: Five women underwent this procedure. They all had laparoscopic GBP 18+4 months prior. They had a mean age of 45 years and a mean excess weight loss of 61% at two years. The procedure occurred on an outpatient basis, relieved symptoms in all cases, and yielded no complications.

Conclusion: Stitch rejection, an increasingly-observed complication of gastric bypass, can be quickly and safely resolved in an outpatient setting by simple endoscopic technique. This paper might suggest the option of using absorbable stitches for the GJA.

55. Extended Laparoscopic Distal Pancreatectomy

R RASSADI MD, DR JEYARAJAH MD

Introduction: Recently, reports of laparoscopic distal pancreatectomy with or without splenectomy have been published, though extended distal pancreatectomy has not been reported. Here we demonstrate the technique and feasibility of extended laparoscopic distal pancreatectomy and splenectomy in the treatment of lesions of pancreatic neck.

Method: After laparoscopic exploration of abdomen, lesser sac was entered between greater curvature of stomach and transverse colon. Splenic vessels were dissected to the right of the tumor, located at pancreatic neck. Splenic artery was transected close to its origin and splenic vein was transected close to its junction with superior mesenteric vein. The pancreas was transected and dissected en bloc with spleen and removed in a large endo bag.

Results: There were no complications intraoperatively as well as in postoperative period. Patient was discharged home on postoperative day four. The margins of resection were negative at final pathology.

Conclusion: Extended distal pancreatectomy and splenectomy is safe and feasible laparoscopically. Laparoscopic approach is also an oncologically sound procedure with the advantage of minimizing hospital stay.

56. Use of Harmonic Scalpel in Pancreaticoduodenectomy

DR JEYARAJAH MD, R RASSADI MD

Introduction: Harmonic technology has been used in different areas of general surgery. This video demonstrates the safety and efficacy of Harmonic technology in dissection of ligament of Treitz and retroperitoneal attachments of pancreatic head and uncinate process during Whipple procedure.

Method: After transection of jejunum, Harmonic Ace 36P (Ethicon Endosurgery, Cincinnati, Ohio) was used to divide its mesentry up to ligament of Treitz. mesentry of duodenum was similarly ligated and divided. Harmonic Ace was also used to divide the retroperitoneal attachment of pancreas, therefore separating it from superior mesentric vein (SMV) and superior mesenteric artery (SMA).

Results: Harmonic technology was used in 45 consecutive pancreaticoduodenectomies. There was no complication associated with its use intraoperatively or postoperatively. Operative time was also reduced.

Conclusion: Harmonic technology is being used increasingly in different open as well as laparoscopic procedures. Here in this video we show the technique as well as safety and efficacy of its use as part of pancreaticoduodenectomy. The use of Harmonic in our series of pancreaticoduodenectomies has resulted in no additional complication with benefit of reducing the operative time.

57. Transjugular Intrahepatic Portosystemic Shunt for Treatment of Radiation Proctitis

AE HARZMAN MD, J LOPEZ MD, GA SAROSI MD, M ASOLATI MD

Introduction: Radiation proctitis is a known complication of radiation therapy for prostate cancer.

Method: We present the first case of the use of transjugular intrahepatic portosystemic shunt (TIPS) to treat radiation proctitis.

Results: A 56 year old man presented to the emergency room with rectal bleeding and a history of radiation therapy for prostate cancer and hepatitis C. He had recently undergone colonoscopy for mild rectal bleeding, revealing radiation proctitis that was treated with argon plasma coagulation. On arrival to the emergency room, he required transfusion, and despite attempts at multiple forms of topical care, including multiple applications of formalin, he continued to require transfusion. Physical examination concurrently revealed a palpable hepatic mass, and CT and MRI of the abdomen revealed a 6.6cm hepatoma. Having failed multiple therapies and receiving several units of packed red blood cells, we referred him for measurement of portal venous pressure and possible TIPS. His portal venous to right atrial pressure gradient of 15mmHg was reduced to 5mmHg with TIPS. No further bleeding occurred.

Conclusion: At the conclusion of this report we discuss other treatments for radiation proctitis.

