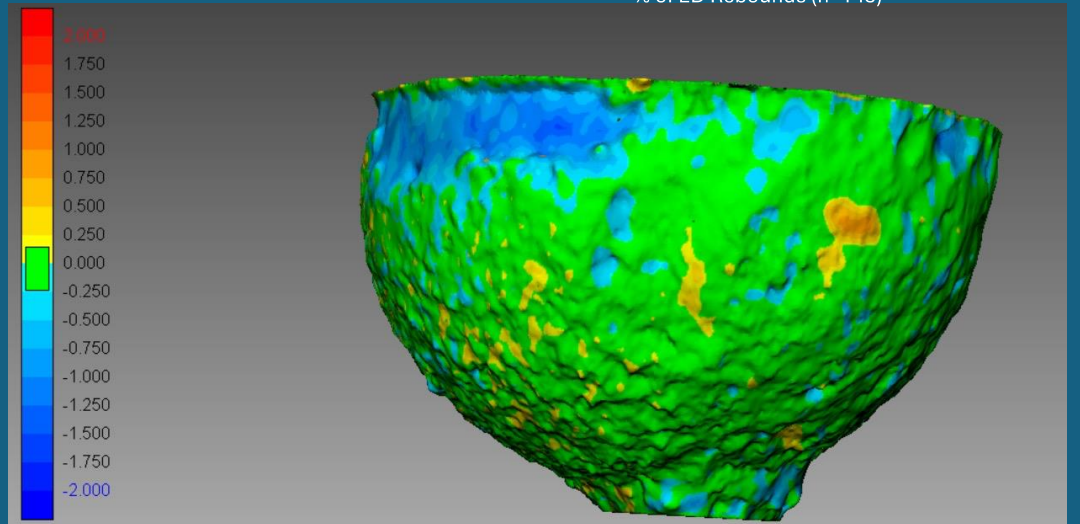
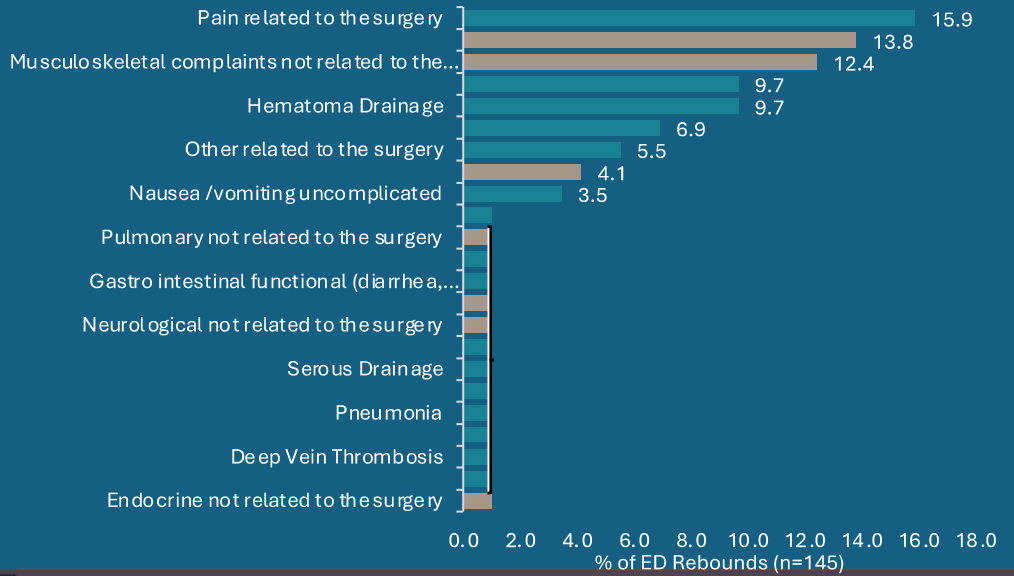
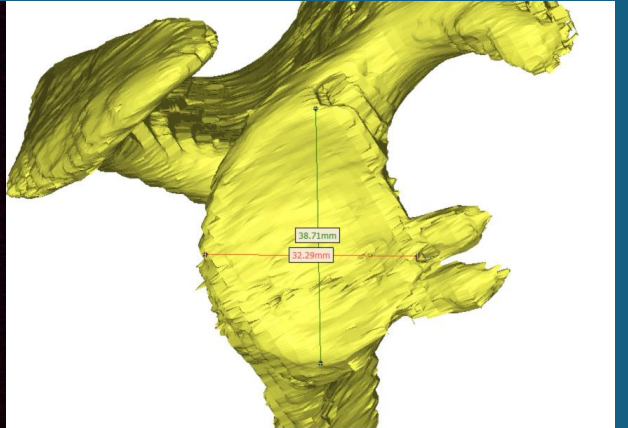
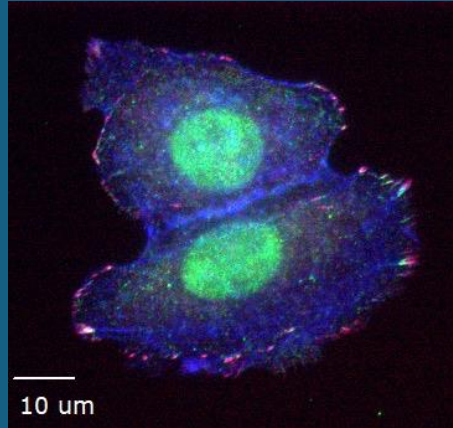


Research Day

April 10, 2024



Dr. Gail Darling
Professor and Head
Department of Surgery

It is a great pleasure to welcome you to our 34th Annual Research Day in the Department of Surgery at Dalhousie University. This day remains a flagship event in the Department, as it is the one day we bring together faculty, alumni, residents, medical students, graduate students, allied health professionals and friends of the Department to celebrate not only each other, but the excellent research we are conducting.



Fifty-six inquisitive minds will present their research projects spanning the full breadth of impactful research we do here in the Department of Surgery.

This year's Dr. Gordon Bethune Visiting Professor is a colleague of mine from the University of Toronto, **Dr. John Marshall**. I look forward to introducing you to him during his noon time keynote "How Covid-19 is Changing Clinical Research."

Our research program has been under the able stewardship of Dr. Michael Dunbar since 2017. He has led a motivated research committee to develop a culture of research within our department. Our Department provides support to our basic and translational scientists, our researchers in quality, education, access to surgical services, and patient outcomes. Our goal is to promote a culture of inquiry, laying solid foundations across the Department for all our members. I am confident that the Department's efforts towards these research initiatives will be apparent to all by the end of the day. Thank you for joining us for the academic highlight of the year.

Dr. Michael Dunbar
Director of Research



Welcome to the 34th Annual Resident Research Day in the Department of Surgery.

We received a record 79 abstracts for this year's Dal Surgery Research Day Competition. The overall caliber of the submissions this year was excellent. The planning committee, Dr. Richard Spence, Dr. Alison Wallace, Dr. Jim Fawcett, and I were tasked with the decision of awarding platform presentations from an outstanding field of abstracts submitted. I am appreciative of their efforts. I am especially appreciative of all our learners who are presenting their research today. Your efforts are important and impactful and will help move the yard sticks forward in the pursuit of excellence in surgical care.

This year's programme captures the significant breadth of research including decision support tools, epidemiology and quality care, prescription management, innovative basic science, medical and resident education, new surgical techniques, cancer outcomes, practicing in the digital age, and case costing.

We are especially proud this morning to share the findings of our department-wide project – the Emergency Department Rebound Study. This study has used a common resource and methodology that has been applied across multiple divisions within our department to investigate the rates and reasons for 90-day ED rebounds after common surgical procedures. By contrasting and comparing differences and similarities in results, we hope to look for potential solutions to directly improve patient outcomes and reduce the burden on strained emergency departments.

Please join me in welcoming the Nova Scotia Minister of Health and Wellness, The Honorable Michelle Thompson, who joins us today to give opening remarks. She will be with us during the discussion period after we present our Emergency Department Rebound Project. I look forward to her participation during this session.

I am also excited to welcome the Dr. Bethune Visiting Professor, Dr. John Marshall, who will present his talk "How COVID-19 is Changing Clinical Research" during our lunch hour. Our colleagues in the Departments of Ophthalmology and Anesthesia will join us during our combined Research Day in our main room. Funding and sponsorship were awarded to our combined research planning committee, and we gratefully acknowledge the financial support from Dalhousie University's Faculty of Medicine & Medical Research Development Office.

The Research Office is pleased to inform you that all physicians at today's function are eligible to receive **7.0** hours of accredited group learning activity credit.

I am looking forward to a stimulating and impactful day.

The Honorable Michelle Thompson
Nova Scotia Minister of Health and Wellness

The Honourable Michelle Thompson was first elected to the Nova Scotia House of Assembly as MLA for Antigonish in 2021 and was subsequently appointed Minister of Health and Wellness. She currently serves as both the Minister responsible for the Office of Healthcare Recruitment and the Minister responsible for Healthcare Redevelopment.



Minister Thompson has been a Registered Nurse for 32 years, working both on the frontlines as a care provider and in leadership roles. Prior to becoming MLA, Michelle was CEO at RK MacDonald Nursing Home in Antigonish, was President of the Continuing Care Association of Nova Scotia, taught nursing part-time at St. Francis Xavier University, and has served as a part-time therapist for a non-profit organization. Michelle extensively engages with her community through her previous involvement as a board member of the Antigonish Celtics Soccer Club, the PHAST Swim Team, and L'Arche Antigonish.

Minister Thompson has importantly been a strong advocate for innovation and research in the province. As an experienced clinician, she has a unique perspective on the value of translation research and how it can make a positive impact on patient care.

Dr. John Marshall

2024 Dr. Gordon W. Bethune Visiting Professor Combined Research Day Keynote Speaker

Dr. Marshall obtained his medical degree from the University of Toronto in 1977. He completed a fellowship in General Surgery at Dalhousie University in 1984 and undertook a research fellowship at McGill University under the mentorship of Dr. Jonathan Meakins.



He received the prestigious Royal College Medal for Surgery in 1989 following three years of a critical care surgical practice in Halifax. He moved to Toronto in 1990 and spent 15 years at the Toronto General Hospital as a critical care surgeon and intensivists before moving to St. Michael's Hospital in 2005.

Dr. Marshall is currently a Professor of Surgery at the University of Toronto. He runs a CIHR-funded laboratory at St. Michael's Hospital, focused on the mechanisms of prolonged neutrophil survival in sepsis. In addition, he serves as Chair of the Canadian Critical Care Trials Group – the oldest and most productive investigator-led critical care clinical trials group in the world. He is a past-president of the Surgical Infection Society, and past-Chair of the International Sepsis Forum. Dr. Marshall has published more than 210 papers and 75 chapters and has given more than 600 invited lectures around the world.

Dr. Marshall's lecture, "*How COVID-19 is Changing Clinical Research*", will start at 12:45 PM. Our Department Head, Dr. Gail Darling, will introduce him and Dr. Jon Bailey from the Department of Anesthesia, Pain Management & Perioperative Medicine will Chair the Q&A session.

Welcome Dr. Marshall!

Keynote Learning Objectives:

1. Participants will understand the role of clinical research in resolving uncertainty in clinical decision-making
2. Participants will be able to describe the role of research networks in the response to COVID-19
3. Participants will discuss the role of novel research models in integrating research into day-to-day clinical practice

Judges:



Dr. Emily Krauss
Division of Plastic Surgery



Dr. David Wilson
Division of Orthopaedics



Dr. Lutz Weise
Division of Neurosurgery

Session Chairs:



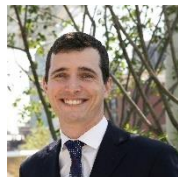
Session II-III
Dr. Ashely Drohan



Session IV-V
Dr. Devin Piccott



Session VI-VII
Dr. Phil Tremblay



Session VIII-IX
Dr. Sam Jessula

Prize Categories:

Dr. Robert Stone Travelling Fellowship	\$ 3,500.00
Best Resident Presentation	\$ 1,000.00
Best Medical Student Presentation	\$ 1,000.00
Best Basic Science Presentation	\$ 1,000.00
Honorable Mentions	\$ 500.00

The Robert Stone Travelling Fellowship Past Winners

<i>2023 Dr. Anna Duncan</i>	<i>2012 Dr. Phillipe Magown</i>	<i>2001 Dr. Sean Christie</i>
<i>2022 Dr. Joel Bierer</i>	<i>2011 Dr. Scott Livingstone</i>	<i>2000 Dr. J.F. Legare</i>
<i>2021 Dr. Chad Purcell</i>	<i>2010 Dr. Devon Richardson</i>	<i>1999 Dr. C. Ikejiani</i>
<i>2020 Dr. Catherine Deshaies</i>	<i>2009 Dr. Michael Bezuhly</i>	<i>1998 Dr. W. Leong</i>
<i>2019 Dr. David Forner</i>	<i>2008 Dr. Jane Watson</i>	<i>1997 Dr. Vivek Mehta</i>
<i>2018 Dr. Ashley Drohan</i>	<i>2007 Dr. Lara Williams</i>	<i>1996 Dr. N. Yoshida</i>
<i>2017 Dr. Ben Taylor</i>	<i>2006 Dr. Ansar Hassan</i>	<i>1995 Dr. Stacey O'Blenes</i>
<i>2016 Dr. Timothy Phillips</i>	<i>2005 Dr. Chris Drover</i>	<i>1994 Dr. C. Giacomantonio</i>
<i>2015 Dr. Phillipe Magown</i>	<i>2004 Dr. Rakesh Arora</i>	<i>1993 Dr. J. Collicut</i>
<i>2014 Dr. Scott Livingstone</i>	<i>2003 Drs S. Christie/A. Skaro</i>	<i>1992 Dr. R. Kennedy</i>
<i>2013 Dr. Fawaz Makki</i>	<i>2002 Dr. A. Skaro</i>	<i>1991 Dr. T. Barnhill</i>
		<i>1990 Dr. G.Caputy</i>

The Robert Stone Traveling Fellowship is named in honour of Dr. Stone, who was the Head of our Department 1993-2006.

The Dr. Stone Traveling Fellowship is awarded to the 1st place resident, carrying a cash prize of \$3,500.00 to be used for travel to conferences to present research, and aid in travel expenses to secure fellowship training after residency.



Inauguration of the Dr. Stone Traveling Fellowship was in 2006 – Its recipient was Dr. Ansar Hassan.

Learners Objectives:

At the end of these sessions, participants will be able to:

1. Identify key researchers in the Department of Surgery and ongoing projects in each of our Divisions.
2. Restate and assess the different types of research being conducted in the Department of Surgery - basic science, outcome studies, RTC, access to care, ED rebound patient research, new surgical techniques or areas of patient care.
3. Objectively question and pose inquiry through the question-and-answer period. Appraising the quality of research being done by Department of Surgery researchers, residents, and peers.
4. Acquire an elevated understanding of research building blocks to conduct clinical research: Ethics approval, methodology and design of projects.

Accreditation:



DALHOUSIE
UNIVERSITY

CONTINUING PROFESSIONAL
DEVELOPMENT &
MEDICAL EDUCATION

As an accredited provider, Dalhousie University Continuing Professional Development and Medical Education,

designates this continuing professional development activity for up to **7.0** credit hours as an accredited group learning Section 1 activity as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada.

Through an agreement between the Royal College of Physicians and Surgeons of Canada and the American Medical Association, physicians may convert Royal College MOC credits to AMA PRA Category 1 Credits™. Information on the process to convert Royal College MOC credit to AMA credit can be found online at edhub.ama-assn.org.

In keeping with CMA Guidelines, program content and selection of speakers are the responsibility of the planning committee. Support is directed toward the costs of the course and not to individual speakers.

