RESIDENTS' RESEARCH DAY

May 18, 2017 | Paetzold Health Education Centre | VGH

VISITING PROFESSOR

Dr. Liane S. Feldman
Professor of Surgery, Chief of the Division of General Surgery
McGill University

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THE UNIVERSITY OF BRITISH COLUMBIA

General Surgery | Pediatric Surgery
Thoracic Surgery | Vascular Surgery

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Liane S Feldman, MDCM FACS FRCS

Professor of Surgery & Chief of the Division of General Surgery
McGill University

Dr. Liane S. Feldman holds the Steinberg-Bernstein Chair in Minimally Invasive Surgery and Innovation at the McGill University Health Centre. She is a gastrointestinal surgeon specializing in minimally surgery with a research focus on improvement of quality and patient centered outcomes after surgery. She is the Director of the McGill Surgeon Scientist Program and Program Director of the Advanced GI/Minimally Invasive Surgery Fellowship.

Dr Feldman established and leads a multidisciplinary team to implement and study evidence-based Enhanced Recovery perioperative care plans, recognized as a "leading practice" by Accreditation Canada. She represented Canada as the James IV Travelling Surgeon in 2010 and received the Canadian Association for Medical Education National Award for "distinguished contribution to medical education."

Dr Feldman is author of over 200 articles, book chapters and videos and editor of two surgical manuals. She serves as vice-president of the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) where she also leads the task force on Enhanced Recovery Programs, and co-chaired the Fundamental Use of Surgical Energy (FUSE) committee.

Sonia Butterworth, MD FRCSC

Clinical Associate Professor, UBC Division of General Surgery
Surgical Foundations Program Director- Department of Surgery, UBC
Pediatric Surgery Program Director- Department of Surgery, UBC
Co-Lead Simulation, Postgraduate Medical Education Office, UBC
Active Staff, British Columbia's Children's Hospital

Dr. Butterworth completed her medical school and General Surgery at UBC. In 2005 she graduated from UBC Pediatric Surgery, then worked in Portland Oregon as a Pediatric Surgeon. In 2008, she returned to UBC and came on as faculty at BC Children's Hospital. Dr. Butterworth has had a strong interest and involvement in surgical education: she became, Associate Program Director of General Surgery in 2010, Program Director of Pediatric Surgery in 2011, Program Director in Surgical Foundations in 2013, UBC Co-Lead in Simulation in 2014 and, most recently, has been appointed as the UBC CBME Lead. Her clinical interests include pediatric trauma and advanced minimally invasive pediatric surgery. I addition, she is the Surgical Director of the BC Children's Hospital Intestinal Rehabilitation Program. Her research interests include surgical education as well as quality initiatives which focus on improving surgical access and outcomes for children requiring emergency surgery.

Garth L. Warnock, BMedSc MD MSc FRCSC FACS

C.N. Woodward Professor
Co-Director, Ike Barber Human Islet Transplant Laboratory and British Columbia Islet Transplant Program
Assistant Director – Surgeon Scientist Program

Dr. Warnock was born in Alberta where he completed high school at Picture Butte, and studies at the University of Lethbridge and the University of Alberta. He went on to complete a residency training program in surgery where he developed research interests in the transplantation of pancreatic islets of Langerhans for type 1 diabetes. After completing Fellowship experience at the Nuffield Department of Surgery in Oxford, he returned to the Faculty of the University of Alberta supported throughout his career by investigator awards from Alberta's Heritage Foundation for Medical Research. Research contributions included improvements to the separation and preservation of islets of Langerhans, definition of the critical mass of transplanted islet cells to reverse the insulin dependence and definition of strategies to prevent auto and allo-immune injury to transplanted islets. Clinical studies in islet cell transplantation led to Canada's first islet cell transplants and the first long-term success after islet cell transplantation worldwide. He developed clinical surgical expertise in management of pancreatic and gastrointestinal disorders and promoted undergraduate and postgraduate education programs. Dr. Warnock joined the University of British Columbia (UBC) in 2001 as Woodward Professor and recently completed 2 consecutive terms as Head of the Department of Surgery and Surgeon-in-Chief of Vancouver Acute Hospitals. He has promoted surgery through the Canadian Association of Surgical Chairs, the Canadian Association of General Surgeons, and the American College of Surgeons, and serves as Co-Editor in Chief of the Canadian Journal of Surgery. Dr. Warnock established clinical and basic studies in pancreatic islet transplantation at the Ike Barber Human Islet Laboratory at Vancouver General Hospital in 2003. Dr. Warnock's research was honored with the 2005 Royal College of Physicians & Surgeons Gallie Lecture and the Governor General of Canada Meritorious Service Medal (Civil Division) for bringing distinction to Canada. This research program has garnered funding from the Canadian Institutes of Health Research (CIHR), the International Juvenile Diabetes Foundation and Canadian Diabetes Association to investigate prevention of immune injury to islet cells. In 2006, his lab became one of the anchors for a Michael Smith Foundation for Health Research Centre for Human Islet Transplantation and Beta Cell Regeneration. In addition to his continued dedication to research, Dr. Warnock leads a strong commitment to teaching at UBC which is now Canada's largest medical school. He continues to perform clinical surgeries while continuing as the Scientific Director of the Ike Barber Human Islet Transplant Laboratory.

2016 RESIDENTS' RESEARCH DAY WINNERS

Congratulations to last year's winners!

Best Research Presentations

Dr. Anu Ghuman	Surgical Site Infection Rates Following Implementation of a Colorectal Closure Bundle in Elective Colorectal Surgeries
Dr. Dean Percy	Surgeon Bias during Sentinel Lymph Node Biopsy in Breast Cancer

Best Research Proposal

Dr. Jieun Cha	The Impact of Time Interval between Neoadjuvant Chemoradiation and Surgery on Rectal Cancer Outcomes

Accredited by UBC CPD

CONTINUING PROFESSIONAL DEVELOPMENT
FACULTY OF MEDICINE

This event is an Accredited Group Learning Activity eligible for up to **7.0** Section 1 credits as defined by the Maintenance of Certification program of the Royal College of Physicians and Surgeons of Canada. This program has been reviewed and approved by UBC Division of Continuing Professional Development. Each physician should claim only those credits he/she actually spent in the activity.

0730-0800		Breakfast and Registration	
0800-0810	Dr. Adam Meneghetti	Welcome and Introduction of Visiting Professor & Judges	

Research Presentations – Podium

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0810-0825	Dr. Joseph Margolick	An Analysis of Collaboration and Sustainability in Global Surgery	8
0825-0840	Dr. David Kim	Establishing a Canadian Global Surgery Community: A National Survey	9
0840-0855	Dr. Kristin DeGirolamo	Structure, Process and Outcome in Acute Care Surgery	10
0855-0910	Dr. Hamid Izadi	A Profile of Trauma Mortality in British Columbia	11
0910-0925	Dr. Rihab Al Lawati	Utility of the ACS NSQIP Surgical Risk Calculator To Accurately Predict Postoperative Outcomes After Colon Resection	12
0925-0940	Dr. Jieun Cha	Improvement in Pulmonary Function Following Laparoscopic Giant Paraesophageal Hernia Repair	13
0940-0955	Dr. David Youssef	Cytomegalovirus Duodenitis Associated with Life-threatening Duodenal Hemorrhage in an Immunocompetent Patient: A Case Report	14
0955-1010	**BREAK**		
1010-1025	Dr Joseph Margolick	Quality Improvement in Thyroid Surgery: Reduction in Unplanned Postoperative Hospital Readmission, Emergency Department Visits and Reoperations	15
1025-1040	Dr. Hamid Izadi	Impact of Multi-disciplinary Tumour Conference on Surgeon Decision Making in a Community Hospital in Interior British Columbia	16
1040-1055	Dr. Emily Mackay	Neoadjuvant Therapy and Nodal Pathologic Complete Response Affects Node Counts at Axillary Node Dissection in Breast Cancer	17
1055-1110	Dr. Dean Percy	Saving the Axilla: Can We Reduce up Front Axillary Lymph Node Dissection in T1/T2 Breast Cancers?	18
1110-1125	Dr. Jonathan Ramkumar	Outcomes and Risk Factors of Peritoneal Perforation During Transanal Endoscopic Microsurgery	19
1125-1140	Dr. Shiana Manoharan	The Impact of Cancer Diagnosis on Patient Reported Outcomes in Patients Undergoing Colorectal Surgery	20
1140-1155	Dr. Gautamn Sarwal *Vascular Surgery*	Technique of Extended Iliofemoral Eversion Endarterectomy for Severe Iliofemoral Arterial Disease	21
1155-1255	**LUNCH**		

