



RESIDENTS' RESEARCH DAY

May 12, 2011

JUDGES



Selwyn O. Rogers, Jr, MD, MPH
Visiting Professor

Associate Professor of Surgery, Harvard Medical School
Chief of Burn, Trauma, and Surgical Critical Care, Brigham & Women's Hospital
Co-Director of Surgical ICU, Brigham & Women's Hospital
Co-Director of Outcomes Research and Quality Improvement, Centre for Surgery and Public Health

My research work focuses on outcomes following surgical procedures, disparities in surgical care, and improving the quality of healthcare. Using epidemiological and health services research methods, areas of investigation include characterizing the surgical outcomes of different patient populations. Current investigation focuses on improving the quality of care and understanding unwarranted variation in both process of care and healthcare delivery. My clinical interests lie in the care of patients following trauma and critical illness. Furthermore, I have a great deal of interest in improving the quality of care in minority populations, including addressing the implementation gap of surgical delivery in resources constrained environments. I have sought to translate research into practice by promoting health equity with community efforts, from local churches to the global community.



Stephen Chung, MD, PhD, FRCSC

Professor, Department of Surgery, University of British Columbia
Scientific Director, BC Transplant Society
Medical Manager, Oncology & Specialty Surgery, Vancouver General Hospital

Dr. Chung's academic career incorporates the principles of research and education with clinical subspecialization, developing each pathway in a complementary manner. His clinical activities focus on diseases of the liver (primarily cancer and liver transplantation), pancreas and the biliary tree. His research has been focused upon the modulation of the immune system in animal and human studies as it relates to transplantation and cancer. Specific research interests include development of new strategies for monitoring the immune status of transplant recipients and evaluation of novel tolerance inducing regimens in different animal models of transplantation. He is part of a transplant immunology research team funded by a grant from Genome Canada examining the gene expression profile of immune cells from transplant recipients in order to develop methods of immunomonitoring to predict transplant graft rejection or accommodation. In parallel research studies, these principles of immunological evaluation have been applied to assessment of predicting outcomes of patients undergoing surgical resections for liver and pancreatic cancer. Dr. Chung also has educational interests in surgical sciences, especially related to liver diseases and transplantation. He is involved in undergraduate, postgraduate and continuing medical education in these areas, has established a university-wide symposium for faculty and students in transplantation, and has organized several postgraduate surgical and research educational forums. Dr. Chung heads the Canadian Institutes of Health Research Strategic Training Program in Transplantation.



O.M. Neely Panton, MB, BS, FRCSC, FACS

Clinical Professor, Department of Surgery, University of British Columbia
Head – Division of General Surgery, University of British Columbia & Vancouver General Hospital

Dr. Neely Panton completed Medical School at the University of the West Indies receiving the MB BS degrees in 1977. He entered the University of British Columbia General Surgical Residency Program in 1979 completing Resident training in 1984. He became a Fellow of the Royal College of Physicians and Surgeons of Canada in November 1983. Dr. Panton practiced as a community surgeon from 1984-1999 & joined the staff at the UBC Hospital in 1999. He developed an early interest in Laparoscopic Surgery performing diagnostic laparoscopy on entering practice. He trained with Dr. Eddy Joe Reddick in the United States in 1990 introducing laparoscopic cholecystectomy & appendectomy into his practice in the spring of 1991. In the fall of 1991 he trained with the late Dr. Carl Zucker, Dr. Robert Bailey, Dr. Mark Talamini & Dr. John Corbin Jr in the USA & introduced laparoscopic Inguinal Herniorrhaphy, Nissen Fundoplication, Colectomy & Bile Duct Exploration in his practice in 1991. He collaborated with Dr. John MacFarlane in the early 90's to develop laparoscopic splenectomy at St. Paul's Hospital in Vancouver, BC, Canada. He & Dr. Richard Finley collaborated to introduce the techniques of Nissen & partial fundoplication in the early 90's in Vancouver & Delta, BC. Over the past twenty years he has preceptored surgeons in Canada & Internationally in the field of Laparoscopic Surgery. In 2000 he & Dr. Mark Meloche introduced laparoscopic adrenalectomy at the UBC Hospital. Dr. Panton is a Minimally Invasive Surgeon & is Head of the UBC Division of General Surgery.



Sandra Jarvis-Selinger, PhD

Assistant Professor, Department of Surgery, University of British Columbia
Michael Smith Foundation for Health Research Scholar
Associate Director, Education eHealth Strategy Office

Dr. Jarvis-Selinger is an Assistant Professor in the Department of Surgery and Associate Director in the eHealth Strategy Office. In 2008 she received a Michael Smith Foundation for Health Research Career Investigator Award. She is a PhD-trained educational specialist and researcher in the area of Human Learning, Development and Instruction (UBC Faculty of Education). Her work focuses on educational innovation and knowledge translation, which specifically includes: 1) the development of excellence in teaching and 2) the use of technology to support education. All of her research focuses on how to translate knowledge into action. To this end, Dr. Jarvis-Selinger has been included in the top 15 Knowledge Translation researchers by dollar amount in Western Canada, tied for second in BC (based on an independent report completed by the Alberta Heritage Foundation for Medical Research, 2007).

2010 RESIDENT RESEARCH DAY WINNERS

Congratulations to last year's winners:

Best Research Proposal

Sarah Lord The Road Traffic Injury Report Card: A Survey of Incidence Rates in Communities Across Canada

Best Project Clinical Year

Gareth Eeson Practice and Outcome Variation in the Management of Congenital Diaphragmatic Hernia – A CAPSnet Study

Best Project Dedicated Research Year

Amanda Johner Detection and Management of Hypothyroidism Following Total or Near Total Thyroid Lobectomy: Evaluation of a Clinical Algorithm



The Royal College of Physicians and Surgeons of Canada Region 1 Advisory Committee have approved a Continuing Medical Education Grant in support of Dr. Selwyn O. Rogers, Jr.



This event is an Accredited Group Learning Activity eligible for up to **5.25** 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.

