The Philadelphia Academy of Surgery

Conjoint Meeting with the New York Surgical Society

The Union League

Philadelphia, Pennsylvania

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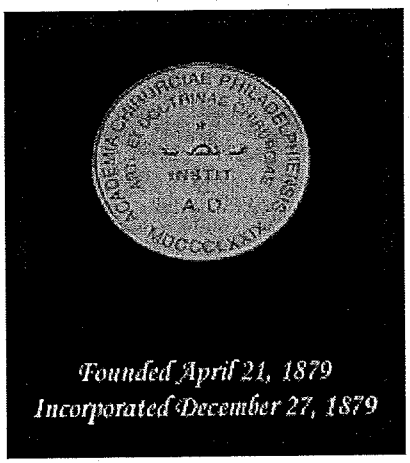
2:00 PM



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PHILADELPHIA ACADEMY OF SURGERY

Program

2:00 PM	**Welcoming Remarks** William C. Meyers, MD, President, Philadelphia Academy of Surgery Michail Shafir, MD, President, New York Surgical Society John C. Kairys, MD, Program Chair
2:10 PM	**Integrating Partial Breast Irradiation into Surgical Practice: Comparing the Infection & Explantation Rates & Cost Effectiveness for Office versus Operating Room Placement of The MammoSite® Radiation Therapy System** Thanasoulis LC, MD Brown A, Frazier TG *Comprehensive Breast Center, Bryn Mawr Hospital, Bryn Mawr, PA* Discussant: Mahmoud El Tamer, MD
2:35 PM	**Lymph Node Harvest and Survival in Rectal Cancer** E. Carter Paulson, MD1, Christopher Wirtalla, BA1, Katrina Armstrong, MD2 MSCE, Najjia Mahmoud, MD3 *1 Hospital of the University of Pennsylvnia, Department of General Surgery* *2 Hospital of the University of Pennsylvnia, Department of Internal Medicine* *3 Hospital of the University of Pennsylvnia, Department of General Surgery, Division of Colon and Rectal Surgery* Discussant: Tomas Heimann, MD

3:00 PM	**Variable Clinical Presentations of Pheochromocytoma Including Patients with No Classic Symptoms** Dale Han1, Giorgos C. Karakousis1, Robert E. Roses1, Rachel Rapaport Kelz1, Jason Fong1, Kathryn Freeman1, Debbie Cohen2, Raymond R. Townsend2, Douglas L. Fraker1 *1Department of Surgery, Division of Endocrine and Oncologic Surgery, University of Pennsylvania School of Medicine, Philadelphia, PA* *2Department of Medicine, Division of Endocrinology, Diabetes, Metabolism, University of Pennsylvania School of Medicine, Philadelphia, PA* Discussant: Demetrius Pertsemlidis, MD,
3:25 PM	**Use of the TRAM vs Latissimus dorsi flaps for Immediate Autologous Breast Reconstruction: A 10-Year Institutional Experience** Nicholas A. Tarola, MD, Nathan Dvor, Eugene Latyshev, Steven E Copit, MD, James Fox, MD, John H Moore, Jr, MD *Department of Surgery, Jefferson Medical College, Philadelphia, PA* Discussant: Carlin Vickery, MD
3:50 PM	**Break** View Poster Presentations
4:10 PM	**Tumor status after neoadjuvant chemoradiation allows alterations in decisions regarding sphincter preservation for rectal cancer** Valsdottir, E. B; Marks, J. H; Yarandi, S. S; Newman, D. A; Marks, G. J. *Lankenau Hospital and Institute of Medical Research, Wynnewood, PA, USA.* Discussant: Thomas Webber, MD

4:30 PM	**A Simulator for Major Surgical Operations** Robert F. Buckman Jr. M.D. *St. Mary Medical Center, Langhorne, PA* Discussant: Michael Zenilman, MD
4:55 PM	**Closing Remarks** William C. Meyers, MD, President, Philadelphia Academy of Surgery Michail Shafir, MD, President, New York Surgical Society
5:00 PM	**Reception & Dinner**
6:30 PM	**Erb Lecture: The Impact of Advanced Technology on the Future of Surgery** Richard M. Satava, MD FACS Professor of Surgery, Department of Surgery *University of Washington Medical Center, Seattle, Washington*

Integrating Partial Breast Irradiation into Surgical Practice: Comparing the Infection & Explantation Rates & Cost Effectiveness for Office versus Operating Room Placement of The MammoSite® Radiation Therapy System

Thanasoulis LC, MD Brown A, Frazier TG

Comprehensive Breast Center, Bryn Mawr Hospital, Bryn Mawr, PA

Purpose: To determine the infection rate, catheter explantation rate and cost effectiveness of the MammoSite® (Cytec Corp., Marlborough, MA) breast balloon-based intracavitary brachytherapy catheter placement in the office and operating room (OR) settings.