Visiting Professor Lecture

1300-1400	Dr. Liane Feldman	The Impact of Physical Activity on Patient Outcomes

Research Opportunities

1400-1415	Dr. Alice Mui	Research Opportunities in General Surgery

Research Proposals – E-Posters

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1415-1425	Dr. Kristin DeGirolamo	Lithium Associated Hyperparathyroidism & Hypothyroidism Study	22
1425-1435	Dr. Jake Hiebert	Utility of Preoperative localization with Dual Energy CT (DECT) for Hyperparathyroidism	23
1435-1445	Dr. Jennifer Li	Galectin-3 as a Serum Marker for Thyroid Cancer	24
1445-1455	Dr. Graeme Hintz	Stapled versus Hand-Sewn Pediatric Intestinal Anastomoses: Preliminary Results from a Retrospective Cohort Study	25
1455-1505	Dr. Nicole Mak	Is Preoperative Nodal Sampling in the Absence of FDG-Avid Mediastinal Nodes in Early Stage Non-Small Cell Lung Cancer Necessary? A Single-Centre Experience in Preoperative Staging with PET-CT	26
1505-1515	Dr. Mitch Webb	Incisional Negative Pressure Wound Therapy Following Colorectal Resection: a Single Site, Prospective, Randomized Control Trial (Protocol)	27
1515-1525	Dr. Katrina Duncan	Usability of a Mobile Electronic Platform for Trauma Patient Resuscitation and Management	28
1525-1535	Dr. Jean Oosthuizen	Review of Surgically Managed Thyroid Nodules with a Cytopathologic Diagnosis of "Atypia of Undetermined Significance" and the Effect of Papillary Features on Risk of Malignancy	29

RESIDENTS' RESEARCH DAY & GRADUATING RESIDENTS' DINNER

Vancouver Lawn Tennis & Badminton Club | 1630 West 15th Avenue | Vancouver, BC
Reception 18:30 | Dinner 19:00

AN ANALYSIS OF COLLABORATION AND SUSTAINABILITY IN GLOBAL SURGERY

Authors

Joseph Margolick MD, Department of Surgery, S. Morad Hameed, MD, MPH, FRCSC, FACS, Department of Surgery, Trauma Division, Emilie Joos, MDCM, FRCSC, Department of Surgery, Trauma Division

Background

There is a major gap in access to surgery between High Income Countries (HICs) and Low and Middle Income Countries (LMICs). Building surgical capacity through sustainable global partnerships can help reduce this disparity. This is the only systematic review identifying all published studies on North American global surgery initiatives. The objective is to quantify collaboration in global surgery and propose a model for international cooperation and sustainability based on 6 pillars: multidisciplinary collaboration, bilateral authorship, effective training, broad community engagement, sustainable funding, and outcomes reporting.

Methods

This systematic review uses the methodology established by the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA-P). PubMed, EMBASE and MEDLINE databases were searched. Selected studies were independently reviewed by two authors and assessed based on the Newcastle-Ottawa Scale.

Results

A total of 4,489 citations were reviewed. Only 82 (1.8%) met our inclusion criteria. Excluded studies were non-surgical, unilateral, military or initiatives not arising from a North American partnership. Of the 82 initiatives, 44% had bilateral authorship. Sixty-eight (83%) involved North American academic institutions, 53 (65%) involved LMIC academic centres, and 11% partnered with civil society organizations. Fifty-four percent of initiatives provided training for practitioners from LMICs. Thirty-three percent of initiatives were multidisciplinary, and only 6% explicitly demonstrated sustainable funding. Whereas 36 (44%) provided data collection, only 13 (16%) were involved in quality improvement initiatives.

Conclusions

We identified 82 studies reporting true global surgery collaborative initiatives. The collaboration ranged from single teaching seminars to full fellowship training. None of the studies fulfilled all 6 proposed pillars of sustainability. To be more collaborative and sustainable, global surgical partnerships should consider beginning with a foundation of thoughtful, bilateral exchange of ideas and knowledge, clear and measurable objectives, training and capacity building, and continuous evaluation of program outcomes.

ESTABLISHING A CANADIAN GLOBAL SURGERY COMMUNITY: A NATIONAL SURVEY

Authors

Kim, David, BSc, MD, Department of Surgery; Wong, Heather, RD, BSN, Trauma Services; Fawcett, Vanessa, MD, MPH, Department of Surgery; Hameed, Morad, MD, FRCSC, MPH, Department of Surgery; Westerberg, Brian, MD, FRCSC, Department of Surgery; Ball-Banting, Elenor, BA Manager, Branch for International Surgical Care; Joos, Emilie, MD, FRCSC, Department of Surgery

Background

Surgery has recently gained a prime position on the global health agenda. However, the global surgery community remains fragmented. We sought to map the Global Surgery Offices (GSOs) in Canada and evaluate the scope of their initiatives.

Methods

This is a scoping review of all Canadian GSOs. They were identified through the Canadian Association of General Surgeons and by word of mouth. Surveys were conducted electronically and by phone interviews.

Results

A total of seven academic institutions have known GSOs. Six out of seven responded. These GSOs span across five provinces and include six universities: Dalhousie, McGill, McMaster, University of Calgary, University of Alberta and University of British Columbia. Low and middle income countries (LMICs) with involvement included Africa (5/6), Americas (4/6), Eastern Europe (1/6) and Asia (1/6). Most GSOs have multiple partners: governmental organizations (2/6); non-governmental organizations (5/6); private institutions (3/6). Only two have formal partnerships between one another. All offer training in international surgery to Canadian residents and most to Canadian medical students (5/6). Only Half (3/6) offer training to LMIC trainees. Whereas one GSO provides surgical support only, others provide data collection (3/6) and quality improvement initiatives (5/6). All benefit from financial support from their Department of Surgery/Anesthesia, two from private funding and only one from grants and fundraising activities.

Conclusions

Despite a unifying commitment to improve surgical care in LMICs, GSO in Canada mostly operate independently of one another. We propose to build an epistemic community of Canadian surgeons involved in global health: the “Canadian Global Surgery Initiative.” This community could function as a flexible governance structure by providing a platform for networking, sharing of ideas, coordinating initiatives, building research-capacity and obtaining political support and sustainable funding. To ensure a more effective collective action, an additional effort should be made to include all surgical specialties.

STRUCTURE, PROCESS AND OUTCOME IN ACUTE CARE SURGERY

Authors

Dr. Kristin DeGirolamo BSc, MD, MSc (Candidate) and Dr. Morad Hameed MD, MPH, FRCSC Division of Trauma and Acute Care Surgery, Vancouver, BC

Background

Many centers providing acute general surgery coverage have transitioned from a traditional call model to a dedicated acute care surgery (ACS) model. Literature on appendicitis and cholecystitis outcomes exists, but little is reported on how an ACS service impacts patient care or how quality improvement can be used to improve this complex service. We therefore aimed to highlight the complexity of ACS, report on what is already known about the impact of ACS services and apply the methodology of process mapping to a cohort of small bowel obstruction (SBO) patients to identify areas for quality improvement.

Methods

We chose to use a Donabedian approach of structure, process and outcome to evaluate ACS services.

1. Outcome: a systematic review was conducted around the effects of an ACS service on patient and non-patient related outcomes.

2. Structure: a 24-hour data collection of ACS services across Canada was undertaken. Patient and service demographics, along with operative data were collected at 14 hospitals.

3. Process: a pilot study of small bowel obstruction patients was undertaken to process map their journey through the hospital and identify potential areas of quality improvement.