Key Events:

Introduction

Dr. Michael Dunbar
Director of Research
Department of Surgery
8:00 - 8:05 AM

Opening Remarks

The Honorable Michelle Thompson
Nova Scotia Minister of Health and Wellness
8:05 - 8:15 AM

Keynote Bethune Speaker

Dr. John Marshall
"How COVID-19 is Changing Clinical Research"
12:45 - 1:30 PM

Closing Remarks

Dr. Gail Darling
Professor and Head
Department of Surgery
4:55 - 5:00 PM

Wine and Cheese/Announcement of Winners

5:00 - 5:30 PM

Session I

8:15 AM

Chair: Dr. Michael Dunbar

Emergency Department Rebound Project

8:20 AM:	Sarah Jennings	18
	Medical Student – Orthopaedics Primary Knee Arthroplasty	
8:23 AM:	Kalpesh Hathi	19
	Resident – Otolaryngology Adult Tonsillectomy	
8:26 AM:	Jenna Smith-Forrester	20
	Resident – Neurosurgery Posterior Spinal Decompression	
8:29 AM:	Tammy Selman	21
	Resident - Plastic Surgery Breast Reduction Surgery	
8:32 AM:	Haley Glazebrook	22
	Medical Student – Plastic Surgery Trigger Finger Release	
8:35 AM:	Katie Ross	23
	Resident – Plastic Surgery Carpal Tunnel Release	
8:38 AM:	Maria Simmons	24
	Medical Student – Pediatric General Surgery Pediatric Appendicitis	
8:41 AM:	Danielle de Wet	25
	Medical Student – Pediatric General Surgery Pediatric Gastrostomy Tube Placement	
8:44 AM:	Brianne Cruikshank	26
	Surgical Resident – General Surgery Common General Surgery Procedures	
8:47 AM:	Neha Katote	27
	Medical Student – General Surgery Endoscopic Retrograde Cholangiopancreatography	
8:50 AM:	Cameron Penny	28
	Resident - General Surgery Breast Surgery	

8:55 AM: Discussion Panel Q & A (20 minutes)

Session II

9:15 AM

Chair: Dr. Ashley Drohan

Prospective Studies

9:15 AM: **Sabrina Secord.....29**
Surgical Resident – Otolaryngology
Outcomes of T3 Glottic Squamous Cell Carcinoma

9:20 AM: **JD Brown.....30**
Medical Student – Orthopaedics
A Comparison of Post-Operative Complications of The Wiltse Versus Midline Approach in Degenerative Conditions of the Lumbar Spine: A Pilot Randomised Controlled Trial (RCT)

9:25 AM: **Jillian Karpyshyn.....31**
Clinical Fellow – Orthopaedics
Bridging Reconstruction has Superior Short-Term Radiographic Outcomes Compared to Superior Capsular Reconstruction: Results of a Prospective (RCT)

9:30 AM: **Emma MacLean.....32**
Medical Student – Medicine
Peripheral Arterial Disease Prevalence, Awareness and Screening in a Nova Scotian Population

9:35 AM: **Julia Paffile.....33**
Medical Student – Cardiac Surgery
The Contribution of Sternotomy in the Inflammatory Response to Cardiac Surgery in Children

9:40 AM: **Dominique de Waard.....34**
Surgical Resident -Cardiac Surgery
Implementation of Staphylococcus Aureus Screening and Decolonization in Cardiac Surgery Patients at The Halifax Infirmary in Nova Scotia, Canada

9:45 AM: Discussion Panel: Q & A (10 minutes)

Session III

9:55 AM

Chair: Dr. Ashley Drohan

Costing

9:55 AM: **Lauren Barter.....35**
Medical Student – Orthopaedics

Evaluating the Socioeconomic Burden for Patients with Spinal Cord Injury in Nova Scotia

10:00 AM: **Connor Sonke**.....36
Resident – Orthopaedics
Cost Effectiveness of the Paramedian Approach to the Spine

10:05 AM: **John Gobran**.....37
Medical Student – Plastic Surgery
Investing in a Gender Affirming Surgery Program: A Cost Analysis

10:10 AM: **Discussion Panel Q & A (5 minutes)**

10:15 – 10:45 **BREAK**

Session IV

10:45 AM

Chair: Dr. Devin Piccott

Basic and Innovative Science

10:45 AM: **Kavita Krueger**.....38
Grad Student – Pharmacology
Recessive Variants in the Intergenic NOS1AP-C1ORF226 Locus Cause Kidney Disease

10:50 AM: **Mark Hanes**.....39
Grad Student – Pathology
B Cells Regulate NK Cells and Melanoma Development in Mice

10:55 AM: **Yara Azizeh**.....40
Grad Student- Pathology
Characterizing Renal Tubular Epithelial Injury During Donation after Circulatory Death (DCD) And Possible Amelioration With PKX-001.

11:00 AM: **Mark MacLean**.....41
Resident – Neurosurgery
NMDA-Receptor Antagonism for The Prevention of Neurological Dysfunction in Traumatic Brain Injury: Results of a Randomized Pre-Clinical Trial

11:05 AM: **Barry Kennedy**.....42
Graduate Student – Microbiology & Immunology
Genomic And Immunological Profiling of Thin Melanomas: Unraveling Molecular Determinants of Metastatic Potential Through TCGA Insights

11:10 AM: **Jae Ho Han**.....43
Resident – Neurosurgery
Expression Pattern of Select Cell Proliferation and Apoptotic Markers in Non-Functioning Pituitary Adenomas Predictive of Tumour Growth/Recurrence: A Pilot Project.

11:15 AM Panel Discussion and Q & A (10 minutes)

Session V

11:25 AM

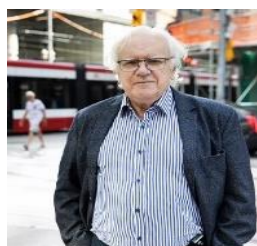
Chair: Dr. Devin Piccott

Blood and Drugs

- 11:25 AM: **Allison Loewen**.....**44**
Resident – Orthopaedics
Anticoagulant Prescribing Trends for VTE Prophylaxis at Discharge Post
Total Knee and Hip Arthroplasty Surgery in Nova Scotia Between 2016 - 2021
- 11:30 AM: **Panthea Pouramin**.....**45**
Medical Student – Otolaryngology
Does Ibuprofen Increase the Risk of Post-Tonsillectomy Bleeding: An
Atlantic Canadian Pediatric Sub-Population
- 11:35 AM: **Brie Loughlin-Murray**.....**46**
Medical Student - Orthopaedics
Long-Term Opioid Use in Seniors Following Partial and Total Knee Arthroplasty:
Pre and Post 2017 'Canadian Opioid Prescribing Guideline' Implementation
- 11:40 AM: **Skylah Macleod Van Wagoner**.....**47**
Medical Student – General Surgery
Variability in Opioid Prescription Practices for Common General Surgery
Procedures in Nova Scotia, Canada
- 11:45 AM: **Adele Orovec**.....**48**
Resident – General Surgery
Opioid Prescribing Following General Surgery Same Day Procedures in Nova
Scotia
- 11:50 AM: Panel Discussion and Q & A (10 minutes)**

NOON LUNCH BREAK

12:00 PM – 12:45 PM: **Lunch – main corridor reception area**



12:45 PM – 1:30 PM

Keynote Bethune Speaker – room C1-2

Dr. John Marshall

“How COVID-19 is Changing Clinical Research”

Introduction: Dr. Gail Darling, Head Department of Surgery

Chair Q&A – Dr. Jon Bailey, Department of Anesthesia

(15 minutes)

Session VI

1:50 PM

Chair: Dr. Phil Tremblay

Cancer Outcomes

1:50 PM:	Geraint Berger	49
	Medical Student – Thoracic Surgery Fixed In Formalin – An Evaluation of 986 Consecutive Endobronchial Ultrasound Guided Transbronchial Needle Aspiration Procedures for Reflex Biomarker Testing for Lung Cancer: A Single Center Retrospective Review	
1:55 PM:	Kassandra Coyle	50
	Medical Student – Thoracic Surgery Understanding the Complexity of Concurrent Cancers in Lung Cancer Patients: A Focus on Atlantic Canada	
2:00 PM:	Abdullah Chanzu	51
	Medical Student – Otolaryngology Assessing The Complications and Outcomes of Patients Undergoing Gastrostomy Tube Procedures For Head And Neck Cancers	
2:05 PM:	Alexander Clark	52
	Resident – Otolaryngology Assessing the Accuracy, Safety, and Tolerance of Office-Based Endoscopic Biopsies for Laryngopharyngeal Lesions	
2:10 PM:	Gizelle Francis	53
	Medical Student – Otolaryngology Role of Neck Dissections in the Management of Carotid Body Tumors: A Retrospective Study	
2:15 PM:	Angela Cheng	54
	Resident – Diagnostic and Molecular Pathology/General Surgery Evaluation of the Local Upgrade Rate of Intraductal Papillary Breast Lesions with Benign Features on Core Biopsy	
2:20 PM:	Sulaiman Alshammari	55
	Clinical Fellow – General Surgery Cytoreductive Surgery and Hyperthermic Intraperitoneal Chemotherapy for Colorectal Cancer Peritoneal Metastasis: Experience of Atlantic Peritoneal Oncology Group	
2:25 PM:	Ilinca Georgescu	56
	Resident – General Surgery A Watch and Wait Approach to Complete Clinical Response After Total Neoadjuvant Therapy for Locally Advanced Rectal Cancer Achieves High Organ Preservation Rates in Nova Scotia Patients	

2:30 PM: **Susan Allen**.....57
Research Team Member - General Surgery
Exploring the Impact of the Median Meld at Transplant Minus 3 (MMAT-3)
Exception Points System on Waitlist Mortality for Liver Transplant Patients in
Atlantic Canada

2:35 PM: **Panel Discussion Q & A (10 minutes)**

Session VII

2:45 PM

Chair: Dr. Phil Tremblay

Surgical Techniques

2:45 PM: **Shariar Seddigh**.....58
Resident, CIP – Orthopaedics
Validation of Structured Light 3D Scanning for Measurement of Tibial Bone
Defects in Revision Total Knee Arthroplasty

2:50 PM: **Nick Dawe**.....59
Medical Student – Orthopaedics
Pathological or Physiological? An Analysis of Bone Resorption After Anatomic
Glenoid Reconstruction

2:55 PM: **Jillian McNally**.....60
Resident – Orthopaedics
Patient-Specific Glenoid Reconstruction: The Importance of Understanding
Anatomic Variations of the Scapula

3:00 PM **Panel Q &A (5 minutes)**

3:05-3:35 PM **BREAK**

Session VIII

3:35 PM

Chair: Dr. Sam Jessula

Epidemiology and Quality Care

3:35 PM: **Colton Boudreau**.....61
Resident – Plastic Surgery
Self Inflicted Hand Fractures as a Predictor of Future Psychiatric Conditions
in Pediatric Population

3:40 PM: **Ellen Parker**.....62
Resident – Neurosurgery
Pituitary Apoplexy: A Retrospective Single Center Cohort Study

3:45 PM:	Ashley Robinson	63
	Resident, CIP – General Surgery Relationship Between Hospital Surgical Volumes and Length of Stay for Hirschsprung's Disease: Preliminary Results of a Can Population-Based Study	
3:50 PM:	Thomas Van Essen	64
	Clinical Fellow – Neurosurgery Disparities in Casemix, Acute Interventions, Discharge Destinations and Mortality of Patients with Traumatic Brain Injury Between Europe and India	
3:55 PM:	Allison Keeping	65
	Resident – General Surgery The Impact of Liver Parenchymal Quality and Liver Remnant Volume on the Risk Assessment of ACS NSQIP Morbidity and Mortality after Major Liver Resections.	
4:00 PM:	Erin Gaudette	66
	Medical Student – Vascular Surgery Local Anesthesia for Endovascular Repair of Abdominal Aortic Aneurysm Allows for Accurate Graft Deployment with Durable Results	
4:05 PM:	Peter Urbanellis	67
	Clinical Fellow – General Surgery Laparoscopic Gastropexy with Soft Tissue Anchor is a Safe and Durable Treatment for Hiatal Hernias During or After Sleeve Gastrectomy	

4:10 PM: Panel Discussion Q & A (10 minutes)

Session IX

4:20 PM

Chair: Dr. Sam Jessula

Education, Decision Making and The Digital Age

4:20 PM:	Usman Khan	68
	Resident – Otolaryngology The Barriers and Facilitators of Shared Decision Making in Pediatric Otolaryngology: A Qualitative Study	
4:25 PM:	Rachel Vaughan	69
	Resident – Neurosurgery Impact of Neuropsychological Testing on Surgical Decision Making and Targeting in Parkinson's Disease	
4:30 PM:	Taylor Jordan	70
	Resident – Orthopaedics Validating the Assessment of Surgical Skills in Orthopaedic Surgery Training Programs Using Multi Angle Professionally Produced Performance Videos	

4:35 PM:	Olivia MacIntyre	71
	Medical Student – Plastic Surgery Content Analysis of Instagram Stories of Top Plastic Surgeons	
4:40 PM:	Joel Bierer	72
	Resident, CIP – Cardiac Surgery The First Human Application of Sparse Identification of Nonlinear Dynamics (SINDY); Modeling Complement Activation During Pediatric Cardiac Surgery	
4:45 PM:	Dan Vidovic	73
	Resident- General Surgery Beta Testing of The SEAMLESSMD Patient Engagement Application for Bariatric, Colorectal, and Gyne-Oncology Surgery within the Dalhousie Department of Surgery	
4:50 PM:	Panel Discussion Q & A	
<i>FIN</i>		
5:00 PM:	Closing Remarks Dr. Gail Darling	
5:30 PM:	Wine and Cheese /Announcement of Winners	

REASONS FOR NINETY-DAY EMERGENCY DEPARTMENT VISITS AFTER PRIMARY KNEE ARTHROPLASTY AT NOVA SCOTIA HEALTH

Sarah Jennings, O Al-Hubaishi, JA Douglas, E Nemeth, M Dunbar

Background: Long wait times at emergency departments (ED) in Nova Scotia have driven an investigation into strategies for quality improvement. Studies have found high rates of ED presentation following total joint arthroplasty. The goal of this study was to determine the most common reasons and timing for ED presentation after primary knee arthroplasty in Nova Scotia. This may provide insight into preventive measures and potentially reduce ED rebound.

Methods: Patients who underwent primary knee arthroplasty between April 1st,2021–March 31st,2022 at one of two Nova Scotia Health (NSH) facilities were identified using NSH datasets. Those patients with an ED visit in Nova Scotia within 90 days of post-operative discharge were also identified using NSH data. Chart review of 238 eligible ED visits in 144 patients led to categorization into primary reason for ED visits.

Results: The rate of primary knee arthroplasty patients presenting to the ED within 90 days of discharge was 21.1%; almost two thirds (62.8%) were for surgical reasons, with the surgical to medical ratio decreasing over time. Median time to ED presentation was 47 days for medical reasons and 5 days for surgical. The most common surgical reasons for ED presentation were pain related to surgery (15.9%), hematoma drainage (9.7%), and swelling (9.7%). The most common medical reasons were other medical not related to the primary (13.8%) and musculoskeletal complaints not related to the surgery (12.4%).

Discussion: The most common reason for ED presentation after primary knee arthroplasty was pain related to surgery. Studies have identified risk factors for increased post-operative pain. Identifying these patients pre-operatively and re-evaluating our protocols and patient education for early post-operative pain management may decrease ED rebound. Addressing frequent surgical reasons, such as hematoma drainage or swelling, may involve earlier post-operative follow-up or redirecting ED patients to minor procedures clinic.

90-DAY EMERGENCY DEPARTMENT REBOUND FOLLOWING ADULT TONSILLECTOMY: A RETROSPECTIVE COHORT STUDY

Kalpesh Hathi, G Francis, JA Douglas, E Nemeth, P Hong

Background: Post-operative complications following tonsillectomy often present to the emergency department (ED). Reducing post-operative ED visits is one strategy to relieve the current strain on healthcare systems and patients. This study assesses ED visits 90-days post-adult tonsillectomy in Nova Scotia, Canada.

Methods: Retrospective cohort study utilizing Nova Scotia Health administrative datasets and chart review for province-wide ED visits within 90-days post-adult tonsillectomy performed in Nova Scotia Central Zone from April 1, 2016–March 31, 2022. The patients' first ED visit post-operation was analyzed.

Results: Overall, 352 adult patients underwent tonsillectomy, of which 122 (34.7%) presented to the ED within 90-days. Of these, 92 were related to the tonsillectomy, resulting in a surgery-specific ED rebound rate of 26.1%. Most surgical visits, 79/92 (85.9%) occurred within the first seven days. The most frequent surgical presentations were bleeding (45.6%) and pain (29.5%). Of the surgical visits 23/92 (25.0%) were admitted to hospital, 19 were for bleeding. Of the surgical visits not related to bleeding, 46/50 (92.0%) were discharged home. This suggests 46/92 (50.0%) of surgical visits are potentially preventable. Patients spent an average of 4.65 hours in the ED, surgical visits accounted for 372 patient hours spent in the ED.

Conclusion: The surgery-specific ED rebound rate was 26.1%. This data adds to recent literature suggesting a higher rate of ED visits and complications post-adult tonsillectomy compared to the pediatric population. This is important to consider when counselling adult patients for tonsillectomy. Post-tonsillectomy bleeding and pain were the most common ED presentations. Given the potentially fatal consequences of post-tonsillectomy bleeding, a high rate of ED visits and inpatient observation is prudent. However, optimization of post-operative pain control with greater access to urgent outpatient otolaryngology and primary care may reduce the burden of ED visits on health systems and patients.

POSTOPERATIVE EMERGENCY DEPARTMENT CARE FOR NOVA SCOTIA HEALTH DEPARTMENT OF SURGERY SURGICAL PATIENTS FOLLOWING POSTERIOR SPINAL DECOMPRESSION

Jenna Smith-Forrester, JA Douglas, E Nemeth J Alant, S Barry, A Glennie,
W Oxner, L Weise, S Christie

Background: This quality improvement initiative broadly aims to enhance patient outcomes following posterior decompression surgery by scrutinizing the primary drivers for Emergency Department (ED) visits. By analyzing patterns and reasons behind patient presentations and/or admissions, we seek to identify key factors contributing to postoperative complications. We aim to streamline care processes, improve patient education and experience, refine postoperative monitoring, minimize healthcare costs and ultimately reduce avoidable ED visits, whilst elevating overall quality of care. The objective of this project is to understand the magnitude of ED “bounce-backs” following spinal surgery and to identify high frequency drivers that may be amenable to intervention.

Methods: From April 1, 2016 to March 31, 2022, all provincial ED datasets (EDIS, STAR, Meditech) were queried to identify patients presenting within 90 days post-spine surgery. Using Canadian Classification of Health Interventions codes, laminectomies (1SC80) and discectomies (1SE87) demonstrated the highest post-operative ED visit rates. Comprehensive chart reviews were then conducted identifying surgical and medical reasons for ED presentation for this population.

Results: Reviewing a cohort of 2165 post-decompression patients, 42.1% presented to the ED (n=912) with 62.8% of these presentations being directly related to surgery. Primary reasons included wound care (31.6%), pain management (31.6%), and bladder issues (retention or UTI, 11.0%). Simple wound evaluation constituted 49.7% of wound-related visits, with surgical site infection 37.6% and dehiscence 6.6% as other major contributing factors. Pain-related presentations resulted in 72.3% discharge with additional medications, and 27.7% necessitating hospital admission. New or worsening neurologic deficits were reported in 8.9% of ED visits.

Conclusion: A significant number of patients present to ED’s across the province following spine surgery. Multiple areas of care improvement have been identified amongst spine surgeons, including post-operative education, pain management and system change to facilitate wound care and assessment outside of the ED.