MORNING SESSION

CHAIR: Dr. Sonia Butterworth

| | | |
|-----------|-------------------|-------------------------------------------------------------------------------------------|
| 0730-0800 | | Breakfast & Registration |
| 0800-0805 | Dr. Garth Warnock | Welcome |
| 0805-0815 | Dr. Morad Hameed | Introduction of Judges & Visiting Professor, Dr. Selwyn O. Rogers, Jr. Contest Details |

Oncology / Immunology / Transplantation

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| 0835-0845 | Dr. Clara Tan-Tam | HIV Liver Transplantation: A Clinical Review of The BC Experience | 8 |
| 0850-0900 | Darya Habibi | Small Molecule Inhibitor Borrelidin Induces Apoptosis in Acute Lymphoblastic Leukemia Cell Lines | 9 |
| 0905-0915 | Megan Himmel | Human CD4+FOXP3+ T regulatory Cells Produce IL-8 Recruit Inflammatory Immune Cells | 10 |
| 0920-0930 | Andrew Ming-Lum | Small Molecule Ship Agonists: Mimicking Il-10 to Treat Inflammatory Bowel Disease | 11 |
| 0935-1015 | Refreshment Break | | |

Trauma / Acute Care Surgery

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| 1030-1040 | Dr. Amanda Johner | Cost-Utility of Early Versus Delayed Laparoscopic Cholecystectomy for Acute Cholecystitis | 13 |
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| 1115-1200 | Dr. Selwyn Rogers, Jr. | Visiting Professor Royal College Lecture "Health Services Research in Surgery" | |

1200-1340 ALUMNI LUNCHEON
Medical Student & Alumni Centre (MSAC) 2750 Heather Street

BASIC SCIENCE LUNCH & POSTER SESSION Everyone Welcome
Department of Surgery Conference Room, JPN 3134

AFTERNOON SESSION

CHAIR: Dr. Erik Skarsgard

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| RESIDENTS' & ALUMNI DINNER <i>Marine Drive Golf Club, 7425 Yew Street</i> | | | |
| 1815 | Reception | | |
| 1900 | Dinner | | |

ABSTRACTS

CHARACTERIZATION OF NON-AIDS DEFINING MALIGNANCIES IN HIV/AIDS-INFECTED INDIVIDUALS IN THE HAART ERA: A STUDY OF 5012 PATIENTS

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³Population and Preventive Oncology, British Columbia Cancer Agency, British Columbia, Canada.

INTRODUCTION

Non-AIDS defining malignancies (NADM) have become of increasing importance because individuals diagnosed with HIV/AIDS now have lengthy survival and improved immune function in the era of Highly Active Anti-Retroviral Therapy (HAART). The objectives of the study were to determine the incidence of NADMs among HIV/AIDS infected persons, and to determine the clinical characteristics associated with a diagnosis of a NADM, in a large population based cohort.

METHODS

A retrospective cohort study was conducted utilizing matched health administrative data obtained through linkage of two provincial health databases: the British Columbia Cancer Registry (BCCR), and the British Columbia Centre for Excellence in HIV/AIDS (BC-CfE) Drug Treatment Program (DTP) Registry. The DTP is a centralized provincial drug administration centre, and all individuals receiving anti-retroviral therapy in British Columbia are registered in the DTP. Individuals in the DTP registry were included in the study if anti-retroviral drug therapy had begun between August 1st, 1996 and March 31st, 2008. Standardized incidence ratios (SIR) for cancer, Kaplan-Meier survival estimates, and univariate and multivariate analyses of clinical variables associated with NADMs were calculated.

RESULTS

A total of 303 NADMs and 256 ADMs were identified in 5012 individuals infected with HIV/AIDS in the study cohort. 195 NADMs and 124 ADMs were identified in individuals while on anti-retroviral treatment, and 108 NADMs and 132 ADMs were recorded before initiation of HIV/AIDS drug therapy. Of the NADMs that developed during anti-retroviral drug treatment, the five most common sites were cancers of the: lung (16.4%), anal canal and anus (14.9%), cervix in-situ (14.4%), skin (11.8%), and prostate (4.6%). The overall SIR for NADM was 2.69 (C.I. 2.33 to 3.10) in the DTP cohort compared to the general population of British Columbia. Cancer of the anal canal and anus represented 19.5% (29 of 149 cases) of NADMs amongst males, and cervical cancer in-situ represented 60.9% (28 of 46 cases) of NADMs amongst females. Males aged 20 to 39 years and females aged 20 to 39 were particularly at risk for development of NADM compared to the general population. Individuals with a NADM in the DTP registry had a similar overall survival compared to the general population. Clinical variables that were significantly associated with the development of a NADM amongst individuals infected with HIV/AIDS on anti-retroviral drug therapy were: older age of enrollment into the DTP, a lower nadir CD4 cell counts, the presence of another NADM prior to DTP enrollment, the absence of HAART, and enrollment in DTP prior to year 2000.

CONCLUSIONS

The current study provides a contemporary overview of the implication of HAART and cancer risk in the HIV/AIDS population. The incidence of NADMs has currently surpassed the incidence of ADMs in our patient cohort. The ongoing development of more effective HAART, allowing for improved maintenance of immune function, and more intensive screening and prevention practices for anal and cervical cancers, requires further study and will ultimately benefit individuals diagnosed with HIV/AIDS.

HIV LIVER TRANSPLANTATION: THE BC EXPERIENCE

C. Tan-Tam, P. Verma, P. Richardson, C. Scudamore, J. Montaner and E. Yoshida.

Vancouver General Hospital, BC Transplant, and British Columbia Centre for Excellence in HIV/AIDS, Vancouver, BC

Evidence clearly indicates that infection with Human Immunodeficiency virus (HIV) is no longer an acceptable exclusion criteria for solid organ transplantation. The demand for definitive management for end-stage organ disease for these patients continues to grow. Despite evidence in the United States (USA) of good clinical outcomes, HIV infected Canadians with end-stage liver disease are still prohibited from undergoing transplantation, except in British Columbia (BC) where the liver transplant program of BC Transplant has accepted these patients for referral, assessment, listing and providing them with a liver allograft. There is a need to evaluate the experience in BC to help us determine the issues surrounding liver and kidney transplantation in HIV-infected patients, and examine our clinical strategies to provide them with the optimal care. This is the first project of its kind in Canada.

The purpose of this project is to allow for an assessment of quality assurance in terms of management for this complex population, and provide vital information for this growing subset of Canadians.

This is a literature review and analysis of clinical cases. These candidates were all referred to the BC Transplant for liver/renal transplantation. We investigated the reasons for referral for transplantation, and compared the status of the patients and their clinical outcomes.

The outcome of this study may persuade other Canadian centres to discontinue the current prohibition of liver transplantation for Canadian HIV infected residents outside of BC.

SMALL MOLECULE INHIBITOR BORRELIDIN INDUCES APOPTOSIS IN ACUTE LYMPHOBLASTIC LEUKEMIA CELL LINES

Darya Habibi (M.Sc.)^{1,2}, Nadya Ogloff (B.Sc.)¹, Reza B. Jalili (MD, Ph.D.)², Aziz Ghahary (Ph.D.)², Christopher J. Ong (Ph.D.)¹

¹The Prostate Centre at Vancouver General Hospital, Department of Surgery, University of British Columbia, Vancouver, British Columbia, Canada. ² Department of Surgery, University of British Columbia, Vancouver, British Columbia, Canada.