Results

1. Studies found increased daytime and decreased after-hours operating, improved patient transit from ED to OR to home, and decreased length of stay after implementation of an ACS service. The overall trend was higher more diverse case volumes, which improved resident education. Lower complication rates were noticed in the appendicitis and cholecystitis groups.

2. Sites had an average of 4 operative cases during the study period with a diverse case mix. The top three presentations were gall bladder disease, intestinal obstructions, and appendicitis. Protected OR time was variable, with only a few sites reporting an ability to book elective cases during that time.

3. The processes of care for SBO patients from the time of presentation to the time of follow-up were highly elaborate and variable in terms of duration. Data visualization strategies were used to identify substantial variability in terms of time to CT scan and time to OR.

Conclusions

The ACS model has been implemented worldwide, and has demonstrated an improvement in timeliness of care, decreased administrative costs, and improved trainee learning. Process mapping has been successfully integrated into surgical specialties and continues to provide insight into potential areas of QI, even in acute care surgery.

A PROFILE OF TRAUMA MORTALITY IN BRITISH COLUMBIA

Authors

Izadi, Hamid, PGY4 UBC General Surgery; Evans, David, Trauma Surgeon, Trauma Services, VGH; Gezer, Recep, Analyst, Trauma Services BC

Background

Death due to traumatic injury is the leading cause of potential years of life lost in Canada. Prevention requires a clear understanding of where actionable opportunities exist. To this end, we undertook a 3-year analysis of all trauma deaths in British Columbia focusing on time to death following injury and geographic location as a proxy for access to definitive care. This analysis can serve as a framework for annual review of trauma mortality in BC.

Methods

We undertook a retrospective descriptive study of trauma-related deaths in BC between 2012-2015. Variables included time to death, and geographic zones for injury location. Time to death intervals from time of EMS call were: <24h, 1-3d, 3-7d, 7-30d, and >30d. Geographic zones were designated as Metro, urban, rural, and remote. We interrogated the discharge abstract database (DAD) capturing deaths in all BC hospitals, the BC Trauma Registry (BCTR) from BC's 11 designated trauma hospitals, and the Vital Statistics.

Results

We identified 2827 trauma-related deaths in the study period. Mortality rate for the years 2013, 2014 and 2015 was 20.7, 20.7 and 19.7 per 100,000 respectively, with only one-third of these captured by BCTR. Time to death analysis revealed 2579 deaths within 24 hours of injury, with 74% of these occurring out of hospital; 1126 deaths in 1-7 days, 1297 in 3-7 days, and 698 deaths in the >30d period. Out of hospital deaths per 100,000 were 12 in metro, 25 in urban, 28 in rural, and 55 in remote areas. These proportions for in-hospital deaths were 6.7 for metro, 10.5 for urban, 3.4 for rural, and 4.6 for remote.

Conclusions

Few studies have reported time to death after injury. Trauma mortality in BC for the past three years increased slightly. Nearly 75% of injury-related deaths within 24 hours occur out of hospital, disproportionately higher in remote areas. This raises concerns regarding access to pre-hospital trauma care, especially in remote communities. A significant number of patients die 30 days or more after initial injury, representing a significant resource burden. Incomplete reporting of injury-related deaths remains a challenge. Using combined datasets will allow for delineating key patient, provider, or system factors that will help guide strategies to reduce preventable death following injury.

UTILITY OF THE ACS NSQIP SURGICAL RISK CALCULATOR TO ACCURATELY PREDICT POSTOPERATIVE OUTCOMES AFTER COLON RESECTION

Authors

R. Al Lawati, K. Mayson, P. Brasher, G. Warnock

Background

Predicting potential complications from surgery is a crucial step to aid decision to operate. The American College of Surgeons (ACS) initiated the National Surgical Quality Improvement Program (NSQIP), which collects and analyses patients' outcomes from surgery. ACS NSQIP developed a Surgical Risk Calculator (RC) to predict risks of postoperative complications. Aim of this study was to assess RC accuracy for predicting complications in patients undergoing colon resection.

Methods

Validation study with secondary use of administrative data conducted in a tertiary care center. Patients who received colorectal procedures in our Enhanced Recovery After Surgery (ERAS) program from November 2013 to December 2015 were enrolled. RC predictions were calculated and compared with observed NSQIP outcomes within 30 days follow-up. Observed versus predicted outcomes were compared. RC accuracy was assessed by graphical examination of the calibration curve for outcomes that exceeded 50 events. Predicted versus observed length of stay (days mean□SD) was compared.

Results

A total of 368 patients were enrolled. RC predicted risks were lower than observed for: serious complication 40.3 vs. 51; any complication 60.5 vs. 70; surgical site infection (SSI) 31.8 vs. 51; pneumonia 5.8 vs. 15 and urinary tract infection 9.8 vs. 11. Predicted risks were higher for: cardiac complication 16.5 vs. 9; venous thromboembolism 4.8 vs. 4; acute renal failure 16.6 vs. 5; return to operating room 14.6 vs. 6; death 4.2 vs. 2; Discharge to facility 20.2 vs. 12. Good calibration was observed for any complication and serious complications. SSI was underestimated but incorporating (Risk somewhat higher than estimate); adjustment improved SSI prediction. Length of stay was inaccurately predicted: 4.4□1.3 predicted versus 8.6□12.1 days observed (p <0.01, Wilcoxon Rank Sum Test).

Conclusions

Application of RC in our population closely predicts serious and any complication but less accurately predicts SSI unless adjusted; average length of stay was underestimated. All outcomes including the above require analysis of greater number of events to permit final conclusions on RC use.

IMPROVEMENT IN PULMONARY FUNCTION FOLLOWING LAPAROSCOPIC GIANT PARAESOPHAGEAL HERNIA REPAIR

Authors

Cha, Jieun; Hafizi, Ajmal; Ashrafi, Ahmad

Background

Paraesophageal hernias are common among the elderly, and they are commonly associated with reflux, regurgitation, and respiratory symptoms including cough and dyspnea. Laparoscopic repair of paraesophageal hernia has shown superior outcomes when compared with transabdominal or transthoracic approaches in terms of 30-day mortality rate, length of stay, and morbidity (Mungo et al., 2014). Previous work on open repair of giant paraesophageal hernias showed improvement in pulmonary function (Carrott et al., 2012; Low & Simchuk, 2002). Given that the laparoscopic approach to giant hiatus hernia repair is becoming the new standard, we proposed this study to investigate change in pulmonary function following laparoscopic repair of giant paraesophageal hernias. The objective of the study was to investigate whether laparoscopic giant paraesophageal hernia repairs result in improvement in pulmonary function.

Methods

This study is a retrospective observational study. 56 patients who have undergone laparoscopic giant paraesophageal hernia repairs at Surrey Memorial Hospital between 2009 – 2016 with pre- and post-op pulmonary function test data (FVC, FEV1, DLCO) were included in this study. Demographic data included age, sex, smoking status, and BMI. Intraoperative details including operating time, length of stay, and estimated blood loss were noted. Pre-op and post-op PFT parameters including FVC, FEV1, and DLCO were compared using two-tailed t-test.

Results

Among the 56 patients included in the study, the mean age was 74, and 40 patients (71.4%) were female and 16 patients (28.6%) were male. There were 25 smokers with mean pack year of 31.6. Mean BMI was 29.7. 55 patients underwent laparoscopic giant paraesophageal hernia repair, and 1 patient was converted to laparotomy due to bleeding and difficult anatomy. Common pre-operative signs and symptoms included asymptomatic (39.2%), regurgitation (17.9%), heartburn (16%), cough (14.3%), dysphagia (12.5%), and pain (12.5%). 3 patients experienced shortness of breath (5.3%) pre-operatively. Common early post-op complications included pain, nausea, and urinary retention. Late post-op complications included dysphagia and nausea. There was no in-hospital or 30-day mortality among patients studied. Pulmonary function data from pre-op and post-op PFTs were compared and the change in FVC was +0.0938L (6.4906 % predicted; p = 0.0029), FEV1 +0.1123L (8.5 % predicted; p = 0.0004), and DLCO was -0.2563 (2.3556 % predicted; p = 0.2098).