58. Hard Operative Cost of Bariatric Surgery

G DHILLON MD, A BARTON BS, MS WACHTEL MD, EE FREZZA MD, MBA

Introduction: We compared the operative costs of laparoscopic gastric bypass (LGBP) to those of laparoscopic gastric banding (LGB).

Methods: Data from the Southwest region of the United States were used to derive cost estimates. Operative costs were summarized into three categories: 1) anesthesia professional charges; 2) operating room charges; 3) instrument charges.

Results: Anesthesiologist charges accrue from the beginning of induction until the patient is received by the post-anesthesia recovery room. Their professional charges for LGB, \$1400, are nine-tenths of those for LGBP, \$1540.

Operating room costs are proportionate to procedural duration. LGBP costs \$7553 and LGB costs \$5546. There is, however, a range of charges.

The cost of the band makes the disposable instrument costs for LGB, \$3195, three-halves those for LGBP, \$1901.

The total operative costs for LGB, \$10,141, are over five-sixths those of LGBP, \$11,761, notwithstanding that LGB takes less time compared to LGBP.

Conclusion: Disposable instrument costs for LGB, as a fraction of total operative costs, are twice those of LGBP. Because the greatest potential price reductions due to technologic innovation and competition among vendors in this area, cost containment efforts as regards LGB should focus upon disposable instrument costs.

59. A Survey of the Southwest Surgical Congress Members' Practices in Inguinal Hernia Repair: What is Today's Procedure of Choice?

RC MOOTY MD, AJ MANGRAM MD, EL DUNN MD

Background: More than 600,000 hernias are repaired annually in the United States, making hernia repair one of the most common operations performed by general surgeons. In review of the surgical literature on inguinal hernia repair, it is obvious that a number of procedural options exist. Questions commonly arise as to what surgical herniorraphy technique would best benefit particular patients.

Methods: Active Southwest Surgical Congress (SWSC) members were surveyed regarding inguinal hernia repair. Five different clinical presentations were proposed in an attempt to recognize the current preferred operative technique.

Results: A total of 591 surveys were dispersed, of which 188 (31.8%) responded. Ninety percent (169) of the responding surgeons perform inguinal hernia repairs in their practice. Interestingly, the noted respondents were evenly divided between academic (81, 47%) and private practicing surgeons (93, 53%). Sixty-nine percent (117) of the responding surgeons perform greater than twenty-five inguinal hernia repairs annually. In reference to three unique presented clinical settings involving unilateral inguinal hernia repair; fifty-one (30%), fifty-four (32%), and fifty-two (31%) responding surgeons, respective of each particular setting, indicate that the Lichtenstein Tension-Free Hernioplasty, regardless of a patient's age and/or sex, is the most common procedure of choice. Concerning repair of bilateral inguinal hernias and recurrent unilateral inguinal hernias, forty-nine (29%) and forty (24%) responding surgeons indicate laparoscopic inguinal herniorraphy to be the most common procedure of choice, respectively.

Conclusions: Advances in surgical technique of inguinal hernia repair have appeared in the surgical literature for years. No particular method has surpassed others as the overall method of choice. Our study was implemented in an attempt to recognize what procedure active practicing general surgeons in the Southwest Surgical Congress prefer. Collectively, the Lichtenstein Tension-Free Hernioplasty is the most common procedure of choice. According to the active SWSC members, laparoscopic repair is the favored method of repair in patients with either bilateral or recurrent inguinal hernias. Despite new advances in technical approach, not to mention changes in mesh design, the hernia procedure of choice to date is still extremely patient as well as physician dependent.

60. A Proficiency-Based Curriculum for Robotic Two-Layer Hand Sewn Anastomosis

M. GEDEON MD, MT GOOVA MD, G. WALKER RN, FJ KEHDY MD, H. RIVAS MD, DJ SCOTT MD

Introduction: Validated curricula are now widely available for laparoscopic skills but not for robotic surgery. The purpose of this study was to develop and evaluate a proficiency-based curriculum using an inanimate model for two-layer hand sewn anastomosis using the daVinci robot.