Methods: A retrospective review with approved Institutional Review Board protocol enrolled 158 consecutive patients treated with breast conserving therapy (BCT) who received adjuvant radiation using the MammoSite® catheter. 48/158 (30.4%) and 111/158 (70.2%) catheters were placed in the office and OR, respectively, (mean age was 69 years). All patients received perioperative antibiotics for the duration of 10 treatment days and had at least 1 cm applicator-to-skin distance for catheter placement. The balloon diameters for all office Mammosite® placement patients were 4-5 cm and the OR Mammosite® were 4-5 cm for 103/111 (92.8%) patients and 5-6 cm for 8/111 (7.2%) patients. The radiation dose fractionation was 34 Gy twice daily for 5 days total. All patients had Stage 0-2 breast cancer with a minimal clear margin of ≥ 2 mm. The infection rate, explantation rate, and cost-effectiveness were determined for each placement setting.

Results: 3/111 (2.7%) OR Mammosite® placement patients had their balloon removed due to insufficient applicator to skin distance to proceed with brachytherapy. 1/111 (0.9%) OR Mammosite® placement patients had their catheter removed due to insufficient space from the balloon and cardiac pacemaker to proceed with radiation. 1/48 (2.1%) office Mammosite® placement patients had their catheter replaced due to spontaneous rupture of their first Mammosite® after placement, but no patient had their catheter removed for insufficient spacing from office Mammosite® placement. Infections within 30 days of the surgery occurred in 2/111 patients (1.8%) with OR Mammosite® placement and 1/48 patients (2.1%) with office Mammosite® placement. Infections beyond 30 days to 1 year of the surgery occurred in 4/111 patients (3.6%) with OR Mammosite® placement and 1/48 patients (2.1%) with office Mammosite® placement. Infections beyond 1 year from the surgery occurred in 1/111 patients (0.9%) with OR Mammosite® placement. 1/48 patients (2.1%) with office Mammosite® placement, had a symptomatic seroma, which required aspiration. 1/48 (2.1%) patients, with office Mammosite® placement, had a symptomatic skin burn, which was treated with anti-microbrial cream. The cost for a Medicare patient for office Mammosite® placement averaged $5,400 and in the OR setting with general anesthesia averaged $ 14,500. With a saving of $9,100 per patient with office Mammosite® placement, applying this saving to all OR Mammosite® placement patients, would result in a saving over $ 1,000,000 in this study alone.

Conclusions: Early stage breast cancer patients treated with accelerated partial breast radiation using the Mammosite® balloon may have their catheters placed in either the office or OR with similar explantation rates and infection rates. The cost savings for office placement would suggest it should be the standard approach for the majority of patients.

Lymph Node Harvest and Survival in Rectal Cancer

E. Carter Paulson, MD[1], Christopher Wirtalla, BA[1], Katrina Armstrong, MD[2] MSCE, Najjia Mahmoud, MD[3]

[1] Hospital of the University of Pennsylvnia, Department of General Surgery
[2] Hospital of the University of Pennsylvnia, Department of Internal Medicine
[3] Hospital of the University of Pennsylvnia, Department of General Surgery, Division of Colon and Rectal Surgery

Background The NCCN recommends that at least 12 nodes be identified in a colon cancer specimen to ensure adequate staging. This standard is applied to rectal cancer despite anatomic and treatment differences. The factors that predict adequate nodal harvest and the relationship between harvest and survival in rectal cancer patients, with or without preop xrt are unknown.
Methods We performed a retrospective cohort study of 8,580 patients with stage I-III rectal cancer undergoing proctectomy from 1996-2004 using SEER-Medicare. Multivariate logistic regression was performed to identify patient and hospital variables associated with adequate LN harvest. Kaplan-Meier curves and Cox regression compared survival among patients who had >=12, 1-11, or no nodes harvested, adjusting for patient and hospital characteristics.
Results 28% of patients had >=12 nodes and 14% had no nodes harvested. Patients who were older, had more comorbidities or underwent preop XRT or emergent surgery were less likely to have >=12 nodes harvested. High surgical volume and teaching status were positively associated with having >=12 nodes harvested.