EMERGENCY DEPARTMENT VISITS WITHIN 90 DAYS OF BREAST REDUCTION SURGERY: A RETROSPECTIVE COHORT STUDY

Tammy Selman, O MacIntyre, JA Douglas, E Nemeth, J Williams & E Krauss

PURPOSE: Across our provincial healthcare system, bilateral reduction mammoplasty (BBR) patients represent a common post-operative ED presentation among plastic surgery patients. We sought to identify the factors of these patient “rebounds” to the emergency department (ED) after reduction mammoplasty surgery in this health utilization study.

METHODS: A retrospective cohort study was performed by accessing NACRS data and matching ED visit encounters from 2016-2022 in all Nova Scotia EDs. Encounters within 90 days of a surgical procedure performed in central zone of Nova Scotia were matched, organized by procedure code (BBR) and analyzed. Electronic health records were reviewed for ED encounter timing, primary complaints, diagnoses, treatment recommendations, and their relationship to the surgical procedure.

RESULTS: Over six years, 458 BBRs were performed in 452 patients. ED visits within 90 days of procedure occurred 136 times in 85 patients who underwent 86 procedures; a base rate of 18.81%. Of 86 first visits, only 58 were directly related to surgery; an adjusted rate of 12.7%. Of ED encounters directly related to the surgical procedure, 27 occurred within 8-30 days. The most prevalent reason for ED department returns was for surgical site infection (30.91%), post-operative pain (27.27%), wound checks (14.55%), and bleeding (14.55%). The average time spent in the ED was 3.15 hours. After post-operative day 30, visits were unlikely to be related to BBR.

CONCLUSION: We illustrate higher rates of post-operative ED visits after bilateral reduction mammoplasty than anticipated. A high complication rate cannot explain this rate of returns, as only 17 ED visits were related to surgical site infection and no other serious post-operative complications were reported. A percentage of rebounds may have avoided the ED if formalized diversion plans were created within our departments.

ED REBOUND: 90-DAY POST-OPERATIVE TRIGGER FINGER RELEASE EMERGENCY DEPARTMENT VISITS IN NOVA SCOTIA; A QUALITY IMPROVEMENT STUDY

Haley Glazebrook, K Ross, JA Douglas, E Nemeth & E Krauss

Purpose: In the current context of an overburdened healthcare system, increased emergency department (ED) wait-times have attracted media attention with multiple factors across the system contributing to crisis. Post-operative visits after elective surgery may be one target to reduce ED burden. The purpose of this study is to investigate the rates and reasons for ED visits following trigger finger release (TFR) in Nova Scotia.

Method: Patients who underwent TFR surgery within Nova Scotia Health (NSH) Central Zone between April 1, 2016 – March 31, 2022, and visited a Nova Scotia ED within 90 days of surgery were identified using provincial healthcare databases. A chart review was conducted to determine the timing, reasons for presentation, and other system-related factors associated with their visit.

Results: During the retrospective period, 1,103 patients underwent TFR and 178 (16.1%) presented to the ED within 90 days of surgery. Overall, 115 were for medical concerns and 63 were surgical concerns, leading to a post-operative ED rebound rate of 5.71% for surgical concerns. Surgical site infection was the most common reason for ED visit (46.0%). Other reasons included suture removal (25.4%), wound check (20.6%), wound dehiscence (6.3%), and pain (3.2%).

Conclusions: ED visits after elective TFR surgery were 5.71%, contributing to an already overburdened Nova Scotia ED system. With majority of the concerns being common post-operative complaints, a specific focus on educating patients about the usual post-operative course and providing regular surgeon contact may help redirect these patients away from EDs.

ED REBOUND: 90-DAY EMERGENCY DEPARTMENT UTILIZATION AFTER CARPAL TUNNEL RELEASE, A HEALTHCARE UTILIZATION STUDY

Katie Ross, J MacLellan, JA Douglas, E Nemeth & E Krauss

Purpose: Emergency departments (ED) across Canada are over-burdened with multiple factors across the system contributing to crisis. Post-operative visits after elective surgery may be one target to reduce ED load. In Nova Scotia, open carpal tunnel release (CTR) was the most frequent plastic surgery procedure to result in an ED visit. The purpose of this study was to determine the rates, reasons, and risk factors associated with ED visits following CTR surgery.

Methods: Utilizing multiple provincial healthcare databases, patient encounters for outpatient CTR in the Central Zone from April 1st 2016 – March 21st 2022 were matched to ED visits throughout the province within 90 days of surgery. A limited chart review was completed to explore ED timing, reasons for presentation, and predetermined systems-level factors (geographic distribution, primary care access).

Results: Overall, 2690 patients underwent CTR surgery, of which 452 (16.8%) presented to the ED within 90 days of surgery. Of these visits, 159 visits were surgical and 289 were medical, resulting in a post-surgical ED rebound rate of 5.91% for surgery-specific concerns. Common post-operative ED presentations were surgical site infection (36.5%), wound check (27.0%), suture removal (17.6%), and wound dehiscence (7.5%). Majority of these patients had a primary care provider (93.8%).

Conclusions: In Nova Scotia, ED visits for surgery-specific concerns after elective CTR were 5.91%. Nearly 89% of presentations could be managed by surgeons and primary care providers. Specific efforts to educate patients about the expected post-operative course combined with regular post-operative surgeon contact may help divert these patients away from the ED.

REVIEW OF POSTOPERATIVE ED VISITS FOR PEDIATRIC APPENDICITIS IN NOVA SCOTIA

Maria Simmons, O Bednarek, JA Douglas, E Nemeth & J Mills

Background: Appendicitis is the most common abdominal surgical emergency worldwide and the most common pediatric emergency surgery in the developed world. A critical measure of pediatric surgical performance is the incidence of post-operative emergency room (ER) visits. The aim of this study was to determine the rate and reason for ER presentations following pediatric appendectomy.

Methods: This retrospective study analyzed pediatric patients who underwent appendectomy at the IWK between April 1, 2016, and March 31, 2022, and then presented to a Nova Scotia ER in within 90 days of their surgery. Patients were identified using provincial and national databases and chart review was performed. Demographic and surgical variables and details regarding the nature and outcome of the ER visit were abstracted. Differences in cohorts with early (within 30 days of OR) versus late (within 90 days) presentation to the ER were determined.

Results: 497 appendectomies were retrospectively identified, of which 24.8% (n= 123) had an ER visit within 90 days. 62% of patients (n=73) presented within 30 days of surgery with a median of 20.5 days to presentation. Early post-operative visits to the ER were most likely to be related to post-surgical complaints (53.4%; n=39) while most late visits were attributable to non-surgical issues (60.2%; n= 71). 20 patients (17%) were readmitted from their post-operative ER visit, the majority of which had presented with a post-surgical etiology (n=17, 85%). Overall, the most common reasons for ER encounters were surgical site infections, pain, bowel habit changes, minor trauma, and unrelated medical conditions.

Conclusion: The majority of post-appendectomy related visits to the ER occur in the early post-operative period and are due to concerns for infection, pain and bowel management. Investigation of how to best mitigate/manage these post-operative issues would be high yield to improve the quality of appendectomy care.

RETROSPECTIVE REVIEW OF POSTOPERATIVE EMERGENCY DEPARTMENT VISITS FOLLOWING PEDIATRIC GASTROSTOMY TUBE PLACEMENT.

Danielle de Wet, O Bednarek & J. Mills

Purpose: Pediatric gastrostomy tubes (G-tubes) are prone to postoperative complications, and Emergency Department (ED) visits for these patients have been shown to represent a significant source of healthcare resource consumption. The aim of this study was to determine the incidence and reasons for ED visits following pediatric G-tube placement in Nova Scotia.

Methods: This study is a retrospective review of all pediatric patients who underwent surgical G-tube placement at the IWK between April 1, 2016, and March 31, 2022, and presented to a Nova Scotia ED within 90 days of their surgery. Chart review was performed after identifying patients using provincial and national databases. Patient demographics, surgical variables, and details from the ED visit (reason for presentation, diagnosis, disposition) were abstracted.

Results: During the study period, 125 patients underwent surgical g-tube placement and 53.6% (n=67) presented to the ED at least once within 90 days of their surgery. ED visits were most likely to occur within the first 30 days (60%, n=39). A significant number of patients were admitted from the ED (30.8%) with 80% of admissions due to non-surgically related issues. The majority (56.9%) of ED visits were for reasons unrelated to the primary surgery while the most common post-surgically related reasons for ED visit were tube problems (24.6%) and wound issues such as superficial surgical site infection (SSI) and granulation tissue (13.9%).

Conclusions: In Nova Scotia, over half of pediatric patients undergoing G-tube insertion make at least one visit to the ED post-operatively. Both surgical and medical etiologies are common, perhaps reflecting the complexity of both the underlying medical diagnoses and the management of an implanted, external medical device. Our results indicate that further efforts to understand and mitigate the factors leading to ED visits could offer both improved quality of care and healthcare resource savings.

POST-OPERATIVE PAIN IS A DRIVER OF EARLY PRESENTATION TO NOVA SCOTIA EMERGENCY DEPARTMENTS AFTER DISCHARGE FROM COMMON GENERAL SURGERY PROCEDURES

Brianne Cruickshank, N Katote, G Berger, A Drohan, RT Spence and K Neumann

Introduction: Nova Scotia (NS) patients are challenged with long wait times in the Emergency Department (ED). Cholecystectomy, appendectomy, and hernia repair account for approximately 40% of the Canadian general surgeon's practice, with little data available on the resulting burden to ED. The purpose of this study was to identify the proportion, characterization, and reason for ED presentation in patients undergoing the above procedures.

Methods: Patients who underwent cholecystectomy, appendectomy, or hernia repair at the QEII between 2018-2022, and presented to any NS ED within 90 days, were identified using the Discharge Abstract Database and National Ambulatory Care Reporting System. The reason for ED presentation was elucidated in a randomized, representative sample via retrospective chart review.

Results: We identified 12,068 patients who underwent cholecystectomy, appendectomy, or hernia repair between April 1st, 2016 and March 31st, 2022. Of these patients, 2450 (20.3%) presented to ED within 90 days post-surgery. ED presentation occurred in 1356/6492 (20.9%), 704/3337 (21.1%), and 413/2199 (18.8%) of cholecystectomy, appendectomy and hernia repair patients, respectively. The mean age of the full cohort was 51.8 years, 6411/12068 (53.1%) were female, with a mean Charlson Comorbidity Index score of 1.56, and underwent laparoscopic approach 8852/12,068 (73.4%) of the time.

On retrospective review of a randomized sampling, the most common cause for ED presentation (cholecystectomy n=178, appendectomy n=177, hernia repair n=167) was uncomplicated surgical pain in 24.5%, 35%, and 18% of patients within 30 days, respectively. Patients tended to present for surgery-related issues within the first 30 days post-discharge, with gradual increase in medical reasons for presentation overtaking by day 31-90. Only 15.8% of ED presentations lead to hospital re-admission.

Conclusion: uncomplicated post-operative pain accounts for a large proportion of ED presentations after general surgery procedures. A standardized approach to analgesia prescription at discharge may be an area for targeted intervention.

EMERGENCY DEPARTMENT PRESENTATION FOLLOWING ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY IN NOVA SCOTIA: HIGH REBOUND RATES RELATED TO PROGRESSIVE PANCREATICOBILIARY PATHOLOGIES DEMONSTRATE THE NEED FOR ALTERNATIVE ACUTE CARE STRATEGIES IN THIS POPULATION.

Neha Katote, P Urbanellis, J Ellsmere, R Spence

Background: Endoscopic retrograde cholangiopancreatography (ERCP) is a common procedure utilized in the diagnosis and treatment of a multitude of pathologies affecting the pancreaticobiliary tract. It is also a technically challenging procedure associated with known complications. In order to develop strategies to improve post-procedure outcomes and patient experience, we investigated the local rate and reasons for return to the emergency department (ED) following ERCP.

Methods: Retrospective analysis of charts from Nova Scotia central zone sites between April 1, 2021 – June 24, 2022 of patients identified as having undergone ERCP by Canadian Classification of Health Interventions codes who also presented to ED within 90d.

Results: 3041 patients underwent ERCP with 1230(40.5%) presenting to an ED within 90 days. 200 Charts were selected for review by computer generated randomization. 39 Charts were excluded due to incorrect/incomplete records. In this study cohort, ERCPs were performed primarily at QEII (n=155;96%, Female n=85[52.8%], Mean Age=63.9±16.4). Of ED visits, 107(66.5%) were unrelated to the ERCP with most common presentations relating to disease progression, chronic pain, deconditioning or other medical conditions associated with their underlying malignancy/pathology (n=87[54%]). Visits relating to ERCP primarily included recurrent biliary obstruction/cholangitis (n=21[13%]), or pancreatitis (n=12[7.5%]). 56 patients were admitted to hospital with 28(50%) for treatment of complications related to ERCP and 28(50%) for treatment of conditions related to their underlying condition, which was palliative in the majority (n=15[54%]).

Conclusions: Patients undergoing ERCP in Nova Scotia have a high return to ED rate, however this is primarily unrelated to the procedure and rather due to progression of underlying disease. This suggests that alternative palliative/hospice strategies to manage acute medical conditions in patients with progressive and terminal pancreaticobiliary pathologies would help alleviate the strain on ED while also improving the patient experience.

FACTORS DRIVING EMERGENCY DEPARTMENT FOLLOWING BREAST SURGERY IN NOVA SCOTIA: A RETROSPECTIVE CHART REVIEW

Cameron Penny, K Neumann, RT Spence, A Drohan

Background: Same-day surgery has become the standard of care for breast conserving surgery, and more recently a similar trend has been observed for mastectomy. However, little data exists describing emergency department (ED) presentation following breast conserving surgery; while studied in patients undergoing mastectomy, these data show mixed results. Given the context of local emergency departments, uncovering the drivers of ED presentation following breast surgery in Nova Scotia is necessary to develop strategies to enhance patient care after surgery.

Purpose: To describe the rate of, and reasons underlying, emergency department (ED) presentation following breast surgery at the IWK between 2021 and 2022.

Methods: Patients undergoing breast surgery at the IWK between 2021 and 2022 were identified using the Discharge Abstract Database (DAD) and the National Ambulatory Care Reporting System (NACRS). IWK NACRS and Nova Scotia Health's provincial ED datasets were used to identify patients who presented to the ED within 90 days of operation. Chart review was conducted to determine the reason for presentation; the 200 most recent ED visits were selected to provide a preliminary sample.

Results: Analysis of the 200 most recent ED visits identified 123 unique patients comprising these visits. The majority (61.9%, n=76) had undergone lumpectomy. Among all comers, 56.9% of patients (n=70) presented due to a surgical concern. This was primarily superficial surgical site infections (23.7%, n=18) for the lumpectomy group, compared to hematoma (21.3%, n=10) following mastectomy. Of those presenting to the ED for medical reasons (n=53), 24.5% (n=13) presented due to a chemotherapy-related side effect. Regarding disposition, most patients (82.1%, n=101) were discharged home.

Discussion: Most patients presented to the ED due to surgical concerns. Given the proportion of patients that were discharged home, targeted interventions – such as use of telehealth – may help reduce the rate of ED presentation following breast surgery.

OUTCOMES OF T3 GLOTTIC SQUAMOUS CELL CARCINOMA

Emma Bogner, J Henley, M Rigby, M Corsten, J Trites, & M Taylor
Presented by: **Sabrina Secord**

Background: Few centres globally have adopted transoral laser microsurgery (TLM) for T3 glottic squamous cell cancer (SCC) treatment. The purpose of this paper was to perform an update of our continued treatment of T3 glottic cancer patients with TLM. The objective was to assess the oncologic (disease-specific survival (DSS), local control (LC), laryngeal preservation (LP)) and functional (VHI-10 scores) outcomes for this cohort and determine the impact of anterior commissure involvement.

Methods: A prospective cohort study of patients with stage T3 glottic SCC treated with TLM between 2006 and 2021. Two-year and five-year OSS, DSS, LC, and LP were calculated using Kaplan-Meier curves. Comparisons between patients with and without anterior commissure involvement were made using log-rank tests.

Results: Twenty-eight patients were included in our analysis that underwent curative TLM for T3 glottic SCC. The average age was 68.4, with a male to female ratio of 24:4. Sixteen of the cases involved the anterior commissure. The majority of patients had paraglottic space involvement (n=22). Two-year and five-year DSS was 79.2%. Two-year LC was 80.2% and five-year LC was 52.6%. Two-year LP rate was 86.1% and five-year LP rate was 64.6%. There was no significant difference in DSS, LC, or LP based on anterior commissure involvement. There was no significant difference between paired VHI-10 values between pre-op and 3 months ($p=0.6632$). VHI-10 scores did significantly improve between pre-op and 6 months ($p=0.042$) and pre-op and 12 months ($p=0.037$).

Conclusions: Our institution continues to achieve favourable oncological and functional outcomes using TLM for patients with T3 glottic cancer, with or without involvement of the anterior commissure.

A COMPARISON OF POST-OPERATIVE COMPLICATIONS OF THE WILTSE VERSUS MIDLINE APPROACH IN DEGENERATIVE CONDITIONS OF THE LUMBAR SPINE: A PILOT RANDOMISED CONTROLLED TRIAL (RCT)

JD Brown, B Ells, C Dunning, E Jones, W Oxner, RA Glennie

Purpose: Post-operative infection after instrumented spinal fusion surgery is a devastating complication for patients. The primary objective of this study was to compare the infection rates between the Wiltse and traditional midline approaches to the lumbar spine. Secondly, we sought to determine the feasibility of recruitment for a multi-centre trial and compare adverse events.

Methods: A single-centre, pilot RCT compared patients undergoing single or two level posterior interbody fusion surgery. Participants were randomly assigned to the Wiltse or midline surgical incision study group (1:1). All patients returned to follow-up throughout the two year period. All adverse events were recorded and incidence statistically analysed.