BACKGROUND

Acute lymphoblastic leukemia (ALL) is the most common malignancy diagnosed in children. L-asparaginase (L-ASNase), an important agent in the treatment of ALL, catalyzes the hydrolysis of asparagine (Asn), leading to activation of the general control nonderepressible-2(GCN2) kinase stress-responsive pathway, inhibition of protein synthesis, and apoptotic cell death. Unfortunately, allergic hypersensitivity reactions can occur in patients after repeated administrations of ASNase and are the main reason for discontinuation of ASNase treatment. Borrelidin, a small molecule nitrile-containing macrolide, is a known inhibitor of bacterial and eukaryal threonyl-tRNA synthetase (ThrRS). As both ASNase and borrelidin increase the levels of uncharged tRNA, we hypothesize that ASNase may be replaced by borrelidin. Thus, the aim of the present study was to investigate if borrelidin could have a potential role in targeting ALL cell lines and, whether the GCN2 kinase pathway activation is involved as one of the downstream mechanisms by which borrelidin affects lymphoblastic cells.

METHODS

In order to mediate inhibition of threonyl-tRNA synthesis and to induce nutritional stress in ALL cell lines, Jurkat and CEM cells, cells were treated with borrelidin. Proliferation assay was also performed and the growth rate of these cells was studied. Propidium iodide staining and flow cytometry were performed to study the apoptotic effects of borrelidin on these cells as well as to study the effects of borrelidin on cell cycle progression. The levels of phosphorylated GCN2, total GCN2, phosphorylated eIF2 α , total eIF2 α , CHOP and cleaved PARP were evaluated by Western blot analysis.

RESULTS

Borrelidin was able to potently inhibit the proliferation and growth of ALL cell lines in low concentrations. Borrelidin showed a greater apoptotic effect on T cells compared to primary fibroblasts (half maximal inhibitory concentration (IC₅₀) of 50 ng/ml and 400 ng/ml respectively). Flow cytometry and Western blot analysis indicated that borrelidin was able to increase the level of apoptosis in treated Jurkat cells as compared with non-treated control groups (3.9 ± 1.26 and 0.77 ± 0.06 , respectively; $p < 0.01$, $n = 3$). Flow cytometry results showed a significant dose-dependent G₁ arrest in Jurkat cells treated with borrelidin (10.88 ± 0.63) compared to that of non-treated control group (4.18 ± 0.24 ; $p < 0.001$, $n = 3$). Activation of the GCN2 kinase pathway as well as induction of the proapoptotic CHOP protein was significantly higher in ALL cell lines treated with borrelidin relative to that of control non-treated cells.

CONCLUSIONS

These findings collectively suggest for the first time that borrelidin may have promising potentials in treating ALL by activating the GCN2 kinase pathway, inducing apoptosis and mediating G₁ arrest in T-cells.

HUMAN CD4+FOXP3+ T REGULATORY CELLS PRODUCE IL-8 AND RECRUIT INFLAMMATORY IMMUNE CELLS

Himmel, Megan E.¹, Crome, Sarah¹, Ivison, Sabine², Steiner, Theodore² and Levings, Megan K.¹

¹Child and Family Research Institute, and ²Vancouver Coastal Health Research Institute, University of British Columbia, Vancouver, British Columbia, Canada.

FOXP3⁺ T regulatory cells (Tregs) play a key role in establishing and maintaining tolerance to self and foreign antigens. If Tregs are lost through genetic or environmental factors, dysregulated immune responses can lead to diseases such as diabetes, rheumatoid arthritis, or inflammatory bowel disease. On the other hand, replacing or enhancing Tregs can restore immune homeostasis, and prevent autoimmunity. Tregs are well equipped to rapidly travel to sites of inflammation, and indeed inflamed tissues often have significant numbers of these cells. However, the biological significance of the early arrival of Tregs into inflamed tissues remains unknown. We hypothesized that one function of Tregs could be to produce chemokines and attract immune cells that could rapidly resolve inflammation. Using flow cytometry, multiplex chemokine assays, and neutrophil migration assays, we found that Tregs are significant producers of the chemokine Interleukin-8 (IL-8), which binds to the IL-8 receptors CXCR1 or CXCR2 and attracts neutrophils to sites of inflammation. Evidence that IL-8 producing Tregs did not co-secrete IL-17 or IFN-gamma indicates that production of this chemokine is not due to contaminating conventional T cells. Furthermore, Treg derived IL-8 is functional and able to attract neutrophils. Transduction of naïve CD4⁺ T cells with FOXP3 also leads to IL-8 expression. These results offer new insight into the function of Tregs and support the notion that they may play a role in the recruitment of innate inflammatory immune cells to sites of inflammation during the early stages of an immune response.

SMALL MOLECULE SHIP AGONISTS: MIMICKING IL-10 TO TREAT INFLAMMATORY BOWEL DISEASE

Ming-Lum, Andrew, BSc, Golds, Gary, MSc, McCarrell, Erin, MSc, Gold, Matthew, BSc Ghanipour, Ali, PhD, MD, Dhesi, Rupinder, Ong, Christopher, Mui, Alice, PhD,

Division of General Surgery, UBC and Immunity and Infection Research Centre, VCHRI

BACKGROUND

Inflammatory bowel disease (IBD) is a group of disorders in which an abnormal response of the immune system results in inflammation and ulceration of the intestines. Canada has the highest prevalence of IBD in the world an estimated 210,000 people living with the disease. Currently there is no cure for IBD and therapy is directed towards relief of symptoms through medication and when this fails, surgery. The anti-inflammatory cytokine interleukin-10 (IL10) is an important regulator of immune homeostasis. Genome-wide association studies have linked decreased expression of IL-10 gene or loss-of-function mutations in its receptor with the development of IBD. In order to develop new ways to treat IBD, our lab investigated the intracellular signal transduction pathways utilized by IL10 to control inflammation. The best known pathway used by IL10 is the STAT3 transcription factor mediated induction of anti-inflammatory gene products. We now show that in addition to the well-established STAT3 pathway, IL-10 utilizes an alternate, faster-acting signalling pathway through the lipid phosphatase SHIP and that this may provide novel targets for the treatment of IBD.

METHODS

Using small interfering RNA (siRNA)-mediated knockdown of STAT3 and SHIP in cell lines, we demonstrated the required presence of SHIP in order for IL-10 to mediate its early-phase anti-inflammatory effects. Additionally, we screened a library of sea-sponge extracts to identify potent and specific small molecule activators. Using IL-10 Knockout mice which develop a spontaneous form of colitis that shares many pathological features with human IBD, we tested the efficacy of our candidate SHIP agonist compounds at reducing intestinal inflammation.

RESULTS

Our data show that IL-10 utilizes a STAT3-independent signalling pathway and that this pathway, mediated by the lipid phosphatase SHIP, regulates the immediate response of an immune cell to IL-10. We also demonstrate that small molecule SHIP agonists are able to mimic the effect of IL-10 and reduce the production of pro-inflammatory cytokines *in vitro* and in an animal model of IBD.