Median survival by nodal harvest by stage and treatment are shown in table 1. After multivariate adjustment, node status remained significantly associated with mortality ($p<0.001$). Compared to patients with no nodes harvested, patients with 1-11 nodes were 27% (HR 0.73) and patients with >=12 nodes 40% (HR 0.63) less likely to die. The effect of node harvest varied by stage and treatment, with the weakest association with survival in patients with stage III disease and stage I patients who received preop XRT or postop therapy.
Conclusion Nodal harvest is associated with survival following proctectomy for rectal cancer, primarily in Stage I and II patients. Further research is needed to understand the contribution of treatment and quality measures to this finding and to determine whether number of nodes is an appropriate quality measure for patients who undergo preop XRT.

Median Survival (Years)

	Surgery Only			Preop XRT, Surgery			Surgery, Postop Tx		
# Nodes	I	II	III	I	II	III	I	II	III
0	5.9	1.4		5.1	3.9		4.4	3.3	
1-11	7.6	3.6	1.8	7.7	5.4	3.4	6.0	6.1	4.9
>=12	9.3	4.8	2.1	6.3	7.2	3.1	6.1	8.4	4.9
P-value	<.001	<.001	.08	.02	.005	.49	.04	<.001	.78

Variable Clinical Presentations of Pheochromocytoma Including Patients with No Classic Symptoms

Authors: Dale Han[1], Giorgos C. Karakousis[1], Robert E. Roses[1], Rachel Rapaport Kelz[1], Jason Fong[1], Kathryn Freeman[1], Debbie Cohen[2], Raymond R. Townsend[2], Douglas L. Fraker[1]

Institutions:
[1]Department of Surgery, Division of Endocrine and Oncologic Surgery, University of Pennsylvania School of Medicine, Philadelphia, PA
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Introduction: Our understanding of pheochromocytomas (Pheos) has evolved with recent reports suggesting high rates of atypical presentations. Also, the introduction of laparoscopic adrenalectomy has significantly influenced the management of Pheos. Here, we present one of the largest current single surgeon experiences with Pheos.
Methods: A retrospective review was done on 86 consecutive patients (March 1997 to October 2007) referred for resection of Pheos. Variables analyzed included: demographics, presenting symptoms (typical/classic symptoms include headache, palpitations, diaphoresis), familial syndromes, pathologic features, operative information and short-term mortality.
Results: Mean patient age was 47 years and 55% of patients were female. Nine patients (10%) had familial syndromes (3 MEN II, 3 Von Hippel Lindau, 3 Neurofibromatosis). Only 29% of patients presented with 2 or more typical symptoms and 75% had some degree of hypertension. The incidence of each classic symptom was 39% palpitations, 23% headaches and 25% diaphoresis. However, 44% of patients had no symptoms typically associated with Pheos. Nineteen lesions had capsular invasion, 21 lesions had lympho-vascular invasion and 7 lesions had extra-adrenal extension. There was no statistical association between invasive features and tumor size. Laparoscopic adrenalectomy was performed in 60% of cases and the mean tumor size resected by this approach was 4.4±1.8 cm. With an open approach, mean tumor size was 7.4±3.8 cm and 71% of tumors with extra-adrenal extension required an open procedure. In terms of outcomes, 3 patients had metastatic disease, 1 lesion was unresectable, and there was 1 post-operative death.
Conclusions: This large single surgeon experience shows the clinical variability of Pheos. A large proportion of patients have none of the classic symptoms associated with this diagnosis and all patients with adrenal masses even without symptoms should be screened for Pheos. This study also shows that laparoscopic adrenalectomy has become a mainstay in the management of Pheos.

Use of the TRAM vs Latissimus dorsi flaps for Immediate Autologous Breast Reconstruction: A 10-Year Institutional Experience

Nicholas A. Tarola, MD, Nathan Dvor, Eugene Latyshev, Steven E Copit, MD, James Fox, MD, John H Moore, Jr, MD

PURPOSE: A 10-year experience with TRAM and latissimus dorsi flap breast reconstruction in a university hospital was reviewed. One presumed benefit of the latissimus dorsi flap over the TRAM flap is the lower incidence of major complications and lower overall morbidity. The purpose of this study was to compare the incidence of major and minor complications between these two reconstructive options.

METHODS: A 10-year retrospective office and hospital chart review was conducted between January 1995 and January 2005. All patients who underwent breast reconstruction during this time were included in the study. There were 460 TRAM flaps performed on 392 patients and 198 latissimus dorsi flaps performed on 155 patients.