Methods: The model was developed by repetitive iterations using various materials; a Daisy model holding 2 parallel foam intestinal organs was selected. The anastomosis was created using the daVinci system with 2 needle drivers (primary arms) and scissors (4th arm), a 15mm bougie, and four 18cm braided sutures placed in a running fashion on 3cm premarked segments of foam. Objective scoring included time and errors based on a previously validated system; errors included suture fraying, breakage, or laxity, knot security, inaccurate bite size or travel, and anastomotic size and patency. A proficiency level was defined as the mean score of 3 repetitions performed by an expert with extensive robotic experience (score 55 or 35 minutes with no errors). After an orientation, robotic novices (n=3, PGY5-Fellow) performed 3-5 repetitions to determine feasibility, construct validity, and benefit of training. Workload was assessed after each repetition using the validated NASA-TLX visual analogue scale. Comparisons were by t-tests; values are mean \pm s.d. ($p < 0.05$ considered significant).

Results: The curriculum required 25 man-hours for development and the model was suitably durable for repetitive practice; materials cost less than \$100 for the entire study with sutures donated. Baseline trainee and expert performance were significantly different (19.3 ± 12.1 vs. 54.7 ± 4.0 , $p=0.01$), supporting construct validity. Trainees significantly improved after practicing 3.6 ± 1.3 hours, as indicated by baseline and final scores (19.3 ± 12.1 vs. 50.3 ± 3.0 , $p=0.01$), but none reached proficiency in 3-5 repetitions. No difference in workload was detected between novices and experts (68 ± 23 vs. 66 ± 7 , NS).

Conclusion: This model is cost-effective and suitable for proficiency-based robotic anastomosis training. With additional training time, it is anticipated that novices may reach expert performance. Interestingly, robotic surgery seems to even the playing field from a workload standpoint while trainees are acquiring the skills necessary to perform a complex task. Such training may ultimately play a role in surgeon credentialing on robotics prior to proctorship or adoption into practice.

61. Implementation, Construct Validity, and Benefit of a Proficiency-Based Knot-Tying and Suturing Curriculum

MT GOOVA, MD, LA HOLLETT, RN, MA, ST TESFAY, RN, MS, RB GALA, MD, N. PUZZIFERRI, MD, FJ KEHDY, MD, DJ.SCOTT, MD

Introduction: We previously reported the development of a proficiency-based curriculum for open knot-tying and suturing skills using commercially available bench models. The aim of this study was to evaluate implementation of this curriculum within a residency program, and to further assess construct validity and perceived benefit.

Methods: Surgery residents (n=37, PGY1) were enrolled in an IRB-approved prospective study. Over 12 weeks, residents self-practiced to proficiency by achieving previously established expert levels on 2 consecutive repetitions for 12 standardized knot-tying and suturing tasks (objective time and error scoring, composite score = sum of 12 task scores); additional practice was allowed. Trainees viewed a video (appropriate technique and error avoidance) during orientation and subsequently as needed; additional feedback was given upon request. Trainees performed 1 repetition of each task for baseline and post-testing and completed questionnaires. Experts (n=4, practicing surgeons) performed 3 consecutive repetitions of each task to evaluate construct validity. Comparisons were by t-tests and Chi-square (mean \pm s.d reported).

Results: Curriculum implementation required 376 man-hours and material costs were \$776 using donated suture and instruments already on-hand. All trainees achieved proficiency within the designated 12-week period. Overall, trainees completed 141 ± 80 repetitions over 12.7 ± 5.3 hours. Baseline trainee and expert performance were significantly different for all 12 tasks and composite score (732 ± 294 vs. 1488 ± 26 , $p < 0.001$), supporting construct validity. Significant differences were detected between baseline and post-test trainee composite scores (732 ± 294 vs. 1503 ± 131 , $p < 0.001$), proficiency (2.7% vs. 88.5%, $p < 0.001$), and self-rated comfort (42% vs. 91%, $p < 0.001$).

At post-testing, 97% of trainees felt that the curriculum improved their technical skills and 90% perceived benefit in helping them to perform operations; 90% felt that the proficiency levels were “appropriate”, 10% “too hard,” and none “too easy.”

