THE UNIVERSITY OF BRITISH COLUMBIA

Department of Surgery
Faculty of Medicine

29th WB & MH CHUNG LECTURESHIP AND RESEARCH DAY

November 6, 2023

ZOOM
ID 99652 042124
PASSCODE 042124

OR

IN PERSON
PAETZOLD AUDITORIUM
VANCOUVER GENERAL HOSPITAL

Scan to access the program, schedule, and evaluation:

Table of Contents

Message from the Department Head, Dr. Gary Redekop

I am very pleased to welcome you to the 29th edition of our Department of Surgery Research Day and Chung Lectureship. We acknowledge with thanks the support and contribution of the benefactors of this prestigious lectureship, Drs. Wally and Madeline Chung. The format will be a hybrid in-person and virtual event, which allows for attendance and participation from all of our distributed sites.

Our Chung Professor, Dr. Jodi Sherman, is an anesthesiologist at Yale, and the Co-Chair of the Lancet Commission on Sustainable Health Care, with our own Dr. Andrea MacNeill. Dr. Sherman is also Director of the Yale Program on Healthcare Environmental Sustainability, and Medical Director of Yale New Haven Health System Centre for Sustainable Healthcare.

Chung Research Day is an opportunity to highlight the wide range of basic, clinical, and translational research in our department, and also provides an opportunity to recognize excellence in scholarship among our faculty. This year, the Hjalmar Johnson Early-Career Investigator Award goes to Dr. Faizal Haji, and the Richard Finley Senior Scholar Award goes to Dr. Carl Brown. This year, we also have our first winner of the Research Mentorship Award – Dr. Sam Wiseman.

I would like to thank all of our faculty, staff, and trainees for their perseverance and contributions to surgical science and scholarship during the past year.

Gary Redekop
Head, Department of Surgery
November 2023

Land Acknowledgment

The UBC Department of Surgery would like to acknowledge that the land on which we gather in-person for this province-wide day-long celebration of our Department's research achievements, is the traditional, ancestral, and occupied territory of the Coast Salish Peoples, including the territories of the **xwməθkwəy̓əm (Musqueam), Skwxwú7mesh (Squamish), Stó:lō** and **Səl̓ílwətaʔ/Selilwitulh (Tsleil- Waututh) Nations**. For millennia, these nations have passed on their culture, history, and traditions from one generation to the next on this site. We invite each attendee to critically reflect on the ongoing effects of settler colonialism and structural racism and question what it means to teach, learn, and conduct research on occupied lands.

View the interactive map of BC First Nations communities and lands
https://www.bcafn.ca/first-nations-bc/interactive-map

Founders of the W.B and M.H. Chung Lectureship

Prior to the establishment of the W.B. and M.H. Chung Research Day, the Department of Surgery only had division specific research days. In 1995, the Dr. W.B. and M.H. Chung created an endowment that allows us to hold an annual research day that has become the premier, department-wide event at which we recognize our research achievements.

Wallace B. Chung, MDCM, FRCSC, DSc

Dr. Chung was born and raised in Victoria, British Columbia. After pre-medical education at Victoria College and UBC, he attended the McGill University and received his M.D. in 1953. Following internship and surgical residency training at VGH and UBC, Dr. Chung was appointed to the Department of Surgery at UBC as an Instructor in 1960. After being appointed to an Assistant Professor in 1961, Dr. Chung rose quickly through the ranks to become a full Professor in 1972. For his many professional and community contributions, Dr. Chung has received many awards, including being appointed to the Order of Canada in 2005.

Professional Career

Dr. Chung was noted as a technically gifted surgeon who pioneered Vascular Surgery in Western Canada. In particular, Dr. Chung was known for his excellent surgical results for carotid artery surgery for transient ischemic attacks. He established Vascular Surgery as a new specialty in BC, and as a separate division of surgery at VGH and UBC. He was one of founders of the Canadian Society for Vascular Surgery, and served as its president in 1982. Throughout his academic career, Dr. Chung has taken positions of responsibility (appointed University Head of the Division of General Surgery in 1970, Head of the University Division of General and Vascular Surgery in 1978, Head of the Department of Surgery at the University Hospital in 1981). During his nine-year tenure he built the University Hospital Department of Surgery into an excellent academic unit with international recognition for vascular surgery and gastrointestinal surgery. He was also the Governor of the American College of Surgeons from 1980 to 1986. Dr. Chung has received many awards for his teaching and service, including being honoured by the vascular surgeons of British Columbia with a named day – The Wallace B. Chung Clinical Day.

Community Service

Dr. Chung has also been an effective and tireless pillar of the community. He has used his extraordinary gifts of wisdom and diplomacy to help advance the integration of the Chinese Community. He was one of the founding executives of the Chinese Cultural Centre of Vancouver serving as Chair from 1983-87. Under Dr. Chung's leadership, the Centre has become a model for other multicultural programs in Canada. Among his other community activities, Dr. Chung is a founding member and patron of the Sun Yat-Sen Gardens, served on the Board of Directors International Dragon Boat Festival Society, and Vice Chair of the Canadian Multiculturalism Council. Dr. Chung's contributions have been recognized by awards (Chinese Cultural Centre Outstanding Achievement Award in 1989 and Chinese Benevolent Association Outstanding Citizen Award in 1990) and his appointment to the B.C. Heritage Trust in 1993.

History Scholar

An avid reader and collector of first edition rare books, Dr. Chung became a renowned authority and collector of one of Canada's best libraries on the history of the Pacific Northwest exploration and Chinese Canadian immigration. Due to his interest in the Canadian Pacific Steamship Company, Dr. Chung was a guest curator of the Vancouver Maritime Museum for the "Empress to the Orient Exhibition" in 1991. In recognition of this interest, the Vancouver Maritime Museum has named its library, the W.B. and M.H. Chung Library. In 1999 he made a gift of more than 25,000 rare and unique items to the University of British Columbia. The Chung Collection is housed in the Ike Barber Learning Centre (http://chung.library.ubc.ca/) and attracts scholars and visitors from around the world.

Madeline Chung, MD, FRCSC

Dr. Madeline Chung was born in Shanghai, China. Her medical education took place at the Yale Medical College of China. She did her internship in Victoria, B.C. followed by specialty training in Obstetrics and Gynecology in Montreal and at the Mayo Clinic in Rochester, Minnesota. Upon coming to Vancouver in the late 1950's, she was the first female and first Chinese-Canadian specialist in Obstetrics and Gynecology in British Columbia. She was appointed as a Clinical Instructor at the University of British Columbia and by the time of her retirement she had delivered over 6,500 babies over a 40-year career, and held the rank of Clinical Professor. Shortly after her retirement from clinical practice she was made an Honorary Life Member of the College of Physicians & Surgeons of British Columbia. Dr. Madeline Chung was also a Clinical Professor Emeritus of the Department of Obstetrics and Gynecology in the Faculty of Medicine at the University of British Columbia. She passed away on August 22, 2021.

Physician

She was known as a compassionate and empathic physician who gave freely and willingly of her time to her patients, often acting as a counselor to her patients and mentor to the children and adults who she had previously delivered. Frequently, the children she delivered would return to see Madeline years later when it was time for them to have their own babies.

Community Service

Dr. Madeline Chung extended her philosophy of volunteerism and service to the community in all aspects of her life. Not only was this evident in her professional life but she was active in her church and community as well. She served on boards of the Chinese United Church, the Vancouver Academy of Music, and was the founding Executive Director of the True Light Chinese School in Vancouver. Well into her eighties, she was given an honorary graduation certificate from York House School in recognition of her contributions to the school.

Family

Despite her tireless devotion and dedication to her patients she was still able to balance a healthy family life providing endless support to her husband, Wally, while raising two children who felt inspired enough by their home life to pursue careers in medicine. Their daughter Dr. Maria Chung is in the Division of Geriatric Medicine at the University of British Columbia. Their son Dr. Stephen Chung is the past University of British Columbia Head of the Division of General Surgery and the current Vancouver General Hospital Head of Hepatobiliary & Pancreatic Surgery. Late in her career, she experienced a life-threatening illness but was able to return to full-time work. At the same time, she was the primary caregiver to her elderly mother whom she looked after in her home.

Chung Lecturer 2023

Dr. Jodi Sherman

Jodi Sherman, MD, is Associate Professor of Anesthesiology of the Yale School of Medicine, Associate Professor of Epidemiology in Environmental Health Sciences, and founding director of the Yale Program on Healthcare Environmental Sustainability in the Yale Center on Climate Change and Health. Dr. Sherman also serves as the Medical Director for Yale New Haven Health Center for Sustainable Healthcare.

Dr. Sherman is an internationally recognized researcher in the emerging field of sustainability in clinical care. Her research interest is in life cycle assessment of environmental emissions, human health impacts, and economic impacts of drugs, devices, clinical care pathways, and health systems. Her work seeks to establish sustainability metrics, paired with health outcomes and costs, to help guide clinical decision-making, professional behaviors, and organizational management toward more ecologically sustainable practices to improve the quality, safety and value of clinical care and to protect public health. Dr. Sherman routinely collaborates with environmental engineers, epidemiologists, toxicologists, health economists, health administrators, health professionals, and sustainability professionals. Dr. Sherman is a member of the Lancet Countdown on Health and Climate Change and was contributing analyst for the UK National Health Service Net Zero Initiative, and serves on the National Academy of Medicine Action Collaborative for Decarbonization of the U.S. Health Sector. She also co-leads the Lancet Commission on Sustainable Healthcare.

History of the Chung Lectureship

In 1995, Madeline and Wally Chung made a generous donation to the Department of Surgery at the University of British Columbia. The purpose of the donation was to support an annual UBC Department of Surgery research day and invite the W.B. & M.H. Chung Lecturer to present new academic work as well as judge academic productivity by learners and faculty. The Department is grateful for this wonderful legacy that Madeline and Wally Chung have left for the Department.

1995 Lloyd MacLean, Department Head, Surgery, McGill University and President of the American College of Surgeons
1996 John Duff, University of Western Ontario: *"Multisystem organ failure: manifestations and mediators"*
1997 K. Wayne Johnston, University of Toronto
"Issues in the management of abdominal aortic aneurysms in a rapidly changing health care environment"
1998 Charles H. Tator, Professor and Chair, Division of Neurosurgery, The Toronto Hospital: *"The breadth of surgical research in the 1990's"*
1999 Garth Warnock, Chief General Surgery, University of Alberta Hospitals, Director, Division of Surgical Research, University of Alberta
"Progress in transplantation of insulin-secreting tissues for diabetes mellitus"
2000 Paul Walker, Vice President, Toronto General Hospital
Professor of Surgery and Laboratory Medicine, Pathobiology, University of Toronto
"The continuing challenge of sepsis"
2001 James C. Thompson, Ashbel Smith Professor of Surgery, University of Texas Medical Branch
"Endocrine tumors of the pancreas"
2002 Richard J. Finley, Professor, Department of Surgery
Head, Division of Thoracic Surgery, University of British Columbia
"Future of image guided minimally invasive thoracic surgery"
2003 Douglas W. Wilmore, Frank Sawyer Professor of Surgery, Department of Surgery
Brigham and Women's Hospital, Boston, Massachusetts
"The pathophysiology and treatment of intestinal failure"
2004 John Wong, Chair of Surgery & Head, Department of Surgery
University of Hong Kong Medical Centre, Queen Mary Hospital, Hong Kong
"Complications of esophagectomy: confess and remember"
2005 Richard K. Reznick, R.S. McLaughlin, Professor and Chair, University of Toronto
Department of Surgery, Banting Institute, Toronto, Ontario
"Surgical training in 35 hours per week: laudable or lunacy?
2006 James T. Rutka, Janes Visiting Professor in Surgery, Dan Family Chair in Neurosurgery, Professor and Chairman,
Division of Neurosurgery, University of Toronto
"Astrocytoma invasiveness: molecular mechanisms form the leading edge"
2007 Markus W. Büchler, Professor of Surgery, Division of General Surgery
Chairman Surgical Unit, University of Heidelberg
"Evidence based pancreatic surgery"
2008 Thomas M. Krummel, Emile Holman Professor and Chair, Stanford University School of Medicine, Department of Surgery
Susan B. Ford Surgeon in Chief, Lucile Packard Children's Hospital, Stanford, CA
"From Blood and Guts to Bits, Bytes and Beyond-- Upgrading the Surgical Apprentice Model"
2009 Andrea L. Pusic, Assistant Attending Surgeon, Plastic and Reconstructive Surgery, Memorial Sloan-Kettering Cancer Center, New York
"Measuring patient reported outcomes in surgery"
2010 Yvan Douville, Chief, Department of Surgery, University of Laval
"Evolution of Stentgraft for Treatment of Abdominal Aortic Aneurysms"
2011 Gerald Fried, Chair, Department of Surgery, McGill University
"Teaching Billy how to operate: can we do better?"
2012 Haile Debas, Executive Director of UCSF Global Health Sciences (GHS); former Dean of the UCSF School of Medicine (1993-2003); former Chair, UCSF Department of Surgery . *"Precious Times"*
2013 Lorelei Lingard, Professor and Director of the Centre for Education Research & Innovation, Schulich School of Medicine & Dentistry, Western University, London, ON
"Beyond communication skills: A rhetorical approach to communication for advancing the practice and teaching of teamwork"
2014 Thomas Waddell, Chair, Division of Thoracic Surgery, University of Toronto, Professor, Department of Surgery, University of Toronto
Head, Division of Thoracic Surgery, UHN, Senior Scientist, Toronto General Research Institute, UHN
"The role of research training in surgical education".
2015 Garnett Sutherland, Professor, Clinical Neurosciences, University of Calgary, Founder and Director, Seaman Family MR Research Centre, Alberta Heath Services. *"Magnetic resonance imaging and robotic surgery."*
2016 Dr. Ivar Mendez, Fred H. Wigmore Professor and Unified Head of the Department of Surgery at the University of Saskatchewan – *"Robotic and distance tele-mentoring surgery."*
2017 Dr. Michael Tymianski, Head of UHN's Division of Neurosurgery and Senior Scientist at the Krembil Research Institute
Dr. Wendy Lai, President of Mèdecins Sans Frontières (Doctors Without Borders) Canada
2018 Dr. Richard Reznick, Dean, Faculty of Health Sciences Queen's University and CEO, Southeastern Ontario Academic Medical Association
"Large scale educational change: difficult, but doable."
2019 Dr. Teodor Grantcharov, Professor of Surgery, University of Toronto. "Surgical innovation, surgical education and patient safety"
2020 Dr. Melanie Morris, Medical Director, Global Surgery Office, University of Manitoba and Lead, Indigenous Health, The Children's Hospital of Winnipeg. "Something to Imagine: Equity in Pediatric Surgery."
2021 Dr. Gelareh Zadeh, Professor and Dan Chair, Neurosurgery, University of Toronto Head, Division of Neurosurgery, Toronto Western Hospital.
"Equity and Inclusion in Surgical Leadership"
2022 Dr. Chad Ball, Professor of Surgery and Oncology at the University of Calgary. *"Surgical Innovation: Failure, Success, and Everything in Between"*