CONCLUSIONS

Our studies show for the first time, non-STAT3 pathways downstream of the IL-10 receptor and that activation of this SHIP-dependent pathway can be used for the treatment of inflammatory disease. One molecule SHIP agonist has now passed phase I clinical trials, with phase II studies to begin by the end of the year.

SYSTEMATIC REVIEW OF BIOLOGICAL MESH REPAIR OF COMPLICATED ABDOMINAL HERNIAS

Fry, Nick MD MHSc General Surgery

BACKGROUND

Biological mesh products are a relative newcomer to the field of complicated hernia repair. Unlike conventional mesh products they provide a framework for the healing process that allows revascularization to occur. Preliminary studies suggest that biologic mesh products reduce recurrence rates and reduce infection rates while being suitable for contaminated fields. There are few large controlled studies and much of the literature is industry driven. A systematic review of the literature can provide a framework to properly assess these claims.

METHODS

A systematic review of the literature was undertaken with inclusion of studies examining the use of biological mesh products in human abdominal wall hernias. Studies that were non clinical or examined the use of biological mesh in non-abdominal repairs were excluded. After quality analysis a total of 8 studies were identified and a standardized data extraction was performed. Meta analysis was performed using institutional historical control data for illustrative purposes.

RESULTS

Publication bias was not as large an issue as expected. Demonstrating a reduction in infection rates proved difficult due to the high prevalence of previously infected fields in study subjects. Biological mesh was associated with a reduction in hernia recurrence when compared to historical controls (OR 0.68)

CONCLUSIONS

The literature supporting the use of biological mesh remains immature but does appear to support claims of reduced hernia recurrence when used in contaminated fields. Larger case series, particularly those with properly matched controls will be invaluable in guiding the proper use of these products in the future.

COST-UTILITY OF EARLY VERSUS DELAYED LAPAROSCOPIC CHOLECYSTECTOMY FOR ACUTE CHOLECYSTITIS

Amanda Johner BSc MHSc MD, Sam M. Wiseman MD FRCSC

Department of Surgery, St. Paul's Hospital & The University of British Columbia

BACKGROUND

Early laparoscopic cholecystectomy for acute cholecystitis is safe and effective. The potential cost savings of this management strategy have not been well studied in a North American context. The objective of this study was to estimate the cost-effectiveness of early laparoscopic cholecystectomy compared with delayed laparoscopic cholecystectomy in Canada.

METHODOLOGY

A decision tree model estimating and comparing costs to a Canadian providing institution following either early or delayed laparoscopic cholecystectomy was utilized. Health care resources consumed were calculated by way of local hospital data. Outcomes were measured in QALYs gained over one year. Uncertainty was investigated with a one-way sensitivity analysis, varying the probabilities of the events and utilities.

RESULTS

In a cohort of 1000 patients over 1 year, early laparoscopic cholecystectomy was estimated to cost approximately \$2 million less than delayed laparoscopic cholecystectomy, with an incremental gain of approximately 52 QALYs. Only extreme values of bile duct injury or bile leak altered the direction of incremental gain.

CONCLUSIONS

Adoption of a policy in favor of early laparoscopic cholecystectomy will result in better patient quality of life and substantial savings to the Canadian health care system.

A GLOBAL INVENTORY OF TRAUMA SYSTEMS

Vanessa Fawcett MD, MPH, S. Morad Hameed MD, MPH, FRCSC, FACS, Charles Mock, MD, PhD, MPH, Richard Simons, MB, BCHIR, FRCSC, Nadine Schuurman BSc, MA, PhD

BACKGROUND

Trauma systems have emerged as a public health tool by which injury outcomes can be improved. The World Health Organization (WHO) has produced a Trauma System Maturity Index, whereby the growth of a trauma system in a given region can be assessed. The goal of the current project is to perform a systematic evaluation of trauma systems throughout the world, using the WHO Trauma System Maturity Index. By understanding the current state of trauma systems worldwide steps can be taken to facilitate their evolution, thereby contributing to improved trauma outcomes.

METHODS

A three-phase approach has been undertaken. The first is adaptation of the WHO Trauma System Maturity Index to create a functional tool. The second is a systematic review of the published and grey literature on trauma systems throughout the world. Finally, this review informs a region-by-region assessment of current trauma systems. The results are presented in a mapped format.

RESULTS

The level of maturity of 5 trauma systems is presented. These systems come from regions that represent diverse geographical and sociopolitical settings.

CONCLUSIONS

This project has shown the feasibility of determining the stage of growth of trauma systems in different regions of the world. Strengths and weaknesses of such systems have emerged, along with gaps in knowledge. The project is ongoing.

THE BENEFITS OF LAPAROSCOPIC APPENDECTOMIES IN OBESE PATIENTS

C.Tan-Tam, E.Yorke, Wasdell, D. Konkin and N.P. Blair.

Royal Columbian Hospital, Fraser Health, New Westminster, BC

BACKGROUND

Patients who receive laparoscopic appendectomies (LA) recover faster and have lower postoperative complications as compared with those who received open appendectomies (OA). Recent systematic reviews and randomized control trials comparing laparoscopic appendectomies with open appendectomies have identified a reduction in wound infections associated with LA, but a threefold increase in intraabdominal abscess with LA. Length in time of surgery and operation costs were significantly higher with LA. The advantage of LA over OA was small, and the recommendations arising from the systematic review suggest routine employment of LA in special cases, such as young women and obese patients, although these patients have not been specifically analyzed in the report. The purpose of this study is to determine if obese patients benefit in shorter length of stay (LOS) by having LA versus OA surgery relative to non-obese patients.

METHODS

Retrospective chart review of all patients who have undergone appendectomy at Royal Columbian Hospital and Burnaby hospital between 2005 and 2009. Pregnant women and patients who had appendectomies combined with other surgeries were excluded.

RESULTS

The LOS is shorter overall for LA, but the difference between obese and not obese patients is smaller with LA. The variability in LOS is much higher in obese patients as compared to not obese patients. The BMI and type of surgery contribute to a significant difference in LOS.

CONCLUSIONS

Obese patients who undergo LA have decreased LOS as compared to obese patients who undergo OA for appendicitis. This is the first study demonstrating specifically that LA would most benefit obese patients and the health care system.