RESULTS: Over a 10-year period, 547 patients underwent breast reconstruction. Of the 392 patients who had TRAM flap procedures, there were 86 monopedicled, 11 monopedicled with mesh, 48 bipedicled, and 247 bipedicled with mesh. Of the 155 patients who had latissimus dorsi flap procedures, there were 43 bilateral flaps with tissue expanders (TE), 8 unilateral flaps without TE, and 104 unilateral flaps with TE. With hernia and flap loss considered as the major complications for TRAM flaps, the incidence of complete flap loss was 3/460 (0.65%) and partial flap loss was 14/460 (3%) and the incidence of herniation was 71/392 (18%) with a trend showing a difference between bipedicle flaps closed with and without mesh. Complete flap loss did not occur in any of the latissimus dorsi flap patients while the incidence of partial flap loss was 3/196 (1.5%). The donor seroma rate for latissimus flaps was 31%. The overall donor and flap site complications for TRAM flaps were 35 and 23%, respectively, and for latissimus dorsi flaps were 8.5 and 5.5%, respectively. The incidence of herniation following TRAM flap for nonsmokers (16%) was significantly lower than for smokers (35%) ($p = 0.006$). The average length of stay for TRAM flap patients was 4.4 days and for latissimus dorsi flap patient was 3.4 days.

CONCLUSIONS: As we have seen greater morbidity associated with the TRAM flap, in recent years our practice has been favoring the use of the latissimus dorsi flap. The latissimus flap carries with it a lower incidence of minor complications and both a lower potential for and incidence of major complications. In addition, patients have a shorter length of stay in the hospital following latissimus flap. We advocate the use of latissimus dorsi flap breast reconstruction when appropriate for our patients.

Tumor status after neoadjuvant chemoradiation allows alterations in decisions regarding sphincter preservation for rectal cancer

Valsdottir, E. B.[1]; Marks, J. H.[1]; Yarandi, S. S.[1]; Newman, D. A.[1]; Marks, G. J.[1]
1. Lankenau Hospital and Institute of Medical Research, Wynnewood, PA, USA.

Introduction: Improved tumor downstaging and complete response rates of rectal cancer treated with neoadjuvant therapy have been observed. To extend sphincter preservation, decisions regarding the need for permanent colostomy can be based on the post- chemoradiated cancer. We evaluated long term oncologic outcome in T 2-3 rectal cancer patients in the distal 3 cm.

Methods: From a prospective database, data regarding all T2 and T3 rectal cancers in the distal 3 cm of the rectum undergoing curative resection between 1/98 and 12/04 were evaluated. All were treated with neoadjuvant chemoradiation (CXRT). Median dose of XRT was 5400 cGy (4500-7560 cGy). Chemotherapy was 5FU based. Surgery was performed between 8-12 weeks following completion of treatment (mean 8.9 weeks/4-17 weeks). Only patients with fixed cancers after treatment underwent APR (N=5). Oncologic outcomes of patients undergone sphincter preservation surgery were analyzed (N=77; 94%).

Results: Of the 77 patients, 52 were men and the mean age was 60.7 years (22 - 85 y.o.). An APR would be required in 100% of these patients based on pretreatment presentation. Response to neoadjuvant therapy was deemed good to complete in 55 patients (71%). Surgery included proctosigmoidectomy with hand-sewn coloanal anastomosis (n=58), stapled colo-anal (n=2) and transanal endoscopic microsurgery (n=17). CR rate was 22%. There was 1 positive margin (disease free at 77 months). No patient was lost to follow up. With a mean follow up of 55.4 months (2.1-114.4), local recurrence rate was 2.6%. KM5YAS was 86%, 90% in the node negative patients and 78% in the node positive patients (p=0.001). Sphincter preservation was ultimately successful in 70 patients (91%).

Conclusion: Tumor status after neoadjuvant chemoradiation allows alterations in decisions regarding sphincter preservation for rectal cancer in the distal 3 cm of the rectum with excellent long term oncologic outcomes.

A Simulator for Major Surgical Operations

Robert F. Buckman Jr. M.D.
St. Mary Medical Center
Langhorne, PA

A major challenge to surgical training programs has been providing each trainee with expertise in the technical maneuvers of major operations, particularly open operations for trauma. Many factors, including the shortened workweek and the non-operative management of many traumatic conditions that formerly were treated by operation have contributed to this problem. The patients who now come to operation have been selected out for unusual severity, often with severe hemorrhage. The surgeon confronting such a catastrophe may have had little experience with milder variants of the same injury. The confidence and expertise that can only be gained by experience may be lacking.