Results: Seventy-five patients with degenerative conditions of the lumbar spine were included in the study. The average follow-up time was 1.9 years. Thirty-seven patients were randomly assigned to the Wiltse group and 38 assigned to the midline group. The number of deep post-operative infections was higher in the midline (5/38, 13.2%) versus the Wiltse group (2/37, 5.4%) ($p = 0.430$). Rates of revision surgery were higher in the midline compared to the Wiltse group ($p = 0.065$). Ten of the 38 (26.3%) patients in the midline group underwent reoperation compared to three of 37 (8.1%) patients in the Wiltse group. The Wiltse group had a greater incidence of superficial wound infection (6/37, 16.2%) versus midline (1/38, 2.6%) ($p = 0.056$). The overall number of adverse events for each group were similar (16 midline versus 13 Wiltse).

Conclusions: Patients who underwent the Wiltse approach had a non-statistically significant difference in deep and superficial wound infection rates, and a decreased risk of requiring revision surgery. There were no differences in the number of post-operative complications or adverse events between the two groups. These results highlight the value of a multi-centre RCT further comparing these approaches.

BRIDGING RECONSTRUCTION HAS SUPERIOR SHORT-TERM RADIOGRAPHIC OUTCOMES COMPARED TO SUPERIOR CAPSULAR RECONSTRUCTION: RESULTS OF A PROSPECTIVE, RANDOMIZED CONTROLLED TRIAL

Jillian Karpshyn, S Remedios & I Wong

Introduction: Bridging rotator cuff reconstruction (BRR) and superior capsular reconstruction (SCR) have been described with acellular human dermal allograft for massive rotator cuff tears and have shown satisfying clinical results. Currently, no randomized controlled trials have compared the outcomes of these two techniques. The main objective of this study was to compare the radiographic outcomes of patients who received bridging rotator cuff reconstruction or superior capsular reconstruction.

Methods: This is a prospective RCT, comparing SCR versus BRR for patients with large (> 3cm), 2-tendon rotator cuff tears. 46 patients were randomized into the SCR or BRR group (1:1 ratio). All patients received pre- and post-operative (~12-months) x-rays and MRIs. The primary outcome was acromiohumeral interval (AHI), pre- and post-operatively between the groups. Secondary outcomes included graft healing, and progression of muscle atrophy and fatty infiltration.

Results: There were no significant demographic differences between the groups. AHI was significantly worse post-operatively for the SCR group only (difference from pre-op = -1.95 ± 3.08 mm; $p=0.002$). There was a higher rate of graft failure in the SCR group compared to BRR, however this was not found to be significantly different (19% vs 5%, respectively, $p=0.373$). The SCR group showed significant progression of muscle atrophy of supraspinatus and infraspinatus ($p<0.001$ and $p=0.002$, respectively). There was no progression of muscle atrophy in the BRR group. The number of patients who demonstrated progression of fatty infiltration was not different between the groups.

Conclusions: BRR showed superior short term (1-year) radiographic outcomes to SCR. While healing was similar in both groups, our results suggest worse post-operative AHI, and muscle atrophy in the SCR group. Further, long-term studies are needed to establish durability and effectiveness of these procedures for large rotator cuff tears.

PERIPHERAL ARTERIAL DISEASE PREVALENCE, AWARENESS AND SCREENING IN A NOVA SCOTIAN POPULATION

Emma MacLean, F Fogarty, B Peterson, S Xu & N Giacomantonio

Introduction: The aim of this study was threefold: (1) determine the prevalence of peripheral arterial disease (PAD) in Nova Scotia, (2) determine awareness of PAD in the Nova Scotian population, and (3) evaluate the sensitivity and specificity of the Edinburg Claudication Questionnaire (ECQ)—a PAD screening tool—when applied to a Nova Scotian population.

Methods: Participants were recruited for one week in July in 2022 and 2023 at 8 sites across the province either at 2022 Heartland tour (HLT) sites, or at community sites coinciding with the 2023 HLT schedule. Participants completed a demographics questionnaire and ECQ. To determine the presence of PAD, participants completed an Ankle-Brachial Index (ABI) via oscillometric blood pressure cuffs. ABI of <0.9 was considered positive for PAD.

Results: 249 HLT participants, and 149 public participants completed ABI measurements with a PAD prevalence of 2.81% and 5.37% respectively. When comparing PAD risk factors, the community group had a higher rate of hypertension (40.7%), diabetes mellites (16.7%) current smoking history (33.3%), and history of myocardial infarctions (8%), but lower rates of previous smoking history (14.7%) compared to the HLT group (23%, 6.15%, 2.05%, 2.46% and 28.3% respectively). Overall, 75% of participants did not have prior knowledge of PAD. Of the 394 participants that completed an ECQ and an ABI, only one participant had a true positive result with the ECQ, resulting in a sensitivity of 6.67%, and a specificity of 97.63%.

Discussion: We found a Nova Scotia PAD prevalence of 5.37%—double that of the national predicted average (2.1%)—yet 75% of participants did not know what PAD was. The reported higher-than-average prevalence may suggest a need for PAD screening in Nova Scotia; however, the ECQ may not be an effective tool as demonstrated by our low sensitivity when used on a Nova Scotian population.

THE CONTRIBUTION OF STERNOTOMY IN THE INFLAMMATORY RESPONSE TO CARDIAC SURGERY IN CHILDREN

Julia Paffile, J Bierer, P Andreou, & D Horne

Introduction: Cardiac surgery using cardiopulmonary bypass (CPB) causes a systemic inflammatory response. It is not clear what sternotomy contributes to the overall inflammatory effects during cardiac surgery with CPB. The purpose of this study is to determine if sternotomy alone contributes significantly to the cumulative inflammatory response during pediatric cardiac surgery with CPB and sub-zero ultrafiltration.

Methods: In this sub-analysis of a prospective single-arm clinical study (forty pediatric patients undergoing cardiac surgery with CPB), a descriptive analysis was conducted comparing changes in 33 inflammatory mediators (complement factors, chemokines, cytokines, and leukocyte adhesion molecules) at three timepoints: 1) pre-sternotomy, 2) post-sternotomy, and 3) end of CPB. Between all timepoints, differences in mediator concentrations were assessed in a pairwise fashion, and the median difference (MD) [95% confidence interval] for each mediator was calculated. The fold change of each mediator was calculated by (MD/median pre-sternotomy concentration) and (MD/median post-sternotomy concentration), respectively.

Results: With sternotomy, 23 of 33 inflammatory mediators changed significantly ($p < 0.05$), but importantly, all cytokines and chemokines increased. The largest median fold increases were in IL-6 (4-fold), CXCL2 (4-fold), IL-10 (3-fold), GM-CSF (3-fold), and IL-1b (3-fold). Complement factors did not increase significantly.

With CPB, 22 of 33 mediators increased significantly. The fold increases were substantially higher for almost all mediators, with the largest increases in C3b (49-fold), IL-6 (36-fold), and IL-10 (27-fold).

Conclusions: Sternotomy, a form of major tissue trauma, is primarily associated with increased expression of pro-inflammatory cytokines and chemokines, whereas CPB is primarily associated with increased expression of complement factors, and most significantly C3b (which triggers the inflammatory cascade). The magnitude of the fold increase in inflammatory mediators on CPB dwarfs the change seen in mediators in the same patients after sternotomy alone.

IMPLEMENTATION OF STAPHYLOCOCCUS AUREUS SCREENING AND
DECOLONIZATION IN CARDIAC SURGERY PATIENTS AT THE HALIFAX INFIRMARY IN
NOVA SCOTIA, CANADA

Dominique de Waard, Ryan Gainer, Dr. Meaghan Sim, Dr. Claudia Cote,
Dr. Paul Bonnar, Dr. Gregory Hirsch

Objective: *Staphylococcus aureus* screening and decolonization is a guideline recommended treatment for the prevention of surgical site infections in cardiac surgery. Our objective is to assess the barriers and facilitators associated with the implementation of *S. aureus* screening and decolonization.

Methods: Targeted *S. aureus* screening and decolonization started in November 2022. Screening involves performing a nasal swab to detect *S. aureus*. Decolonization includes Mupirocin 2% nasal ointment twice daily and Chlorhexidine 2% wipes daily both for five days prior to surgery. If Mupirocin was started within five days of surgery, the remaining doses were given postoperatively. Informed by the Consolidated Framework for Implementation Research (CFIR), we conducted focus group interviews approximately six months after initiation of the study to explore factors influencing implementation. Using NVivo, focus group data was mapped to the five CFIR domains to identify barriers and facilitators. Uptake of screening and decolonization was analyzed using descriptive statistics.

Results: After six months, 310 non-urgent inpatients and 126 outpatients were consulted to cardiac surgery. 94% of inpatients and 90% of outpatients considered for cardiac surgery were screened. *S. aureus* was detected in 49 inpatients (5 MRSA, 44 MSSA) and 23 outpatients (1 MRSA, 22 MSSA). Of the patients accepted for cardiac surgery, 50% of positive inpatients underwent full preoperative or pre/post-operative decolonization compared to 77% of outpatients.

Implementation barriers highlighted during focus groups included: 1) screening result lab delays, 2) difficulty meeting treatment timelines for inpatients, and 3) staffing turnover. Implementation facilitators included: 1) dedicated research personnel, and 2) preprinted orders.

Conclusions: Changing practice is faced with challenges. Implementation Science frameworks can help identify how and what influences practice change. As highlighted, a dedicated implementation researcher can have a positive impact on the uptake of new treatment strategies. To improve the rate of decolonization, we adjusted our implementation strategy to address ongoing barriers.

EVALUATING THE SOCIOECONOMIC BURDEN FOR PATIENTS WITH SPINAL CORD INJURY IN NOVA SCOTIA

Lauren Barter, E Jones, C Butler, S Wallace,
S Christie & A Glennie

Study design: Economic modelling analysis.

Background: Tracking costs associated with spinal cord injury is very challenging given the heterogeneity of the condition, inconsistent institutional case costing and inaccurate representations of out-of-pocket/lost wage costs from patients.

Objectives: To model direct and indirect costs from initial hospitalization to available follow-up of all traumatic spinal cord injuries (tSCI) from 2014 to 2020 in Nova Scotia. Secondly, evaluate major cost drivers based on the level and severity of initial injury.

Methods: Incidence-based approach to assessing tSCI from a societal perspective, including health, rehabilitation, long-term care, aids and adaptations, unpaid care, and employment. The model accounts for differences in injury severity (American Spinal Cord Injury Association (ASIA) classification, age at onset and geographical residence.

Results: The most common type of SCI from the fiscal years 2015-2020 was ASIA D, which had a reduced overall hospital cost (\$85,556) when compared to injury types A-C (\$237,089). Patients had greater odds of being from a rural area (OR=2.03, CI – 1.37-2.99, p=0.0004). Rural patients had a higher average out-of-pocket cost compared to urban patients. Those with an ASIA D SCI had higher annual out-of-pocket costs compared to ASIA A patients. Twenty patients (15%) had passed away within the first year after their injury.

Conclusions: Despite the magnitude of costs, this analysis of SCI costs in Nova Scotia is likely to be conservative. Findings are particularly sensitive to the level and costs of home renovations. The analysis demonstrates how modelling can be used to highlight the economic impacts of SCIs rapidly to policymakers, illustrate how changes in future patterns of injury influence costs, and help inform future economic evaluations of actions to prevent and/or reduce the impact of SCIs.

COST EFFECTIVENESS OF THE PARAMEDIAN APPROACH TO THE SPINE

Conner Sonke & A Glennie

Purpose: The number of patients undergoing surgical procedures to manage degenerative lumbar spine conditions has increased by over the past three decades (Martin, 2019). The most common approach to the lumbar spine is via the posterior midline incision. By using two incisions, the Wiltse approach facilitates two surgeons working concurrently to decrease operative time, allows for a more direct pedicle screw insertion trajectory to minimize hardware complications, enables decompression far lateral disc herniation, and can shorten hospital stays with reductions in pain (Fraser & Hall, 1993). The goal of this study was to evaluate whether the Wiltse paramedian approach was cost-effective for the surgical management of lumbar degenerative spondylolisthesis when compared directly to the midline approach.

Methods: An interventional, randomized control trial comparing paramedian to midline approach for surgical candidates with single or two-level degenerative spondylolisthesis. Patients were asked to keep cost records for 24 months and associated hospitals were determined using available data for the Halifax Infirmary. To determine the cost-effectiveness, the EQ-5D questionnaire was used, and Index data was converted into Quality Adjusted Life Years (QALY). Cost-effectiveness was assessed using the Incremental Cost-Utility Ratio (ICUR), defined as $ICUR = \text{incremental QALY} / \text{incremental costs}$.

Results: 73 patients were enrolled in the trial thus far. Preliminary results have shown an 8 percent revision rate in the paramedian group compared to 27 percent in the midline group. Infection rates were twice as high in the midline group at 11 percent, while the adverse event rate was 44.5 percent in the midline group compared to 35 percent in the paramedian group. Costing and EQ data to be determined.

Conclusion: While final analysis is pending, with greater improvements in EQ and likely lower costs (secondary to fewer revisions), we hope to show the paramedian approach to be more cost effective.

INVESTING IN A GENDER AFFIRMING SURGERY PROGRAM: A COST ANALYSIS

John Gobran, E Krauss, J Williams, M Hajizadeh, J Corkum

Purpose: Demand for gender-affirming surgery (GAS) is increasing, and many Canadian provincial governments continue to outsource these specialized procedures to private travel clinics. Herein we aimed to investigate whether it would be most economical to continue delivering GAS in this fashion, or to invest in the development of a comprehensive GAS program locally.

Methods: Using a decision-analytic discrete-time Markov model with microsimulation, we conducted a comprehensive cost analysis using Nova Scotia in 2023 as the base case comparing the current practice of sending most GAS patients out of province for their surgery with investing in a local GAS program. We obtained cost estimates from provincial documents and through hospital costing inquiries. A government payee perspective was taken, and various time-horizons were used.

Results: Over a 10-year time horizon the expected value for cost of providing a local GAS program in addition to treating patients each year was \$20,743,919. This was less costly than the status quo (\$26,908,082), suggesting that the initial investment to build a program would be recovered within the first 10 years. A sensitivity analysis showed these results were most influenced by the number of patients treated yearly, the annual cost of a GAS program, and the out of province cost of bottom surgery.

Conclusions: In this cost analysis, funding a local GAS program was more economical than the status quo, which suggests that Canadian provincial governments should consider modifying their care delivery model to reduce costs and improve access to these necessary procedures.

RECESSIVE VARIANTS IN THE INTERGENIC NOS1AP-C1ORF226 LOCUS CAUSE KIDNEY DISEASE

Kavita Krueger, F Buerger, D Salmanullah, L Liang, V Gauntner, M Qi, V Sharma, A Rubin, D Ball, K Lemberg, K Saida, LM Merz, S Sever, AC Gomez, MT McNulty, MG Sampson, M Shalaby, J Kari, F Hildebrandt, A Majmundar, & JP Fawcett

Background: Nephrotic syndrome (NS) is known to be caused by loss of integrity of the glomerular filtration barrier, leading to proteinuria, hypoalbuminemia, and edema. Recently, a cohort of children with steroid-resistant NS were identified with mutations in the nitric oxide synthase 1 adaptor protein (*NOS1AP*). In support of a role for *NOS1AP* in kidney development, mice lacking *NOS1AP* showed nephrotic syndrome. However, we identified that *NOS1AP* is a highly spliced gene, giving rise to multiple isoforms including one with a unique C-terminus. We hypothesized that variants impacting these non-canonical (herein nc-*NOS1AP*) isoforms would also lead to a NS phenotype.

Methods: Molecular, histological, and mass spectrometry techniques were used to analyse kidney development of control or nc-*NOS1AP* mutant mice.

Results: Using isoform specific antibodies, we identified that nc-*NOS1AP* co-distributes with nephrin, a marker of kidney glomeruli. Evaluation of urine from mice lacking the nc-*NOS1AP* protein showed high levels of proteinuria. Consistent with this, kidneys from the nc-*NOS1AP* mutant mice revealed a significant decrease in podocyte foot density and increases in the glomerular basement membrane, common phenotypes of NS. Finally, in addition to the distribution in glomeruli, the nc-*NOS1AP* is also highly expressed in tubules in the developing kidney.

Conclusion: nc-*NOS1AP* plays an important role in the development of the kidney glomeruli and may be a useful pharmacological target to help reduce the effects of NS.

B CELLS REGULATE NK CELLS AND MELANOMA DEVELOPMENT IN MICE

Mark Hanes, ID Haidl, JS Marshall, & CA Giacomantonio

Background. Cutaneous melanoma is an aggressive skin cancer, with a high degree of plasticity, heterogeneity, therapeutic resistance, and an increasing rate of mortality and incidence in Canada. With T cell-based immunotherapies achieving limited benefit, new strategies for treating melanoma are urgently needed. B cell presence is often associated with favourable patient outcomes, but anti- and pro-tumour roles for B cells in human and murine melanoma have been identified. In mice, this dichotomy may reflect the multiple roles of B cells in melanomas or improper modeling of the human disease. Further knowledge of B cells and their cellular networks in melanomas is key before B cell-targeting strategies can be implemented.

Methods. To examine the impact of B cells on melanoma development, we used the transplantable B16-F10 murine melanoma model and developed a novel, clinically-relevant, B cell-deficient spontaneous melanoma model. Tumour growth was measured by caliper and onset was defined by macroscopic hyperpigmentation. Multiparameter flow cytometry was used to define immune cells involved in tumour immunosurveillance including T cells and NK cells from B cell-deficient and -sufficient spontaneous melanoma mice.

Results. B cell-deficiency hindered the growth of B16-F10 melanoma and significantly delayed melanoma onset in spontaneous melanoma mice. Although B cell-deficient spontaneous melanoma mice harboured less NK cells overall, they had an enhanced frequency of cytotoxic/mature NK cells and fewer immature NK cells than their B cell-competent counterpart.