THE ROLE OF NPAS4 ON BETA CELL ACTIVITY

Sabatini, Paul, BSc; Lynn Francis BSc, PhD

Children and Family Research Institute

BACKGROUND

Diabetes is characterized by chronic hyperglycemia, caused by either β -cell destruction (Type I) or by peripheral insulin resistance (Type II). The long term effects of diabetes include neuropathy, skin ulcers, retinopathy and the number of diabetics is increasing in all regions of the globe. Currently, type 1 diabetics monitor blood-glucose levels and inject insulin postprandially; however islet transplantation offers relief from insulin injections as well as offering better glycemic control. However there is a shortage of β -cells available for transplantation. Being able to produce β -cells from stem would dramatically increase the number of β -cells available for transplantation, however, in order to increase the efficiency of differentiating stem cells to β -cells, a better understanding of factors which control β -cell function is required. Npas4 is a transcription factor which has only been studied in the context of neurons; where it has been shown to be up regulated in response to neuron depolarization. An Npas4 KO mouse has been generated and these mice have increased susceptibility to neurotoxins such as kainite, leading researchers to conclude that Npas4 has an 'on demand' cytoprotective function. While Npas4 is present in beta cells, nothing is known about its function on beta cell activity, however, based on the function of Npas4 in neurons we hypothesize that Npas4 protects beta cells in time of stress.

METHODS

Using both the min6 cell line and islets isolated from wildtype mice, we have assessed insulin secretion using a variety of stimulatory agents, following Npas4 over-expression using an adenoviral vector. We have also measured insulin expression by real time polymerase chain reaction (RT-PCR) in min6 cells where Npas4 has been over-expressed.

RESULTS

Overexpressing Npas4 in min6 cells significantly decreases insulin expression as shown through our RT-PCR experiments, this translates to a decrease in insulin secretion as shown in our glucose and potassium stimulated insulin secretion measurements. Interestingly, specifically opening L-type calcium channels (which stimulates insulin secretion late in the insulin secretion pathway) does not yield lower insulin secretion values in min6 cells where Npas4 has been over-expressed, suggesting that npas4 is not only involved in regulating insulin expression but is also inhibiting its secretion in the proximal steps of the pathway.

CONCLUSIONS

Npas4 is a transcription factor which has an 'on demand' cytoprotective function in neurons; within beta cells, we have shown that it is involved in reducing insulin secretion in response to glucose. With further study of how Npas4 may effect insulin secretion as well as how it may be involved in protecting beta cells in times of stress, we can apply Npas4 as part of a stem cell differentiation protocol or islet transplantation protocol. However, more extensive research will be needed to illuminate the mechanism. Various techniques will be used to understand the effect that Npas4 has on β -cells, including; Npas4 over expression and knock-down in tissue culture, as well as a β -cells specific Npas4 knockout mouse. As Npas4 is downregulated during an increase in β -cell mass; it is hypothesized that Npas4 plays an inhibitory role in β -cells production and that the knockout of Npas4 will lead to greater β -cell mass and insulin production. With an understanding of the role of Npas4 in β -cells, new therapies for type one diabetes could be developed using stem cells.

MEDIAL TO LATERAL VERSUS LATERAL TO MEDIAL APPROACH FOR LAPAROSCOPIC RIGHT HEMICOLECTOMY

Rana S Khan (MBBS, Department of Surgery, UBC), Carola Behrens M.A.Sc, Bao Tang MD, FRCS(C)

Department of Surgery, Royal Jubilee Hospital and Victoria General Hospital, Victoria, BC.

BACKGROUND

Laparoscopic Colon Resection (LCR) is well-documented and now standard practice in many centers throughout the world. Although LCR is associated with decrease pain, decrease blood loss, improve cosmesis and improve 30-day morbidity and mortality compared to open, it takes longer to perform LCR compare to open technique.

Two techniques emerged since the introduction of LCR, Lateral-to-Medial (LM) and Medial-to-Lateral (ML). LM is the same technique as open technique by mobilizing the colon laterally starting from white line of Toldt and dividing the Ileo-Colic (IC) pedicle extracorporeally. ML technique starts dissection with controlling and dividing the IC pedical first and dissecting medially to reach the lateral attachments of colon and dividing them. The specimen is then retrieved through mini-laparotomy incision, and extracorporeal anastomosis performed.

OBJECTIVE

We designed this study to demonstrate the differences in outcomes between the two techniques in mobilizing the right colon for right hemicolectomy. We also want to see the difference in terms of adequacy of resection in cancer patients.

DESIGN

This is a prospectively collected Data reviewed from Jan 2004 to Feb 2011 from a single surgeon. Primary outcomes we measured were the duration of operation, conversion rate, and number of lymph node resected in cancer patients. The secondary outcomes measured include, incision length, length of hospital stay, complication rate including late complications, cost difference, and 30-day readmission rate.

RESULTS

There were 42 patients in ML group and 37 in LM group. Both groups were similar in terms of age, sex, BMI, ASA class, previous abdominal surgery and diagnosis. OR time was significantly shorter in ML group 143.6min compared to 179.5mins in LM group (**p=0.0003**). Conversion rate was significantly lower in ML group 2.4% compared to 16.2% in LM (**p=0.047**). Overall complication rate were 19.5%(n=8) and 16.2%(n=6) in ML and LM respectively (p-value0.934). There was no significant difference in length of incision, length of hospital stay, complication rate, 30-D readmission rate. 79% patient in ML receive only routine postoperative analgesics compared to 81% LM which is not significantly different.

Among cancer patients, the ML (n=29) and LM (n=23) were similar in terms of age, sex, previous abdominal surgery, ASA and cancer stage. Again the OR-time was shorter in ML group (**p=0.0002**). Number of LN harvested in ML were significantly higher (ML: 24.6+/-10.6 vs LM: 16.7+/-8.5, **p=0.006**). Cost difference between the two techniques in our study was constant \$512 due to our choice of using Versaport™ and Endo-GIA stapler.

CONCLUSIONS

Medial-to-Lateral approach for right hemicolectomy is associated with shorter operating time, and decrease conversion rate. Among cancer patients in addition to above benefits it significantly increases lymph node harvest. The cost of instruments is higher in ML group in our study but significantly lower operative time may negate this difference.

THYROID PATHOLOGY REPORTING AT A CANADIAN CENTRE: A CRITICAL APPRAISAL

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BACKGROUND

Cancer surgical pathology reports contain information which is crucial for diagnosis, staging, post-operative management, and determining completeness of resection. The traditional narrative format is prone to errors and omissions with variability in format and content. The College of American Pathologists (CAP) has defined validated checklists that form the basis for synoptic reporting to ensure consistency and accuracy.

METHODS

Thyroid cancer surgical pathology reports from a Canadian tertiary care institution between 2001-2009 were retrospectively examined by two independent reviewers. Data was collected based on required and optional reporting elements from the CAP synoptic reporting checklist. Results were expressed as proportions of each element reported.

RESULTS

Data was abstracted from 389 pathology reports by two reviewers with 90.7% agreement. Required elements with 100% reporting included procedure and histologic type. Tumour characteristics including tumour capsule was reported in 32.1% of reports, tumour laterality in 93.8% and tumour size in 81.5%. 41.1% of specimens contained multifocal tumours with the number of foci were reported in 75%. Required elements describing cancer spread included margin status which was reported in 91.3% of reports, lymph-vascular invasion in 61.7%, extrathyroidal extension in 59.9% and lymph node status in 60.2%. Of those with reported lymph nodes, extranodal cancer extension was reported in only 16.5%. There was low reporting (<5%) of the minor elements histologic grade perineural invasion.