At present, aside from having a profusion of cases upon which residents can gain major operative experience, a luxury which exists in few training programs, most residents learn on a haphazard clinical basis. Experience is not evenly distributed, either among training programs or even within individual programs. For example, the median number of trauma splenectomies performed by American surgical residents is 2.5.

Some surgical programs have begun to augment the clinical experience with practice operations on cadavers or living animals. Simulators are now widely used for the practice of certain emergency maneuvers such as cricothyroidotomy, chest tube placement, diagnostic peritoneal lavage and pericardiocentesis.Very good physiologic simulators for medical and anesthesiology emergencies have been developed and are becoming crucial educational tools. There is currently no realistic simulator to train surgeons to perform major, complex operations within the soft tissues or body cavities, using open or endoscopic approaches.

We have developed a prototype, hands-on, anatomic simulator that allows a trainee to practice many maneuvers that are components of major operations, including the creation of major incisions, the separation of dissection planes, the retraction of tissues, the exposure and mobilization of abdominal and thoracic vessels and viscera, and the control of simulated hemorrhage. Organ resection, anastomosis and repair can also be practiced. Our initial efforts have been directed toward the simulation of major injuries, but a variety of other inflammatory, degenerative and neoplastic conditions can also be presented on the simulator.

Authors: Dale Han, Jeffrey A. Katz, Christopher J. Wirtalla, Robert L. Bailey, Alejandro Bribriesco, Rachel Rapaport Kelz, Douglas L. Fraker

Institution: Department of Surgery, Division of Endocrine and Oncologic Surgery, University of Pennsylvania School of Medicine, Philadelphia, PA

The Dual Nature of Papillary Microcarcinoma: Benign versus Aggressive Clinical Behavior

Introduction: Most studies have shown that papillary microcarcinoma (PMC) follows a benign course while other studies show that PMC may be a relatively aggressive lesion. Here, we analyze a large single surgeon experience to study the clinical behavior of PMC.

Methods: Between December 1996 and October 2007, 1783 patients were referred for surgical evaluation of thyroid disease. Demographic, clinical, pathologic and operative information were retrospectively reviewed specifically looking at patients with a final diagnosis of PMC (papillary cancer ≤1 cm).

Results: There were 267 surgeries in which the only cancer found was PMC. Mean age was 49 years and 80% of patients were female. In 225 cases, thyroidectomy was performed because of a dominant nodule >1 cm with the majority having an indeterminant cytology. In this group, average tumor size was 0.56±0.30 cm and 8% had positive lymph node metastases with 44% occurring in tumors ≤0.5 cm. There were cases of recurrent disease (1.8%) and each presented with metastatic lymph nodes. In 42 cases, PMC was found incidentally during operations performed for benign indications (e.g. multinodular goiter, Graves disease). In this group, average tumor size was 0.23±0.15 cm and there were no recurrences and no lymph node metastases. Rates of vascular invasion, positive margins and extrathyroidal extension were approximately 2-7 times higher in tumors >0.5 cm compared with tumors ≤0.5 cm, however rates of intrathyroidal lymphatic invasion were similar in tumors ≤0.5 cm (3%) and tumors >0.5 cm (3%).

Conclusions: The majority of incidentally discovered PMC behaves in a benign manner, but PMC in cases where thyroid nodular disease was the surgical indication can behave aggressively causing recurrent disease and lymph node metastases. Furthermore, the tendency for PMC to invade lymphatics may not depend on tumor size with tumors ≤0.5 and >0.5 cm having similar rates of lymphatic invasion.

Return to the Round Theater: Surgical education via live video broadcast

Rachel R Kelz, Evelyn Diaz, David Hindin, Chris Wirtalla, E. Carter Paulson, Judy Shea, James Mullen, Noel Williams, Howard Ross, Jon B. Morris

From the Division of Surgical Education at the Hospital of the University of Pennsylvania

Background and Significance

Medical student training continues to provide a wide range of opportunities for surgical educators. Students often question the educational value of time spent on the surgical services especially in the operating room. We proposed that the use of Live Video Broadcasting (LVB) would facilitate teaching and improve student satisfaction.