Conclusion. B cells regulate spontaneous, murine melanoma development and shape the NK cell arm of the immune system. Ongoing studies will reveal a role of the B cell/NK cell axis in melanoma development and provide fundamental insight into how B cells and NK cells can be manipulated to the benefit of patients.

CHARACTERIZING RENAL TUBULAR EPITHELIAL INJURY DURING DONATION AFTER CIRCULATORY DEATH (DCD) AND POSSIBLE AMELIORATION WITH PKX-001.

Yara Azizieh, R Arseneau, MD Faleiro, LP Westhaver, S Somerville, L Gonzalez-Chavez, JE Boudreau & BL Gala-Lopez

Introduction: Kidney transplantation is the treatment of choice for end-stage renal disease, with organ donation after cardiocirculatory death (DCD) playing a crucial role in addressing the organ shortage. However, DCD kidneys experience significant ischemia-reperfusion injury, resulting in delayed graft function (DGF). Organ machine preservation (MP) has demonstrated reduced rates of DGF when compared to static cold storage (SCS). This study aims to characterize the renal epithelial damage in DCD kidneys and assess the efficacy of MP in preserving tubular integrity compared to SCS. Furthermore, we will assess the potential benefits of PKX-001; a synthetic antifreeze protein with anti-inflammatory and antioxidant effects.

Methods: A DCD rat model will be established, with kidneys surgically procured and allocated to receive PKX-001 (5mg/mL) or saline during in-situ flush. Organs were preserved in SCS or hypothermic machine perfusion (HMP) (~4°C) for 24h to mimic ischemia. Four groups of Wistar rats were studied: SCS + saline, SCS + PKX-001, MP + saline, and MP + PKX-001, and two groups of Zucker rats were studied: SCS + saline and MP+ PKX-001. Perfusate samples were collected and quantified for N-acetyl-b-D-glycosaminidase. Tissue samples will be stained for Kidney Injury Molecule-1 and caspase-3. Homogenized tissue lysate will quantify cytokines, chemokines, and caspase-3.

Two additional groups (SCS +NMP and MP+PKX-001+ NMP) were added to mimic reperfusion injury through normothermic machine preservation (~37°C) for 2h following hypothermic storage. Perfusate and tissue samples will be obtained and stained/analyzed for the same biomarkers.

Results: Preliminary results indicate the establishment of our DCD model and MP system. In the ischemia groups, NAG activity significantly increased over 24 hours. Caspase-3 activity in tissue lysate requires further data analysis. Similar observations were made in the reperfusion group, emphasizing the need for the stained tissue results.

NMDA-RECEPTOR ANTAGONISM FOR THE PREVENTION OF NEUROLOGICAL DYSFUNCTION IN TRAUMATIC BRAIN INJURY: RESULTS OF A RANDOMIZED PRE-CLINICAL TRIAL

Mark MacLean, JH Muradov, G Van Hameren, R Green,
DB Clarke & A Friedman

Background: Cortical spreading depolarization (CSD) is a promising target for neuroprotective therapy given the association with poor clinical outcomes following traumatic brain injury (TBI). Here we aimed to: (1) determine the effect of NMDA-receptor antagonism on *in vivo* electrocorticographic (ECoG) and neurovascular parameters following CSD in healthy and TBI animals; and (2) conduct a randomized pre-clinical trial (RCT) of memantine for the prevention of complications following repetitive mild TBI (rmTBI).

Methods: Experiments were conducted using 9-week-old Sprague Dawley rats. Daily neurobehavioral scores were recorded by trained, blinded observers. Using an established weight-drop model, animals received either single moderate (modTBI; n = 23) or four daily mild (rmTBI; n = 30) head impacts. Sham animals received brief anesthetic without TBI (n = 40). Ninety-three animals underwent craniectomy with electrocorticographic and local cerebral blood flow monitoring. Ketamine (100uM topical and 25 mg/kg IP, respectively) and memantine (10 mg/kg IP) were tested *in vivo*. Subsequently, a RCT was conducted (N=31) using memantine (10 mg/kg) or saline (2.5 cc/kg). Primary outcome: proportion of animals resilient to rmTBI (neurobehavioral scores ≥ 6 of 12).

Results: In brain injured animals, intraperitoneal ketamine and memantine inhibited CSDs in 44-88% and 50-67% of cases, respectively. CSD amplitude was reduced by 44-75% and 52-67%, and duration by 39-87% and 61-78%, respectively. Daily memantine significantly reduced spreading depression and cortical hypoperfusion following CSD. RCT animals in the memantine group were more likely resilient to injury (93% vs. 56%; p = 0.023) and had higher mean neurological scores (9.27 (SD 3.08) vs. 5.56 (SD 3.05)), p < 0.001) compared to saline.

Conclusions: The NMDA-receptor antagonist memantine suppresses CSD and reduces pathological cerebral hypoperfusion *in vivo* following CSDs. In a blinded RCT of rmTBI, memantine prevented neurological decline.

GENOMIC AND IMMUNOLOGICAL PROFILING OF THIN MELANOMAS: UNRAVELING MOLECULAR DETERMINANTS OF METASTATIC POTENTIAL THROUGH TCGA INSIGHTS

Barry Kennedy, C Dean, E Nofthall, & C Giacomantonio

Introduction: Thin melanomas, with a Breslow Thickness at Diagnosis of <1mm have a generally favorable prognosis, boasting reported 10-year survival rates exceeding 90%. However, a small subset, estimated at less than 5%, experience metastasis. This study hypothesized that specific molecular and immunological features underlie thin melanoma metastasis, offering insights into disease progression. Leveraging The Cancer Genome Atlas (TCGA), this study genetically distinguishes metastatic from non-metastatic cases, unraveling immune landscape intricacies.

Methods: Analyzing 58 patients, including 10 with metastasis, we conducted comprehensive RNA expression and DNA mutation profiling. Metastasis affected sites including bone, soft tissue, liver, lung and brain. RNA levels were used for immune cell deconvolution through CiberSort and Ecotype analysis.

Results: Genomic analysis revealed distinct profiles in metastatic thin melanomas, with mutations in Toll-like receptor (TLR) and immunology-related genes. Elevated mutation frequencies in immunological genes—TNFAIP1, TLR8, TLR9, IL10RA, IL13RA2, NCF2, PRKCD, SUCNR1, GBP4, and HPSE—suggested a link between immune dysregulation and metastasis. K-means clustering showcased upregulated immune pathways in non-metastatic cases versus those associated with extracellular matrix, oxidative phosphorylation, and cell migration in metastatic patients. Deconvolution analysis demonstrated reduced T and B cell concentrations in the tumor microenvironment of metastatic cases. Ecotype analysis revealed significantly lower levels of favorable B cell, CD4+, and CD8+ T cell types linked to higher survival, and increased levels of unfavorable CD4+ linked to lower survival in metastatic patients. Differential gene expression highlighted upregulated genes in non-metastatic cases, including CD19, ILRA2, CCL21, CXCL13, IL7R, BLK, and TLR10, indicating an augmented presence of factors associated with immune modulation, cytokine signaling, and lymphocyte activation.

Conclusion: This study uncovers a genomic connection and immunosuppressive signature in metastatic thin melanomas, offering potential precision medicine avenues. It emphasizes the dynamic immune landscape's role in melanoma metastasis.

EXPRESSION PATTERN OF SELECT CELL PROLIFERATION AND APOPTOTIC MARKERS IN NON-FUNCTIONING PITUITARY ADENOMAS PREDICTIVE OF TUMOUR GROWTH/RECURRENCE: A PILOT PROJECT.

Jae Ho Han, A Hebb, S Croul, E Massoud, L Tramble, S Imran, DB Clarke

Introduction: Recurrence of non-functioning pituitary adenoma (NFPA) after surgery is poorly predicted based on currently established routine histopathology. To better understand markers of recurrence, we assessed established tumour markers linked to aggressiveness including X-linked IAP (XIAP), a potent inhibitor of apoptosis, vascular epithelial growth factor (VEGF) which facilitates angiogenesis and cell growth, and leptin. The purpose of this pilot study was to determine if expression patterns of select pro-tumorigenic markers in NFPA could be used to predict the clinical course.

Methods: Tissue microarrays (TMA) were constructed from paraffin-embedded tissue (representing pituitary tissues from growing or stable tumours, or normal controls). Immunohistochemical staining using antibodies against XIAP, VEGF, leptin, and leptin receptor was completed. Slides were analyzed with Aperio Image Scope software. Statistical analyses were completed using Chi-square and Fishers exact test ($p < 0.05$).

Results: Tissue samples from 98 patients with NFPA were analyzed. TMA analysis of normal pituitary tissue ($n=24$) revealed low levels (weakly positive) of XIAP relative to VEGF, leptin, and leptin-receptor. VEGF levels and leptin were moderately positive. Staining for leptin receptor was strongly positive in normal pituitary tissue ($p < 0.0001$). NFPA tissues revealed moderate and strongly positive staining of XIAP relative to the low-staining present in normal pituitary tissue ($p < 0.00001$). VEGF levels were moderately positive in normal pituitary tissue and weakly positive in tumour tissue ($p < 0.00001$).

Conclusion: Analyses are ongoing to correlate patterns of staining with clinical and tumour variables. Preliminary data show altered expression of select markers in tumours compared with normal pituitary tissue, which may help to predict recurrence of NFPA.

ANTICOAGULANT PRESCRIBING TRENDS FOR VTE PROPHYLAXIS AT DISCHARGE POST TOTAL KNEE AND HIP ARTHROPLASTY SURGERY IN NOVA SCOTIA BETWEEN 2016 – 2021

Allison Loewen, L Lethbridge, JA Douglas & M Dunbar

Purpose: Joint replacement surgery offers numerous benefits however, there are risks associated with the surgery including venous thromboembolic events (VTE). A clinical pathway (ERC) released in June 2021 provides evidence-based strategies to improve clinical outcomes post total knee arthroplasty (TKA) and total hip arthroplasty (THA), including reducing rates of post-op VTE (1).

The purpose of this study was to describe the VTE prophylaxis prescribing practices after TKA and THA across Nova Scotia, compare variations between hospitals and assess compliance with ERC guidelines pre-issuance.

Methods: Data included primary TKA and THA cases completed from January 2016 until December 2021 on Nova Scotia residents. Hip fracture cases were excluded. Discharge prescriptions (RX) were found on the Drug Information System (DIS).

Results: A total of 18,833 total joint replacements (11,682 TKA and 7,151 THA) across five hospitals were analyzed. The average rate of anticoagulant RX upon discharge after TKA or THA varied from 72.4% in 2017 to 56.0% in 2020.

There were major differences in rates and type of RX among hospitals. Hospital Two decreased over the past 5 years from 20.3% in 2016 to 6.2% in 2021. Conversely, Hospital Three increased from 81.9% to 96.4% over the same period. At Hospital One, 26.0% of patients were not prescribed any anticoagulant, 32.3% Dalteparin, 20.9% ASA, 20.1% Rivaroxaban and 0.33% Warfarin. This contrasts with Hospitals Two, Three, and Five where treatments were internally highly consistent, though differed between hospitals.

Finally, the average rate of RX consistent with ERC guidelines in the province was 40.4% post TKA and 36.5% post THA, ranging from 90.0% and 87.8% for TKA and THA at Hospital Five to 9.7% and 3.1% at Hospital Two.

Conclusion: This study demonstrates the variety and inconsistency of VTE prophylaxis prescribing habits post TKA and THA across the province pre-issuance of ERC guidelines.

DOES IBUPROFEN INCREASE THE RISK OF POST-TONSILLECTOMY BLEEDING: AN ATLANTIC CANADIAN PEDIATRIC SUB-POPULATION

Panthea Pouramin, V Kuta, & LB Johnson

Background: Ibuprofen is commonly used for post-operative pain management in pediatric patients undergoing an adenotonsillectomy. Concerns persist regarding postoperative bleeding risk. This is the first study in the Nova Scotian pediatric patient population assessing the relationship between ibuprofen use, post-operative bleeding and return to operating room for haemorrhage control in patients requiring admission following the initial surgery. Approximately 4% of patients require post-operative admission after adenotonsillectomy due to very young age, multifactorial causes of upper airway obstruction, or other comorbidities. This study explores whether the paediatric patient population requiring postoperative admission (inpatients) following adenotonsillectomy treated with acetaminophen plus ibuprofen is non-inferior to acetaminophen alone when comparing bleeding events.

Methods: This retrospective review includes children aged <16 years, who were admitted following adenotonsillectomy at a tertiary care children's hospital in Halifax, Canada from 2013-2017. Patients with underlying bleeding disorders were excluded.

Results: We included 313 patients, 47.6% were given ibuprofen post-surgery. The mean age was 4.8 ± 3.6 years old, and 42.8% were female. Obstructive sleep apnea (77.6%) was the most common indication. In univariate analysis, ibuprofen was not associated with primary or secondary bleeding, or reoperation ($p > 0.05$). Multivariate logistic regression analyses found no association between ibuprofen and primary (OR: 1.4, 95% CI 0.55-3.7, $p = 0.5$), secondary (OR: 0.96, 95% CI 0.47-1.98, $p = 0.9$), or total post-operative bleeding (OR: 1.0, 95% CI 0.56-1.9, $p = 0.9$), or re-operation (OR: 1.3, 95% CI 0.62-2.9, $p = 0.5$). Age increased the risk for post-operative bleeding (OR: 1.6, 95% CI 1.4-1.8; $p < 0.001$) and reoperation (OR: 1.7, 95% CI 1.4-2.1 $p < 0.001$), while weight decreased the risk for post-operative bleeding (OR: 0.95, 95% CI 0.93-0.98; $p < 0.001$) and reoperation (OR: 0.93; 95% CI 0.89-0.97, $p < 0.001$).

Conclusion: This preliminary study revealed no association between ibuprofen and post-operative bleeding. We aim to expand this analysis to encompass all patients undergoing adenotonsillectomy up until 2023.

LONG-TERM OPIOID USE IN SENIORS FOLLOWING PARTIAL AND TOTAL KNEE ARTHROPLASTY: PRE AND POST 2017 'CANADIAN OPIOID PRESCRIBING GUIDELINE' IMPLEMENTATION

Brie Loughlin-Murray, L Lethbridge, E Johnston, G Richardson, M Dunbar

Background: Persistent opioid use is an unintended consequence of post-operative opioid prescriptions. In 2017 'Canadian Guideline for Opioids for Chronic and Non-Cancer Pain' provided recommendations for opioid prescribing. This study's purpose was to examine trends in opioid prescribing, and whether guideline implementation correlated with a decrease in opioid prescriptions and strength at discharge, as well as long-term (defined as > 3 months) following total or partial knee arthroplasty.

Data & Methods: The Discharge Abstract Database and National Ambulatory Care Reporting System were utilized to identify knee arthroplasty cases using procedure codes from the Canadian Classification of Health Interventions. Pharmacare data (seniors >65yr) provided information on opioid use. Prescribing trends were analysed. The cohort was divided into time periods, pre-guideline (2001 – 2017) and post-guideline (2018 - 2022). The probability of receiving an opioid prescription at discharge and long-term were evaluated using logistic regressions. The association between time period of surgery and Morphine Measurement Equivalent (MME) prescribed at discharge and long-term were examined using linear regression. Inverse probability of treatment weighting was used to reduce the effect of confounders.

Results: There were 19,172 observations, 57.8% female, average age 73.4 (SD 5.5). In 2010, hydromorphone replaced codeine as the most frequently prescribed opioid. Undergoing an operation post-guideline did not alter the odds of a patient being prescribed opioids at discharge (p-value 0.226) or long-term (p-value 0.088). However, receiving surgery post-guideline was associated with a decrease of 23 MME for every one MME prescribed at discharge pre-guideline (p-value <.0001). MMEs prescribed long-term did not change in the post-guideline period (p-value 0.286).

Conclusion: Types of opioids prescribed changed between 2001 - 2022. The 2017 guidelines did not correlate with a reduction in the probability of being prescribed an opioid at discharge or long-term. Although MMEs prescribed at discharge decreased post-guideline, MMEs prescribed long-term remained unchanged.

VARIABILITY IN OPIOID PRESCRIPTION PRACTICES FOR COMMON GENERAL SURGERY PROCEDURES IN NOVA SCOTIA, CANADA

Skylah McLeod Van Wagoner S, RT Spence, L Lethbridge, CM Hoogerboord.

Introduction: Unwarranted variability in opioid prescription practices (OPP) significantly contributes to the opioid epidemic. The objective of this study was to determine variability in OPP for common general surgery procedures in Nova Scotia (NS), Canada from 2016-2022.

Methods and Procedures: The study population was identified through the Canadian Classification of Health Interventions procedure codes in the Canadian Institute for Health Information Discharge Abstract Database, and National Ambulatory Care Reporting System. Surgical procedures included cholecystectomy, appendectomy, inguinal hernia repair, and hemorrhoidectomy. The Drug Information System was used to identify opioid prescriptions. OPP were standardized to 2 mg hydromorphone tablets. The mean, standard deviation (SD) and coefficient of variation (CV) were calculated. Variation in OPP was measured using a hierarchical linear regression model (HLM), with surgeons and hospitals included as random effects, and patient factors included as fixed effects. For all analyses, a p-value of <0.05 was considered statistically significant.

Results: There were 12,199 inpatient and 13,333 outpatient cases, 22.8% of inpatients received an opioid prescription, compared to 26.8% of outpatients ($p < 0.0001$). The mean number of pills was lower for inpatients compared to outpatients [8.1 vs 9.4 ($p < 0.0001$)] while the variation as measured by the CV was higher [36.9 vs 28.7 ($p < 0.0001$)]. In the HLM, patient factors reduced unexplained variance by 10.5% for inpatients, and 2.4% for outpatients, with significant variation amongst hospitals (inpatients; $p = 0.026$, outpatients; $p = 0.029$) and surgeons (inpatients; $p = 0.0002$, outpatients; $p < 0.0001$). Outpatients were less likely to receive a prescription for hydromorphone compared to inpatients (34.0% vs. 71.24%, $p < 0.0001$), and were more likely to be prescribed codeine (52.5% vs. 12.8%, $p < 0.0001$).