2023 Department of Surgery Faculty Achievement Awards

Hjalmar Johnson Early-Career Investigator Award – Dr. Faizal Haji

Dr. Faizal Haji is a pediatric neurosurgeon at BC Children's Hospital and an Assistant Professor in the Department of Surgery at the University of British Columbia. He co-leads the Surgical Education Research Interest Group and serves as the Associate Director of the Global Surgery Lab at UBC. Dr. Haji's background includes undergraduate and medical studies at McMaster University, followed by a neurosurgical residency at Western University in Ontario. His research focus is on simulation-based education, procedural skill training, and surgical decision-making. After completing his neurosurgical residency in 2018, he pursued a postgraduate fellowship in pediatric neurological surgery, emphasizing surgical training in resource-limited settings. His academic interests span health professions education and global surgical capacity development.

Richard J Finley Senior Investigator Award – Dr. Carl Brown

Dr. Carl Brown is a subspecialist colorectal surgical oncologist at Providence Health Care and Provincial Lead for Surgical Oncology at BC Cancer. In 2006, Dr. Brown completed a fellowship in colorectal surgery and earned a master's degree in clinical epidemiology at the University of Toronto. He initiated practice at St. Paul's Hospital and the University of British Columbia. Dr. Brown has an academic background with over 100 peer-reviewed studies published, covering surgery for colorectal cancer, innovative techniques in cancer surgery, and rectal cancer surgery quality improvement. He was recognized in 2012 as one of Vancouver's top 40 under 40 by Business in Vancouver magazine. Dr. Brown is also passionate about education, having taught courses in laparoscopic colorectal cancer surgery, TEM, and TaTME.

Research Mentorship Award – Dr. Sam Wiseman

Dr. Sam Wiseman is a thyroid/parathyroid surgeon in Vancouver. He completed his medical degree and General Surgery residency at the University of Manitoba, achieving Fellowship in Surgery from the Royal College of Physicians and Surgeons of Canada in 2000. He pursued fellowships in Head & Neck Surgery, Surgical Oncology, and Oncology Research, specializing in cancer molecular biology at the Roswell Park Cancer Institute. Currently, he is a Professor of Surgery at the University of British Columbia, practicing as an attending surgeon at St. Paul's Hospital. Dr. Wiseman also holds the position of Director of Research for the Providence Health Care Department of Surgery and is the Chair of the BC Cancer Surgery Thyroid Cancer Tumour Group. He has over 180 peer-reviewed scientific publications and plays a key role in education, mentoring and supervising numerous trainees in clinical and research settings.

J. H. Ennis Award in Medicine for Breast Cancer Treatment – Dr. Lina Cadili

Dr. Lina Cadili is a 5th year General Surgery resident at UBC and one of the chief administrative residents. She completed her medical school at the University of Calgary and her Master of Science in Epidemiology at Harvard University. She is interested in clinical research and has presented her work at various conferences. She recently was awarded the Stephen & Gail Chung Award for Excellence in HPB Surgery and Liver Transplant. She will be pursuing a fellowship in Hepatopancreaticobiliary Surgery and Abdominal Transplant at the Toronto General Hospital. She enjoys keeping active with running and hiking, and exploring coffee shops around the city.

Learning Objectives

The University of British Columbia Division of Continuing Professional Development (UBC CPD) is fully accredited by the Committee on Accreditation of Continuing Medical Education (CACME) to provide study credits for continuing medical education for physicians. This event is an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada and has been approved by UBC CPD for up to **6.5 MOC Section 1** Group Learning credits. Each physician should claim only those credits accrued through participation in the activity.

1. To describe and evaluate the clinical, education and basic science research being conducted in the Department of Surgery.
2. To discover new and innovative research techniques.
3. To participate in the collaborative research environment within the Department of Surgery.

Accredited by UBC CPD

CONTINUING PROFESSIONAL DEVELOPMENT
FACULTY OF MEDICINE

Research Day Schedule

Paetzold Lecture Theatre, Vancouver General Hospital

Zoom: Meeting ID 99652 042124 Passcode 042124

8:00	**Opening Remarks and Introductions**		
8:15	**Chung Lecturer: Dr. Jodi Sherman** ***Professor of Anesthesiology, Yale University*** **HEALTHCARE AND ITS POLLUTION: BALANCING PATIENT SAFETY AND PUBLIC HEALTH**		
	MORNING SESSION 1 8-minute paper with 2-minute discussion **Chair: Dr. Robert Olson**		
9:15	**Guo, Michael**		***General Surgery***
		P1	A Cost-Utility Study of Elective Rectal Prolapse Repairs in Canada
9:25	**Spoyalo, Karina**		***General Surgery***
		P2	Sustainability Assessment of Perioperative Patient Warming: A Clinical Life-Cycle Oriented Approach
9:35	**Chan, Megan**		***Vascular Surgery***
		P3	Predictors of Quality End-of-Life Care and Goals of Care Communication Amongst Vascular Surgery Patients
9:45	**Jin, Ruijia**		***Radiation Oncology***
		P4	Impact of a Medical Student Research and Mentorship Award in Radiation Oncology on Medical Students, Resident Mentors, and Research Supervisors
9:55	**Lalande, Annie**		***General Surgery***
		P5	Developing a Planetary Health Menu for an Acute Care Hospital
10:05	**Livergant, Rachel**		***Branch for Global Surgical Care, General Surgery***
		P6	Post-Operative Outcomes in Indigenous Patients in North America and Oceania: A Systematic Review and Meta-Analysis
10:15	**Kwon, Jamie**		***Otolaryngology-Head and Neck Surgery***
		P7	Circulating MicroRNA Signature for Early Detection and Monitoring of Oropharyngeal Cancer
10:25	**REFRESHMENT BREAK**		
	MORNING SESSION 2 8-minute paper with 2-minute discussion **Chair: Dr. Sam Wiseman**		
10:40	**Bazzarelli, Amy**		***General Surgery***
		P8	Breast Surgery Seed Localization – Reducing Patient Wait Times and Improving Flow in the Operating Room
10:50	**Nabata, Kylie**		***General Surgery***
		P9	Analyzing The Accuracy of Human Reviewers in Identifying Scientific Abstracts Generated by ChatGPT Compared to Original Abstracts
11:00	**Brown, Carl**		***General Surgery***
		P10	Neoadjuvant Chemotherapy, Excision, and Observation for Early Rectal Cancer: The Phase II NEO Trial (CCTG CO.28) Primary End Point Results
11:10	**Hernaiz, Juan**		***Otolaryngology-Head and Neck Surgery***
		P11	Efficacy of Early Postoperative Debridement in Sinonasal Cavity Healing after Functional Endoscopic Sinus Surgery: A Randomized Controlled Trial
11:20	**He, Meghan**		***Otolaryngology-Head and Neck Surgery***
		P12	Tragus to Ala Length Predicts Nasopharynx Distance in Children: A Pilot Study

11:30	**Li, Jim (Zhang Hao)**		***Radiation Oncology***
		P13	Examining the Efficacy and Safety Profile of Palliative Radiotherapy Using 30 Gy in 5 Fractions
11:40	**Watanabe, Akie**		***General Surgery***
		P14	Impact of Synoptic Operative Reporting as a Quality Indicator for Thyroid Surgery
11:50	**Jin, Weina**		***Neurosurgery***
		P15	Evaluating the Clinical Utility of Artificial Intelligence Assistance and its Explanation on the Glioma Grading Task
12:00	**Lee, Jaimie**		***Plastic Surgery***
		P16	Machine Learning to Predict the Need for Post-Mastectomy Radiotherapy Following Immediate Breast Reconstruction
12:10	**Chen, Victoria**		***General Surgery***
		P17	Gastrointestinal Surgical Outcomes in the Highly Active Antiretroviral Therapy (HAART)-Era HIV-Positive Patient: A Scoping Review
12:20			**LUNCH**

		SIMULTANEOUS SESSIONS 2-Minute Talks	
12:30	***Jump to Simultaneous Presentations A schedule***	**Session A – Paetzold Lecture Theater**	***Zoom: Meeting ID 99652 042124 Passcode 042124*** ***Select Simultaneous Session A***
12:30	***Jump to Simultaneous Presentations B schedule***	**Session B – Paetzold Multi-Purpose Room**	***Zoom: Meeting ID 99652 042124 Passcode 042124*** ***Select Simultaneous Session B***

		AFTERNOON SESSION 8-minute paper with 2-minute discussion ***Zoom: Meeting ID 99652 042124 Passcode 042124*** ***Select Plenary*** **Chair: Dr. Mandeep Tamber**	
13:50	**Makarova, Karina**		***General Surgery***
		P18	Preoperative Multidisciplinary Review for Breast Cancer at Mount Saint Joseph Hospital
14:00	**Schweitzer, Christina**		***General Surgery***
		P19	Patient Safety and Quality Improvement Lessons from Review of Canadian Thyroid and Parathyroid Surgery Malpractice Litigation Case Law
14:10	**Hilzenrat, Roy**		***Thoracic Surgery***
		P20	Virtual Thoracic Surgical Outpatient Encounters are Non-Inferior to In-Person Visits for Overall Patient Care Satisfaction in the Post COVID-19 Era
14:20	**Nabataa, Kylie**		***General Surgery***
		P21	Assessing the Attributes of Successful General Surgery Residents: A Comparison of Job Expert Opinions and Resident Workstyle and Performance
14:30	**Parmar, Gurjit**		***Radiation Oncology***
		P22	A Retrospective Study Comparing Outcomes in Matched Patients with Poor Prognosis Treated with Targeted Conventional Volumetric Modulated Arc
14:40	**Holmes, Connor**		***Otolaryngology-Head and Neck Surgery***
		P23	The Current Landscape for Public Insurance Coverage for Sleep Surgery in Canada
14:50	**McNeely, Brendan**		***Otolaryngology-Head and Neck Surgery***
		P24	A Decline in The Randomized Controlled Trial Evidence Base in Otolaryngology-Head and Neck Surgery
15:00	**Kraus, Larissa**		***Neurosurgery***
		P25	The Cellular-Molecular Landscape of The Living Human Brain in Epilepsy