Methods

Before and after the LVB students answered 5-10 questions from ACSSURGERY on a topic. Once the LVB commenced, the students interactively observed an operation broadcasted to a remote theater. Two way live communication between the operative team and the student observers was facilitated by a surgeon in the theatre. At the completion of the session, students completed an anonymous 10 question survey regarding attitudes toward surgery education. Pre- and post-test answers were compared using the paired T test. The survey results were compared between students interested in becoming surgeons (SUR) and those considering other fields of medicine (MED) using the Chi square test.

Results

Sixty students participated. 25% were interested in a surgical career. Students answered 57% of the questions correctly prior to the LVB and 69% correctly following the LVB. (p=.001) 100% of SUR felt that observation alone is educational compared to 67% of MED (p=.01). Most students reported that a dimension of education is lost when operative teaching is moved from the OR to the theater (93% SUR 71% MED, p=0.08). The LVB was less stressful than the operating room for 80% of MED versus 44% of SUR (p=.03). Everyone agreed that LVB was a helpful and educational addition to traditional methods (100%SUR and 100%MED). 13%SUR and 22%MED felt that LVB should replace traditional education (p=0.47).

Conclusions

LVB of operations is an innovative way to enhance surgical education but should not replace the traditional experience of scrubbing on operative cases. LVB allows students to interact with surgeons in a less stressful environment without compromising education.

Intraoperative Parathyroid Hormone Levels Decline by 80% or More in Unilateral Neck Exploration for Primary Hyperparathyroidism

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BACKGROUND: The ability to measure parathyroid hormone levels intraoperatively has contributed to the increased use of unilateral exploration in the treatment of primary hyperparathyroidism (PHPT). We examined a single institution's experience using intraoperative parathyroid hormone (IoPTH) levels to determine the extent of decrease in IoPTH and how that decrease influenced surgical decision making.
METHODS: A database of every IoPTH level determined in our institution from November of 2001 to December 2006 was analyzed. IoPTH levels were measured using the Immuile®1000 (Siemens Healthcare Diagnostic) 2001. Charts were retrospectively reviewed for preoperative diagnosis, number of IoPTH levels obtained, extent of reduction of IoPTH level, unilateral or bilateral exploration, pathology, and, where available, follow-up calcium and parathyroid hormone levels. Operative notes were reviewed to document decision making based on IoPTH levels. Patients were excluded if they did not have a preoperative diagnosis of PHPT, if they did not have pre- and post-parathyroidectomy IoPTH levels measured, and if the initial IoPTH level was not elevated. IoPTH levels above 65 Pg/ml were considered abnormal.
RESULTS: 225 patients had a total of 594 measurements of IoPTH performed. 16 patients were excluded from the study because of a lack of a preoperative diagnosis of PHPT (n= 13), insufficient measurements of IoPTH (n= 3), or lack of initial IoPTH elevation (n= 1). The remaining 209 patients comprise the study group. Final IoPTH levels were normal (<65 Pg/ml) in 189 of 209 patients (90.4%) and were elevated in 20 (9.6%). However, 12 of the 20 with elevated final IoPTH levels had a greater than 80% decrease from initial levels, so that 201 of 209 (96.2%) patients had IoPTH levels that were normal, or dropped by >80%. Eight patients (3.8%) had IoPTH levels which dropped by less than 80%, four of whom had deccreases of <50%.

191 patients (91.3%) had single gland disease. A normal or near-normal IoPTH level after resection of a parathyroid adenoma allowed unilateral exploration in 158 of 209 (75.5%) of patients. Persistent elevation of IoPTH levels after resection of an abnormal gland led to bilateral exploration in 24 patients (11.4%). The remaining 21 patients had bilateral explorations for other reasons. Postoperative serum calcium levels were normal in 201 (96.2%) patients, elevated in 4 patients (1.9%) and unavailable in 4 patients.
CONCLUSION: IoPTH levels can be expected to become normal, or to drop by at least 80%, during parathyroidectomy for PHPT. Normal or near-normal post-resection IoPTH levels allow unilateral exploration in 75% of all patients with primary HPT. Persistent elevations of IoPTH after resection of an abnormal gland dictate the need for bilateral exploration.

Paraspinous Muscle Flap Reconstruction of Complex Midline Back Wounds: Risk Factors and Incidence of Post-flap Complications, at a Regional Spinal Cord Center.