Conclusion: This study shows significant variability in OPP for patients who underwent common general surgery procedures. Shared decision-making models and prescription guidelines have been shown to reduce variability in OPP and may be considered in NS, Canada.

OPIOID PRESCRIBING FOLLOWING GENERAL SURGERY SAME DAY PROCEDURES IN NOVA SCOTIA

Adele Orovec, L Lethbridge, RT Spence & CM Hoogerboord

Purpose: Overprescription of opioid analgesia for management of short-term postoperative pain is widespread and has been associated with increased risk of drug diversion, new long-term opioid use, and the development of opioid use disorder. Given that opioid prescribing practices for patients who undergo day surgery procedures in Nova Scotia are not known, the purpose of this study is to describe the type, frequency, and duration of opioids prescribed postoperatively to general surgery patients who underwent common elective day surgery procedures in Nova Scotia between 2016 and 2022.

Methods: The study population included patients undergoing day procedures of inguinal hernia, appendectomy, laparoscopic cholecystectomy, and open hemorrhoidectomy from July 2016 to May 2022 in Nova Scotia. Data was collected from various sources. Descriptive statistics and multivariate 3-level hierarchical linear model analysis was carried out to test for associations between having an opioid filled at discharge and study outcomes including emergency department visit or admission within 90 days.

Results: The total number of cases during the study period was 15825. Of these 42% received an opioid prescription after surgery, and the mean morphine milligram equivalent was 49. Of the opioids prescribed, the most common included Codeine (43.5%), Hydromorphone (32%), and Oxycodone (12.7%). A hierarchical linear regression found that the probability of being prescribed an opioid was significantly decreased at an older age and with higher Charlson Comorbidity score. The probability of an emergency department visit within 90 days was increased if the patient was prescribed an opioid, but this did not impact the likelihood of admission to hospital.

Conclusion: The opioid prescribing rate following general surgery day procedures is high, and this impacts emergency department visits. We hope with ongoing implementation of consensus guidelines the amount and variability of opioid prescribing after day surgery will decrease, leading to better patient outcomes.

**FIXED IN FORMALIN – AN EVALUATION OF 986 CONSECUTIVE ENDOBRONCHIAL
ULTRASOUND GUIDED TRANSBRONCHIAL NEEDLE ASPIRATION PROCEDURES FOR
REFLEX BIOMARKER TESTING FOR LUNG CANCER: A SINGLE CENTER
RETROSPECTIVE REVIEW**

Geraint Berger, D French, S Houston

Introduction: Endobronchial ultrasound guided transbronchial needle aspiration (EBUS-TBNA) is a minimally invasive technique commonly used to biopsy intrathoracic lymph nodes and tumors. Given the high propensity of lung cancer to spread to intrathoracic lymph nodes, nodal sampling is commonly required for both diagnosis and staging. Moreover, determining the best treatment for non-small cell lung cancer (NSCLC) often requires characterization of tumor biomarkers that can potentially be targeted with systemic therapy. This study aimed to evaluate the utility of EBUS-TBNA for diagnosis and molecular profiling and quantification of PD-L1 expression on NSCLC samples fixed in formalin using reflex testing without rapid on-site evaluation (ROSE).

Methods: We performed a retrospective chart review of all patients referred for EBUS in the province of Nova Scotia between May 2017 and December 2022. Patient demographics, radiographic features of the primary tumor and lymph nodes, histopathological subtype, and results of reflex testing were collected.

Results: A total of 986 EBUS procedures were completed during the study period, with 753 (753/986; 76.3%) indicated for diagnosis and/or staging of suspected or known lung cancer. A total of 1260 lymph node samples in this patient group were placed directly in formalin. 1162 (1162/1260; 92.2%) samples yielded sufficient diagnostic lymphoid tissue. Of these, 511 (511/1162; 44.0%) were positive for lung cancer, of which 407 (407/511; 79.2%) were determined to be NSCLC. Adenocarcinoma was the most common subtype within lymph nodes (276/511; 67.8%). Pathologist-initiated reflex testing was performed on 224 samples (224/511; 43.8%), with a success rate of 96%. PD-L1 immunohistochemistry was successful in 97% of samples (N =209).

Conclusions: Our findings indicate that EBUS-TBNA lymph node samples fixed directly in formalin can reliably be used for reflex testing during the evaluation of patients with lung cancer in the absence of ROSE

UNDERSTANDING THE COMPLEXITY OF CONCURRENT CANCERS IN LUNG CANCER PATIENTS: A FOCUS ON ATLANTIC CANADA

Kassandra Coyle, Y Gao, R Murphy, G Dellaire, G & AM Wallace

Objective: Lung cancer is the most prevalent cancer in Canada, with 31,000 new cases projected for 2023. In the Atlantic provinces, age-standardized incidence rates are the highest in the country. Reasons behind these heightened rates in Atlantic Canada remains elusive. Furthermore, there is an observed phenomenon where lung cancer often reveals an intricate landscape of multiple malignancies, presenting challenges in diagnosis and treatment. This study delves into the prevalence of multiple primary cancers among individual's diagnosed with lung cancer in Atlantic Canada.

Methods: This study took place at the Victoria General Hospital in Halifax, Nova Scotia. 1151 patients were referred to thoracic surgery between 2019-2022 with a new diagnosis of lung cancer. Through a retrospective chart review we characterized the number of patients with multiple primary cancers. The diagnosis of "primary cancer" was determined based off of the pathology report.

Results: Within our Atlantic Canada cohort, 43.36% of patients have multiple primary cancers. 1874 cancers were identified, with 1440 stemming from lung origin. 60% of our cohort was female. 31.28% were self-reported current smokers, 50.3% were ex-smokers, and 18.42% never smokers. The average age and BMI at first diagnosis were 67 and 27.65, respectively. 39.18% of our study participants lived in an urban region (>100,000 people), 10.17% in a semi-urban region (~98,000 people) and 50.65% in rural regions (<55,000 people). The average household income reported ranged from \$56,800-81,000.

Conclusions: We identified patients with multiple primary cancers of different tissue origin, presenting at a rate that is four times greater than previously described. By bridging the gap between clinical observations and robust research methodologies, we are poised to investigate further whether genetic predisposition, environmental exposure, or socioeconomic factors could underly the high statistics. This work will offer unique strategies to optimize lung cancer screening criteria and management strategies.

ASSESSING THE COMPLICATIONS AND OUTCOMES OF PATIENTS UNDERGOING GASTROSTOMY TUBE PROCEDURES FOR HEAD AND NECK CANCERS

Abdullah Chanzu, C MacKay, C & M Rigby

Background: Patients with Head and Neck cancers may suffer reduced oral intake due to progression of their tumour or sequelae of their treatment. This increases the risk of malnutrition, which may lead to early cessation of potentially life-saving treatment and reduced quality of life.

Gastrostomy tube (G-tube) placement provides a nutritional route directly into the stomach, bypassing the oral cavity and oropharynx.

At the QEII Health Sciences Centre, G-tubes are placed by various services. Our main objectives were to explore and compare complications and complication rates of Head and Neck cancer patients with G-tube placement procedures performed by these services.

Methods: Retrospective chart review of 134 Head and Neck cancer patients that had G-tube procedures performed between January 1, 2015 and December 31, 2021. Due to data inaccessibility, procedures were excluded if they were not performed at the QEII Health Sciences Centre. Categories analyzed were requesting service, providing service, length of hospital stay, insertion technique, wait times, and procedure complications.

Results: 91 procedures were included. Of these, 27 (29.7%) had complications. The most common complications were infection (N=19) and post-operative hemorrhage (N=7). One death (due to tachyarrhythmia) occurred 4 days following G-tube insertion. Rates of complications varied between the services providing G-tubes, though the differences were not statistically significant (p: 0.344). Differences in wait times between providing services were statistically significant (p: 0.002).

Conclusion: Overall, we found differences in the absolute complication rates of G-tubes placed by various services, but these differences were not statistically significant. Depending on the time sensitivity of the need for G-tube insertion, statistically significant differences in wait times between providing services have the potential to impact consulting decisions. Further analysis on the potential impacts of wait times on patient outcomes is recommended in future studies.

ASSESSING THE ACCURACY, SAFETY, AND TOLERANCE OF OFFICE-BASED ENDOSCOPIC BIOPSIES FOR LARYNGOPHARYNGEAL LESIONS

Alexander Clark, Y Nam, C MacKay, & T Brown

Objective: The increasing prevalence of office-based biopsies (OBBs) for diagnosing laryngopharyngeal lesions underscores the need for a comprehensive evaluation of their clinical utility. This study aims to investigate the accuracy, safety, and tolerance of these procedures in an office setting.

Method: A retrospective analysis was conducted on 493 office-based biopsies (OBBs) performed with distal chip, working channel endoscopes. Histologic accuracy was assessed through comparison with clinical diagnoses, operating room biopsy results, or resolution/stability of endoscopic findings over six months.

Results: OBBs were taken primarily from the glottic larynx (260/493; 52.7%), the supraglottic larynx (85/493; 17.2%), and the oropharynx (83/493; 16.8%). Patient intolerance and procedural complications led to the non-completion of 20 biopsies (4.1%), with 17 cases due to gag reflex and 3 due to laryngospasm. No serious complications occurred. OBBs effectively guided management in 88.4% of cases. Histologically, 33.0% of cases were benign, 27.1% pre-malignant, 38.7% malignant, and 1.5% yielded inadequate specimens. Discrepancies between clinical context and histologic findings occurred in 8.0% of cases necessitating repeat biopsy in the operating room. Biopsies performed under general anesthesia upstaged 30/127 (23.6%) of pre-malignant cases to invasive malignancies. For malignant/severe dysplastic lesions, OBBs had a sensitivity of 90.8%, specificity of 96.5%, positive predictive value of 97.8%, and negative predictive value of 86.0%.

Conclusion: OBBs of laryngopharyngeal lesions are safe, generally well-tolerated, and offer reliable diagnostic results in appropriate clinical settings.

ROLE OF NECK DISSECTIONS IN THE MANAGEMENT OF CAROTID BODY TUMORS: A RETROSPECTIVE STUDY

Gizelle Francis, G Pickett & SM Taylor

Importance: Carotid body tumors (CBTs) are rare neoplasms of the paraganglia at the carotid bifurcation. While typically benign, CBTs occasionally exhibit malignancy, metastasizing to nearby lymph nodes. Histopathologic analysis alone is insufficient to confirm malignancy, requiring metastases to non-neuroendocrine tissue, including cervical lymph nodes or distant sites, for a definitive diagnosis.

Objective: The role of selective neck dissections (SND) during CBT surgeries in detecting malignancy and guiding subsequent management remains uncertain. Further investigation is warranted to assess the utility of SND in these cases. *Methods:* A retrospective case series through electronic chart review was performed on 21 patients undergoing CBT surgeries between 2002 and 2022 at a Canadian institution. SND were performed on all 21 patients. A standardized data abstraction template was created, based on predetermined inclusion criteria. Data collection encompassed various aspects, including patient demographics, genetic and laboratory testing results, pre-operative imaging, intra-operative and post-operative complications, and follow up results. Histopathological analysis of the specimens obtained from the neck dissections and tumor resections were assessed.

Results: Of the 21 surgical resections, there were three cases (14.3%) of carotid artery injuries and six cases (28.6%) of nerve injuries. One patient (4.8%) experienced three intra-operative strokes. Three patients (14.3%) were found to have lymph node involvement, confirming malignancy, and underwent further treatment with radiotherapy. Interestingly, two patients with carotid injuries had malignant tumors, demonstrating a statistical significance between carotid injury and malignancy ($p=0.04135$).

Conclusion: SND are a useful adjunct in detecting malignancy during CBT surgeries. The incidence of malignancy in CBT is low but not negligible, and SND should be considered in patients with suspected malignancy or high-risk features. This study's 14.3% incidence of malignancy suggests that there may be a rationale for considering the universal implementation of SND during CBT resections.

EVALUATION OF THE LOCAL UPGRADE RATE OF INTRADUCTAL PAPILLARY BREAST LESIONS WITH BENIGN FEATURES ON CORE BIOPSY

Angela Cheng, G Knapp, K Greenlaw & G. Bethune

Introduction: The standard-of-care for most papillary breast lesions on core biopsy is surgical excision due to the risk of associated in-situ or invasive carcinoma. However, the rate of neoplastic upgrade on excision varies widely in the literature (0-33%). We investigated the local upgrade rate after surgical excision for benign appearing papillary lesions initially diagnosed on core biopsy and developed a proposal for the potential de-escalation of surgery in select patients.

Methods: We searched our Lab Information System (Cerner Millennium) for intraductal papillary lesions diagnosed on core biopsy between 2010-2020 and included those with adequate follow-up data. We excluded biopsies containing atypical ductal hyperplasia (ADH), ductal carcinoma in situ (DCIS), or invasive malignancy. We defined 'upgrade' as invasive malignancy or DCIS on the excision specimen. Where available, the patient and radiologic characteristics, including age at biopsy, Breast Imaging-Reporting and Data System (BIRADS) classification, and lesion size, were obtained from Cerner Millennium.

Results: 190 intraductal papillary lesions met the inclusion criteria. 53.2% (101/190) were classified as BIRADS \leq 4A (i.e., low suspicion of malignancy) and 53.1% (94/177) were $<$ 10mm on imaging. 85.8% (163/190) were surgically excised; the remainder received routine surveillance. On final pathology, 4.3% (7/163) of benign appearing papillary lesions were upgraded. 100% (7/7) of the specimens upgraded contained only DCIS. There were no upgrades to invasive carcinoma. 100% (7/7) of upgraded cases were \geq 10 mm on imaging or BIRADS 4B/C (i.e., intermediate-moderate suspicion of malignancy).

Discussion/Conclusion: Our institution had an upgrade rate comparable to the pooled rate in the literature (5.0%) and similar predictive features for upgrade. There is an opportunity for safe de-escalation of management from excision to surveillance in patients with small ($<$ 10 mm) BIRADS 4A papillary lesions without atypia on core biopsy. More selective surgical excision could substantially reduce unnecessary operations for this common breast pathology.

CYTOREDUCTIVE SURGERY AND HYPERTHERMIC INTRAPERITONEAL CHEMOTHERAPY FOR COLORECTAL CANCER PERITONEAL METASTASIS: EXPERIENCE OF ATLANTIC PERITONEAL ONCOLOGY GROUP

Sulaiman A Alshammari, AE Drohan, CA Giacomantonio & G Knapp.

Introduction: Peritoneal metastasis from colorectal cancer (CRC-PM) carries a poor prognosis but highly selected patients may benefit from cytoreductive surgery and hyperthermic intraperitoneal chemotherapy (CRS-HIPEC). Recent compilation of patient-level data has provided the opportunity to describe the experience of Atlantic Peritoneal Oncology Program, with a focus on the role of peri-operative systemic chemotherapy.

Methods: A retrospective cohort single-center including consecutive patients who underwent CRS-HIPEC for CRC-PM between 2014-2022. Patient and tumor characteristics were described for the entire cohort and compared between those receiving neoadjuvant chemotherapy (NAC) and those who did not. Multivariable logistic regression was performed to identify factors associated with the use of NAC. Short-term outcomes including length of stay (LOS) and major complications were compared between groups.

Result: A total of 64 patients were included with a median follow up of 187 days; 39 patients (60.9%) received NAC. There was an equal distribution of males and females and most were from Nova Scotia (53.1%). The mean PCI was 12, and a complete cytoreduction was accomplished in 88.3%. Median LOS was 15 days (7-79) and 23% experienced a grade 3 complication or higher. There were no differences in patient or tumor characteristics among those who received NAC and those who did not. Patients who had NAC were more likely to receive a stoma (61.5 vs 36%, $p=0.046$). The use of NAC did not increase over the study time period ($p=0.299$) and univariable and multivariable analysis did not identify any significant predictors for the use of NAC.

Conclusion: Patients selected to undergo CRS-HIPEC for CRC-PM within the Atlantic Peritoneal Oncology Program are achieving a complete cytoreduction in the majority of cases with a median LOS of 15 days. We did not identify any factors predictive of NAC use. Importantly, NAC was not associated with worse short-term outcomes. Further research on oncologic outcomes is warranted.

A WATCH AND WAIT APPROACH TO COMPLETE CLINICAL RESPONSE AFTER TOTAL NEOADJUVANT THERAPY FOR LOCALLY ADVANCED RECTAL CANCER ACHIEVES HIGH ORGAN PRESERVATION RATES IN NOVA SCOTIA PATIENTS.

Ilinca Georgescu & K Neumann

BACKGROUND: Total neoadjuvant therapy (TNT) has emerged as a leading treatment modality for locally advanced rectal cancer, resulting in improved metastases-free survival and higher rates of complete clinical response (CCR) as compared to standard of care. CCR enables a non-operative approach with strict watch and wait (W&W) surveillance as assessed by MRI and endoscopic investigation. Standardization of a W&W protocol was endorsed by the Nova Scotia Cancer Care Program in 2021.

PURPOSE: To report on quality metrics for the Nova Scotia CCR cohort and benchmark rectal cancer outcomes in Nova Scotia.

METHODS: Patients with CCR following TNT for locally advanced rectal cancer were identified via GI Luminal Cancer Site Team rounds between January 2021 and January 2024. A retrospective chart review was undertaken to collect patient and tumour characteristics, treatment, and surveillance details. Primary outcomes of interest were recurrence and organ preservation. Secondary outcomes included adherence to surveillance protocols. Descriptive statistics were performed.