CONCLUSIONS

With narrative pathologic reporting, the majority of elements were incompletely reported. Crucial information which may impact post-surgical management may not be conveyed to the surgeon and treatment team. Such baseline data has provided justification for transitioning to a thyroid pathology synoptic reporting format.

OUTCOMES OF LAPAROSCOPIC COLON CANCER SURGERY IN A POPULATION BASED COHORT IN BRITISH COLUMBIA – ARE THEY AS GOOD AS THE CLINICAL TRIALS?

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BACKGROUND

Multiple randomized, controlled trials have shown that outcomes of laparoscopic and open colectomy for colon cancer are equivalent when performed by well-trained surgeons experienced in both techniques. The goal of this study was to evaluate the outcomes of laparoscopic colon resection at a population level.

METHODS

We report the implementation of laparoscopic colectomy in the province of British Columbia (BC) for all curable colon cancers referred to the BC Cancer Agency over a 6-year period from 2003 to 2008 inclusive. Using the prospectively-collected Gastrointestinal Cancer Outcomes Unit (GICOU) database and conducting a retrospective chart review, short- and long-term outcomes in patients with colon cancer treated with Laparoscopic-Assisted Colectomy (LAC) and Open Colectomy (OC) were compared.

RESULTS

There was a statistically significant increase in the proportion of LAC cases from 2003 to 2008 ($p < 0.001$). LAC was more likely to be performed in the elective setting as compared to emergency ($p < 0.001$) and for smaller tumors ($p < 0.001$). A similar proportion of patients in LAC and OC group had a minimum of 12 lymph nodes identified by pathology (58% vs. 60%, $p = ns$). Disease-free survival was similar for the two groups after adjusting for stage, emergency presentation and adjuvant chemotherapy. There was no difference in overall survival between LAC and OC groups during follow-up.

CONCLUSIONS

The introduction of laparoscopic techniques for colon cancer resection in British Columbia outside of optimized clinical trial conditions appears to be effective and safe.

ASSESSING RESIDENTS' SURGICAL SKILLS IN THE OPERATING ROOM: UTILITY OF A UNIVERSAL GLOBAL RATING SCALE

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a) Department of Surgery, St.Paul's Hospital & University of British Columbia, b) Division of Educational Support and Development, Faculty of Medicine, Vancouver, British Columbia, Canada, c) Department of Critical Care, UHN Toronto General Hospital, Toronto, Ontario

BACKGROUND

Surgical trainees' technical skills are not currently being assessed by certifying authorities. Most training programs rely on the In Training Evaluation Reports (ITERS), which are prone to significant bias. This highlights the need to for a Global Rating Scale (GRS) to assess performance in the operating room on a day-to-day basis. Our group has published pilot data supporting the use of such a GRS: the Global Rating Index of Technical Skills (GRITS). The objectives of this study were: 1) to determine the inter-rater reliability of the GRITS tool; 2) compare "live real-time assessment" and "videotape" review; 3) to determine the appropriate number of assessments to ensure generalizability of the results.

METHODS

This 2-phase study was conducted in the General Surgery Program at the University of British Columbia (UBC). In Phase I we investigated the inter-rater reliability of the GRITS form. Attending surgeons, surgeons blinded to resident identity, and surgeons using videotape review used the GRITS to assess residents performing surgical procedures. Intraclass correlation coefficients (ICC) were used for analysis. Phase II was the naturalistic implementation of the GRITS tool in the general surgery program over two years. Results were analyzed using generalizability theory.

RESULTS

Phase I – Five procedures were rated by the attending surgeon, a blinded surgeon in the operating room (from a different institution who did not know the residents), and three additional surgeons using videotape review. The ICC scores were significant and higher for surgeons present in the operating room (ICC 0.7) compared to those using videotape review (ICC 0.4-0.5). Phase II – Forty-three assessments by 26 separate surgeons were conducted on 7 residents. The generalizability for a mean of 4 encounters was .72. Using D study analysis, 7 assessments would be required for a generalizability of 0.8.

CONCLUSIONS

These results suggest that (1) using the attending surgeon as an assessor is appropriate; (2) reliance on videotaped assessment alone may not be sufficient; and (3) reasonable reliability is possible with four observations in a natural setting. Hence, there is sufficient justification for use of GRITS as a formative assessment. Further research to elucidate cultural barriers to implementation and gain further evidence for validity is required.

RECORDING EYE-TRACKING OF SURGEONS IN THE OPERATING ROOM: FEASIBILITY STUDY OF USING EYE-TRACKING FOR SURGICAL APPLICATIONS

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BACKGROUND

Successful performance in surgery requires a surgeon to possess sophisticated skills for continual acquisition of visual information from complex and dynamic environments. Quantifying the eye-gazing behavior may provide information into mental readiness and expertise for performing a surgical procedure, especially in Laparoscopic Surgery (LS). Our long-term objective is to incorporate eye-tracking technologies into the field of surgical education to improve the skills of surgeons performing image-guided surgical procedures. This project aims to solve a fundamental question towards this goal, i.e. how to record eye-tracking signal of a surgeon in the operating room (OR) while the surgeon is performing the live procedure on patients. Our previous experience has shown that eye gaze behaviors are different between an operator in doing a task versus just watching a video, and it is important to record surgeons' eye-tracking in the OR for education purpose. To do this we had to overcome few obstacles. We have used three different eye-gaze trackers in the past, with different wearing styles, scanning rates, resolutions, and viewing ranges. For this project, for higher resolution capturing device requirement we initially used Tobii 1750 Eyetracker and then Tobii X50 Eyetracker. Maintaining sterility of the OR is an important issue. The next obstacle was to merge eye-tracking signal with surgical video recorded from the laparoscope. Finally, these two sources of signal can be synchronized in time to reveal where the surgeon is looking at to the surgical site. This is the first time this technology has been used in the real operating room environment.

METHODS

We initially used Tobii 1750 that has accuracy of 1 degree and records at 50Hz on 17" display, then we moved on to a Tobii X50 eyetracker. This eyetracker can be moved close to surgeons while keeping surgical images displayed on the monitor at the comfortable distance to the surgeon. Our goal for this preliminary study was to successfully capture surgeons gaze during the live laparoscopic procedure.

RESULTS

In lab setting, Tobii 1750 worked well, but in OR we encountered many difficulties. There was a lot of equipment around patient and the monitor could not move over the patient which prevented surgeon to stand within 70 cm distance require for capture. Therefore we changed Tobii 1750 and used a Tobii X50 eyetracker with the cameral separated from the monitor. Starting on Nov 15, we have successfully recorded 11 cases of laparoscopic procedures during live operation. 4 surgeons were involved with the study with cases covered from laparoscopic cholecystectomy to hernia repairs.