Conclusions

Laparoscopic repair of giant paraesophageal hernias resulted in significant improvement in FVC and FEV1, with no significant change in DLCO when pre-op and post-op PFT results were compared. These results are comparable to previously reported results on open paraesophageal hernia repairs.

CYTOMEGALOVIRUS DUODENITIS ASSOCIATED WITH LIFE-THREATENING DUODENAL HEMORRHAGE IN AN IMMUNOCOMPETENT PATIENT: A CASE REPORT

Authors

David Youssef, Lucy Shen, Suzan Abu-Abed, Sangita K. Malhotra, Kenneth Atkinson, Elena Vikis, George Melich, Shawn MacKenzie.

Background

Cytomegalovirus (CMV) is known to be opportunistic in immunocompromised patients. However, there have been emerging cases of severe CMV infections found in immunocompetent patients. Gastrointestinal (GI) CMV disease is the most common manifestation affecting immunocompetent patients, with duodenal involvement being exceedingly rare.

Methods

Presented is a case of an immunocompetent patient with life-threatening bleeding caused by CMV duodenitis, requiring surgical intervention. A 60-year-old male with history of disseminated Methicillin-sensitive Staphylo-coccus aureus (MSSA) bacteremia and aortic valve infective endocarditis, presented with life-threatening upper GI hemorrhage. Endoscopy revealed ulcerations, with associated generalized mucosal bleeding in the duodenum. After repeated endoscopic therapies and failed interventional-radiology arterial embolization, the patient required a duodenectomy and associated total pancreatectomy, to control the duodenal hemorrhage. Pathologic review of the surgical specimen demonstrated CMV duodenitis. Systemic ganciclovir was utilized postoperatively.

Results

GI CMV infections should be on the differential diagnosis of immunocompetent patients presenting with uncontrollable GI bleeding, especially in critically ill patients due to transiently suppressed immunity. Endoscopic and histopathological examinations are often required for diagnosis. Ganciclovir is first-line treatment. Surgical intervention may be considered if there is recurrent bleeding and CMV duodenitis is suspected because of high potential for bleeding-associated mortality.

Conclusions

Presented is a rare case of life-threatening GI hemorrhage caused by CMV duodenitis in an immunocompetent patient. The patient failed endoscopic and interventional-radiology treatment options, and ultimately stabilized after surgical intervention.

QUALITY IMPROVEMENT IN THYROID SURGERY: REDUCTION IN UNPLANNED POSTOPERATIVE HOSPITAL READMISSION, EMERGENCY DEPARTMENT VISITS AND REOPERATIONS

Authors

Margolick, Joseph MD, Department of Surgery; Chen, Wenjia PhD, Faculty of Pharmaceutical Sciences, Sam M Wiseman, MD FRCSC FACS, Department of Surgery

Background

Unplanned hospital readmission, reoperation and Emergency Department (ED) visits following thyroid operations are a source of frustration for both patients and surgeons. Some hospitals are now mandated to report readmission statistics and these can be used for quality control. The objective of study was to systematically review the current literature in order to evaluate the rates of readmission, reoperation and ED visits following thyroid operations.

Methods

This systematic review was conducted in accordance with the Preferred Reporting of Items for Systematic Reviews and Meta-Analyses protocols (PRISMA-P). Literature was searched using the MEDLINE, EMBASE and PubMed databases. Titles of articles were scanned, followed by abstract review and full text review. Studies were then graded on their level of evidence based on the Oxford Centre Levels of Evidence. Twenty-two studies were included in this systematic review.

Results

The rates of unplanned readmissions ranged from 0.2% to 11%, while the rates of ED visits ranged from 1.8% to 11.1%. Unplanned emergency reoperation rates ranged from 0.07% to 1.95%. Post-operative hypocalcemia was the most common reason for hospital readmission, while neck hematoma was the most common reason for reoperation.

Conclusions

Prophylactic post-operative calcium and vitamin D supplementation may reduce rates of post-operative hypocalcemia, while avoiding post-operative hypertension may decrease risk of neck hematoma. Older age, thyroid cancer diagnosis, dependent functional status, higher ASA score, diabetes, COPD steroid use, hemodialysis and recent weight loss increase the risk of hospital readmission after thyroid operations. By identifying risk factors for readmission, reoperation, and ED visits, this review may assist optimizing perioperative care algorithms for individuals undergoing thyroid operations.

IMPACT OF MULTI-DISCIPLINARY TUMOUR CONFERENCE ON SURGEON DECISION MAKING IN A COMMUNITY HOSPITAL IN INTERIOR BRITISH COLUMBIA

Authors

Izadi, Hamid, PGY4 UBC General Surgery; Wiseman, Kevin, General Surgery, Vernon Jubilee Hospital

Background

Multi-disciplinary tumour conference (MTC) improves outcomes in general surgical patients. In Vernon Jubilee Hospital (VJH), MTC was initiated in 2013, aiming to improve oncological decision making, expedite referral, minimize investigations, and reduce costs. In this retrospective cases series, we examined one year's worth of cases to determine the extent to which MTC changed surgeons' initial decision.

Methods

Meeting notes from MTC were reviewed from Nov 2015 to Oct 2016 at VJH. Details included patient identification, attending physicians, pre-meeting surgeon's decision, and the consensus decision. Discordance was recorded as a consensus decision different from the pre-MTC decision or in the absence of a pre-MTC decision. Chart review was conducted for clarity in those cases that did not meet the above.

Results

Sixty-five cases, of which 60 were malignant, were discussed in 18 meetings. Mean age was 65. Most frequent were breast cancer cases at 24, followed by colon (20), melanoma (5), gastric (4), sarcoma (3), and other (9). Meeting outcomes were discordant in 55% of cases, with 63% for breast, 55% for colon, 20% for melanoma, 75% for gastric, and 67% for sarcoma. No discernible longitudinal pattern in the rates of discordance was noted. All meetings resulted in consensus decision, which were followed by the surgeon.

Conclusions

In this analysis MTC changed surgeon's decision in more than half of the cases. Most of the impact related to breast and colon cancer. These findings correlate well with existing literature, and confirm the utility of MTCs in a community general surgical practice. Analysis of discordance was less reliable in other cases given their low frequency. Future directions include provision of more detailed MTC records, with explicit pre-meeting investigation and treatment plans to assess MTC's impact on resource utilization.

NEOADJUVANT THERAPY AND NODAL PATHOLOGIC COMPLETE RESPONSE AFFECTS NODE COUNTS AT AXILLARY NODE DISSECTION IN BREAST CANCER

Authors

Emily Mackay, Elaine McKevitt, Carol Dingee, Urve Kuusk, Jin-Si Pao, Rebecca Warburton

Background

Recommendations for number of lymph nodes removed during axillary lymph node dissection (ALND) are based on a mathematical model that was created in the 1990's. This number has been used as a quality indicator in the surgical management of breast cancer. The management of the axilla has evolved dramatically over the years with less invasive techniques (sentinel node biopsy) and increased use of regional radiotherapy. The use of neoadjuvant therapy (NAT) has also changed the landscape of breast cancer treatment and is becoming common practice in the management of node positive breast cancer. Our objective is to characterize the effect of NAT and nodal pathologic complete response (pCR) on number of nodes retrieved at ALND in patients with breast cancer. Increased understanding of this effect may improve management of the axilla and alter quality indicators in breast cancer surgery.

Methods

A retrospective review of a prospectively maintained breast cancer database at Mount Saint Joseph Hospital was conducted to identify patients with invasive breast cancer who underwent ALND between January 1, 2012 and March 31, 2016. Lymph node yield at the time of ALND in patients treated with NAT was compared to patients that underwent surgery first. In the NAT group patients with a nodal pCR were compared to those with residual disease. Statistical analysis was performed using an unpaired t-test with Welch's correction; a p-value of < 0.05 was considered significant.