Alexander F. Mericli BS, Nicholas A. Tarola MD, John H. Moore Jr. MD, James Fox MD, Steven E. Copit MD, Gary Tuma MD

Jefferson Medical College, Thomas Jefferson University, Philadelphia, PA, USA

Purpose: The purpose of this study is to examine the effect of various preoperative risk factors on postoperative complications after paraspinous muscle flap reconstruction of non-healing back wounds. As one of thirteen designated regional spinal cord injury centers in the United States, exposure to complex spinal problems is common. With increasingly complex spine surgeries now being performed on a more comorbid patient population, the reconstruction of midline back wounds from these procedures is becoming a frequent dilemma encountered by plastic surgery.
Methods: An 11-year office and hospital chart review was conducted between July 1996 and August 2007. All patients who underwent reconstruction using paraspinous muscle flaps during this time period were included. There were 92 patients in the study, representing the largest published series to-date for this procedure.
Results: The average age was 56; 49 of the patients were male and 43 were female. 86 of the 92 reconstructions involved spinal hardware. Of this patient population 40% had hypertension, 36% were obese, 33% had a history of smoking, 28% had diabetes, 16% suffered from paraplegia or quadriplegia, 13% were on chronic steroids, and 9% had a history of radiation to the wound area. The most common reasons for initial spine surgery included disk disease (37%), stenosis (22%), trauma (13%), and neoplasia (12%). Pre-flap wound complications necessitating reconstruction included infection (75), dehiscence (16), seroma (10), and hematoma (6). 23 patients (25%) developed a post-flap wound complication and 17 patients (18%) developed a post-flap wound complication requiring hospital admission. Post-flap complications included infection (12), seroma (11), hematoma (1), and dehiscence (1). Female sex, emergent initial spine surgery, hypertension, a history of smoking, radiation to the wound area, and a history of quadriplegia were associated with a significant increase in the rate post-flap complication ($p<.05$). Interestingly, obesity, nutritional status, anemia, diabetes, and steroid use were not associated with post-flap complications. Patients who retained their hardware (50) had significantly fewer post-flap complications compared to patients who had their hardware removed pre-flap (26) (14% vs. 31%; $p<.001$). Patients with persistent hardware had a shorter length of stay compared to patients whose hardware was removed (19 vs. 23 days).
Conclusion: This patient population typically has several comorbidities making complex wound healing difficult. Several risk factors known to impede wound healing appear to not contribute to the rate of post-flap complications after this procedure. From a plastic surgery perspective, an attempt should be made to salvage hardware with the use of paraspinous muscle flaps, as it is associated with fewer post-flap wound complications and a shorter length of stay.

TITLE: A Comparison of HER 2 Positivity in African American Women Evaluated by Immunohistochemistry (IHC) and FISH (fluorescene in situ hybridization).

Brown AT, Thanasoulis L, Frazier TG

OBJECTIVE: The number of Her2 + invasive breast tumors has been estimated between 20-30% in women with breast cancer. African American women have a higher incidence of triple negative breast tumors (ER/PR/HER 2 neu) which may account for the more aggressive disease. To see if there is racial inequity, patients with invasive breast cancer and immunohistochemistry (IHC) staining 2+ or 3+ positive were sent for further evaluation by fluorescence in situ hybridization (FISH). This modality is used as the gold standard for HER2 positivity. The purpose of our study is to evaluate the incidence of HER2 positivity in African American women compared to other racial groups.

METHODS: In our study, 425 consecutive patients with known invasive breast cancer were evaluated; of these patients, 41 patients were African American. Estrogen and progesterone receptor status positivity (ER+, PR+) were examined, as well as, Her 2 positivity(HER2+)IHC and by FISH.

RESULTS: 41 of 425 patients were African American (9.65%). Of the 41 patients, IHC + = 10 (24.4%) & HER2/FISH+= 1 (2.4%); this was out of 55 FISH + patients in the total patient group (1.8%). Other characteristics within the 41 patients demonstrated ER + = 28 (68.3%) and PR += 22 (53.7%) within the African American patients. As compared to the other 384 patients, ER+= 98 (25.5%), PR += 49 (12.8%), IHC + = 55 (14.3%), and FISH + = 55 (14.3%).

CONCLUSION: FISH is the gold standard for determining HER2 neu positivity. In our experience, <2% of African American patients were positive. HER2 + invasive breast cancer does not appear to be as prevalent in African American patients as compared to other racial groups. In general, African American patients are less likely to be HER2 +, and perhaps this mechanism is a different pathway from ER/PR receptor status. Based on our data, African American patients will be lesser candidates for trastuzumab treatment. Therefore, more aggressive screening modalities and early detection of invasive breast cancer at its early inception is needed for these patients.

80 Per Cent Success Using a Long Tube, Endoscopically Advanced into the Jejunum, in Patients with Small Bowel Obstruction.