CONCLUSIONS

Recording eye tracking of surgeons from the OR provides a unique and valuable way to study surgeon's visual research strategy. It opens a promising opportunity to create a novel educational method for improving resident's laparoscopic skills. Although the Tobii eyetracker is able to track eye-gaze under small head movements, the operating surgeons (either out of habit or by necessity) often make large movements, causing Tobii to lose track of the surgeons' eyes, leading to intervals of missing or unreliable data in our recordings. Adding a webcam to the data collection could identify these events, so we would have a view of the surgeon's face and actions. Simply observing the inactivity period is another way to rule out those periods of not capture to analyze the gaze or effectively.

DEVELOPMENT OF A SURGICAL FOOTPRINTING TOOL TO EVALUATE THE ENVIRONMENTAL IMPACT OF SURGICAL SERVICES

Andrea MacNeill, Robert Lillywhite, Carl Brown

The healthcare industry has an obligation to protect the health of the population it serves and the environment it inhabits while delivering the highest quality care. Paradoxically, the current delivery of healthcare results in numerous environmental insults that degrade ecosystems and compromise human health. The U.S. health sector is responsible for 8% of total greenhouse gas emissions, and the U.K.'s National Health Service contributes a full 25% of public sector emissions. In addition, the average mid-size American hospital consumes 25-35 million gallons of water annually, and collectively the U.S. health sector generates 2 billion tons of waste per year. The operating room is the most resource-intensive subsector, consuming disproportionately more energy and consumables than any other service. At present, there are no appropriate metrics with which to investigate the impact of surgical practice on local or global ecosystems. We are currently developing a comprehensive Surgical Footprinting Tool to quantify the environmental impact of operating suites, taking into account greenhouse gas emissions, energy consumption, waste and water management, and the surgical supply chain. This novel methodology will enable hospitals to calculate the environmental footprint of their surgical services, thereby establishing baselines for comparison of hospitals and health systems, and allowing evaluation of sustainable interventions over time. We have compiled case studies of existing sustainable interventions in operating rooms, and have extrapolated the environmental and economic impacts to North American and European health care markets. Based on these preliminary data, widespread implementation of sustainable surgical practices using current technologies could result in 25 million tonnes of CO₂ equivalents avoided per annum, with associated cost savings of USD 6 billion.

POSTER PRESENTATIONS

MAY 11, 2011

Location: VGH Jim Pattison Pavilion 1st Floor Corridor (by Gift Shop)

| | |
|-------|-----------------------------------------|
| 08:15 | Dr. Lisa Aird |
| 08:25 | Dr. Nori Bradley |
| 08:35 | Dr. Nori Bradley |
| 08:45 | Dr. Virginia Gunn |
| 08:55 | Dr. Cailan MacPherson |
| 09:05 | Dr. Cailan MacPherson |
| 09:15 | Dr. Cailan MacPherson |
| 09:25 | Dr. Brett Mador |
| 09:35 | Dr. Ben Matthew |
| 09:45 | Dr. Joey Ojah |
| 09:55 | Dr. Joey Ojah |
| 10:05 | Dr. Siham Zerhouni (absent – view only) |
| 10:10 | Dr. Zaheer Kanji (absent – view only) |
| 10:15 | Dr. May Tee (absent – view only) |

PROPOSAL FOR A RANDOMIZED CONTROLLED TRIAL COMPARING THE COSMETIC OUTCOME OF ELECTROCAUTERY VERSUS SCALPEL FOR SURGICAL SKIN INCISIONS

Lisa N.F. Aird, MD¹ Carl J. Brown, MD MSc FRCS^{1,2}

¹ University of British Columbia

² Department of Surgery, St. Paul's Hospital

Evaluation of the cosmetic outcome between electrocautery versus scalpel for incising skin (epidermis and dermis), to be performed as a randomized controlled trial at St. Paul's Hospital, Vancouver. Endpoints to include: objective scar measures, patient-rated scar appearance, wound complication rate, incisional blood loss, incision time, and post-operative wound pain.

ASSESSMENT OF TRAUMA TRANSFERS IN BC – IS IT TIME FOR A TRAUMA TRANSFER CHECKLIST?

N.L. Bradley¹, S.M. Hameed^{1,2}, R. Simons^{1,2}, Tracey Taulu² and Nasira Lakha²

¹ Department of General Surgery, University of British Columbia

² Trauma Services, Vancouver Coastal Health

Victims of trauma are often transferred from peripheral or lower acuity hospitals to higher level trauma centres. In BC, there is no standardized documentation that is required to accompany these patient transfers. Anecdotally, this appears to contribute to inappropriate resuscitation, delays in diagnoses and treatment of certain injuries, and duplication of imaging. We propose the implementation of a 'Trauma Transfer Checklist' will enhance accuracy of transfer handover, expedite appropriate patient treatment, decrease costs to the health care system and ultimately improve patient care.

MALIGNANT MELANOMA CARE IN BC: A REVIEW OF CURRENT PRACTICE AND EXAMINATION OF GEOGRAPHIC RISK FACTORS

Nori L. Bradley, MD¹, Sam M. Wiseman¹, MD, FRCSC, and Chris Badjik², PhD

¹Department of Surgery, University of British Columbia, Canada and

²Cancer Control Research, BC Cancer Agency

The incidence of malignant melanoma (MM) is increasing worldwide. Ultraviolet radiation exposure is an established modifiable risk factor for development of melanoma. Our study will use Environment Canada solar radiation data to examine the relationship between environmental UV exposure in BC's 5 health regions and rates of melanoma within the province.

HOSPITAL-BASED EXERCISE TRAINING FOR PATIENTS WITH PERIPHERAL ARTERY DISEASE

Virginia Gunn, Ravindar Sidhu

University of British Columbia, Department of Surgery

Patient with both symptomatic and asymptomatic claudication secondary to peripheral vascular disease have been shown to have increased rates of cardiovascular events. Exercise training has been incorporated into the current guidelines for management of PAD. We would like to study if participation in a regimented hospital-based exercise program will decrease the incidence of cardiovascular events in patients after peripheral revascularization for PAD.

UTILIZATION OF ABDOMINOPERINEAL RESECTION FOR RECTAL CANCER IN BC: EXAMINATION OF TEMPORAL TRENDS AND REGIONAL VARIATION

CA MacPherson,¹ JS Pao,¹ R Woods,³ MJ Raval,^{1,2} PT Phang,^{1,2} CJ Brown.^{1,2}

¹ Division of General Surgery, University of British Columbia.

² Division of General Surgery, St. Paul's Hospital

³ British Columbia Cancer Agency

The proportion of abdominoperineal resection to sphincter-preserving surgery has decreased in British Columbia from 2000 to 2007; however, over 30% of APRs during this period were performed for mid or high rectal tumours. This study seeks to determine whether regional trends in the use of APR exist.