Results

A total of 313 patients with node positive invasive breast cancer requiring ALND were identified. 185 (59%) had surgery first and 128 (41%) were treated with NAT (chemotherapy, hormonal therapy, or a combination) followed by ALND. The average number of nodes removed in the surgery first group was 11.5 compared to 9.5 nodes in NAT group (Figure 1, $p = 0.0105$). The average number of positive nodes at ALND in the surgery first group was 3.9 compared to 2.6 in the NAT group ($p = 0.0285$). In the NAT group, 54% had positive nodes while 46% had nodal pCR. In the NAT group, node harvest number in residual axillary disease was 12.0, significantly higher than the average of 6.5 nodes when there was a nodal pCR (Figure 2, $p < 0.0001$).

Conclusions

While further characterization of the effect that NAT has on axillary nodes is needed, these findings demonstrate that NAT has a significant impact on the number of nodes removed at ALND. This seems to significantly affect those patients who achieve a nodal pCR. This questions the utility of node number as a quality indicator for ALND in the setting of NAT especially when patients achieve a nodal pCR.

SAVING THE AXILLA: CAN WE REDUCE UP FRONT AXILLARY LYMPH NODE DISSECTION IN T1/T2 BREAST CANCERS?

Authors

Percy, Dean MD MSc; Roberts, Amanda MD FRCSC; Pao Jinsi MD FRCSC; McKevitt, Elaine MD Med FRCSC; Dingee, Carol MD FRCSC; Kuusk, Urve MD FRCSC; Cheifetz, Rona MD FRCSC; Warburton, Rebecca MD FRCSC Department of General Surgery, The University of British Columbia, Vancouver, Canada Mount Saint Joseph Hospital, Vancouver, Canada

Background

Axillary lymph node dissection (ALND) for breast cancer carries a higher morbidity than sentinel lymph node biopsy. The American College of Surgeons Oncology Group (ACOSOG) Z0011 trial demonstrated that patients with T1-T2 breast cancer and <3 positive lymph nodes can potentially be spared ALND, with favourable long-term results. Despite this, patients with cT1-T2 disease and positive axillary lymph nodes (LN) detected on preoperative ultrasound and fine-needle aspirate (US/FNA) often undergo up-front ALND. The purpose of this study was to examine the proportion of patients with cT1-T2N1 invasive breast cancer who could potentially be spared ALND.

Methods

Patients with cT1-T2N1 primary invasive breast cancer treated with ALND were identified from an institutional database. Patients who received neoadjuvant treatment were excluded. For patients with non-palpable LNs, pre-operative axillary imaging with a positive LN biopsy confirmed N1 status. Patients with <3 positive LNs on final pathology were compared for both the palpable and non-palpable groups.

Results

283 patients underwent ALND for primary T1-T2 invasive breast cancer from 2012-2016. 91 patients met inclusion criteria; 52 (57%) patients had clinically palpable axillary lymphadenopathy, and 39 (43%) had a positive US/FNA. In the group with palpable lymphadenopathy, 26/52 (50%) had <3 positive LNs on final pathology. In the US/FNA group 17/39 (44%) had <3 positive LNs on final pathology. There was no significant difference between the two. The positive-predictive value for having a positive US/FNA and ≥3 LNs on final pathology was 0.56.

Conclusions

Of patients with cT1-T2 tumors who underwent ALND, almost one half (47%) could have potentially been spared an ALND based on ACOSOG Z0011 criteria for nodal burden. These results suggest that upfront ALND in node-positive cT1-T2 breast cancer may lead to over treatment in some patients. Further study is required to determine possible candidacy for avoiding upfront ALND in the setting of preoperative positive axillary LNs.

OUTCOMES AND RISK FACTORS OF PERITONEAL PERFORATION DURING TRANSANAL ENDOSCOPIC MICROSURGERY

Authors

Jonathan Ramkumar, Ahmer A Karimuddin, P. Terry Phang, Manoj J Raval, and Carl Brown2 1Division of General Surgery, University of British Columbia 2Department of Surgery, Section of Colorectal Surgery, St. Paul's Hospital

Background

In patients treated by transanal endoscopic microsurgery (TEM), breach of the peritoneal cavity is feared intraoperative challenge. Our aim is to analyze predictors and outcomes of patients with peritoneal perforation (TEM-P) when compared to similar patients with no peritoneal compromise (TEM-N).

Methods

At St. Paul's Hospital, demographic, surgical, pathologic, and follow up data for all patients treated by TEM is maintained in a prospectively populated database. Two groups were established for comparison: TEM-P and TEM-N. Statistical analysis was performed using student's t or chi-squared test, where appropriate.

Results

Of 619 patients treated by TEM between 2007 and 2016, 39 (6%) patients were in the TEM-P group and 580 (94%) in the TEM-N group. There were no differences between the groups in patient age, gender, histology or tumor size. Patients who had peritoneal perforations had more proximal lesions (11 vs. 7cm, $p < 0.0001$), anterior lesions (56% vs. 43%, $p<0.05$) and longer operations (80 vs. 51mins, $p < 0.005$). While most defects were closed endoluminally, 2 patients with perforation were converted to trans-abdominal surgery. There was a difference in overall hospital stay with TEM-P patients staying on average 2 days in hospital with fewer patients managed as day surgery (31% vs. 73%, $p <0.0001$). There were no mortalities or significant 30-day complications in the TEM-P group and only one patient required readmission.

Conclusions

The St. Paul's Hospital TEM experience suggests that proximal, anterior lesions are at highest risk of peritoneal perforation. Select TEM patients with peritoneal perforation can be transluminally managed and treated as day surgery. Finally, patients with peritoneal breach during TEM can be safely managed with no significant short-term complications.

THE IMPACT OF CANCER DIAGNOSIS ON PATIENT REPORTED OUTCOMES IN PATIENTS UNDERGOING COLORECTAL SURGERY

Authors

Manoharan, Shiana, MD, Department of Surgery UBC, Karimuddin, Ahmer, MD MAEd FRCSC, St. Paul's Hospital, Liu, Guiping, PhD, Center for Health Services and Policy Research UBC, Brown, Carl, MD MSc FACS FRCSC, St. Paul's Hospital, Phang, P. Terry, MD MSc FRCSC FACS FABCRS, St. Paul's Hospital, Raval, Manoj, MD MSc FRCSC, St. Paul's Hospital, Crump, Trafford, Ph.D, Cumming School of Medicine Calgary, Sutherland, Jason, BA MSc Ph.D, Center for Health Services and Policy Research

Background

Research has measured the impact of colorectal cancer surgery and surgery for benign colorectal conditions on health-related quality-of-life. There is, however, a gap in understanding the difference between patients' health-related quality-of-life between patients with colorectal cancer surgery and surgery for benign colorectal conditions. The objective of this study is to examine the effect of an oncologic diagnosis on patients' health-related quality-of-life before and after abdominal colorectal surgery and evaluate whether it was the procedure or the diagnosis which challenged recovery.

Methods

A surgical patient registry was routinely queried to identify patients newly booked for abdominal colorectal surgery. Patients completed a number of validated instruments, including health status (EQ-5D), pain (PEG-3) and depression (PHQ-9). Patients were surveyed a second time six months post-surgically. Participants were stratified into two groups: cancer and non-cancer diagnosis. Multivariate regression models were used to model changes in patient-reported outcomes, adjusting for cancer diagnosis.

Results

134 patients agreed to participate, completed, and returned the survey prior to surgery and six months post-surgery. 83 patients had a diagnosis of colorectal cancer. 51 participants did not have a cancer diagnosis, with inflammatory bowel disease and diverticular disease being most common.

On their overall health, non-cancer patients improved more than cancer patients. Patients without cancer reported higher pre-operative levels of pain, and larger post-operative improvement, than those with cancer (t-test, $p = 0.04$). There was no difference in change in pre-operative and post-operative depression scores between cancer and non-cancer groups ($p = 0.96$).

Conclusions

While cancer and non-cancer patients experienced an improvement in overall health and pain, the gain in self-reported health was more marked among participants with benign disorders. This study points to the diagnosis being more responsible than the procedure in affecting post-operative recovery, though more research is needed to confirm these findings.