Session A

12:30 pm – 13:40 pm

2-minute talks

Chair: Dr. Hannah Piper

Paetzold Lecture Theatre, VGH with Zoom Connection

Zoom: Meeting ID **99652 042124** Passcode **042124**

Select **Simultaneous Session A**

Abstract ID	Division	Presenting Author	Abstract Title
A1	Otolaryngology-Head and Neck Surgery	Abbasidezfouli, Samin	Enhancing Free Tissue Transfer Monitoring: A Novel Method in Head and Neck Cancer Surgery
A2	Pediatric Surgery	Ahisar, Yitzchok	Catheter Lock Solution and Associated Complications in Pediatric Intestinal Failure Patients
A3	General Surgery	AL-Abri, Mohammed	The Same but Different: Clinical and Enhanced Recovery after Surgery Outcomes in Ileocecal Resection for Crohn's Disease versus Right Hemicolectomy for Colon Cancer
A4	Branch for Global Surgical Care	Antonsen, Amy	Barriers to Accessing Surgery in High-Income Countries: A Scoping Review
A5	Plastic Surgery	Boroditsky, Matthew	From Flames to Facts: Unveiling Discrepancies in Burn Patient Documentation
A6	Otolaryngology-Head and Neck Surgery	Garland, Katie	Does Timing Matter? Early vs. Late Tympanostomy Tube Placement in Infants with Cleft Lip and Palate: A Pilot Study
A7	General Surgery	Gilbert, Richard	Reducing Surgical Site Infections in Patients Undergoing Pancreatectomy. A Quality Improvement Initiative
A8	Vascular Surgery	Gu, Ningzhi (Tony)	The Carbon Footprint of the Vascular Surgery Operating Room
A9	General Surgery	Guo, Michael	Routine Thymectomy in the Surgical Treatment of Renal Hyperparathyroidism should be Abandoned
A10	Otolaryngology-Head and Neck Surgery	Heffernan, Austin	Spasmodic Dysphonia Patients' Perception of Pain with Botulinum Toxin Injections
A11	Otolaryngology-Head and Neck Surgery	Hernaiz, Juan	Sinonasal Microbiota Transfer (SNMT) to Treat Recalcitrant Chronic Rhinosinusitis: A Case-Series
A12	Otolaryngology-Head and Neck Surgery	Hernaiz, Juan	Development and Validation of the Sinonasal Endoscopic Score (SiNES) for Chronic Rhinosinusitis
A13	Thoracic Surgery	Huynh, Caroline	Thymomatous Myasthenia Gravis after Total Thymectomy at a Tertiary-Care Surgical Centre: a 20-Year Retrospective Review
A14	Other	Jedrzejko, Nicole	Factors Associated with the Surgical Management of Early-Stage Breast Cancer in the Million Women Study
A15	General Surgery	Leong, Rachel	The Evolution and Contributions of the Canadian Journal of Surgery: A Bibliometric Study
A16	Otolaryngology-Head and Neck Surgery	Liu, Alice	The Impact of Motivational Interviewing on Hearing Aid Use: A Randomized Controlled Trial
A17	Radiation Oncology	O'Reilly, Emily	Program Director Perspectives on the Implementation and Experiences of the Competence by Design Curriculum in Canadian Radiation Oncology Training Programs
A18	Radiation Oncology	Siriani-Ayoub, Nicolas	Breast Cancer Outcomes of Patients with pT4b Disease: A Population-Based Retrospective Analysis
A19	General Surgery	Spoyalo, Karina	Promoting Sustainable Food Choices in Hospital Cafeterias Using Behavioural Insights
A20	Plastic Surgery	Tan, Sophia	Influence of Gender on the Delivery of Breast Cancer Care from Diagnosis to Treatment: A Systematic Review
A21	Vascular Surgery	Udwadia, Farhad	Left Vertebral Artery Revascularization in Distal Aortic Arch Surgery: Comparative Study of Patients with and without Aberrant Left Vertebral Anatomy
A22	Vascular Surgery	Udwadia, Farhad	Impact of Device Representatives in the Operating Room on Clinical Outcomes during Standard Infra-Renal Endovascular Repair of Aneurysm (EVAR)
A23	Branch for Global Surgical Care	Vayalikunnel, Rosemary	Planetary Health Courses Around the World: An Environmental Scan

A24	General Surgery	Watanabe, Akie	Multiple Positive Imaging Tests are Often Redundant When Diagnosing Acute Appendicitis: A Real-World Analysis of More Than 27,000 Cases
A25	Plastic Surgery	Wells, Hannah	The Role of Breast Implant Surface Texture in the Development of Capsular Contracture and Breast Implant Associated Anaplastic Large Cell Lymphoma: A Review of Cellular and Molecular Pathways
A26	Otolaryngology-Head and Neck Surgery	Trejo, Jessica	The Impact of Extracellular Vesicles Derived from Lung Adenocarcinoma Cells on Cancer-Associated Fibroblasts Differentiation
A27	Otolaryngology-Head and Neck Surgery	Abgoon, Reyhaneh	Differentially Expressed miRNA Expression Levels in Paired Serum and Plasma Samples of Patients with Sudden Sensorineural Hearing Loss
A28	Plastic Surgery	Knight, Paige	Child Life Specialists in the Treatment of Acute Pediatric Burns: A Systematic Review
A29	General Surgery	Zabolotniuk, Taryn	Screening for Nephrolithiasis in Patients with Primary Hyperparathyroidism

Session B

12:30 pm – 13:40 pm

2-minute talks

Chair: Dr. Kathryn Isaac

Paetzold Multi-Purpose Room, VGH with Zoom Connections

Zoom: Meeting ID **99652 042124** Passcode **042124**

Select **Simultaneous Session B**

Abstract ID	Division	Presenting Author	Abstract Title
B1	Otolaryngology-Head and Neck Surgery	Banyi, Norbert	Applications of Natural Language Processing in Otolaryngology: A Scoping Review
B2	Branch for Global Surgical Care	Binda, Catherine	Defining a Framework and Evaluation Metrics for Sustainable Global Surgical Partnerships: A Modified Delphi Study
B3	Otolaryngology-Head and Neck Surgery	Booth, Lindsay	Systematic Review of Airway Management in Mediastinal Goiter Surgery: Does Awake Intubation Decrease the Frequency of Airway Complications as Compared to Intubation After Induction of General Anesthesia?
B4	Otolaryngology-Head and Neck Surgery	Booth, Lindsay	Accuracy and Readability of Ankyloglossia Materials on Social Media
B5	Plastic Surgery	Cohen, Danielle	Implications of Immediate Breast Reconstruction on Wait Times to Adjunctive Therapies: A Regional Canadian Cross-Sectional Study
B6	Vascular Surgery	Cohen, Danielle	Evaluating the Role of Computed Tomography Angiography in Measuring Great Saphenous Vein Diameter for Lower Extremity Bypass Patency
B7	Vascular Surgery	Deng, Yvonne	Factors Associated With EEG-based Selective Shunting in Carotid Endarterectomy for Symptomatic Carotid Artery Stenosis
B8	Otolaryngology-Head and Neck Surgery	Dorling, Marisa	Real-World Adverse Events after Type 2 Monoclonal Antibody Use in Chronic Rhinosinusitis with Nasal Polyps
B9	Otolaryngology-Head and Neck Surgery	Dorling, Marisa	Factors Associated with Switching Biologics in Chronic Rhinosinusitis with Nasal Polyps
B10	Neurosurgery	Elder, Madeline W.	Can Histopathological Features Predict Outcomes in Grade 2 Meningiomas?
B11	Neurosurgery	Guo, Ru	Trends in Glioblastoma Outcomes before, during, and after the COVID-19 Pandemic: A Single-Centre Retrospective Analysis
B12	Vascular Surgery	He, Meghan	Predictive Factors of Success for Endovascular and Surgical Management of Neurogenic Thoracic Outlet Syndrome
B13	Vascular Surgery	He, Meghan	Clinical Outcomes of Medicare-Aged Patients with Neurogenic Thoracic Outlet Syndrome
B14	Plastic Surgery	Kwok, Christy (Oi Ting)	Automated Data Extraction of Breast Cancer Pathology Reports Using Natural Language Processing (NLP) and Machine Learning (ML)
B15	Branch for Global Surgical Care	Lau, Davy	Rapid Review: Humanitarian Organizations and Existing Policy on Sustainable Surgical Care in Conflict and Post-Conflict Zones
B16	Radiation Oncology	Lum-Wang, Sandy	YouTube Videos as a Tool to Educate Medical Students about Careers in Radiation Oncology: A Characteristics Assessment
B17	Neurosurgery	Ong, Kenneth	Intraoperative and Postoperative Complications for Repeat High Grade Glioma Resections with Concurrent Chemotherapy

B18	Neurosurgery	Richards, Christy	COVID-related Changes in the Epidemiology of Infective Intracranial Complications of Bacterial Sinusitis in British Columbia
B19	Radiation Oncology	Samson, Laura	Characteristics Assessment of YouTube Videos Related to Radioactive Iodine Therapy for Thyroid Cancer
B20	Otolaryngology-Head and Neck Surgery	Toor, Amolpreet	Anesthetic Techniques for Type 1 (Medialization) Thyroplasty: A Scoping Review
B21	Neurosurgery	Tosefsky, Kira	Effect of Pre-operative Corticosteroid Therapy on the Diagnostic Accuracy of Biopsies for Primary Central Nervous System Lymphoma
B22	General Surgery	Kniels-Roine, Karsten	A Greenhouse Gas Emissions Inventory of Individually-Packaged Food Items at Vancouver General Hospital and Opportunities to Reduce the Environmental Costs of Inpatient Food Services
B23	General Surgery	Zhong, Jade	A Comparison of Daytime vs Overnight Liver Transplant from a Single Canadian Centre
B24	Radiation Oncology	Chai, Brandon	A Qualitative Analysis of Medical Student Reflections Following Participation in a Canadian Radiation Oncology Studentship
B25	Neurosurgery	Dhillon, Karan	Effect of After-Hours Surgery on Outcomes in High Grade Glioma Patients
B26	General Surgery	Jiang, Karen	Axillary Ultrasound for Early Stage Invasive Breast Cancer
B27	Radiation Oncology	Keyes, Sarah	Evaluating Online YouTube Resources for Cervical Cancer Brachytherapy
B28	Neurosurgery	Ma, Crystal	Wounded Glioma Syndrome: Neurologic Worsening in Patients with Subtotal Resection in High-Grade Gliomas
B29	General Surgery	Schulze, Marie	Intraoperative Teaching Methods, Models, and Frameworks: A Scoping Review for Surgical Resident Education
B30	Otolaryngology-Head and Neck Surgery	Senthilkumaran, Maya	A Narrative Review of the Factors That Determine Hearing Aid Satisfaction and Use

Evening Reception

6:00 pm - Cocktails
6:30 pm – Award Presentations
7:00 pm – Dinner

Location

The University Golf Club in the heart of the Pacific Spirit Park and the University Endowment Lands
5185 University Blvd, Vancouver, BC V6T 1X5

Abstracts

THANK YOU to our abstract reviewers

Each year we invite Division Heads, Postgraduate Program Directors and members of the UBC Department of Surgery Research Committee to review the abstracts. A big *THANK YOU* to the faculty members listed below who reviewed the abstracts this year.

Reviewer	Division
Dr. Robert Baird	Pediatric Surgery
Dr. Erin Brown	Plastic Surgery
Dr. Paul Bui	Cardiac Surgery
Dr. Kathryn Isaac	Plastic Surgery
Dr. Henry Jiang	General Surgery
Dr. Ahmer Karimuddin	General Surgery
Dr. Fred Kozak	Otolaryngology-Head and Neck Surgery
Dr. Kirk Lawlor	Vascular Surgery
Dr. Anna McGuire	Thoracic Surgery
Dr. Jonathan Misskey	Vascular Surgery
Dr. Dylan Narinesingh	Radiation Oncology
Dr. Jason Park	General Surgery
Dr. Michael Peacock	Radiation Oncology
Dr. Terry Phang	General Surgery
Dr. Hannah Piper	Pediatric Surgery
Dr Konrad Salata	Vascular Surgery
Dr. Tracy Scott	General Surgery
Dr. Ash Singal	Neurosurgery
Dr. Mandeep Tamber	Neurosurgery
Dr. Eric Webber	Pediatric Surgery
Dr. Brian Westerberg	Otolaryngology-Head and Neck Surgery
Dr. Jian Ye	Cardiac Surgery

We welcome any other faculty members who would like to review abstracts next year (please email alice.mui@ubc.ca).

Plenary Session Abstracts

P1 – 9:15

Title: A Cost-Utility Study of Elective Rectal Prolapse Repairs in Canada

Authors: Guo M MD MHSc1, Karimuddin AA MD FRSCS1,2, Liu GP PhD3, Sutherland, J.M. PhD3.
Affiliations: 1Department of Surgery, University of British Columbia, Vancouver, BC, Canada.
2Department of Colorectal Surgery, St. Paul's Hospital, Vancouver, BC, Canada.
3Centre for Health Services and Policy Research, University of British Columbia, Vancouver, Canada.

Background: Surgery remains the most effective treatment for rectal prolapse, with consistent evidence for improvements in quality-of-life. Valuing the benefits of rectal prolapse repairs on patients' postoperative well-being is influential to shared decision-making and crucial for allocation of healthcare resources. However, cost-effectiveness data surrounding this operation remains sparse.
Objective: We aim to estimate the long-term cost-utility of a rectal prolapse repair using preference-based measures of health, incorporating Canada-specific health utility measures and costs.
Methods: Patients undergoing elective rectal prolapse repairs from general and colorectal surgeons in British Columbia between September 2015 and November 2022 were recruited to complete pre- and postoperative EuroQol quality-of-life questionnaires (EQ-5D-5L). Quality-adjusted life years (QALYs) attributable to surgery were calculated by comparing and discounting preoperative and postoperative health utility values derived from the EQ-5D-5L. Costs incorporated hospital overhead and specialists' fees. Results account for different recurrence rates for abdominal-approach (10%, 15%, and 20%) and perineal-approach (15%, 20%, 30%) repairs.