MANAGEMENT GUIDELINE: APPROACH TO THE CHOICE OF DIAGNOSTIC IMAGING MODALITIES IN PREGNANT WOMEN PRESENTING WITH CLINICALLY SUSPECTED APPENDICITIS

Cailan MacPherson,^{1,4} Carl J Brown,^{1,3} S. Morad Hameed.^{1,2}

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² Division of General Surgery, Vancouver General Hospital.

³ Division of General Surgery, St. Paul's Hospital

⁴ School of Public and Population Health, University of British Columbia

The evidence for diagnostic imaging modalities for appendicitis in pregnancy was systematically reviewed. This management guideline provides a patient-centered, evidence-based approach to selecting appropriate imaging modalities for the investigation of appendicitis in pregnancy.

PROSPECTIVE ASSESSMENT OF SMALL INTESTINE ISCHEMIA WITH VISIBLE LIGHT SPECTROSCOPY

S Morad Hameed,^{1,2} Garth L Warnock,^{1,2} Cailan MacPherson,¹ Stephen M Cohn.³

¹ Division of General Surgery, University of British Columbia.

² Division of General Surgery, Vancouver General Hospital.

³ University of Texas Health Science Center San Antonio

The development of visual light spectroscopy (VLS) technology has facilitated the measurement of microvascular hemoglobin oxygen saturation. VLS thus presents a potential opportunity to improve intraoperative decision-making in cases of questionable bowel viability. This study will use VLS oximetry to compare capillary level tissue oxygenation between small intestinal tissue with and without evidence of necrosis.

CURRENT MANAGEMENT STRATEGIES FOR HEMORRHAGE DUE TO PELVIC TRAUMA: CLINICAL EQUIPOISE AMONG CANADIAN TRAUMA SURGEONS

Mador BD, Evans DE

UBC Department of Surgery, VCH Regional Trauma Services.

Hemorrhage secondary to severe pelvic fracture is a major cause of mortality in blunt trauma patients. However, the literature to date is not clear as to the optimal management of these patients, particularly in regards to the choice between angioembolization and operative pre-peritoneal pelvic packing. In this study we will utilize an electronic survey tool to determine if clinical equipoise exists in the management of pelvic hemorrhage in Canadian trauma patients.

MEDICAL VS. SURGICAL TREATMENT OF ANAL FISSURE DISEASE: A RETROSPECTIVE ANALYSIS OF PATIENTS FROM ST. PAUL'S HOSPITAL

Benjamin Matthew, MD

Anal fissures are now initially a medically treated condition, with a progressively rare need for surgical intervention. Anal fissures have classically been most effectively treated with surgical procedures (ie. Sphincterotomy), however there is a much higher associated morbidity, namely risk of post-procedure stool incontinence. St. Paul's hospital patients with anal fissures will be retrospectively identified as being treated with medical therapy through gathering Pharmanet data on commonly used agents (calcium channel blockers, nitroglycerin, isosorbide dinitrate, botox). These patients will then be followed based on their progression to needing surgical intervention (identified by billing code). The trend between medical therapy for anal fissures and further need for definitive surgical therapy will be established over time. This analysis will then be applied to propose potential changes to the local initial management of anal fissures, including the need for the initial involvement of a general, or colorectal surgeon.

EVOLUTION IN ECTOPIC MEDIASTINAL PARATHYROID ADENOMA MANAGEMENT

Joey Ojah- Resident 2, UBC General Surgery

Richard Finley- Professor, Head, UBC Division of Thoracic Surgery

Don Anderson – Clinical Professor, UBC Division of Otolaryngology

A small percentage of ectopic parathyroid adenomas require surgical exploration of the mediastinum for adequate exposure and excision. Significant reduction in morbidity and hospital length of stay may be obtained utilizing a video-assisted thoracoscopic approach as an open sternotomy-sparing strategy. Outcomes have been sparsely documented in the literature, resulting in low recognition and use of this approach. A retrospective review of cases performed at Vancouver General Hospital via the Thoracic and Otolaryngology services will be conducted.

CONTEMPORARY MANAGEMENT OF MEDULLARY THYROID CANCER IN BRITISH COLUMBIA: IS IT OPTIMIZED?

Joey Ojah – Resident 2, UBC General Surgery

Sam Wiseman – Assistant Professor, Michael Smith Scholar, UBC Division of General Surgery (St. Paul's Hospital)

John Hay – Clinical Professor, UBC Division of Radiation Oncology

Medullary thyroid cancer (MTC) comprises 5-10% of all thyroid malignancies and the proportion of MTC with a familial predisposition syndrome is the highest of any hereditary cancer syndrome. A retrospective population-based review will be conducted, cross-referencing the BCCA and BC Tumor Registry, comparing current provincial practices to the 2009 American Thyroid Association guidelines. Are there opportunities for further standardization and improvement in investigation and management?

CORRELATIVE ANALYSIS OF TUMOURS OF PATIENTS WITH PERITONEAL CARCINOMATOSIS TREATED WITH VACCINA VIRUS

S. Zerhouni, A. McCart

University of British Columbia, University of Toronto

Peritoneal carcinomatosis, despite decades of evolution in chemotherapy and surgical debulking, continues to represent, at diagnosis, a grim prognosis of less than 10% 5 year survival. The use of oncolytic virotherapy to preferentially target and destroy cancer cells is a rapidly growing field that has shown some promise in the treatment of peritoneal carcinomatosis. The aim of this study is to develop assays to quantify the immune and viral response of oncolytic vaccinia virus injected into patients with peritoneal carcinomatosis.

VALIDATION AND CHARACTERIZATION OF GENES IDENTIFIED BY EXOME SEQUENCING IN FAMILIAL PANCREATIC CANCER

Zaheer Kanji, Dr. Steven Gallinger

University of British Columbia, Research to be conducted at the University of Toronto

Pancreatic cancer remains a source of significant morbidity and mortality in North America of which 5-10% of all cases are likely influenced by strong hereditary factors. Familial Pancreatic Cancer (FPC) is thought to be inherited in an autosomal dominant fashion with variable penetrance. Our research aims to identify the genetic basis behind this devastating disease with the goal of improved surveillance.

RISK ADJUSTED ANALYSES OF BARIATRIC SURGERY OUTCOMES

M.C. Tee, MD, M.M. Hutter, MD, MPH, FACS

University of British Columbia, Harvard School of Public Health

Obesity is a major public health issue and surgical management has become an important tool in addressing this epidemic. Evaluation of procedure-specific risk of various bariatric surgeries allows for prediction of operative outcomes and facilitates informed decision-making for both the clinician and patient. The objective of the study is to determine risk-adjusted post-operative mortality for the following bariatric surgery procedures: (1) open roux-en-y gastric bypass (RYGB), (2) laparoscopic RYGB, and (3) laparoscopic gastric band.