RESULTS: A total of 17 patients met CCR criteria and were recommended W&W. Mean age and sex were 62.6 years and 58.5% male respectively. The majority of patients were TNM Stage III (94.1%). Median length of follow-up was 6 months [3 – 24], and 96.7% of patients had MRI/endoscopy at the correct standardized intervals. Recurrences occurred in 5/17 (29.4%) of patients, including 5 regrowths (all salvaged with either radical resection or local excision), of which 1 patient developed subsequent distant metastases, and passed away (5.9%). Organ-preservation was achieved in 14/17 (82.7%) of patients on the W&W protocol.

CONCLUSION: Patients undergoing W&W following CCR have overall positive outcomes, achieving high rates of organ-preservation, with regrowth and distant metastases rates comparable to the literature. High rates of adherence to surveillance guidelines confirm standardized implementation. Ongoing limitations remain sample size and short follow-up time.

EXPLORING THE IMPACT OF THE MEDIAN MELD AT TRANSPLANT MINUS 3 (MMA-T-3) EXCEPTION POINTS SYSTEM ON WAITLIST MORTALITY FOR LIVER TRANSPLANT PATIENTS IN ATLANTIC CANADA

P Pouramin, **Susan Allen**, A Kamal, M McLeod & B Gala-Lopez

Background: Allocation of limited liver transplant (LT) grafts are prioritized based on mortality risk using the Model for End-Stage Liver Disease (MELD) score. Given that MELD scores do not adequately reflect disease severity of Hepatocellular Carcinoma (HCC), historically, HCC patients have been allocated additional 'exception points' to compete with non-HCC patients listed for LT. However, this paradigm over-favoured allocation to HCC patients. Thus, the Median Meld at Transplant minus 3 (MMA-T-3) scoring system, which assigns reflective exception points based on the previous year's patient MELD scores, was adopted to fairly allocate LTs. We aimed to assess the impact of MMA-T-3 on waitlist mortality and transplantation rates amongst HCC and non-HCC patients.

Methods: A retrospective chart review of patients who were listed for a LT (2015-2023) in Atlantic Canada was conducted. Waitlist mortality and transplantation rates were compared between two cohorts pre-MMA-T-3 and post-MMA-T-3 implementation.

Results: We included 240 patients (143 pre- vs. 97 post-MMA-T-3). Mean patient age was 60.8 ± 7.9 years old for HCC, and 52.9 ± 9.9 for non-HCC patients ($P=0.38$). Post-MMA-T-3, non-HCC patients had significantly higher 1-year transplantation rates (72.7% vs. 55.7% $P = 0.04$) and lower 1-year mortality rates (27.8% vs. 12.7%, $p=0.04$). Among HCC patients, post-MMA-T-3, there was no change in 1-year transplant rates (69.0% vs. 82.6%, $P=0.16$), but a trending increase in 1-year mortality (20.7% vs. 6.5%, $p=0.07$). In multivariate cox regression, after correcting for Natural MELD score, age, and BMI, the introduction of MMA-T-3 reduced waitlist mortality (sHR: 0.42, [0.2, 0.89], $p=0.02$) among non-HCC patients, but not among HCC patients (sHR: 2.27 [0.55, 9.34], $p=0.25$).

Conclusion: We demonstrated that implementing the MMA-T-3 exception system decreased waitlist mortality of non-HCC patients with limited impact on outcomes for HCC patients listed for a transplant.

VALIDATION OF STRUCTURED LIGHT 3D SCANNING FOR MEASUREMENT OF TIBIAL BONE DEFECTS IN REVISION TOTAL KNEE ARTHROPLASTY

Shariar Seddigh, R Adamson & M Dunbar

Purpose: Failures of Total Knee Arthroplasty (TKA) may be associated with significant bone loss. Management of bone loss depends on location and size of bony defects, however currently there is no method for their quantitative measurement. Our study aims to utilize Structured Light (SL) 3D scanning to quantitatively measure bone defects intraoperatively. Our objectives are to validate volumetric and geometric accuracy of SL with micro-Computed-Tomography (mCT) for measurement of tibial bone defects and secondarily to evaluate the reliability of SL measurements.

Methods: Revision TKA was simulated on four cadaveric knees. Contained tibial defects were scanned in situ with SL and subsequently with mCT. Three-dimensional reconstructions of SL and mCT were compared. Volume accuracy was assessed by Bland-Altman analysis. Geometric accuracy was assessed by Hausdorff Distance (HDavg) and Dice Similarity Coefficient (DSC). Accuracy thresholds of 1.2mL, 1.0mm and 0.967 were determined for volumetric, linear and spacial metrics respectively. SL reliability was assessed by Intraclass Correlation Coefficient (ICC) using Stata software.

Results: SL and mCT volume measurements had a mean difference of 0.47mL (95% CI 0.36 to 0.58mL) with 95% limits of agreement ranging from -0.06mL (95% CI -0.31 to 0.09mL) to 0.99mL (95% CI 0.84 to 1.24mL). Mean HDavg was 0.16mm (95% CI 0.14 to 0.17mm) and ranged from 0.13mm to 0.24mm for SL-mCT paired models. Mean DSC was 0.986 (95% CI 0.985 to 0.987) and ranged from 0.977 to 0.989 for paired models. SL volume estimates demonstrated an ICC of 0.996 (95% CI 0.986 to 0.999).

Conclusion: SL scanning satisfied all a priori accuracy and reliability thresholds. We conclude that SL is a promising technology for intraoperative application. Accurate measurement of bone defects can facilitate research and communication as well as guide implant selection through intraoperative virtual trialing.

PATHOLOGICAL OR PHYSIOLOGICAL? AN ANALYSIS OF BONE RESORPTION AFTER ANATOMIC GLENOID RECONSTRUCTION

Nick Dawe, J Ma & I Wong

Introduction: Bone graft resorption is a common consequence of bone graft augmentation procedures. There is concern that the graft resorption may be pathological, but recent research suggests that it could instead follow Wolff's Law to physiologically remodel to the natural shape of the glenoid. The purpose of this study was to determine if bone resorption follows Wolff's Law after Arthroscopic Anatomic Glenoid Reconstruction (AAGR).

Methods: This study included patients who underwent AAGR with screw fixation for anterior shoulder instability between 2013 and 2022 who have completed post-op follow-up for a minimum of one year with 3D CT reconstruction images. Deidentified glenoid images were reviewed using 3D models generated using Horos and Meshmixer software. The 3D models were used to measure glenoid width and height. The glenoid width was compared to the estimated glenoid width and the difference between the two variables was calculated.

Results: In 109 patients, the estimated glenoid width (28.5 ± 2.5 mm) was significantly smaller than the measured glenoid width (30.7 ± 4.2 mm) ($p < 0.001$). However, there was a significant negative correlation between post-op CT follow-up time and the difference between measured and estimated glenoid width ($r = -0.325$, $p < 0.001$). In patients with ≥ 6.9 months post-op CT follow-up ($N = 65$), there is no difference between estimated and measured post-op glenoid width (28.6 ± 2.6 mm, 29.4 ± 3.7 mm, respectively, $p = 0.099$). In patients with < 6.9 months CT follow-up ($N = 44$), the estimated post-op glenoid width was significantly smaller than the measured post-op glenoid width (28.4 ± 2.3 mm, 32.7 ± 3.9 mm, respectively, $p < 0.001$).

Conclusion: These findings support the hypothesis that the allograft remodels according to Wolff's Law after AAGR to achieve anatomic reconstruction of the glenoid. This will help direct size of bone blocks used in the future to optimize surgical outcomes and further supports the use of AAGR to treat anterior shoulder instability.

PATIENT-SPECIFIC GLENOID RECONSTRUCTION: THE IMPORTANCE OF UNDERSTANDING ANATOMIC VARIATIONS OF THE SCAPULA

Jillian McNally, Ojaghi, R., Ma, J., Licht, F., & Wong, I.

Anatomic variations in the acromion and coracoid affect Arthroscopic Anatomic Glenoid Reconstruction (AAGR). The acromion is crucial for locating the posterior portal, creating the far-medial portal, and facilitating graft placement. However, the acromion's variability is greater than previously known. In addition, the impact of coracoid position on arthroscopic bone graft fixation remains unexplored. Mixed Reality (MR) offers a potential solution, but current understanding of scapular anatomy is insufficient. This study aimed to assess the variability in acromion and coracoid anatomy using MR to support MR-based, patient-specific glenoid reconstruction.

CT scans of 100 patients requiring shoulder arthroscopy were analyzed. CT scans were used to create 3D-models displayed on a commercially available MR system (Microsoft, HoloLens 2). Using the headset, we measured glenoid height and width. Additionally, we measured the superior-to-inferior and medial-to-lateral distances of the acromion and coracoid relative to the glenoid surface, as well as the angle between the glenoid surface and acromion. A second rater repeated these measurements on 48 models to determine interrater reliability.

The acromion had a mean superior-to-inferior distance of 4 mm (SD: 6) and a mean medial-lateral distance of 9 mm (SD: 6). The position of the coracoid had less variation, reporting a mean superior-to-inferior distance of 21 mm (SD: 6) and a mean medial-to-lateral distance of 14 mm (SD: 5). The angle between the glenoid face and acromion varied widely, with a mean angle of 38.4 degrees (SD:8.1). The intra-class correlation coefficients (ICC) were high for all measurements, except for the angle between the glenoid and acromion (ICC 0.019).

There are significant anatomical variations in the anatomy of the acromion and coracoid, making the standard anatomic landmarks rarely the ideal position for the posterior portal. We suggest that computer manipulated 3D-modeling and MR may enhance individualized preoperative surgical planning for glenoid reconstruction.

SELF INFLICTED HAND FRACTURES AS A PREDICTOR OF FUTURE PSYCHIATRIC CONDITIONS IN PEDIATRIC POPULATION

Colton Boudreau, B Bati, O Picollo & M Bezuhly

Background: Hand fractures are common reason for presentation to pediatric plastic surgery clinics. There is currently no literature investigating the link between pediatric hand injuries and subsequent presentation to mental health services. This study will aim to assess connections between hand injury mechanisms and presentation to mental health services.

Methods: A retrospective cohort study assessing charts of all patient presentations to the IWK plastic surgery fracture clinic from 2012 to 2014 was performed. Charts were assessed for information about the fracture mechanism and subsequently to identify any subsequent presentation to mental health services. Qualitative statistics were employed to ensure homogeneity in basic patient demographics and risk ratio was calculated to compare presentation to mental health services for self-inflicted and accidental mechanisms.

Results: A total of 482 patients with hand fractures were included from 2012 to 2014. The majority were accidental (83.8%) while 16.2% were self-inflicted. Risk ratio (RR) for self-inflicted patients presenting to mental health services was 2.17. The majority of subsequent mental health presentations were outpatient (82.1%) for accidental, while only 56.9% were outpatient for self-inflicted fractures. The average time between hand fracture and mental health presentation was 38.5 +/- 12.2 and 41.8 +/- 9.8 months for self-inflicted and accidental injuries, respectively ($p=0.061$). The most common psychiatric diagnoses for self-inflicted were substance misuse disorders (59.2%) followed by ADHD (19.3%). For accidental mechanisms, most common diagnoses were depression/anxiety (51.8%) and ADHD (23.5%).

Conclusions: Our data indicates that there is an increased risk of presentation to mental health services in the pediatric population assessed subsequent to a self-inflicted hand injury as compared to accidental mechanisms. This provides insight for plastic surgeons to consider early referral to mental health services with self-inflicted injuries as a potential protective mechanism.

PITUITARY APOPLEXY: A RETROSPECTIVE SINGLE CENTER COHORT STUDY

Ellen Parker, A Hebb, N Kureshi, SA Imran & DB Clarke

Introduction: Pituitary apoplexy is a rare clinical syndrome that often involves headache, visual deficits, and endocrine dysfunction resulting from infarction or hemorrhage of a pituitary tumor. Due in part to the rare nature of this condition, there are few published large studies on pituitary apoplexy. Here, we present a large single center study of patients with symptomatic pituitary apoplexy managed surgically or conservatively.

Methods: This is a retrospective cohort study; data were collected from prospectively entered information in our Halifax Neuropituitary Clinic's database. Medical records of patients with symptomatic pituitary apoplexy treated from January 2000 to October 2022 were reviewed. Patient demographics, endocrinologic and radiographic values, clinical outcomes, and cases of tumor recurrence were analyzed.

Results: Eighty-three (n=83) patients met our inclusion criteria. The average age at diagnosis was 50.4 ± 1.6 years. Seventy-two percent of tumours (n=60) were non-functioning adenomas. Functioning (but hormonally uncontrolled) adenomas made up 8.4% of cases (n=7), and other parasellar lesions comprised 13.2% (n=11). Sixty (72.3%) patients were treated surgically, while the remaining twenty-three patients (27.7%) were treated conservatively. There were no significant differences in endocrinological values at time of presentation between patients treated surgically compared with those treated conservatively. At time of presentation, patients treated surgically had a tumor size in maximum dimension of 27 ± 14 mm versus 16 ± 5 mm for those treated conservatively ($p=0.0003$). Fifteen percent (n=9) of patients treated surgically underwent an additional surgery (mean 2.8 ± 2.0 years from index), of which 67% (n=6) were secondary to tumor recurrence.

Conclusions: This is one of the largest reported series of pituitary apoplexy. A subset of surgically treated patients will require additional intervention, highlighting the importance of ongoing follow up in this population.

RELATIONSHIP BETWEEN HOSPITAL SURGICAL VOLUMES AND LENGTH OF STAY FOR HIRSCHSPRUNG'S DISEASE: PRELIMINARY RESULTS OF A CANADIAN POPULATION-BASED STUDY

Ashley Robinson, R Romao, G Ilie, S Stewart & D Keefe

Background: Hospital volume, defined as the average number of specific procedures performed annually at a given hospital, has been linked to better adult patient outcomes, including shorter length of stay (LOS), for various surgical conditions. The evidence supporting a similar volume-outcome relationship in pediatric surgery is limited. This work presents the preliminary results of a study aimed at investigating the relationship between hospital volume and LOS for infants undergoing surgery for Hirschsprung's disease (HD), an index condition managed by pediatric general surgeons.

Methods: This is a retrospective cohort study, analyzing data from the Canadian Institute for Health Information (CIHI) discharge abstract database, from April 2010 to March 2023. All patients aged up to 18 months who underwent surgical treatment for HD were included. Means with standard deviations (SD), and medians with interquartile ranges (IQR), are presented, where appropriate, to describe the study cohort.

Results: Of 563 patients diagnosed with HD in the study period, 485 underwent a pull-through procedure or colonic diversion. The average age of patients at index admission was 3.6 (+/- 3.8) months. Ninety (18.5%) patients were female. Patients were treated across 18 Canadian hospitals. The lowest volume hospitals treated only two HD patients over 12 years, while the highest volume hospital treated a median of 10 (IQR 7-12) patients annually. The overall median LOS for patients was 5 (IQR 3-11).

Conclusions: Pediatric surgical conditions are rare, as exemplified by the relatively small cohort of Canadian patients treated surgically for HD, over a 12-year period. The data herein suggest certain hospitals have increased experience in the management of these patients. Further analysis is required, however, to determine whether an association exists between hospital volume and LOS, as well as other patient outcomes, to better guide delivery of care.

DISPARITIES IN CASEMIX, ACUTE INTERVENTIONS, DISCHARGE DESTINATIONS AND MORTALITY OF PATIENTS WITH TRAUMATIC BRAIN INJURY BETWEEN EUROPE AND INDIA

D Gupta, RD Singh, RJG Vreeburg, JTJ van Dijk, HF Den Boogert, K Sharma, K Praneeth, FE Lecky, AIR Maas, VD Sinha, GW de Ruiter, WC Peul, DB Clarke, **Thomas Van Essen**

Background: Traumatic Brain Injury (TBI) constitutes a major global health problem that disproportionately affects low- and middle-income countries (LMIC). The needs for patients with TBI may differ between levels of human development. We aimed to describe differences in epidemiology and acute care provision of TBI between India and Europe/Israel.

Methods: The prospective observational registry studies CENTER-TBI and CINTER-TBI included patients with an indication for brain CT-scan presenting to respectively 65 centres across Europe and Israel and two trauma centres in India, respectively. We performed descriptive analyses of demographics, injury and treatment characteristics, and in-hospital mortality. Random-effects logistic regression with covariate adjustment was used to examine the likelihood of acute neurosurgical interventions.

Findings: We included 22849 and 3904 patients in CENTER-TBI and CINTER-TBI respectively. The median age was 55 [IQR 32-76] in Europe compared to 27 years [IQR 18-40] in India. Falls were the most common cause of TBI in Europe (12150/22849 [53%]) while in India traffic incidents predominated (2130/3904 [55%]). The proportion of patients with severe TBI was higher in India (867/3904 [22%]) than in Europe (1661/22849 [7%]). Professional pre-hospital care was available in 75% [17203/22849] of European cases and in 6% [224/3904] of Indian cases. Indian patients had higher odds of undergoing intracranial pressure monitor placement (OR 2.3 [2.0-2.7]), surgical hematoma evacuation (OR 4.6 [4.0-5.2]) and primary decompressive craniectomy (OR 4.4 [3.4-5.9]) but lower odds of receiving an external ventricular drain compared to European patients (OR 0.13 [0.06-0.30]). Discharge destinations in Europe included rehabilitation centres (1261/22849 [6%]) or nursing homes (1208/22849 [5%]) while in India these were rarely reported (13/3904 [0%] and 9/3904 [0%], respectively) and patients were mostly discharged home (3035/3904 [78%]).

Interpretation: Substantial disparities between India and Europe exist along the entire neurotrauma care chain. Both systems have unique features and corresponding challenges for the future.