Background.

In 1933, Wangensteen, UnivMinn, had 80% success using the long tube for intestinal decompression in patients with small bowel obstruction. In 1938, Abbott, at Penn, using the Miller-Abbott tube, also had 80% success. A problem with the long tube was the delay, 2 - 4 days, for it to pass into the small bowel, so about 1980, most surgeons chose the short tube that has 30% success. If the long tube has 80% success and the short tube 30%, then 50% of the short tube patients are having unnecessary surgery.

Proposal

Use an endoscope to advance the long tube from the stomach into the jejunum, a 20 minute procedure that eliminates the delay in intestinal decompression.

Results

Using the long tube-endo-advanced, there was success in 33 / 40 patients = 80%.

At 48 hours those patients who need an operation have been identified.

At 72 hours, the other 80% will have resolved their obstruction.

There is no need for mercury or fluoroscopy

The short tube reduces vomiting but the abdominal pain persists.

The long tube-endo-advanced stops the vomiting and eliminates the abdominal pain.

The endoscopic procedure may cost $1,000 but it can save 3 days of daily care @ $1500 / day.

Hospital charges have been reduced by 50% due to the shorter lengths of stay and by avoiding the unnecessary surgery in the short tube patients.

Recurrent small bowel obstruction

short tube	40%
lap / lysis	20%
Long tube	5%

Conclusion

The clinical evidence, plus the economic advantages, prove the superiority of the long tube-endo-advanced technique over the short tube management.

Most patients who have failed a trial with the short tube are eligible for the long tube.

Damage Control Abdomen: Single-Stage Reconstruction Using a Vicryl Mesh Buttress

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PURPOSE: Damage control laparotomy has become an accepted approach for patients with life-threatening abdominal conditions such as trauma and sepsis. While this protocol increases survival rates, it compromises abdominal fascial integrity. There is loss of domain which results in massive hernia. This abdominal wall morbidity can be functionally and aesthetically debilitating for the patient. The purpose of this study is to report our experience and outcomes with these complex abdominal wall reconstructions which represents the largest reported series of repairs of hernias of this magnitude in the surgical literature.

METHODS: A retrospective review was conducted of 56 patients with previous damage control laparotomies (13 females, 43 males) who underwent elective abdominal wall reconstruction at a single institution between January 1999 and April 2006 by one senior surgeon. Mean age was 42 years (19 to 80). The abdomen of patients were covered initially by split-thickness skin graft and/or mesh after their original laparotomy. The reconstructive method used in all patients consisted of a double-layer, subfascial Vicryl mesh buttress to aid in establishing abdominal wall integrity, combined with components separation and rectus muscle turnover flaps. Ten patients with massive abdominal defects (1196 to 1836 cm^2) required additional Marlex mesh implantation. Activity and functional levels were evaluated by clinical exams and telephone surveys.

RESULTS: Major etiologies of abdominal hernias were gun-shot wounds (36.2%), motorvehicle accidents and blunt trauma (23.4%) and sepsis or perforated bowel (23.4%). The mean abdominal wall defect was 865cm^2 (150 to 2475), and the average interval time to definitive repair was 16.9 months (3 to 41). The mean length of follow-up was 29 months (1 to 95). Recurrent herniation following definitive repair was 12.5% (7/56). Of these, one was successfully repaired, five were small umbilical hernias that were asymptomatic and did not limit function. One was the result of intentional fascial release for compartment syndrome and has not since undergone reconstruction. Other complications include superficial skin dehiscence, all of which healed secondarily with daily wound care 8.9% (5 patients) and abdominal compartment syndrome 7.1% (4 patients). There were no mesh exposures, seromas, major wound infections or fascial dehiscence. There were two post-operative mortalities, both occurred in patients with compartment syndrome and were reopened in the intensive care unit. Thirty patients completed telephone surveys (53.4%). Ninety percent of patients who worked full-time prior to injury returned to their jobs, and 92.3% were functioning at pre-trauma activity levels.

CONCLUSION: Massive abdominal hernia following damage control laparotomy poses a great challenge to both trauma and reconstructive surgeons. This patient population is at significant risk for mortality and morbidity. We present the largest series of repairs of these massive hernias with long-term follow-up and an acceptable hernia recurrence rate. Functional results are excellent with most returning to work and baseline activity levels. We believe the use of a vicryl mesh buttress is an important adjunctive maneuver for definitive, single-stage complex abdominal wall reconstruction.

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