Results: Of 46 patients recruited, the mean gain in QALYs 10 years after surgery was 1.2783 assuming recurrence rates of 15% and 20% for abdominal and perineal-approach repairs, respectively. The average cost of the surgery was $7,325. The average cost per quality-adjusted life years was $5,730 when health benefits were assumed to accrue for 10 years following surgery, adjusted for recurrences. The cost per quality-adjusted life year was higher for female sex ($6897/QALY) and age >65 ($8060/QALY).
Conclusions: Surgical repair of rectal prolapses result in significant gains in health status and are inexpensive relative to the associated gains in quality of life based on patients' perspectives of their improvement of health and well-being.
Jump Back to Abstract List

P2 – 9:25

Title: Sustainability Assessment of Perioperative Patient Warming: A Clinical Life-Cycle Oriented Approach
Authors: Karina Spoyalo[1], Thais Rebello[2], Gyan Chippi-Shrestha[2], Kelly Mayson[3], Rehan Sadiq[2], Kasun Hewage[2], Andrea MacNeill[1]
Affiliations: [1]Division of General Surgery, University of British Columbia, Vancouver, BC
[2]Faculty of Engineering, University of British Columbia, Vancouver, BC
[3]Division of Anesthesia, University of British Columbia, Vancouver, BC
Background: Perioperative warming is a universal practice that is critical for the maintenance of intra-operative normothermia, which in turn prevents adverse events such as coagulopathy, surgical site infections, dysrhythmia, and myocardial infarction. The selection of appropriate warming methods should include consideration of the sustainability of these devices, however their financial and environmental impacts have yet to be compared. Evaluating the environmental impacts of clinical care activities can guide healthcare practitioners in the selection of environmentally preferable products and practices.
Objective: To compare the environmental and economic impacts of commonly used and currently available warming devices and model their application in alternative clinical practice scenarios.
Methods: We assessed the environmental and economic performance of four patient warming methods through Environmental Life Cycle Assessment and Life Cycle Costing: forced air warming (FAW), resistive blankets (RB), circulating water garments (CWG), and flannel blankets. Environmental and financial costs were aggregated into a multi-criteria sustainability index. Seven clinical scenarios were then modeled, including current practices using FAW and flannel blankets throughout the perioperative journey, and hypothetical practices using different combinations of FAW, RB, CWG, and flannel blankets.
Results: The re-usable RB was the most environmentally and financially sustainable method of patient warming, generating environmental impacts 64-80% lower than the alternative devices and incurring financial costs that were 99% lower than the CWG and 33-83% lower than FAW. The disposable CWG garment was the most expensive ($72 CAD/hr), followed by FAW ($4 CAD/hr) and RB ($0.7-2.6 CAD/hr). Flannel blanket use produced 0.31-0.36kg CO_2e and cost $1.7-2.7 CAD per blanket. When applied to clinical scenarios, the most sustainable option included intra-operative RB use with FAW pre-and post-operatively. Using flannel blankets pre- and post-operatively and using the CWG at any stage were the most environmentally and financially damaging practices, respectively.
Conclusions: Current warming practices using flannel blankets and FAW represent the least environmentally and economically sustainable methods of preventing intraoperative hypothermia. Reducing flannel blanket use and introducing reusable active warming methods such as RB will minimize environmental and financial costs while providing high-quality patient care.
Jump Back to Abstract List

P3 – 9:35

Title: Predictors of Quality End-of-Life Care and Goals of Care Communication Amongst Vascular Surgery Patients
Authors: Megan Chan MD[1]; Alexa Mordhorst BSc, MD[2]; Maja Grubisic BSc, MSc[3]; Jon Misskey MD, MSc, FRCSC[2]; Jason Faulds MD, MHSc, FRCSC[2]
Affiliations: [1]Faculty of Medicine, University of British Columbia, Vancouver, BC
[2]Division of Vascular Surgery, University of British Columbia, Vancouver, BC
[3]Department of Mathematics & Statistics, Langara College, Vancouver, British Columbia
Background: Palliative care is associated with better overall care at end of life in the context of high-risk surgery[1]. Quality end-of-life care can improve patient symptoms, satisfaction of their goals of care, and preserve patient autonomy and dignity. There is limited evidence describing palliative interventions or prevalence of invasive interventions near end of life within vascular surgery specifically.
Objective: This study aimed to identify factors associated with quality end-of-life care in a vascular surgery patient population at a single tertiary centre in Vancouver, BC. We also examined documentation of code status and goals of care conversations.
Methods: A retrospective review of patients admitted to vascular surgery between January 2015 and December 2020 was completed, all deaths were reviewed. Demographics, clinical, and end-of-life information was extracted. Predictors of quality end-of-life-care and documented goals of care discussion were described using logistic regression models.
Results: 110 patients were reviewed. 16 (15%) patients met our definition of high-quality end-of-life care, and 85 (77%) patients had documented goals of care discussion. Multivariate logistic model revealed that the increasing number of vascular operations (odds ratio [OR], 0.34; 95% CI, 0.14-0.85) and ICU admission (OR, 0.13; 95% CI, 0.022-0.78) were associated with a decrease in the odds of having high-quality end-of-life care (Table 1). Similarly, patients who died during a code (OR, 0.23; 95% CI, 0.067-0.78) were less likely to have had a documented goals of care discussion after adjusting for gender and a palliative care consult (Table 2). Patients who had family meetings were more likely to have documented goals of care discussion than those who did not (OR, 9.68; 95% CI, 2.99-31.34).
Conclusions: The majority of our patients did not meet the definition of high-quality end-of-life care. Acute clinical deterioration, multiple vascular operations, admission as a full code, and admission to ICU were associated with poorer end-of-life care. Given the nature of vascular surgery and inherent risks in this patient population, these clinical outcomes are not uncommon. This should motivate the vascular surgeon to optimize the delivery of high-quality end-of-life care when appropriate.
Jump Back to Abstract List

P4 – 9:45

Title: Impact of a Medical Student Research and Mentorship Award in Radiation Oncology on Medical Students, Resident Mentors, and Research Supervisors

Authors: Ruijia Jin[1], Che Hsuan David Wu[2] MD FRCPC, Meredith Giuliani[3] MBBS MEd PhD FRCPC, Corinne Doll[4] MD FRCPC, Jolie Ringash[5] MD FRCPC MSc, Danny Lavigne[6] MD, Paris-Ann Ingledew[7,8] MD FRCPC MHPE.

Affiliations: [1]Faculty of Medicine, University of British Columbia, Vancouver, BC, Canada.
[2]BC Cancer, Department of Radiation Oncology, Victoria, BC, Canada.
[3]Radiation Medicine Program, Princess Margaret Cancer Centre, Toronto, Ontario, Canada.
[4]Department of Oncology, Cumming School of Medicine, University of Calgary, Calgary, Alberta, Canada.
[5]Department of Radiation Oncology, University of Toronto, Toronto, Ontario, Canada.
[6]Département de radiologie, radio-oncologie, et medicine nucléare, Faculté de médecine, Université de Montréal, Montreal, Quebec, Canada.
[7]Department of Surgery, Division of Radiation Oncology, Faculty of Medicine, University of British Columbia, Vancouver.
[8]BC Cancer, Department of Radiation Oncology, Vancouver, BC, Canada.

Purpose: The *Canadian Association of Radiation Oncology Annual Scientific Meeting Medical Student Research and Mentorship Award* (*CARO ASM MSRMA*) was established in 2020 to support medical students pursuing radiation oncology (RO) research and RO as a career. This study evaluates the impact of three consecutive iterations of this award on medical students, resident mentors, and research supervisors.

Methods: Three separate surveys were created for: medical student mentees, RO resident mentors, and attending research supervisors. These surveys were developed using best practice strategies for medical education surveys and circulated for peer-review amongst experts in oncology medical education. The surveys were sent to the 52 individuals (18 students, 18 residents, 16 supervisors) who participated in 3 cycles of *CARO ASM MSRMA* (2020-23). After anonymization, quantitative answers were analyzed using descriptive statistics and narrative responses were evaluated using a grounded theory approach.

Results: There was a 90% survey response rate. For medical student mentees, the award maintained (71%) or increased interest (24%) in pursuing an RO career. Students reported receiving helpful residency matching tips, insight into RO residency, along with research and career planning advice. Currently, only the first student cohort has full matching results for residency with approximately 50% matching to RO. All resident mentor respondents felt the program either maintained or increased motivation to mentor students in RO. Research project supervisors unanimously enjoyed their role in this program and would recommend and participate in this program again.

Conclusions: *CARO ASM MRSMA* is an innovative award that has shown a positive impact on participants. Medical students felt this program motivated them to continue pursuing oncology research and a potential career in RO. The program also enhanced mentorship skills in residents and research supervisors, which encourages further RO mentorship, teaching, and exposure for future generations of students.

Jump Back to Abstract List

P5 – 9:55

Title: Developing a Planetary Health Menu for an Acute Care Hospital

Authors: Annie Lalande[1,2], Neha Gadhari[3], Jiaying Zhao[2,4], Andrea MacNeill[1,3]

Affiliations: [1]Department of Surgery, University of British Columbia, Vancouver, Canada; [2]Institute for Resources, Environment and Sustainability, University of British Columbia, Vancouver, Canada; [3]Vancouver Coastal Health, Vancouver, Canada; [4]Department of Psychology, University of British Columbia, Vancouver, Canada

Background: Nutrition for hospitalized patients is critical to their recovery. Yet current menus do not meet standards for patient satisfaction, leading to inadequate intake and considerable food waste. Recent studies at Vancouver General Hospital (VGH) have revealed poor perceptions of food quality and high levels of food waste (on average, 60% of food served was wasted). While patients report concern about planetary health, the current menu is poorly aligned with principles of environmental sustainability, relying heavily on meat and ultra-processed items. A novel planetary health menu has been developed for VGH with the aims of improving patient satisfaction through improved taste and cultural diversity, and improving planetary health by incorporating more sustainable foods.

Objective: The objectives of this study were to determine the acceptability of the novel planetary health menu for patients in an acute care hospital and evaluate its alignment with individual and planetary health principles.

Methods: Novel dishes were created by a team comprising an Executive Chef, food services managers, and a dietitian. The palatability of the novel menu was assessed through tasting sessions where food samples were provided and participants were asked to share their feedback via a survey. Participants included patient partners, clinical staff (physicians, nurses, dietitians, allied health), and food services staff. Validated scores were used to quantify alignment of the new menu with the Canada Dietary Guidelines (HEFI-2019) and the planetary health diet (PHDI). Greenhouse gas (GHG) emissions associated with the food served were calculated for the novel menu and compared to those of the standard menu, using established methodologies.

Results: Data collection and analysis are underway. A total of 90 responses were collected over 5 days of testing, in which 14 different dishes were served. Respondents were primarily dietitians (52%) and food services managers (42%). All dishes were well-received, with no recipes receiving ratings below 4/5 on taste, texture, presentation, or food quality. On average, 90% of respondents would want to eat the dishes served if they were hospitalized (range 70-100%). Over the next 6 weeks, 15 more tasting sessions are scheduled, including sessions with patient partners. HEFI-2019 and PHDI scores will be reported, along with the GHG emissions of the novel menu, once all the dishes have been approved. A minimum of 20-30% decrease in GHG emissions is anticipated.

Conclusions: This study will help gather feedback from key stakeholder groups, identifying dishes which are more likely to be well-received by patients, and ensuring that necessary changes can be made ahead of hospital-wide implementation in late 2023.

Jump Back to Abstract List

P6 – 10:05

Title: Post-Operative Outcomes in Indigenous Patients in North America and Oceania: A Systematic Review and Meta-Analysis

Authors: Rachel J Livergant[1]; Kelsey Stefanyk[1]; Catherine Binda[1]; Georgia Fraulin[2]; Sasha Maleki[3]; Sarah Sibbeston[4]; Shahrzad Joharifard[1,5]; Tracey Hillier[6]; Emilie Joos[1].

Affiliations: [1]Branch for Global Surgical Care, Division of General Surgery, University of British Columbia, Vancouver, British Columbia, Canada; [2]Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Alberta, Canada; [3]Lower Mainland Pharmacy Services, Vancouver General Hospital, , Vancouver, British Columbia, Canada; [4]Department of Obstetrics and Gynecology, University of Alberta, Edmonton, Alberta, Canada and Northwest Territory Métis Nation, Yellowknife, Northwest Territories, Canada; [5]Department of Pediatric and Thoracic Surgery, British Columbia Children's Hospital, University of British Columbia, Vancouver, Canada; [6]Mi'kmaq Qalipu First Nation, Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Alberta, Canada.

Background: Indigenous Peoples across North America and Oceania experience worse health outcomes compared to non-Indigenous people, including increased post-operative mortality. Several gaps in data exist regarding global differences in surgical morbidity and mortality for Indigenous populations based on geographic locations and across surgical specialties.

Objective: The aim of this study is to evaluate disparities in post-operative outcomes between Indigenous and non-Indigenous populations.

Methods: This systematic review and meta-analysis was conducted in accordance with PRISMA and MOOSE guidelines. Eight electronic databases were searched with no language restriction. Studies reporting on Indigenous populations outside of Canada, the USA, New Zealand, or Australia, or on interventional procedures were excluded. Primary outcomes were post-operative morbidity and mortality. Secondary outcomes included reoperations, readmission rates, and length of hospital stay. The Newcastle Ottawa Scale was used for quality assessment. **Results:** Eighty-four unique observational studies were included in this review. Of these, 67 studies were included in the meta-analysis (Oceania n=31, North America n=36). Extensive heterogeneity existed among studies and 50% were of poor quality. Indigenous patients had 1.26 times odds of post-operative morbidity (OR=1.26, 95% CI: 1.10-1.44, p<0.01) and when stratified by country, overall post-operative morbidity remained significantly higher in Indigenous groups from Australia (OR=1.42, 95% CI: 1.07-1.90, p=0.02) and New Zealand (OR=1.63, 95% CI: 1.09-2.43, p=0.02). Indigenous patients also had 1.34 times odds of post-operative infection (OR=1.34, 95% CI: 1.12-1.59, p<0.01) and 1.33 times odds of reoperation (OR=1.33, 95% CI: 1.02-1.74, p=0.04) compared to non-Indigenous counterparts. With regards to mortality, Oceanic patients (OR=1.29, 95% CI: 1.06-1.57, p=0.01), and more specifically, Māori and Pacific Islander patients from New Zealand (OR=1.39, 95% CI: 1.01-1.92, p=0.04) had higher odds of >30-day mortality than non-Indigenous patients.