Conclusions: Implementation of this proficiency-based curriculum within the constraints of a residency program is feasible. The self-practice format using video-based tutorials minimizes personnel resources and scheduling issues. Construct validity and curriculum benefit are strongly supported by our findings. Additional studies evaluating transferability to the operating room environment and more widespread adoption of this curriculum are warranted.

62. Four Port Approach for Laparoscopic Banding

M COUCH MD, EE FREZZA MD, MBA

Introduction: We reported our experience of laparoscopic banding (LGB) performed with four trocars.

Methods: Twenty female patients were evaluated after undergoing LGB with VG 10cc lap band. We used one 15mm and two 5mm trocars. The technique involved visualization of the right crura and a minimal dissection done with Harmonic scalpel of the peritoneal reflection on the cruras. A long grasper was passed from the right crura to the left crura and out in the left upper quadrant. The band was inserted through the 15mm trocar and passed around the stomach. Four stitches of 2/0 Surgidac were used to keep it in place. During this part of the procedure, through the left trocar, the assistant was both assisting and retracting the liver.

Results: Body weight loss on average of 51% at 12 months. No complications were reported with this technique. The patients were discharged within 12-16 hours.

Conclusion: We reported a technique with only 4 trocars. This technique is safe and should be considered to further decrease the number of port placement, which is another step in making this operation an outpatient operation. Pictures of the procedure will be presented in detail.

63. Liver, Pancreas and Biliary Surgery: What is the Right Fellowship for the Right Training?

R RASSADI MD, R DICKERMAN MD, E DUNN MD, DR JEYARAJAH MD

Introduction: General surgery residency training has undergone significant changes over the last few years including reduced work hours. Subsequently, exposure to cases in each field of surgery has reduced especially in HPB (hepatobiliary) and upper gastrointestinal (GI) surgery. This will, in turn, motivate more residents to pursue further training in a fellowship training program. The purpose of this report is to determine if a non-transplant, non-surgical oncology fellowship can appropriately train the general surgery resident in organ specific diseases of upper gastrointestinal tract, based on a personal experience.

Method: Based on a personal experience we propose a surgical training model in benign as well as malignant diseases of upper gastrointestinal tract. This fellowship will be focused on organ specific approach to disease processes.

Results: Over the first 3.5 months of a hepatobiliary/upper GI fellowship training program in a relatively high volume community center case logs of the fellow are as follows: 15 pancreaticoduodenectomy, 8 other pancreatic procedures (including total and distal pancreatectomy), 10 esophageal, 8 complex biliary, 6 liver and 12 other major foregut procedures. Many of the procedures were approached laparoscopically when possible including distal pancreatectomy and esophagectomy. During a year of fellowship there would also be a block in transplant service and a dedicated hepatobiliary GI rotation performing endoscopic retrograde cholangiopancreatography (ERCPs) and Endoscopic ultrasound (EUS). There are also weekly multidisciplinary conferences with oncology and non oncology services. Also, the fellowship is designed so that there are no deleterious effects on general surgery residency program.

Conclusion: Based on a personal experience, we propose that an organ specific fellowship program in both benign and malignant diseases of upper gastrointestinal tract provides a practical and focused training in this surgical field. This model is a non-transplant, non surgical oncology fellowship aiming to train the general surgery resident in all aspects of HPB/upper GI disease processes.

64. Interleukin-8 and Tumor Necrosis Factor [Alpha] Expression in Pressure Ulcers

AH LIPSCHITZ, MD, SA BROWN, PHD, L GOETZ, MD, RJ ROHRICH, MD

Goal: Pressure ulcers are a major cause of morbidity in spinal cord injury patients worldwide but there are few data investigating the immunopathogenesis in terms of specific wound-fluid cytokine levels at the injury site. The aim of our study was to examine interleukine-8 (IL-8) and tumor necrosis factor alpha (TNF- α) levels in control tissue and poorly healing pressure ulcers using a relatively non-invasive microdialysis technique.

Methods: Sixteen (n=16) spinal cord injury patients being treated for grade 3-4 pressure ulcers were enrolled. 7 patients had associated osteomyelitis. 9 patients had no osteomyelitis. Microdialysis probes were introduced into subcutaneous tissue and wound margins of pressure ulcers. Whole blood was collected at the time of wound fluid sampling. Cytokine analyses were performed using ELISA assays.