THE IMPACT OF LIVER PARENCHYMAL QUALITY AND LIVER REMNANT VOLUME ON THE RISK ASSESSMENT OF ACS NSQIP MORBIDITY AND MORTALITY AFTER MAJOR LIVER RESECTIONS.

Lujain Attar, A Alabduljabbar, VM. Linehan, CB Lightfoot, BL Gala-Lopez.
presented by: **Allison Keeping**

Introduction: The National Surgical Quality Improvement Program (NSQIP) surgical risk calculator is a validated tool and one of the most popular in clinical settings. However, when used for major hepatic resections, it lacks the analysis of the impact of the estimated future liver remnant volume (FLRV) and its liver parenchymal quality (LPQ), and their influence on postoperative complications after a major liver resection.

Objectives: This study aims to evaluate the predicting capabilities of the NSQIP calculator regarding post-hepatectomy complications and mortality when FLRV and PQ are abnormal.

Methods: This retrospective chart review includes all major hepatectomies. The preoperative surgical risk was estimated with the NSQIP calculator, and observed postoperative complications were registered and compared to the predicted risk. Their respective FLRV and LPQ were also collected. A multivariate regression model was created to assess the risk differences and the impact of FLRV and LPQ on the predictive capabilities of the NSQIP calculator among these patients.

Results: From 138 included participants, 68 had normal LPQ and 70 patients had abnormal LPQ. Patient in the abnormal LPQ group had a significantly higher BMI ($p < 0.01$). In terms of complications, the abnormal LPQ group had a higher rate of infection ($p < 0.01$) and greater number of severe complications according to the Clavien-Dindo classification ($p = 0.04$). There were no differences in 30-day mortality. The multivariate analysis revealed that the NSQIP calculator was better at predicting complications in patients with abnormal LPQ (AUC=0.72, $p < 0.01$) when compared to those with a normal LPQ (AUC=0.54, $p = 0.65$)

Conclusion: The liver parenchymal quality and the future liver remnant volume are crucial element when estimating the risk of post-hepatectomy morbidity and mortality. These variables are not accounted or validated in the current NSQIP calculator and should be taken into consideration when assessing a patient for a major liver resection.

LOCAL ANESTHESIA FOR ENDOVASCULAR REPAIR OF ABDOMINAL AORTIC ANEURYSM ALLOWS FOR ACCURATE GRAFT DEPLOYMENT WITH DURABLE RESULTS

Erin Gaudette, A Grant-Gorveatt, C Herman, M Smith, N Zacharias,
P Casey & S Jessula

Objectives: Local anesthesia (LA) is sparsely used in endovascular aneurysm repair (EVAR) despite demonstrated decreased morbidity, likely secondary to concerns over patient movement preventing accurate endograft deployment. The objective of this study is to examine the association between anesthesia type and endoleak, sac regression, reintervention, and mortality.

Methods: An international prospectively-maintained database was queried for all EVAR cases from 2014-2022. Patients were included if they underwent percutaneous elective EVAR with anatomical criteria within instructions for use of commercially approved endografts. Multivariable logistic regression with propensity score weighting was used to determine the association between anesthesia type on the risk of any endoleak noted by intra-operative completion angiogram and sac regression. Multivariable survival analysis with propensity score weighting was used to determine the association between anesthesia type and endoleak at 1 year, long-term reintervention and mortality.

Results: 13932 EVARs met inclusion criteria: 1075 (8%) LA and 12857 (92%) general anesthesia (GA). On multivariable analysis, LA was associated with similar adjusted odds of any endoleak on intra-operative completion angiogram (OR 0.56, 95%CI 0.47-0.68). On 1 year follow-up CT imaging, LA was associated with a similar rate of freedom from any endoleaks compared to GA (0.66 (95%CI 0.63-0.69) vs 0.71 (95%CI 0.70-0.72), $p=0.663$) and increased rates of sac regression (50% vs 45% $p=0.040$). LA and GA had similar adjusted long-term reintervention rate (HR 0.77, 95% CI 0.44-1.38) and long-term mortality (HR 1.100, 95%CI 0.79-1.25).

Conclusion: LA is not associated with increased adjusted rates of any endoleak on completion angiogram or at 1-year follow-up compared to GA. LA is associated with similar rates of sac regression, long term reintervention and mortality. Concerns for accurate graft deployment should not preclude use of LA and LA should be increasingly considered when deciding on anesthetic type for standard elective EVAR.

LAPAROSCOPIC GASTROPEXY WITH SOFT TISSUE ANCHOR IS A SAFE AND DURABLE TREATMENT FOR HIATAL HERNIAS DURING OR AFTER SLEEVE GASTRECTOMY

Peter Urbanellis, A Fernandes, D French & J Ellsmere

Background: Laparoscopic sleeve gastrectomy (SG) is the most common bariatric procedure in North America. Hiatal hernias (HH) are also a very common anatomical abnormality that can complicate SG at the time of operation or develop in the post-operative phase. There is no consensus regarding the optimal management of HH identified before, during, or after bariatric surgery. Our centre has adopted the novel use of gastropexy using a soft tissue anchor after primary HH repair with SG. This study aims to determine if this is an effective, durable, and safe procedure to address HH identified at same time or after SG.

Methods: Single-centre retrospective analysis of patients' charts over the last 5-years.

Results: Seven procedures were performed during the study period (Female n=7(100%), Male n=0(0%), P=0.02; Median Age=53y, IQR=17y). Six-patients had the procedure following SG and 1 had it simultaneously (Time from SG to procedure, median=1451d, IQR=2577d). Type 1 hernias were more common (Type 1, 2, vs 3: N=5(71%), 1(14%), 1(14%), P=0.05). Patients were mostly never-smokers vs ex-smokers vs current smokers (6(86%), 1(14%), vs 0(0%), P=0.01) with similar ASA class (II:4(57%),III: 3(43%),P=0.45) and a median BMI of 38.4(IQR = 11.6). Median length of post-operative stay was 2d (IQR=2d). There were no significant complications reported peri-operatively related to the procedure. Median follow-up time=223d (IQR 1171d) with symptom resolution or improvement reported in all patients (5(71%) vs 2(29%) vs no improvement 0(0%), P=0.07). There were no mortalities, hospital re-admissions, and no documented recurrence of hiatal hernia.

Conclusions: Gastropexy with soft tissue anchor following primary HH repair with SG is a safe and durable procedure. Continued clinical experience with this procedure and thorough comparisons to alternative strategies are required for widescale adoption of this technique.

THE BARRIERS AND FACILITATORS OF SHARED DECISION MAKING IN PEDIATRIC OTOLARYNGOLOGY: A QUALITATIVE STUDY

Usman Khan, E Luther, C Cassidy & P Hong

Objective: To identify barriers and facilitators to implementing shared decision making (SDM) in pediatric otolaryngology consultations.

Study Design: A qualitative study utilizing structured interviews

Methods: The subjects were pediatric otolaryngologists from North American institutions, and parents of patients in pediatric otolaryngology clinics. The Theoretical Domains Framework (TDF) was used as a guide for data collection and analysis to consider capability, opportunity, and motivation (COM-B) factors. The focal surgical procedures were tonsillectomy, adenoidectomy and tympanostomy tube placement. Deductive and inductive coding of interview transcripts according to TDF/COM-B domains were performed by two separate reviewers. Triangulation of themes in the two data sets sought to identify areas of convergence, complementarity and dissonance in parent and surgeon perspectives.

Results: A total of 11 parents and 11 surgeons were enrolled in the study to achieve data saturation. The dominant themes extracted from surgeon interviews were (1) inconsistent inclusion of SDM elements in practice, (2) social influences from parents, (3) environmental context, and (4) patient ownership of decisions. The dominant themes extracted from parent interviews were 1) additional time and information to support decision-making outside the consultation, 2) ongoing access to a consistent care team, 3) social and emotional support through additional conversations with nurses and family members, and 4) consideration of parents' and children's life context beyond the consultation.

Conclusions: Pediatric otolaryngologists and parents strongly support the value of SDM during clinical encounters. Four potential areas for interventions to support SDM were identified based on the analysis of relational barriers: 1) Need for clear communication of equipoise 2) Need for explicit questions about values and preferences 3) Clinical infrastructure for ongoing emotional support, and 4) Information resources for use at home.

IMPACT OF NEUROPSYCHOLOGICAL TESTING ON SURGICAL DECISION MAKING AND TARGETING IN PARKINSON'S DISEASE

Rachel Vaughan, TA Van Essen, JD Fisk & LM Weise

Introduction: Deep brain stimulation (DBS) improves motor symptoms and quality of life in Parkinson's Disease (PD), but this is offset against the risk of cognitive deterioration. Preoperative neuropsychological screening is widely employed to minimize this risk, but integration of cognitive test results in the DBS evaluation varies. Here, we describe how preoperative neuropsychological status may impact the surgical decision-making process.

Methods: We conducted a single-center, observational cohort study using data from patients enrolled in a local neuromodulation registry. Consecutive patients who were assessed for DBS implantation between 2016 and 2023 were included. A multidisciplinary team, including a trained neuropsychologist, convened bimonthly to review PD patient cases. Patients underwent multi-domain pre-operative neuropsychological assessments to evaluate cognitive functioning and were categorized into those with Mild Cognitive Impairment (MCI) or Parkinson's Disease Dementia (PDD) and those with preserved cognition.

Results: Of 95 PD patients evaluated, 75 (79%) underwent DBS placement. 45 (47%) had MCI and 4 (4%) had PDD. Notably, 14 (29%) patients with MCI were excluded, which comprised 70% of patient exclusions. 27 (56%) had altered DBS targets and 8 (16%) proceeded as planned. Among PDD patients, 3 (75%) were excluded, and 1 (25%) received modified targets. Neuropsychological testing led to a modification of surgical strategy from planned bilateral subthalamic nucleus stimulation in 41 out of 49 (84%) patients with cognitive impairment, which was significant when compared to the 14 of 46 (30%) patients with preserved cognition who required modification (for dystonia/unilateral symptoms) ($p < .001$).

Conclusion: Neuropsychological test results significantly impact the surgical decision-making process for DBS patients, in terms of patient eligibility or treatment modification. Preoperative neuropsychological screening may be clinically relevant to mitigate the risk of cognitive decline in PD patients undergoing DBS. In future research we will analyse one-year neuropsychological follow and develop a prognostic model to predict cognitive decline post-DBS.

VALIDATING THE ASSESSMENT OF SURGICAL SKILLS IN ORTHOPAEDIC SURGERY TRAINING PROGRAMS USING MULTI ANGLE PROFESSIONALLY PRODUCED PERFORMANCE VIDEOS

JE McNally, D Wilson, E Jones, C Coles, W Oxner, A & **Taylor Jordan**

Video assessment has been used for evaluation arthroscopic skills, but less so for assessment of open high fidelity surgical procedures. We aim to assess viability of capturing videos of a simulated competency-based OSCE, to be evaluated by surgeon assessors, with a specific focus on discerning between different years of training and readiness for independent practice.

Residents from Post-Graduate Years (PGY) 2-4 and a practicing surgeon were recruited. Two orthopedic scenarios (both bone forearm fractures and a talar fracture) were simulated on fresh anatomic specimens. The process was captured by a professional videographer and edited for critical steps (15-20 minutes anonymized). Blinded evaluation by 17 orthopedic surgeon assessors using the Objective Structured Assessment of Technical Skills (OSATS) and the Ottawa Surgical Competency Operating Room Evaluation (O-score) was undertaken. Random forest (machine learning algorithm) was employed for handling this unique data that was sparse, had strong correlations, and exhibits non-linear patterns.

The model performed well overall with an 18% error rate. The misclassification of evaluators' scores for the resident with 1.5 years of experience and the practicing surgeon were minimal with class errors of less than 15%. In contrast, surgical residents with 3 and 4.5 years of experience had the most misclassifications with class errors of 20%-30%. The mean decreased accuracy scores were the highest for the talar neck fracture, which implies a more variable importance for predicting surgical residents experience level.

The video scoring system exhibits a moderate capability to differentiate between various years of surgical training. Further sampling is needed to validate and extend the findings. This study endorses the use of anonymized videos as an effective tool for assessing open surgical procedural skills in orthopaedic resident training programs.

CONTENT ANALYSIS OF INSTAGRAM STORIES OF TOP PLASTIC SURGEONS

Olivia MacIntyre & C Boudreau

Background: Instagram is a visual platform utilizing two primary forms of content including posts and stories. Posts are made and remain on the associated account long-term, while stories are posted temporarily for 24 hours. Given the importance of social media in marketing cosmetic surgery practices, a detailed analysis of such trends is helpful to surgeons in guiding marketing regimes.

Methods: The top 100 plastic surgery instagram accounts were identified by total number of followers and using the keywords “plastic”, “cosmetic”, “aesthetic” and “surgeon” using Heepsy™. The accounts of each surgeon were monitored daily over the course of a week, categorically logging the type of content being posted. Qualitative measures were used to assess demographics and trends, while quantitative measures were assessed using Microsoft Excel.

Results: The average number of followers by the top accounts was 437916+/- 36398. The majority of surgeons were located in North America (61%). All of the surgeons had publicly open instagram profiles. The average number of stories posted each week was 28.2+/-3.7. The highest number were posted on Friday (5.01) and lowest on Saturday (2.67). The most common content of stories posted were related to surgical procedures (57.6%), followed by personal life (21.4%), engagement polls/posts (13.4%) and educational content (7.6%). The most common subcategory of content was: intra-operative photographs/videos for surgical procedures (61.3%), hobbies and miscellaneous interests for personal life content (78.1%), open-ended poll questions for engagement posts (87.4%) and procedural descriptions for educational content (59.3%).

Conclusions: Instagram has become an increasingly popular means of advertising to and interacting with patients. This study provides insight regarding the nature of content posted by top plastic surgeons on instagram stories, thus providing guidance to new and existing surgeons and their marketing teams.

THE FIRST HUMAN APPLICATION OF SPARSE IDENTIFICATION OF NONLINEAR DYNAMICS (SINDY); MODELING COMPLEMENT ACTIVATION DURING PEDIATRIC CARDIAC SURGERY

Joel Bierer, D Horné, R Stanzel, Mark Henderson, John Sapp, Jean S. Marshall & P Andreou

Background: Inflammation during pediatric cardiac surgery and cardiopulmonary bypass (CPB) is associated with morbidity; effective immunomodulatory therapies remain elusive. We applied the sparse identification of nonlinear dynamics (SINDy) approach to characterize the complement reaction during CPB and derive governing differential equations.

Methods: This post-hoc analysis arises from a cohort study (NCT05154864) where pediatric patients were enrolled with consent and underwent cardiac surgery with CPB and continuous ultrafiltration. Patients were grouped according to the CPB prime (sanguineous and crystalloid) as a critical variable relative to the innate complement response. Arterial samples were collected at baseline and every 30 minutes during CPB; Luminex® analysis quantified C3, C3a, C3b, C5 and C5a concentrations. Data were prepared for SINDy by transforming into 4th-degree polynomials and centring around 0. The SINDy process modelled the five mediators in each CPB prime group to yield governing differential equations.

Results: Thirty-seven patients, 23 who received sanguineous prime and 14 who received crystalloid prime, contributed to this analysis. Relative to the crystalloid prime group, the sanguineous prime patients were significantly younger (4 [0.3 – 7.5] vs. 49 [39 – 70] months; $p < 0.001$) and had a higher proportion of STAT 3 & 4 pathologies (52% vs. 0%; $p = 0.005$). The baseline concentrations of C3, C3a, C3b, C5, and C5a were comparable between groups ($p > 0.05$). The sanguineous prime SINDy model and governing equations described, almost perfectly, the observed mediator trends, while the crystalloid prime model had a slight deviation from the observed.

Conclusion: The SINDy framework has been applied to human biomarker data for the first time, examining the relationship between five closely linked mediators in the complement pathway. This machine-learning approach may provide a novel framework to identify therapeutic targets to dampen complement activation during cardiac surgery with CPB.

BETA TESTING OF THE SEAMLESSMD PATIENT ENGAGEMENT APPLICATION FOR
BARIATRIC, COLORECTAL, AND GYNE-ONCOLOGY SURGERY WITHIN THE DALHOUSIE
DEPARTMENT OF SURGERY

Dan Vidovic, L Saciragic, R Baxter, C King, S Lavallee, L Lawrence, C Penney,
N Shahisavandi, M Hoogerboord, K Neumann & RT Spence

Introduction: Newly emerging mobile patient engagement technology present a valuable addition to surgical care. Evidence suggests these programs are not only safe but also enhance patient satisfaction, improve recovery quality, and reduce the need for in-person follow-up visits across various surgical specialties, such as breast, orthopedic, and gynecologic oncology procedures. However, there remains a lack of data regarding the impact of these apps on the utilization and cost of non-surgical healthcare services, such as emergency department visits.

Methods: Select patients undergoing bariatric, colorectal, and gynecologic oncology surgeries were enrolled between January 2023 and January 2024 to follow a perioperative patient guide (Seamless MD). The guide was tailored to the hospital where the patient received care and provided personalized recommendations based on the surgery performed. Data on four key domains were collected; patient experience (e.g. patient satisfaction), patient outcomes (e.g. wound pain, opioid usage, patient reported measures), provider experience, and health system costs (e.g. ED use, 30-day readmissions).

Results: Between January 2023 to January 2024, 267 patients were enrolled in the program. Of these 267, 170 patients completed the program (25/170 in bariatrics, 69/170 in colorectal, and 76/170 in gyne-oncology). Our preliminary results show that after completing the program, 88% of patients felt more confident before surgery (51/58), while 91% (58/64) felt more confident at home after surgery. 83% (19/23) of patients reported avoiding 1 or more phone calls, while 23% (3/13) of patients avoided 1 or more ED visit.

Conclusion: Our preliminary data suggests that this online-based perioperative patient guide may be a valuable tool to improve patient outcomes and reduce healthcare costs.