Conclusions: In conclusion, we found that Indigenous patients in North American and Oceania experience significantly poorer surgical outcomes than their non-Indigenous counterparts. Additionally, there is a low proportion of high-quality research focusing on assessing surgical equity for Indigenous patients in these regions, despite multiple international and national calls to action for reconciliation and decolonization to improve quality surgical care for Indigenous populations.

Jump Back to Abstract List

P7 – 10:15

Title: Circulating MicroRNA Signature for Early Detection and Monitoring of Oropharyngeal Cancer

Authors: Jamie JY Kwon[1], Rebecca Towle[1], Eitan Prisman[1], Cathie Garnis[1]

Affiliations: [1]Division of Otolaryngology, Department of Surgery, University of British Columbia, Vancouver, BC

Background: Oropharyngeal cancer (OPC) presents a persistent challenge with a five-year survival rate of approximately 50%, which is largely attributed to recurrent cases. Recent demographic changes, including a notable rise in younger, HPV+ patients demonstrate the urgency for new approaches to detect and manage this disease. While molecular markers offer potential for HPV detection in OPC, their applicability is limited for deeply located tonsillar crypt tumors. The conventional method of "watchful waiting" for recurrence monitoring is hindered by post-treatment scar tissue, leading to late-stage diagnoses in nearly 90% of cases. Hence, there is a pressing need for more effective early detection methods. Circulating microRNAs, small non-coding RNAs in serum, have exhibited promise as non-invasive biomarkers for various cancer types.

Objective: We previously identified a circulating miRNA signature capable of distinguishing individuals with oral premalignant lesions, oral squamous cell carcinoma, and early detection of recurrent disease. This study aims to assess the adaptability of this miRNA classifier in patients with OPC.

Methods: Serum samples were collected from OPC patients pre-treatment and during follow-up appointments. RNA was extracted from serum and profiled using RT-qPCR. A biomarker score was calculated using our two miRNA classifier. Serum samples from healthy individuals without cancer were included as controls to assess the differentiation between OPC and non-cancer samples.

Results: Our findings demonstrate a distinct difference in the miRNA classifier between pre-treatment OPC samples and healthy non-cancer serum.

Conclusions: The miRNA classifier shows promise as a straightforward, non-invasive screening tool for OPC. Additionally, it holds potential for monitoring recurrence and enhancing survival rates within the OPC population.

Jump Back to Abstract List

P8 – 10:40

Title: Breast Surgery Seed Localization – Reducing Patient Wait Times and Improving Flow in the Operating Room

Authors: Amy Bazzarelli, MD[1]; Jin-Si Pao, MD[1]; Elaine McKevitt, MD[1]; Jieun Newman-Bremang, MD[1]; Melina Deban, MD[1]; Carol Dingee, MD[1]; Rebecca Warburton, MD[1]

Affiliations: [1]Division of General Surgery, University of British Columbia, Vancouver, BC

Background: Patients with non-palpable breast lesions require a localization method. Traditionally fine wires are placed under image guidance on the day of surgery. This may result in delays in the perioperative setting and decreased operating room (OR) efficiency. As an

alternative, seed localization allows for localization techniques to occur on the days ahead of surgery to decouple the localization and surgical procedures.
Objectives: We aimed to examine the impact of this change on OR efficiency and patient and practitioner satisfaction.
Methods: Patient day of surgery wait times were gathered for patients who underwent seed localization and compared to patients who underwent wire localization by capturing patient arrival times at the hospital, as well as entry to the operating room. Data was then analyzed using run charts. Patient and practitioner satisfaction was analyzed by questionnaires.
Results: Initial trial of 25 patients who underwent seed localization was compared to 20 patients who had undergone wire localization. Minutes from hospital entrance to operating room entrance decreased to a median time of 3 hours and 4 minutes with seed localization from 6 hours and 8 minutes with wire localization. After initial trial, with adoption of seed localization as standard practice in our hospital, we were able to demonstrate sustained decreased patient wait time with seed localization (3 hours, 21 minutes) in an additional 23 patients. Patient and practitioner satisfaction improved with seed localization.
Conclusions: The introduction of seed localization had decreased the time patients need to wait in the perioperative area on the day of their surgery, resulting in improved operating room efficiency and patient and practitioner satisfaction. Further analysis of results of this change in practice is ongoing.
Jump Back to Abstract List

P9 – 10:50

Title: Analyzing the Accuracy of Human Reviewers in Identifying Scientific Abstracts Generated by ChatGPT Compared to Original Abstracts
Authors: Kylie Nabata[a], MD, Yasir AlShehri[b], MD, Abdullah Mashat[a], MD, Sam Wiseman[a], MD, FRCSC, FACS
[a] Department of General Surgery, St. Paul's Hospital & University of British Columbia,
[b] Department of Orthopedics, University of British Columbia
Background:
Creating an academic paper is a complex skill that can take years to master. ChatGPT is an artificial intelligence (AI) chatbot launched in November 2022, and has shown potential as a co-author in original science publications. However, the quality of academic text written by ChatGPT compared to humans remains uncertain.
Objectives:
This study aims to analyze the accuracy of human reviewers in identifying scientific abstracts generated by ChatGPT compared to the original abstracts, and assess the quality of both abstracts.
Methods:
This observational cross-sectional study involved surgical trainees and faculty at the University of British Columbia. Participants completed an online survey presenting two research abstracts: one generated by ChatGPT and one original abstract. They had to identify which abstract was generated by AI and provide feedback on their preference and perceptions of AI technology in academic writing.
Results:
Surveys were distributed on June 15, 2023. Based on preliminary results, 35 participants responded. The average age of respondents was 36.7 years, with 46% being male, 75% being residents. All respondents, but one, had heard of ChatGPT previously, and 20% of respondents said they used it regularly. On the abstract comparison, in 43% of cases, respondents currently identified the original abstract, however, in 65% of cases they preferred the abstract written by chatGPT. Interestingly, in 75% of cases. respondents preferred the abstract they thought was written by the humans.
Jump Back to Abstract List

P10 – 11:00

Title: Neoadjuvant Chemotherapy, Excision, and Observation for Early Rectal Cancer: The Phase II NEO Trial (CCTG CO.28) Primary End Point Results
Authors: H Kennecke[1]; C O'Callaghan[2]; J Loree[3]; H Moloo[4]; R Auer[4]; D Jonker[4]; M Raval , MD[5]; R Musselman[4]; G Ma[6]; A Caycedo-Marulanda[6]; V Simianu[7]; S Patel[2]; L Pitre[8]; R Helewa[9]; V Gordon[10]; K Neumann[11]; H Nimeiri[12]; M Sherry[2]; D Tu[2]; and **CJ. Brown**[5]
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[7]Virginia Mason Cancer Institute, Seattle, WA [8]Juravinski Cancer Center, Hamilton, ON
[9]University of Manitoba, Winnipeg, MB [10]CancerCare Manitoba, Winnipeg, MB
[11]Nova Scotia Health, Halifax, NS [12]Foundation Medicine, Cambridge, MA
Background: Organ-sparing therapy for early-stage I/IIA rectal cancer is intended to avoid functional disturbances or a permanent ostomy associated with total mesorectal excision (TME).
Objective: The objective of this phase II trial was to determine the outcomes and organ-sparing rate of patients with early-stage rectal cancer treated with neoadjuvant chemotherapy followed by transanal excision surgery (TES).
Methods: This phase II trial included patients with clinical T1-T3abN0 low- or mid-rectal adenocarcinoma eligible for endoscopic resection who were treated with 3 months of chemotherapy (modified folinic acid–fluorouracil-oxaliplatin 6 or capecitabine-oxaliplatin). Those with evidence of response proceeded to transanal endoscopic surgery 2-6 weeks later. The primary end point was protocol-specified organ preservation rate, defined as the proportion of patients with tumor downstaging to ypT0/T1N0/X and who avoided radical surgery.
Results: Of 58 patients enrolled, all commenced chemotherapy and 56 proceeded to surgery. A total of 33/58 patients had tumor downstaging to ypT0/1N0/X on the surgery specimen, resulting in an intention-to-treat protocol-specified organ preservation rate of 57%

(90% CI, 45 to 68). Of 23 remaining patients recommended for TME surgery on the basis of protocol requirements, 13 declined and elected to proceed directly to observation resulting in 79% (90% CI, 69 to 88) achieving organ preservation. The remaining 10/23 patients proceeded to recommended TME of whom seven had no histopathologic residual disease. The 1-year and 2-year locoregional relapse-free survival was, respectively, 98% (95% CI, 86 to 100) and 90% (95% CI, 58 to 98), and there were no distant recurrences or deaths. Minimal change in quality of life and rectal function scores was observed.
Conclusions: Three months of induction chemotherapy may successfully downstage a significant proportion of patients with early-stage rectal cancer, allowing well-tolerated organ-preserving surgery.
Jump Back to Abstract List

P11 – 11:10

Title: Efficacy of Early Postoperative Debridement in Sinonasal Cavity Healing after Functional Endoscopic Sinus Surgery: A Randomized Controlled Trial
Authors: Juan Carlos Hernaiz-Leonardo[1], Bader Alim[2], Marwan Alqunaee[3], Bahar Ahmdi[1], Inara Mawji[4], Judy Fan[1], Athenea Pascual[1], Amin Javer[1]
Affiliations: [1]Division of Otolaryngology-Head and Neck Surgery, University of British Columbia, Vancouver, BC
[2] Prince Mohammed Bin Abdul Aziz Hospital, National Guard Health Affairs, Medina, Saudi Arabia
[3] Department of Otorhinolaryngology, Kuwait Institute for Medical Specialization, Ministry of Health, Sulaibikhat, Kuwait
[4] Department of Medicine, Queen's University, Kingston, Ontario, Canada
Background: Postoperative debridement (PD) after functional endoscopic sinus surgery (FESS) is frequently performed to improve the healing process and prevent scar tissue formation. However, the evidence to support it is weak.
Objective: Determine the efficacy of PD after FESS for reducing synechia formation and middle turbinate lateralization (MTL).
Methods: We performed an open-label randomized controlled trial where adult patients with chronic rhinosinusitis were randomized to PD or no debridement 6 days after primary full-house FESS. The primary outcome was the presence of synechia and MTL at 3 - 6 months post-FESS. Secondary outcomes included the need for in-office procedures, revision surgery, visual analogue scale (VAS) scores for pain, and SNOT-22 scores at 6 months follow-up.
Results: Ninety-six patients met inclusion criteria for the trial. Fifty-three (55%) patients were randomized to PD and 43 (45%) received no debridement. A total of 16 (37%) non-debrided patients developed synechia compared to 21(40%) of PD patients (RR 1.06; 95%CI 0.64 – 1.77; $p = 0.81$). Eight (19%) non debrided patients had MTL compared to 13 (24%) PD patients (RR 1.32; 95%CI 0.60 – 2.88; $p = 0.50$). Five (12%) non-debrided patients required an in-office intervention compared to 10(19%) PD patients ($p = 0.35$). One patient in the no-debridement arm required revision FESS compared to two patients in the PD group ($p = 0.74$). VAS and SNOT-22 scores did not differ significantly between groups ($p > 0.05$).
Conclusions: PD does not reduce the incidence of synechia or MTL compared to no debridement after FESS. If PD is deemed necessary, we would advise against aggressive instrumentation.
Jump Back to Abstract List

P12 – 11:20

Title: Tragus to Ala Length Predicts Nasopharynx Distance in Children: A Pilot Study
Authors: Meghan He[1], Carmen Huang[1], Marisa Dorling[1], Julie Pauwels[2], Neil K. Chadha[3]
Affiliations: [1]University of British Columbia, Vancouver, BC, [2]BC Centre for Disease Control, BC Children's Hospital
Background: Current North American guidelines to obtain a viable nasopharyngeal (NP) swab are heterogenous and impractical, potentially leading to inconclusive test results. Past studies on NP depth are also based on an adult population which may not be representative of a pediatric cohort.
Objective: This study thus aims to investigate whether a correlation exists between nasopharyngeal depth measured by endoscopy and patient age, sex, ethnicity, height, weight, finger length, and distance from tragus to alar rim of nose. The secondary objective is to provide a reliable and simple method for bedside estimation of nasopharynx depth in children to be used for NP sample collection.
Methods: We conducted a cross-sectional pilot study at the BC Children's Hospital Pediatric Otolaryngology (ENT) Clinic from June to August 2022 and June to October 2023. Participants were children under the age of 17 years of age undergoing flexible nasal endoscopy as part of their standard of care at BC Children's Hospital Pediatric Otolaryngology Clinic. NP depth was measured from nostril to the posterior NP wall during nasal endoscopy and compared to participant demographics and clinical measurements including height, weight, distance from tragus to alar rim of the nose, and finger lengths. Statistical analyses were performed with R version 4.2.1 to develop a model predicting nasopharynx depth using stepwise linear regression.
Results: A convenience sample of 53 participants from June to August 2023 was used in an interim analysis to assess the final sample size required for a meaningful result (30% female, age range 3 weeks – 18 years). The mean NP depth for participants between the ages of 0-4 years old ($N = 23$), 5-9 years old ($N = 11$), 10-14 years old ($N = 11$), and ≥ 15 years old ($N = 2$) were 5.89 cm, 7.25 cm, 8.91 cm, and 9.03 cm respectively. A linear relationship was found between all predictor variables and NP distance, and seven multicollinear variables were identified: age in months, age in years, height, weight, index length, middle finger length and small finger length. Stepwise linear regression identified that tragus to ala measurements formulate the simplest and most accurate equation to estimate NP depth in children (testing RMSE 0.79, training RMSE 0.99, R-square 0.68).
Conclusions: A simple and accessible bedside equation using tragus to ala length can be used to predict the distance of the swab insertion for sampling the nasopharynx. This formula offers an anatomically-individualized NP sample collection guideline to achieve viable sampling while minimizing discomfort and complications.
Jump Back to Abstract List

P13 – 11:30

Title: Examining the Efficacy and Safety Profile of Palliative Radiotherapy Using 30 Gy in 5 Fractions

Authors: Zhang Hao (Jim) Li[1], Timothy Kong[1], Emma Dunne[1], Mitchell Chung Chiu Liu[1], Jee-Suk Chang[1], Tina Wanting Zhang[1], Matthew Chan[1], Ronan McDermott[1]

Affiliations: [1]Division Radiation Oncology, University of British Columbia, Vancouver, BC

Background: Higher biological equivalent doses of radiotherapy (RT) can improve symptom palliation and local control in select tumour sites. However, not all patients meet criteria for treatment with stereotactic ablative radiotherapy (SABR). Furthermore, SABR is a resource intensive technique which may limit its use in many centres. The 30 Gray in 5 fractions regimen (30/5) stems from a modification of 5-fraction SABR regimens. It is a conformal, homogenous hypo-fractionated regimen that delivers higher dose than conventional palliative RT while still respecting the normal tissue constraints for 5-fraction SABR. It uses streamlined contouring and planning with less stringent requirements for immobilization and image guidance, compared to what is required for SABR.