TECHNIQUE OF EXTENDED ILIOFEMORAL EVERSION ENDARTERECTOMY FOR SEVERE ILIOFEMORAL ARTERIAL DISEASE

Authors

Gautamn Sarwal MD MEd (cand), Jonathan Misskey MD MEd, John D.S. Reid MD FRCPC, Ravindar Sidhu MD MEd FRCPC and Peter S. MacDonald, MD FRCPC

Background

To demonstrate our novel approach to managing severe iliofemoral arterial disease, with an extended iliofemoral eversion endarterectomy (IFEE).

Methods

We performed a retrospective review of all patients undergoing IFEE from 2007 to 2015 at our institution. This included patients who underwent IFEE, with or without an additional procedure for inflow or outflow improvement.

Surgical technique

The common femoral artery (CFA) and external iliac artery (EIA) are exposed via a vertical or oblique groin incision. All side branches are ligated and proximal control achieved with balloon occlusion. The CFA is then transected at its bifurcation and everted superiorly to the EIA. The endarterectomized segment is then re-anastamosed in an end-to-end fashion onto the CFA bifurcation or its branches, thus providing an autologous arterial reconstruction.

Results

112 patients underwent IFEE with a total of 140 limbs over eight years. 59 limbs (42.1%) presented with critical limb ischemia. Mean age was 72.1 years and the American Society of Anaesthesiologists grade was three. A vertical incision was used in 93 cases. Post endarterectomy, the iliofemoral segment was re-anastamosed to the CFA bifurcation in 68 limbs (48.6%), PFA in 70 limbs (50%) and SFA in two limbs (1.4%). 49 procedures (35%) involved an additional profunda femoris or superficial femoral artery endarterectomy. 72 patients had adjunctive re-vascularization procedures including iliac stenting (40%) or distal bypass (31%).

The 30-day mortality was 5%, one of whom died secondary to an underlying malignancy. We noted 15 (10.1%) systemic complications and 16 (11.4%) minor complications. Systemic complications included three myocardial infarctions, one stroke, seven cases of sepsis and four cases of acute limb ischemia requiring thrombectomy. There was one patient with technical failure due to chronic occlusion. Local complications included four groin infections, six wound dehiscences, and six surgical site collections, all managed conservatively. We report no amputations.

Conclusions

IFEE is an alternative means of treating iliofemoral arterial disease with patency and efficacy to be analyzed in a future study.

LITHIUM ASSOCIATED HYPERPARATHYROIDISM & HYPOTHYROIDSM STUDY

Authors

Dr. Kristin DeGirolamo BSc, MD, MSc (Candidate) and Sam M. Wiseman BSc, MD, FRCSC, FACS

Background

Lithium is the mainstay treatment for many difficult to manage psychiatric conditions such as bipolar disorder, and treatment resistant depression.1 Although it's full mechanism of action remains unknown, it is thought to act via the inositol monophosphatase pathway in the hypothalamus and the frontal cortex.1 Lithium is also well known for it's multiple side effects including effects on the thyroid and parathyroid glands.1 It can cause deregulation of calcium homeostasis and parathyroid and thyroid functioning.1 Very limited documentation of these effects may be found in the literature and no current guidelines are available for physicians regarding lithium use and hyperparathyroidism and thyroid function surveillance, aside from ordering calcium and TSH levels, respectively. We aim to evaluate the management of individuals in British Columbia who are receiving lithium and are at risk for developing hyperparathyroidism and hypothyroidism. The current study aims to use a survey to determine how this population is currently screened, and potentially contribute to the development of screening guidelines.

Methods

Patients who have had lithium levels ordered in the past 4 years will be identified using the Laboratory Services Information System at St. Paul's Hospital. The primary care provider or psychiatrist who referred these patients for the lab test will be identified using the Laboratory Services Information System. A letter and brief survey regarding the patients' eligibility for the study will be sent to the physician via fax by the Principle Investigatory (PI) or Research Coordinator.

The study concludes once the survey is completed by the physician and is returned to the PI. For patients with surveys that there is no received response within 3 months of the initial mail out, a second identical mail out will be faxed to the ordering physician. Patients that are referred to the endocrine medical/surgical clinic by their ordering physician will be managed as per current clinical standards of care, and the outcomes of their evaluations and treatments will be retrospectively reviewed by the study investigators.

Results

Pending

Conclusions

Pending

UTILITY OF PREOPERATIVE LOCALIZATION WITH DUAL ENERGY CT (DECT) FOR HYPERPARATHYROIDISM

Authors

Jake Hiebert MD, Cameron Hague, MD, FRCPC2, George Sexsmith, MD, FRCPC3, Sam Wiseman, MD, FRCSC1 Affiliations: St. Paul's Hospital, Departments of Surgery1, Radiology2, and Nuclear Medicine3

Background

Primary hyperparathyroidism has an incidence of up to 0.2%, and 85% of the time it is caused by a solitary parathyroid adenoma (PTA). Surgery remains the only cure. Over the last two decades, advances in medical imaging and the development in intra-operative PTH assays have allowed a transition from bilateral neck exploration to less invasive surgical approaches by localizing adenomas pre/intra-operatively. Despite utilizing the standard imaging modalities, US and CT-MIBI, there are still a significant number of patients who fail to localize, or localize incorrectly. We have previously shown, in a group of 24 patients, that dual energy CT is equivalent to US and superior to CT-MIBI. This study will look at approximately 200 patients to further evaluate the utility of DECT in preoperative localization.

The objective of this study is to look at a larger cohort of patients to compare the ability of DECT to accurately localize abnormal parathyroid gland(s) to US and CT-MIBI within a single quaternary centre (St. Paul's Hospital). We will also evaluate the utility of DECT in cases where other imaging modalities were non-localizing, and in the re-operative setting for recurrent disease.

Methods

This study will be a retrospective chart review of all patients with hyperparathyroidism undergoing DECT for preoperative parathyroid localization. Patients will be excluded if they did not undergo all 3 preoperative localization studies and subsequent parathyroid surgery at SPH. The following data will be collected and analyzed: patient demographics, pre-operative laboratory investigations (iCa, PTH), imaging results, intra-operative PTH values, intra-operative findings, pathology results, and post-operative laboratory investigations (iCa, PTH). True location of the abnormal parathyroid gland, delineated at time of surgery, will be compared to predictions made by the preoperative imaging modalities.

Results

The sensitivity, PPV, and accuracy of each modality will be calculated and compared. We will also specifically look at DECT's performance in circumstances where the other modalities were non-localizing, and in the re-operative setting for recurrent/persistent disease.

Conclusions

This study will provide important insight into the role of DECT in the preoperative localization of parathyroid adenomas.

GALECTIN-3 AS A SERUM MARKER FOR THYROID CANCER

Authors

Jennifer Li, Marie DeMarco, Sam Wiseman

Background

Thyroid cancer is a common head and neck endocrine malignancy and its incidence is rising. However, despite the high prevalence of thyroid nodules in the general population, the incidence of thyroid cancer, although increasing, remains low. The current most accurate diagnostic tool, FNA, is an invasive procedure and often inconclusive, subjecting patients to unnecessary operations and associated risk where in majority of cases the final pathology returns benign. The search for an accurate, simple and non-invasive pre-operative diagnostic tool for thyroid cancer is ongoing.

Galectin-3 is a protein with diverse biological functions and plays a well-documented role in carcinogenesis in various cancers, and in particular is highly expressed in well-differentiated thyroid cancer. It has received significant attention in recent years and has been extensively investigated for potential use as a marker for thyroid cancer, both on the tissue level and in FNA cytology. However, it was only in the last few years that researchers have begun to investigate the diagnostic potential of its serum level, with inconsistent results to date. In the current study, we propose a prospective trial in which patient serum samples will be collected prior to undergoing thyroidectomies and serum galectin-3 levels analyzed and compared to final pathology to assess its potential utility as a biomarker for thyroid cancer.