Results: IL-8 levels were 5 times elevated in pressure ulcers versus control, subcutaneous tissues ($p<0.05$). Levels were twice as elevated in osteomyelitis associated wounds compared to non-osteomyelitis associated pressure ulcers ($p<0.05$). Osteomyelitis associated pressure ulcers had elevated TNF- α levels compared to control subcutaneous tissue.

Discussion: These data demonstrate that pressure ulcers have significantly elevated acute phase IL-8 and TNF- α levels than control wounds especially when associated with the uncontrolled inflammation, destructive bone loss and impairment of wound healing of osteomyelitis. Clinically reducing acute phase inflammatory cytokines such as IL-8 and TNF- α in non-healing pressure ulcers may improve wound healing in these difficult clinical cases.

65. Adenocarcinoma Arising in a Retrorectal Cyst: Case Report and Review

J MONROE MD, WE LICHLITER MD

Introduction: This is a case report of a rare cancer arising in retrorectal cyst.

Methods: Review of the literature and findings at surgery.

Results: This is a case report of a rare cancer arising in a retrorectal cyst and adds to the few cases reported previously in the world literature. Retrorectal lesions include a variety of congenital tumors, cysts and developmental anomalies. This is a report of a previously healthy forty-four year old female with a cancer arising in an enteric cyst that was diagnosed on imaging studies done for other indications. This report includes a review of the literature on retrorectal lesions, the anatomic review of their location and embryonic development as well as a description of the Kraske procedure, which is not often used today.

Conclusions: Retrorectal lesions can uncommonly harbor malignancy. This must be kept in mind during the work up of these lesion and in planning treatment.

66. Transgastric, Transcolonic, and Transvaginal Cholecystectomy Using Magnetically Anchored Instruments

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Introduction: An ideal approach has not been developed for Natural Orifice Translumenal Endoscopic Surgery (NOTES). The purpose of this study was to compare various NOTES approaches for cholecystectomy using Magnetic Anchoring and Guidance System (MAGS) instruments.

Methods: Non-survival procedures were conducted in pigs (n=3) using a transgastric (TG, pig 1), transcolonic (TC, pig 2), or transvaginal (TV, pig 3) approach. An overtube (18mm inner diameter) was placed intralumenally and inserted into the peritoneal cavity through a 20mm opening in the stomach (prepyloric), colon (rectosigmoid junction), or vagina (posterior fornix) using a flexible gastroscope and a needle knife (all), sphincterotome (TG), balloon dilator (TC), or direct dilation (TV). MAGS instruments were deployed through the overtube and held in place on the peritoneal surface using magnetic coupling via an external handheld magnet; instruments, including a camera, tissue retractor (clip-fixated magnet), and cautery dissector, were then maneuvered using magnetic guidance. Two 5mm ports were placed transabdominally to maintain a CO₂ pneumoperitoneum and for laparoscopic assistance as needed.

Results: Overtube insertion, instrument deployment, and magnetic anchoring and guidance were successful for all procedures. The MAGS camera was limited by fogging and a 5mm laparoscope was used in all cases. The MAGS retractor was successfully secured to the gallbladder with EGD clips but required additional laparoscopic suture fixation in all cases; the retractor uniformly provided excellent fundus retraction but a laparoscopic grasper was required for infundibulum retraction. In all cases, the MAGS cauterizer was used for 100% of the dissection of the gallbladder from the liver bed and facilitated complete gallbladder removal with extraction through the overtube using a Roth net or snare. Inadvertent magnetic coupling between instruments occurred in the first 2 cases (requiring a 3rd laparoscopic port in the TC procedure) but not in the final case. Access to the gallbladder using the flexible endoscope, including clipping the cystic duct and artery, was best for the transpelvic (TC, TV) approaches.

Conclusion: MAGS instruments may be successfully used for cholecystectomy via TG, TC, or TV routes, with transpelvic approaches best suited for access to the gallbladder. MAGS instruments facilitate tissue retraction and dissection, significantly enhance NOTES, and should be further developed.

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