Objective: Clinical outcomes of this streamlined protocol have not been extensively studied at BCCA Vancouver; therefore, quality assurance would be needed to enhance patient safety while guiding future institutional improvements. This study endeavours to evaluate the clinical outcomes of patients receiving 30/5.

Methods: A single-institution retrospective review of clinical data was performed for patients who received 30/5 from October 2020 to August 2022. Local control (LC), distant metastasis-free survival (DMFS), progression-free survival (PFS), and overall survival (OS) were calculated for all patients. Survival analyses were analyzed by the Kaplan-Meier method and curves compared by log-rank test. Univariate analyses were performed using cox-regression analysis.

Results: 77 patients and 92 courses of 30/5 were available for analysis. The median patient age was 64 years. The median tumour size treated was 11.4 cm^3. Treatment sites included lung (31%), lymph nodes (22%), non-spine bone (20%), and spine (15%). At median follow-up of 10.1 months, 25 deaths occurred. Median LC, DMFS, PFS, and OS after receiving 30/5 were 18.5 months (95% CI: 15.7-21.3 months), 6.6 months (95% CI: 4.6-8.6 months), 6.4 months (95% CI: 4.9-8.0 months), and 18.1 months (95% CI: 13.1-23.1 months) respectively. Radiosensitive tumours had better LC than radioresistant tumours (median 20.9 vs 12.1 months, $p < 0.02$). Six grade 2 toxicities occurred. No grade 3+ toxicities occurred.

Conclusions: The 30/5 regimen is a safe and resource efficient regimen with effective local control. This may serve as a practical alternative for patients who require palliative RT but are not optimal candidates for SABR. Future research can further explore the safety, efficacy, and indications of 30/5 as a palliative RT option.

Jump Back to Abstract List

P14 – 11:40

Title: Impact of Synoptic Operative Reporting as a Quality Indicator for Thyroid Surgery

Authors: Akie Watanabe[1], Susan Yao[1], Eitan Prisman[1], Gary Groot[2], Elliot Mitmaker[3], G. Ross Walker[4], Jonn Wu[5], Jesse Pasternak[6], Chi Kien Lai[7], Antoine Eskander[8], Jonathan Wasserman[9], Frederick Mercier[10], Kathryn Roth[11], Sabrina Gill[12], Carlos Villamil[7], David Goldstein[8], Vicki Munro[13], Alok Pathak[14], Debon Lee[1], Anne Nguyen[1], Sam M. Wiseman[1]

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Background: Narrative operative reports (NORs) often lack important information that can guide multidisciplinary management of benign and malignant thyroid disease.

Objective: This study aimed to improve information consistency by validating a nationally developed synoptic operative report (SOR) for thyroid surgery.

Methods: A 21-item SOR for thyroidectomy was piloted by 6 thyroid surgeons. Completeness of SORs were compared to pre-pilot NORs using the Wilcoxon rank sum test and linear regression adjusting for baseline factors including diagnosis, procedure type, and surgeon volume. Chi-square and Fisher's exact analyses assessed the associations between item-specific reporting frequencies and report type. A post-pilot survey assessed provider satisfaction.

Results: Amongst 172 NORs and 170 SORs collected, 39% of surgeries were performed for treatment of thyroid cancer. SORs had higher median overall completeness (100% [100-100%]) compared to NORs (65% [47-70%], $p<0.001$) with comparable results when stratified by benign (NOR: median 70% [60-77%], SOR: median 100% [100-100%], $p<0.001$) or malignant disease (NOR: median 47% [41-65%], SOR: median 100% [100-100%], $p<0.001$). On multivariate analysis, SORs were 36.73% (SE 1.37, $p<0.001$) more complete than NORs when adjusted for baseline factors. SORs improved reporting of all cancer-specific elements such as gross extrathyroidal cancer extension (SOR: 100%, NOR: 43%, $p<0.001$), invasion of structures (SOR: 100%, NOR: 38%, $p<0.001$), and presence of residual gross disease (SOR: 100%, NOR: 16%, $p<0.001$). SOR improvement in completeness, functionality, and impact on patient care were reported by more than half of users and readers.

Conclusions: Implementation of a nationally developed SOR for thyroid surgery enhanced overall completeness, delivery of cancer-specific information, and provider satisfaction, which can improve quality of patient care.

Jump Back to Abstract List

P15 – 11:50

Title: Evaluating the Clinical Utility of Artificial Intelligence Assistance and its Explanation on the Glioma Grading Task

Authors: Weina Jin (co-first author)[1], Mostafa Fatehi (co-first author)[2], Ru Guo[2], Ghassan Hamarneh[1]
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[2]Division of Neurosurgery, University of British Columbia, Vancouver, BC

Background: Clinical evaluation evidence and model explainability are key gatekeepers to ensure the safe, accountable, and effective use of artificial intelligence (AI) in clinical settings.
Objective: To assess the utility of AI assistance and its explanation on the glioma grading task, we conducted a clinical user-centered evaluation with 35 neurosurgeons nationally.
Methods: Using the publicly-available Multimodal Brain Tumor Segmentation (BraTS) dataset, we trained an AI model with 88.0% accuracy on the binary glioma grading task that classify GBM from grade 2/3 gliomas. We selected the SmoothGrad explainable AI algorithm that explains the AI's prediction using a heatmap overlaid on the MRI to highlight important regions for AI prediction. We conducted an online survey where the prediction from the AI model and the explanation for the AI model are embedded. Each participant read 25 brain MRI scans of patients with gliomas, and gave their judgment on the glioma grading without and with the assistance of AI's prediction and explanation.
Results: Results showed that compared to the average accuracy of 82.5±8.7% when physicians performed the task alone, physicians' task performance increased to 87.7±7.3% with statistical significance (*p*-value = 0.002) when assisted by AI prediction, and remained at almost the same level of 88.5±7.0% (*p*-value = 0.35) with the additional AI explanation assistance.
Conclusions: Based on quantitative and qualitative results, the observed improvements in physicians' task performances assisted by AI predictions were mainly because physicians' decision patterns converged to be more similar to AI's decisions, as physicians only switched their decisions when disagreeing with AI. The insignificant change in physicians' performance with the additional AI explanation assistance was because the AI explanations did not provide explicit reasons, contexts, or descriptions of clinical features to help doctors discern potentially incorrect AI predictions. The evaluation showed the clinical utility of AI to assist physicians on the glioma grading task. It also identified the limitations and clinical usage gaps of existing explainable AI techniques for future improvement.

Jump Back to Abstract List

P16 – 12:00

Title: Machine Learning to Predict the Need for Post-Mastectomy Radiotherapy Following Immediate Breast Reconstruction

Authors: Jaimie Lee[1], Charles Chen[2], Sahil Chawla[1], Dorsa Mousa-Doust[1], Alan Nichol[3], Raymond Ng[2], Kathryn Isaac[1]
Affiliations: [1]Division of Plastic Surgery, Department of Surgery, University of British Columbia, Vancouver, BC [2]Department of Computer Science, University of British Columbia, Vancouver, BC [3]Department of Radiation Oncology, BC Cancer, Vancouver, BC

Background: Immediate breast reconstruction (IBR) is a surgical procedure that aims to restore the breast mound at the time of mastectomy and has been associated with improved cosmetic outcomes and patient satisfaction. However, a significant challenge of IBR is the long-term morbidity following post-mastectomy radiotherapy (PMRT). While PMRT is an effective adjuvant therapy that curbs breast cancer recurrence, it is also associated with numerous reconstructive complications such as infection, capsular contracture, and mastectomy flap necrosis. Machine learning (ML) algorithms have demonstrated considerable predictive modeling capabilities and can generate individualized risk profiles based on group-level evidence. Hence, ML can be leveraged to determine PMRT necessity for breast cancer patients, which would influence the type and timing of reconstructive surgery to optimize long-term outcomes.
Objective: This retrospective cohort study aimed to create an ML model to predict the probability of requiring PMRT following IBR.
Methods: The study population comprised 800 breast cancer patients who underwent mastectomy with immediate alloplastic breast reconstruction from January 2017 to December 2020. Data collected on these patients were 81 pre-operative characteristics derived from reports on clinical history, physical examination, diagnostic imaging, and biopsy pathology. The study cohort was partitioned into a training-validation set (75% of the cohort) and a test set (25% of the cohort) for ML model building. The primary outcome of our model was the recommendation for PMRT. Four algorithms were developed and compared for performance and clinical utility: Logistic Regression (LR), Elastic Net (EN), Logistic Lasso (LL), and Random Forest (RF). Model performance was evaluated using the Area Under the receiver operating characteristic Curve (AUC) metric, precision-recall curves, and calibration plots.
Results: Within our cohort of 800 patients, 325 (40.6%) were recommended to undergo PMRT. The performance of the four algorithms using the training-validation dataset (n=600) can be summarized by the following AUC metrics and 95% confidence intervals: LR 0.73 (0.65-0.80), RF 0.77 (0.74-0.81), EN 0.77 (0.73-0.81), LL 0.76 (0.72-0.80). Without significantly sacrificing model performance, we found that the 81 predictive factors could be reduced to 13 for prediction using the LL method. The performance of the LL prediction model was confirmed using the test dataset (n=200), with an AUC of 0.79 (0.73-0.86).
Conclusions: An ML model for predicting PMRT following IBR was developed and translated into an online nomogram calculator for providers and patients to assist in clinical decision-making. The calculator is available for real-time use at https://surgery.med.ubc.ca/divisional-research/plastic-surgery/pmrt-nomogram.

Jump Back to Abstract List

P17 – 12:10

Title: Gastrointestinal Surgical Outcomes in the Highly Active Antiretroviral Therapy (HAART)-Era HIV-Positive Patient: A Scoping Review

Authors: Victoria H. Chen[2], Keiko M. Patterson[3], Sam M. Wiseman[1]
Affiliations: [1]Department of Surgery, St. Paul's Hospital & University of British Columbia, Vancouver, BC [2]Department of Medicine, St. Paul's Hospital & University of British Columbia, Vancouver, BC [3]Faculty of Medicine, University of British Columbia, Vancouver, BC

Background: Since 1996, widespread Highly Active Antiretroviral Therapy (HAART) use has drastically improved health outcomes in Human Immunodeficiency Virus (HIV) patients. Early HAART-era studies suggested higher postoperative complications after gastrointestinal (GI)

system surgeries in HIV patients. However, more recent studies give varied reports of surgical outcomes. The aim of this scoping review is to evaluate GI system surgery complications in HAART-treated HIV patients.
Methods: MEDLINE and EMBASE were searched for primary publications since 1996 reporting on GI tract and associated solid organ surgery outcomes in exclusively HAART-treated HIV patients, or where subset analysis of this population was performed. 2 reviewers performed 2 sequential screens against study criteria. National Surgical Quality Improvement Project reported complications (NRCs), such as mortality, wound infections (SSI), sepsis, wound dehiscence, and hospital stay (LOS) were extracted, along with non-NRCs, HIV disease parameters and procedure details.
Results: 12 studies matched study criteria, reporting on bowel surgery (4), bariatric surgery (5), cholecystectomy (1), appendectomy (1) and general abdominal surgery (1). Preoperative HAART duration ranged from newly started to 11.7 years. No NRCs and only minor non-NRCs occurred in bariatric surgery. NRC rates of over 44.4% occurred in bowel surgeries and 13.3% in appendectomies. Septic complications accounted for 50% or more of NRCs reported. 5 studies compared outcomes between HAART-treated patients and other groups. Significantly lower any-cause complications, LOS, septic complications, and mortality (non-significant) occurred in comparison to treatment-naive HIV. Significantly higher any-cause complications, LOS and reoperation occurred in comparison to HIV-negative patients.
Conclusions: HAART is associated with improved NRC outcomes, LOS and septic complications in GI system surgery, however, despite treatment, complication rates remain higher than in HIV-negative patients. More studies are needed to examine GI system surgery outcomes in HIV patients well managed on HAART, and the impact of disease parameters and preoperative HAART duration on surgical complications.
Jump Back to Abstract List