Methods

Every patient over the age of 18 who is referred with thyroid nodule to St. Paul's Hospital, who is eligible for thyroid resection will be recruited and consented to participate in the study. Pre-operative blood samples will be collected in the immediate pre-operative period in the operating room after induction of general anesthesia and will again be collected at the initial postoperative visit. Commercial ELIZA kit will be used for the measurement of serum galectin-3 level. Clinical data, specifically pathology reports, will also be collected. We anticipate accrual of 100 patients over one year.

All data will be collected on standard Excel spreadsheet and data will be divided into two groups – thyroid cancer vs. benign thyroid conditions. Standard univariate and multivariate analysis will be used to determine whether there is a statistically significant difference between the serum galectin-3 level between the two groups.

Results

NA

Conclusions

NA

STAPLED VERSUS HAND-SEWN PEDIATRIC INTESTINAL ANASTOMOSES: PRELIMINARY RESULTS FROM A RETROSPECTIVE COHORT STUDY

Authors

Hintz, Graeme, MD (Department of General Surgery); Alshehri, Abdullah MD, FRCPC (Division of Pediatric General Surgery); Bell, Carolyn, BSc (UBC Medicine); Butterworth, Sonia MD, FRCPC (Division of Pediatric General Surgery)

Background

Though frequently performed, the choice of intestinal anastomotic technique remains inadequately investigated in the pediatric population. Evidence on the use of stapled intestinal anastomosis in the pediatric population is sparse; outcomes have found reduced operative times and no difference in safety parameters when stapled anastomosis was compared to hand-sewn groups. The primary outcome measure for our study was anastomotic dehiscence, secondary outcome measures were anastomotic stricture and other intestinal complications requiring intervention.

Methods

All pediatric patients (<18 years) undergoing intestinal anastomosis at a single academic centre over a four year period were included. This patient cohort was divided into two groups according to the technique used to construct their anastomoses: either a hand-sewn anastomosis (HA) or a stapled anastomosis (SA). HA and SA groups were compared using the following details: demographics, surgical diagnosis, intestinal condition, and location of the anastomosis, as well as post-operative intestinal complications including anastomotic dehiscence and stricture formation. Comparison was performed using T-test, Chi-Square, and Fisher's Exact test, as appropriate. We plan to incorporate regression analysis to adjust for confounders, as well as a subgroup analysis of newborns vs. infants, pending complete data collection.

Results

Preliminary results included 96 patients, having undergone a total of 117 intestinal anastomoses (78 HA and 39 SA). The mean age and weight at operation differed significantly between the two groups (2.8 vs. 6.4 years, and 6.9 vs. 29.7 kilograms, in the HA and SA groups respectively). Both groups were similar in their other baseline characteristics, including prematurity, and congenital anomalies. The overall anastomotic leak rate was 2.6% with no statistically significant difference between groups (3.8% in the HA group versus 0% in the SA group). Despite an overall stricture rate of 12%, there was no significant difference between the two groups (11.5% in the HA group versus 12.8% in the SA group). Other complications (including post-operative bowel obstruction, and entero-cutaneous fistula) were not significantly different between groups. Mean length of follow up was 47.5 months in the HA group vs. 46 months in the SA group.

Conclusions

We concluded from our preliminary results that overall, both hand-sewn and stapled anastomotic techniques have similar anastomotic complication rates in our population of pediatric patients. Adjustment for cofounders and subgroup analysis will be important to determine if there are specific patient factors or anatomic considerations which would favour one intestinal anastomosis technique over another.

IS PREOPERATIVE NODAL SAMPLING IN THE ABSENCE OF FDG-AVID MEDIASTINAL NODES IN EARLY STAGE NON-SMALL CELL LUNG CANCER NECESSARY? A SINGLE-CENTRE EXPERIENCE IN PREOPERATIVE STAGING WITH PET-CT.

Authors

Mak, N MD, Ashrafi, A MD, Bond, J MD

Background

One in 12 Canadian males and 1 in 15 females will be diagnosed with lung cancer in their lifetime. Over 80% of lung cancers comprise of non-small cell lung cancer (NSCLC) subtypes. For resectable non-small cell lung cancer, determining mediastinal nodal status is central in determining prognosis and the need for post-operative chemotherapy. Post-operative chemotherapy in stage II or stage IIIa NSCLC has been shown to decrease recurrence rate and increase survival rate.

The practice of routine nodal sampling has evolved since the addition of PET-CT to the standard preoperative staging of lung cancer. The sensitivity and accuracy of mediastinal nodal staging with PET-CT may be such that it is no longer necessary to pursue nodal sampling in patients without FDG-avid lymph nodes.

Our purpose is to evaluate our center's approach to surgical management of patient's with clinical stage I and II NSCLC in which patients without evidence of mediastinal nodal disease on PET-CT do not undergo routine preoperative lymph node sampling prior to thoracoscopic resection. The overall survival, incidence of upstaging on final pathology and early recurrences will be evaluated to validate a simpler approach to the staging and surgical management of NSCLC and the accuracy of preoperative PET-CT.

Methods

A retrospective cohort study of patients with clinical stage 1 or 2 NSCLC who underwent a lobectomy between 2010 to 2016 at Surrey Memorial Hospital will be conducted. Patients with adenocarcinoma, squamous cell carcinoma, broncheoalveolar carcinoma and carcinoid types are included. Patient characteristics resulting in exclusion are: small cell lung cancer, metastasectomy, benign lung disease, absence of preoperative PET scan, death within the immediate postoperative period, non-cancer related death within the first year of surgery.

Patients without FDG avid mediastinal nodes on preoperative CT. Primary outcomes will be frequency of upstaging following final surgical pathology, accuracy of PET-CT in preoperative mediastinal nodal staging (i.e. sensitivity, specificity, positive, and negative predictive values) and recurrence rate. Secondary outcomes will include adequacy of nodal sampling and oncological outcomes such as disease-free survival and mortality.

Patient outcomes and accuracy of PET-CT in our population will be compared with those previously published in the literature.

Results

450 patients were included in this study. The average age of patients with clinical stage 1 or 2 NSCLC who underwent thoracoscopic lobectomy was 71 years with a standard deviation of 10.6 years. 93% of patients presented without mediastinal node disease on preoperative PET-CT. Only 13 out of 450 patients underwent mediastinal nodal sampling prior to planned lobectomy.

After surgical resection, 95% of patients were determined to have N0 or N1 disease, and 5% of patients had N2 or distant metastases. The negative predictive value of FDG avidity on PET-CT of the chest was 93%.

Conclusions

The aim of this study is to evaluate the management strategy for NSCLC patients who have operable disease. The advent of PET-CT has improved noninvasive preoperative staging of NSCLC. The accuracy of PET-CT is demonstrated here. In this population of patients, a large majority present preoperatively without N2 disease on PET-CT (> 90%). The resulting negative predictive value is 93%. This suggests that may be reasonable to forego preoperative nodal sampling in the patient who is referred for thoracoscopic resection and who possesses a PET negative mediastinum. This cohort study is ongoing. Data for five-year recurrence rates and survival in this group is pending. After five-year outcomes are obtained, comparisons may be made to published data on patients undergoing systematic nodal sampling.

INCISIONAL NEGATIVE PRESSURE WOUND THERAPY FOLLOWING COLORECTAL RESECTION: A SINGLE SITE, PROSPECTIVE, RANDOMIZED CONTROL TRIAL (PROTOCOL)

Authors

Webb, Mitchell, PGY1 General Surgery; Nguyen, Vy, FRCSC MIS Fellow; Chiu, Jack, FRCSC; Meneghetti, Adam FRCSC; Panton, Neely FRCSC FACS Divisional Head of General Surgery

Background

Surgical site infection (SSI) is associated with considerable patient morbidity, mortality, and use of health care resources. Clean-contaminated general surgical procedures, such a colorectal surgery, inherently carry a higher than average rate of SSI, ranging from 15% - 30%.

Over the last decade, interest has shifted towards the use of negative pressure wound therapy over closed incisions; dubbed incisional Negative Pressure Wound Therapy (iNPWT). There is mounting evidence that, in certain populations, iNPWT promotes healing and confers a reduction in the incidence of surgical site infections and wound complications.