P18 – 13:50

Title: Preoperative Multidisciplinary Review for Breast Cancer at Mount Saint Joseph Hospital
Authors: Elaine McKevitt[1,2], Karina Makarova[2,3], Allison Chiu[4], Amy Bazzarelli[1,2], Melina Deban[1,2], Carol Dingee[1,2], Jieun Newman-Bremang[1,2], Jin-Si Pao[1,2], Rebecca Warburton[1,2]
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[3]Faculty of Science, University of British Columbia, Vancouver, BC
[4]Physician Quality Improvement, Vancouver Coastal Health, Vancouver, BC
Background: Compared to the alternative of mastectomy, Oncoplastic Breast Reduction (OBR) is a procedure that is reported to have a lower rate of complications and results in fewer total surgeries. However, care of these patients involves multiple specialists, and a lack of structured communication between departments can result in incomplete removal of the cancer. This can be overcome by multidisciplinary review of cases, a widely accepted standard of care for cancer patients that can often result in significant changes in treatment recommendations. The requirement for this type of review was implemented 20 years ago in Europe and 10 years ago in the USA, but steps are still being taken for Canada-wide implementation.
Objective: This Quality Improvement study aimed to increase the number of OBR cases reviewed preoperatively in a multidisciplinary setting at Mount Saint Joseph Hospital (MSJ) from 0% to 50% by May 2023.
Methods: We prospectively collected data for all cancer cases triaged for surgery from October 2022 to May 2023 to determine the number of complex cases flagged for preoperative review. Complex cases were classified as patients triaged for mastectomy or neoadjuvant chemotherapy, women at or under the age of 40, and those with breast cancer recurrence. PDSA cycles were undertaken to trial different approaches to multidisciplinary review during the study period, and changes in the number of cases reviewed as a result were tracked. Conference members (radiologists, pathologists, surgical oncologists) were surveyed using Google Forms on existing multidisciplinary processes at MSJ and BC Cancer. Questions aimed to evaluate time required for case review preparation, as well as challenges members generally encountered throughout the course of review.
Results: Prospectively obtained triage data consisted of 337 cancer cases. PDSA cycles included case review at existing multidisciplinary processes at MSJ and BC Cancer. In February 2023, a tumour localization program was established at MSJ, resulting in the implementation of a new preoperative review process. In April 2023, this process evolved to include all complex preoperative cases. As a result, the number of OBR cases and total number of cases reviewed increased to 50% and 32%, respectively. Several patients had changes in management following review. This included changes in the type of operative procedure, the order of treatment (neoadjuvant chemotherapy vs. surgery), and others. In the surveys, conference members reported challenges consisting of time conflicts, inconsistent review criteria, and other general conference logistics.
Conclusions: Preoperative multidisciplinary review of OBR patients was successfully increased from 0% to 50%, and the outcomes demonstrated that management of cases can change considerably as a result of review. These findings support the implementation of a consistent pre-treatment review process at MSJ.
Jump Back to Abstract List

P19 – 14:00

Title: Patient Safety and Quality Improvement Lessons from Review of Canadian Thyroid and Parathyroid Surgery Malpractice Litigation Case Law
Authors: Christina Schweitzer MD MPH MPhil[1], Ivneet Garcha MPH JD[2], Sam M. Wiseman MD FRCSC[1]
Affiliations: [1]University of British Columbia Division of General Surgery and St. Paul's Hospital, Vancouver, BC. [2]Queen's University School of Medicine, Kingston, ON.
Background: Malpractice litigation is a concern for all surgeons. Reviews of legal judgements identify areas to improve patient safety and satisfaction, inform consent discussions, and reduce risk of litigation. Few prior studies have examined Canadian surgical malpractice litigation case law. This is the first study of Canadian thyroid and parathyroid surgery case law.

Objective: Identify quality improvement areas for surgical practice, to improve patient safety and reduce the risk of regulatory college complaints and litigation.
Methods: The Canadian Legal Information Institute (CanLII) public database was searched for all legal judgements relating to thyroid and parathyroid surgery, in English and French. Cases were included if a surgeon was listed as the applicant or respondent, the case pertained to pre-, intra-, or post-operative management of thyroid or parathyroid disorders, and there was an allegation of malpractice. Cases were excluded if thyroid or parathyroid surgery was mentioned only incidentally, or if the case was primarily focused on non-surgical management.
Results: We identified 347 relevant legal judgements. Of the 14 cases meeting screening criteria, 13 related to thyroid and 1 to parathyroid surgery. Judgements were issued between 1978 and 2017. Most cases related to pre-operative decision making, investigations, and consent, including discussions of surgical risks with patients. Several cases pertained to intra-operative decision making and technical competence, including preservation of recurrent laryngeal nerves and hemostasis. Post-operative management issues included failure to recognize post-operative hematoma causing airway compression prior to respiratory arrest. Four cases involved patient mortality, and one patient required a permanent tracheostomy due to bilateral recurrent laryngeal nerve injury.
Conclusions: Quality improvement lessons from this review include the importance of documenting risks discussed in the consent process, comprehensive pre-operative patient education, communicating with patients and other members of the care team, and reassessing patients in person when post-operative complications arise.
Jump Back to Abstract List

P20 – 14:10

Title: Virtual Thoracic Surgical Outpatient Encounters are Non-Inferior to In-Person Visits for Overall Patient Care Satisfaction in the Post COVID-19 Era
Authors: Roy Avraham Hilzenrat[1], Maurice Blitz[2], Shaun Deen[2], Michael Francis Humer[2], Anand Jugnauth[2], Gordon Buduhan[2]
Affiliations [1]Division of General Surgery, Department of Surgery, University of British Columbia, Vancouver, Canada.
[2] Division of Thoracic Surgery, Department of Surgery, Kelowna General Hospital, University of British Columbia Faculty of Medicine, Kelowna, British Columbia, Canada.
Background: The COVID-19 pandemic prompted physicians to predominantly utilize virtual outpatient care. As patient satisfaction emerges as an indicator of care quality, it is important to distinguish patients' experiences with various clinician encounter platforms.
Objective: We aim to summarize thoracic surgery patient satisfaction and experiences with virtual care encounters compared to in-person visits in the contemporary post-pandemic era.
Methods: An online questionnaire was sent to all thoracic surgical patients seen in-person or virtually (Telehealth, Zoom video teleconference or phone) from April 2022 – Feb 2023. The questionnaire assessed patients' experiences and overall satisfaction with their clinic encounters.
Results: 358 patients were included. We observed a 96.8% satisfaction rate in overall care among virtual care patients and 98.6% among in-person patients, with no significant difference in the odds of being satisfied based on encounter type [OR=0.45, 95% CI = 0.02-2.65], subtype of virtual care or reason for visit (consultation vs. follow-up). Among virtual care patients, 97.9% noted decreased financial burden associated with virtual visits and 91.2% agreed or strongly agreed that virtual visits were as good as in-person visits for overall care. Patients' initial encounter type was predictive of their preference for future encounters. A greater proportion of in-person patients preferred the opposite type of encounter for their next visit, that is, they preferred a virtual visit compared to the proportion of virtual patients who preferred an in-person visit (27% vs. 9.2% respectively; $p<0.001$).
Conclusion: Virtual care thoracic outpatient encounters are associated with a high degree of patient satisfaction in the post-COVID era, with a higher proportion of in-person patients preferring future virtual platform options. While in-person visits remain an important component of evaluation, virtual encounters provide a highly valued, patient-centered model of care. Eliciting patient satisfaction should help guide decisions regarding optimal provision of health services.
Jump Back to Abstract List

P21 – 14:20

Title: Assessing the Attributes of Successful General Surgery Residents: A Comparison of Job Expert Opinions and Resident Workstyle and Performance
Authors: Kylie Nabata[a], Samantha Goldstein[b], Stephen Race[b], Ahmer Karimuddin[a], Tracy Scott[a]
Affiliations: [a]Department of Surgery, St. Paul's Hospital & University of British Columbia, [b]TalentClick Workforce Solutions
Background: There has been longstanding interest in measuring non-cognitive attributes in general surgery residents to help predict and understand success. The aims of this study are three-fold: assess the work styles, values, and safety of successful surgical residents over multiple domains; determine what Job Experts consider an "ideal general surgery resident"; and compare these two scores.
Methods: A TalentClick workstyle performance, values and safety assessment was distributed to all general surgery residents at the University of British Columbia. A group of residents were classified as High-Fit based on residency performance and their scores on the TalentClick assessment were analysed. We asked practicing surgeons (Job Experts) in General Surgery to rate which domains were important in an ideal resident. The scores of the High-Fit residents and Job Expert ratings were compared.
Results: *High-Fit* residents were higher in Aggression-Control, Responsibility, Empathy, Dominance and Accommodation compared to the other residents surveyed. High-Fit residents were more likely to be Reactive ($p<0.001$), Conventional ($p<0.001$), Reserved ($p=0.002$), Spontaneous ($p=0.003$), Impatient ($p<0.001$), Anxious ($p<0.001$), Impulsive ($p<0.05$), and lower in Conformity ($p<0.01$), Positivity ($p<0.001$), Open Communication ($p=0.006$) and Responsibility ($p=0.038$) compared to the Job Expert ratings.
Conclusions: There were multiple domains where *High-Fit* residents and Job Expert scores differed significantly. Our results suggest that objective measures of workstyle, values, and safety can have an important implication on performance, and provide independent value in the assessment of general surgery residents outside of the traditional subjective evaluations.

Jump Back to Abstract List

P22 – 14:30

Title: A Retrospective Study Comparing Outcomes in Matched Patients with Poor Prognosis Treated with Targeted Conventional Volumetric Modulated Arc Radiotherapy vs. Whole Brain Radiotherapy for Brain Metastases

Authors: G. S. Parmar[1], T. Kong[2], J. Hamm[3], M. Liu[1,2], S. Lefresne[1,2], H. Carolan[1,2], E. Berthelet[1,2], J. Chan[1,2], and A. Nichol[1,2]

Affiliations: [1]University of British Columbia, Vancouver, BC, Canada. [2]BC Cancer, Vancouver, BC, Canada. [3]BC Cancer Surveillance & Outcomes Unit, Vancouver, BC, Canada

Background: Patients with brain metastases and poor prognosis are often treated with whole brain radiotherapy (WBRT) which can cause a variety of side effects. Our institution devised a new RAPid simPLE (RAPPLE) brain-sparing radiotherapy technique to treat multiple brain metastasis for patients whose poor prognosis does not warrant stereotactic radiosurgery (SRS).

Objective: This study compares the oncologic outcomes of matched patients treated with RAPPLE and WBRT.

Methods: Patients treated with a first course of RAPPLE from January 2017 to December 2021 were identified in an institutional database. Using age, cancer diagnosis, and treatment date, we identified a matched cohort of patients receiving a first course of WBRT with 20 Gy in 5 fractions. Overall survival (OS) was calculated using the Kaplan-Meier method, and intracranial progression was calculated using cumulative incidence with a competing risk of death. Log-rank, Cox regression and Fine-Gray analyses were used for comparisons. Paired t-tests were used to compare patient-reported fatigue measured using 5-level Likert scales before and 2-6 weeks after radiotherapy

Results: The RAPPLE and WBRT cohorts each had 137 patients. The matched median age was 69 years. Primary diagnoses were lung cancer (72%) and other cancers (28%). The median Karnofsky Performance Score (KPS) was 70 in both cohorts. The median survival was 4.1 months for RAPPLE and 4.2 months for WBRT, and the 18-month OS was 11% for RAPPLE and 12% for WBRT (log-rank $p = 0.8$). On multivariable analysis, KPS, diagnosis, extracranial disease, and use of systemic therapy before and after RT were predictive of OS, but use of RAPPLE vs. WBRT was not (HR = 0.97, 95%CI: 0.75-1.25, $p = 0.8$). The 18-month cumulative incidence of intracranial progression was 0.49 for RAPPLE and 0.37 for WBRT ($p = 0.04$). After RAPPLE, 13% required more focal RT and 3% required salvage WBRT, while after WBRT, 3% required focal RT and 4% required repeat WBRT. After RAPPLE, mean patient-reported fatigue remained stable from baseline to first follow-up (2.18 vs. 2.27, $p = 0.9$), but, after WBRT, it worsened from baseline to first follow-up (1.95 vs. 2.63, $p = 0.002$).

Conclusions: As expected, after RAPPLE, more targeted radiotherapy was required for intracranial progression, but there was no difference in OS between the RAPPLE and WBRT cohorts. Patients reported significantly worse fatigue after WBRT. Almost all patients (97%) treated with RAPPLE avoided WBRT.

Jump Back to Abstract List

P23 – 14:40

Title: The Current Landscape for Public Insurance Coverage for Sleep Surgery in Canada

Authors: Connor Holmes[1] Amanda Hu[1]

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Background: Obstructive sleep apnea (OSA) is highly prevalent and surgical procedures to treat OSA are offered by Otolaryngologists. The objective of this study was to review and compare the Canadian public insurance coverage for OSA surgeries.

Objective: Review literature on public insurance coverage for sleep surgery in Canada and compare coverage between provinces and territories.

Methods: Cross sectional study of provincial funding for OSA surgeries in Canada and literature review. Funding details were collected by reviewing fee codes for each province. Surgeries evaluated included: tonsillectomy, septoplasty, uvulopalatoplasty (UPPP), palatoplasty, tongue base reduction, distraction osteogenesis maxillary expansion, genioglossus advancement, maxillomandibular advancement and tracheostomy in adults. A literature review was conducted using PubMed, GoogleScholar, and UBC Libraries databases. A hand search was also performed. Keywords included: 'sleep apnea', 'surgery', 'Canada', 'funding'.