Systematic review of the recent literature has identified a need for further high quality randomized trials to establish guidelines on appropriate indications for use of this technology.5 In colorectal surgery, there is limited data demonstrating the benefit of iNPWT. Much of the literature is based on retrospective review, but the first clinical trials are currently under way.

This trial expands upon the current evidence and includes both laparoscopic and open colorectal resections.

Methods

In this single-institution, prospective, randomized, open-label, superiority trial, patients scheduled for elective colorectal resection with or without creation of an ostomy (open or MIS) will be considered eligible. Exclusion criteria includes patients who are under 19, pregnant, immune compromised, allergic/sensitive to adhesive dressings or operations performed under an emergent basis, without an anastomosis (e.g. APR/Hartmann), for palliation or without a midline incision made for specimen extraction. Cases involving additional procedures at time of CRR (eg. hernia repair) will also be excluded. Anticipating a wound complication rate of 20-30%, and a RRR of 50%, we will recruit subjects to provide appropriate power. Subjects will be randomized into one of two treatment arms: use of standardized adhesive dressings vs application of a negative pressure wound device for three days. The surgical team will inspect incisions every day leading to discharge. Patients will be followed up to 30 days following surgery and a satisfaction questionnaire will be completed by the patient on the last day of follow up. SSIs will be diagnosed according to CDC guidelines.

Results

There is a 11% rate of SSI in elective colorectal patients at our institution. The rate of wound complication, as defined above, is currently unknown, but based on anecdotal experience, we estimate a 20% incidence. Planning for a relative reduction of 50%, we will recruit 420 patients in total (200 in each treatment arm + a 5% drop out rate).

Primary outcomes will be compared using the chi-squared test for categorical data. This analysis will be performed according to an intention-to-treat principle.

Secondary outcomes will be arranged into continuous and categorical data, with categorical data to be compared using Chi-squared test and non-normally distributed continuous variables compared using the Wilcoxon rank-sum test

Baseline characteristics will include: Age, BMI, ASA, Diabetes, smoking history, BMI, operative time, blood loss, use of an intraoperative wound protector, preoperative antibiotics, intraoperative antibiotics, duration of postoperative antibiotics, type of colorectal resection, purpose for resection, length of incision.

Conclusions

The aim of this proposed study is to ascertain if a wound healing benefit is conferred according to dressing type. Incisional Negative Pressure Wound Therapy devices are becoming popular in certain patient populations, particularly those with high risk wounds and surgeries. Our institution, with its prospectively collected database and evidence-based perioperative protocols, is well suited for such a study.

USABILITY OF A MOBILE ELECTRONIC PLATFORM FOR TRAUMA PATIENT RESUSCITATION AND MANAGEMENT

Authors

K Duncan1, L Roux2, E Zargaran1, M Brennan2, H Bandurski2, I Muravyov2, L Cohen2, A Hubbard3, R Callcut4, M Cohen5, SM Hameed1,2 1 University of British Columbia, 2 T6 Health Systems, 3 UC Berkeley, 4 UC San Francisco, 5 Denver Health

Background

Providing care to trauma patients requires the healthcare team to simultaneously assess and manage critically ill patients in a timely manner. Modern technology can aid clinicians in recording, analyzing and communicating data in a way that optimizes patient care and team dynamics. This study describes the testing of a mobile electronic interface for trauma patients that provides real-time data to inform decision-making and quality improvement.

Methods

A mobile digital interface for clinical documentation, designed to closely mirror clinical processes in trauma care, was built on a comprehensive foundation of trauma resuscitation data. The interface enables trauma teams to collect data in real time during the process of trauma care, and to wirelessly relay it to a spectrum of data visualization and analytics applications to promote patient-specific best practices and optimization of trauma team dynamics.

This platform was tested with thirteen resident doctors and surgical nurses using simulated patients. A think-out-loud protocol was used to assess key heuristics adapted from the literature.1-4 Participants were encouraged to verbalize their experiences as they entered simulated patient data. They were then sent an electronic survey with questions based on the chosen heuristics.

Results

The iPad-based interface was found to be user-friendly and intuitive for the resident doctors and nurses. Users particularly appreciated the built-in tools to aid in score calculation and flowsheets outlining clinical practice guidelines for specific patient problems. Most users appreciated the emphasis on efficient checklists that minimized typing. The most common concern voiced was regarding speed of data entry in a trauma activation.

Conclusions

It is feasible for trauma teams to collect real-time clinical data at the point of trauma resuscitation via a mobile electronic device. The iPad-based platform was intuitive and easy to use for both nurses and physicians. This platform has great potential to inform and optimize patient care in a high acuity setting.

The most recent version of the iPad-based interface is currently being piloted at a Level One trauma centre in Cape Town, South Africa. Currently, more than 1000 patients have been entered by front line trauma teams at the point of trauma care. An assessment of the initial experiences with the program is currently underway.

REVIEW OF SURGICALLY MANAGED THYROID NODULES WITH A CYTOPATHOLOGIC DIAGNOSIS OF "ATYPIA OF UNDETERMINED SIGNIFICANCE" AND THE EFFECT OF PAPILLARY FEATURES ON RISK OF MALIGNANCY

Authors

Jean Oosthuizen, MD[a], Blair Walker, MD, FRCPC[b], Sam M. Wiseman, MD, FRCSC, FACS[a]

[a] Department of Surgery, St. Paul's Hospital & University of British Columbia, Vancouver, British Columbia, Canada
[b] Department of Pathology & Laboratory Medicine, St. Paul's Hospital & University of British Columbia, Vancouver, British Columbia, Canada

Background

Thyroid nodules are a common clinical problem, and may be found in up to 70% of individuals by ultrasound. Historically, varied and non-standardized terminology for reporting the cytological appearance of biopsies has led to confusion and uncertainty regarding malignancy risk. This led to the development and publication of The Bethesda System for Reporting Thyroid Cytopathology (BSRTC) in 2007.

Since the adoption of the BSRTC many centres have found variation in the risk of malignancy (ROM) associated with each of the Bethesda diagnostic categories and their own experience. In particular, the category Atypia of Undetermined Significance or Follicular Lesion of Undetermined Significance (AUS-FLUS) has been found to have a significantly higher ROM than what was originally published (5-15% cancer risk). Several authors have found an association with papillary features and an elevated ROM for AUS-FLUS cases. The prevailing belief is that papillary features characterizes a readily identifiable subgroup within AUS-FLUS diagnostic group that is responsible for the higher ROM.

Study Objectives

1. To determine the incidence of cancer in thyroid nodules diagnosed by the Bethesda System for Reporting Thyroid Cytopathology as 'atypia of undetermined significance' (AUS-FLUS) at our institution (St. Paul's Hospital) between years 2010 and 2016
2. To determine the association between papillary features and risk of malignancy (ROM) for thyroid nodules diagnosed as AUS-FLUS

Hypothesis

Cytopathological identification of the presence of papillary features increases the risk of a malignancy for thyroid nodules diagnosed as AUS-FLUS.

Methods

A Retrospective chart review of all cases of thyroid nodules undergoing surgery with previous cytopathology reported at St. Paul's Hospital from 2010 to 2016 will be performed. Those cases with available FNAB pathology with a diagnosis of AUS-FLUS will be extracted. Final FNAB pathology reports for all cases will be reviewed for identification of papillary features. A random subset of those cases identified as having papillary features will undergo direct pathological review to ensure methodological validity.

Conclusion

The Bethesda System for Reporting Thyroid Cytopathology has provided a standardized framework for pathologists interpreting thyroid FNAB specimens, and provides ROM with clear management guidelines for clinicians. Further refinement to the AUS-FLUS diagnostic group seems warranted, as its ROM is not consistent with reported risk. Those specimens with papillary features on cytopathology appear to be responsible for the observed higher than anticipated risk of malignancy. Our intention is to try and retrospectively identify those cases with papillary features within our own institution, and characterize their associated ROM. This may inform our practice and improve patient counselling and identify those cases diagnosed as AUS-FLUS who would potentially benefit from diagnostic thyroid lobectomy, as opposed to repeat FNAB or observation.