Results: Surgeries that were covered universally across provinces included tonsillectomy, septoplasty, and tracheostomy. Provincial variation exists in health coverage for some procedures (eg UPPP). Information regarding coverage for skeletal procedures exists for some provinces but were unclear if OSA patients qualify. Associated private fees for skeletal surgery were unclear. Although 52 articles were identified in the literature search; none specifically discussed public insurance coverage for sleep surgery in Canada. A hand search of the literature failed to locate additional articles.

Conclusions: Surgeries that were insured universally had multiple indications, including OSA. Surgeries that were specifically indicated for OSA were less likely to be insured. Currently, there is no academic literature describing public insurance coverage for surgical treatment of OSA in Canada. Advocacy by physicians is necessary to establish clear guidelines for covered procedures across Canada to help our OSA patients access this service.

Jump Back to Abstract List

P24 – 14:50

Title: A Decline in the Randomized Controlled Trial Evidence Base in Otolaryngology Head and Neck Surgery

Authors: Brendan McNeely[1], Austin Heffernan[1], Melissa Lee[1], Emily Deane[1], and Desmond Nunez[1]

Affiliations: [1]Division of Otolaryngology – Head and Neck Surgery, University of British Columbia, Vancouver, BC

Background: Randomized controlled trials (RCTs) are the foundation of evidence-based medicine and evaluate innovations in clinical practice to ensure patient safety and confirm treatment efficacy. In publicly funded health care systems, such as in Canada, healthcare funders and stakeholders utilize RCT evidence to govern the rationing and distribution of health care expenditures and provision of services.

Objective: This study aims to compare the proportion of published Otolaryngology - Head and Neck Surgery (OHNS) RCTs from the years 2016-2020 with that in 2008-2012.

Methods: Original research articles published in eight major Otolaryngology journals from January 1, 2016 - December 31, 2020 were reviewed. Articles were categorized as RCT, secondary research, other clinical research, case report, primary basic science, or other study type. Additionally, studies were categorized as American, Canadian, British, or other International origin according to the corresponding author's institutional address. The proportion of RCTs published in 2016-2020 was compared to an earlier bibliometric analysis of 2008-2012 OHNS journal publications (Gurberg et al., 2014). Among studies published in 2016-2020, the proportion of RCTs were also compared by national origin. Pearson's Chi-Squared testing with Bonferroni correction was used for statistical comparison.
Results: Six thousand seven hundred and seventy-seven (6777) articles were reviewed and analyzed. The proportion of published RCTs decreased from 3.1% in 2008-12 to 2.3% in 2016-2020 (Chi-squared test, $p < 0.01$). There was a significant difference in the proportion of RCTs published by national origin, 1.3% USA, 2.2% Canada, 2.7% UK, 3.3% other (Chi-squared test, $p < 0.01$).
Conclusions: The current study suggests that the proportion of RCT publication is declining over time. Furthermore, North American researchers were found to be undertaking less RCTs than researchers in other countries. Altogether, our study demonstrates the continued need for pursuit of level 1 evidence in Canadian Otolaryngology to best direct the healthcare funding of surgical procedures.
Jump Back to Abstract List

P25 – 15:00

Title: The Cellular-Molecular Landscape of the Living Human Brain In Epilepsy
Authors: Larissa Kraus[1], Milena Baldauf[1,2], Brianna Bristow[1], Adrienne Kinman[1], Kaitlin Sullivan[1], Tara R. Stach[3], John Maguire[4], Mostafa Fatehi[5], Gary Redekop[5], Mark S Cembrowski[1,6]
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Background: Epilepsy is a life-altering disease, affecting up to 1 million people worldwide. Despite the introduction of new anti-epileptic drugs in recent decades, 30% of patients remain pharmacoresistant. One of the challenges in understanding and treating epilepsy is the differences in fundamental properties between mice and human neurons, as well as the difficulty to translate therapeutic approaches from rodent models to clinical trials.
Objective: Our study hypothesizes that epilepsy induces cell-type-specific molecular dysregulation, contributing to runaway excitation. We employ a multidisciplinary approach to directly investigate this phenomenon in living human brain samples.
Methods: Collaborating with VGH neurosurgery, we acquire living human brain tissue from consenting patients undergoing resective brain surgery. Using these rare samples, we employ single-cell spatial transcriptomics (scST) to label >300 RNA transcripts at single-cell resolution over wide fields of view. This cutting-edge technology enables us to analyze molecular properties of individual cells in the epileptic human brain. Additionally, we use calcium activity imaging (GCaMP8m) in human hippocampal brain slice cultures to record seizure-like events at single cell resolution. Here we subsequently identify the molecular cell types of recorded neurons via multiplexed fluorescent in situ hybridization.
Results: Our scST analysis reveals cell-type-specific alterations in epilepsy-associated genes within the human hippocampus. Functional investigations using calcium activity imaging demonstrate the cell-type-specific involvement in epileptic activity in the human brain.
Conclusions: Our findings provide insight into the molecular and functional changes in cell types in the epileptic human brain, and will inform the development of novel therapeutic approaches for the treatment of pharmacoresistant epilepsy. Additionally, our study highlights the importance of studying fundamental pathological mechanisms directly in human brain tissue for a better understanding of this debilitating disease.
Jump Back to Abstract List

Simultaneous Session A Abstracts

A1

Title: Enhancing Free Tissue Transfer Monitoring: A Novel Method in Head and Neck Cancer Surgery
Authors: Aaron Mah [1,2], Donald Anderson [3], Shahbaz Askari [2], Sadra Khosravi [2], Samin Abbasidezfouli [3], Oleksandr Butskiy[3], Babak Shadgan[1,2,4]
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Background: Free tissue transfer (FTT) is a surgical technique involving tissue transplantation from one body area to a surgical wound. Near-infrared spectroscopy (NIRS) is a noninvasive optical technique for monitoring tissue oxygenation and hemodynamics. A novel advanced NIRS system, featuring a miniaturized implantable sensor, was devised for FTT monitoring in head and neck surgery.
Objective: This study aimed to investigate the feasibility and function of the FTT-NIRS sensor in a group of patients undergoing FTT surgery for head and neck cancer and to assess both patient and clinician perceptions of this innovative NIRS monitoring method.
Methods: The NIRS sensor was affixed over the FTT site for 72 hours post-surgery continuous monitoring of FTT tissue oxygen saturation index (TOI) and tissue hemodynamics parameters. Following the 72-hour period, patients and clinicians completed questionnaires to gauge their experiences with the NIRS system.

Results: All patients who underwent FTT surgery experienced successful operations without any complications related to the FTT. The NIRS data confirmed proper microvascular function and a normal range of tissue oxygenation levels in all FTT cases. The questionnaire responses revealed that the NIRS sensor did not cause additional discomfort or inconvenience for patients or clinicians.
Conclusions: Our findings suggest that the novel NIRS sensor can continuously and non-invasively monitor FTT for 72 hours with minimal disruption to patient care. Integrating this innovative NIRS biosensor into FTT monitoring can potentially enhance post-operative care and reduce FTT failure rates. This technology holds promise for improving surgical outcomes and patient experiences in head and neck cancer surgery.
Jump Back to Abstract List

A2

Title: Catheter Lock Solutions and Associated Complications in Pediatric Intestinal Failure Patients
Authors: Yitzchok Ahisar[1], Jaclyn Strauss[2], Deema Al Husari[3], Andrea Martinez[4], Hannah Piper[3]
[1]Division of General Surgery, University of British Columbia, Vancouver, BC
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[4]Division of Pediatric Gastroenterology, University of British Columbia, Vancouver, BC
Background: Children with intestinal failure (IF) who receive parenteral nutrition support are at high risk for central venous catheter (CVC) associated complications including infection, occlusion and breakage. Traditionally, heparin has been used as a catheter lock solution, when the CVC is not in use, to preserve catheter patency. Alternative lock solutions including Taurolidine/Citrate and EDTA are being used more commonly in children with IF because of their antimicrobial and anticoagulant properties, however whether one solution is superior to the other remains unclear. The objective of this study was to compare CVC associated complications in children with IF, using either Taurolidine/Citrate or EDTA based catheter lock solutions.
Methods: A retrospective review of children with IF cared for at BC Children's Hospital and Alberta Children's Hospital between 2017 to 2022 was performed. Clinical characteristics, intestinal pathology, CVC properties (type, size, number of lumens), and CVC associated complications (infections, occlusions, and breakages) were compared among children using Taurolidine/Citrate or EDTA lock solutions. Complication rates were reported as mean events per 1000 catheter-days with standard deviations. Statistical analysis was performed using Student's t-test, at a statistical significance of alpha <0.05.
Results: A total of 38 children (ages 2 months – 16 years) were included in the study (19 using Taurolidine/Citrate and 19 using EDTA). Etiology of IF included gastroschisis (24%), necrotizing enterocolitis (21%), dysmotility (16%), midgut volvulus (8%) and atresia (5%). The majority of catheters were single lumen, cuffed, peripherally inserted central catheters (73%) or single lumen, Broviac catheters (16%). Taurolidine/Citrate locks were used in 52 catheters for 16,927 catheter-lock-days, and EDTA locks were used in 29 catheters for 7,208 catheter-lock-days. CVC associated complications did not differ between Taurolidine/Citrate or EDTA locks including bloodstream infections (0.5/1,000 catheter days, SD=2.1 vs. 0.4/1,000 catheter days, SD=2.3, p=0.83) or catheter occlusions (4.5/1,000 catheter days, SD=14.1 vs. 16.1/1,000 catheter days, SD=36, p=0.11). However, there were more catheter breakages in the Taurolidine/Citrate group compared to EDTA (6.1/1,000 catheter days, SD=20.2 vs. 0.1/1000 catheter days, SD=0.5, p=0.04).
Conclusions: Taurolidine/Citrate and EDTA catheter lock solutions are equally effective in preventing CVC associated infections and occlusions. There was a higher incidence of catheter breakages when using Taurolidine/Citrate which may not solely be due to the lock solution, but this warrants further study.
Jump Back to Abstract List

A3

Title: The Same But Different: Clinical and Enhanced Recovery after Surgery Outcomes In Right Hemicolectomy For Colon Cancer Versus Ileocecal Resection In Crohn's Disease
Authors: Mohammed Al-Abri M.D., Elliott Gee, Ahmer Karimuddin M.D., Terry Phang M.D.,Carl J Brown M.D., Manoj Raval M.D., Amandeep Ghuman M.D.
Colorectal Surgery, Saint Paul Hospital, University of British Columbia.
Background: Enhanced recovery after surgery (ERAS) protocols have been well established for colorectal surgery. However, few studies have focused on post-operative outcomes in inflammatory bowel disease (IBD) distinct from cancer diagnoses. The objective of this study is to assess for possible differences in clinical and ERAS outcomes in right hemicolectomies for colon cancer (CC) versus ileocecal resection in Crohn's disease (CD).
Methods: A large retrospective study was conducted using National Surgical Quality Improvement Program (NSQIP) database, from January 2016 to December 2020. Demographic data, total length of hospital stay, and rates of complications were compared between the two groups.
Results: A total of 29,453 patients were included, 17,980 (61.0%) patients underwent right hemicolectomy for CC and 11,473 (39.0%) patients underwent ileocecal resection for CD. Mean age of CD patients was younger than CC (42.2 vs 69.4). There were similar number of males in both groups (46.0% vs. 45.8%). Total length of stay was 5.96 days in CD vs. 5.31 days in CC ($p < 0.001$). Readmission rate within 30 days was 10.6% in CD vs. 8.5% in CC ($p < 0.001$). Rate of re-operation was 4.0% in CD vs. 3.3% in CC ($p = 0.002$). There was significant difference in the rate of superficial skin infection (3.3% CD vs. 2.2% CC, $p < 0.001$). There was no significant difference in the rate of deep venous thrombosis (0.9% CD vs. 1.0% CC, $p = 0.560$).
Conclusion: Our study, the largest to date comparing these groups, reveals a significant increase in post-operative complications in CD patients compared to CC patients. Therefore, we recommend designing IBD tailored ERAS protocols to overcome this significant increase in complications.
Jump Back to Abstract List

A4

Title: Barriers to Accessing Surgery in High-Income Countries: A Scoping Review

Authors: Amy Antonsen[1], Lindsay Kastelic[2], Taewoong Chae[2], Isabella Parrotta[3], Nicholas Wilkinson[3], Anna-Lisa Nguyen[4], Nikka Golzar[3], Sarah Kuhn[3], Ethan Ponton[3], Justin Chan[5], Vanessa Kitchin[6], Qian Zhang[7], Jeffrey Bone[7], Soojin Kim[3]

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Background: Patients face barriers in accessing surgery. The Lancet's 2015 Commission on Global Surgery highlighted the surgical treatment modality as a whole, rather than fragmenting data by disease type, and estimated 30% of global disease burden to be surgical. While ample literature assesses overall access patterns in low-income countries, similar broad overviews do not exist for high-income countries.

Objective: This scoping review aimed to characterize patterns in current literature investigating access to surgery in high-income countries.

Methods: MEDLINE, EMBASE, CINAHL, PsychINFO, and Web of Science databases were queried for peer-reviewed studies published between 2010 and 2020 set in high-income countries as defined by the World Bank (2020) investigating timeliness, capacity, affordability, or social equity in surgery. Case reports, opinion articles, and commentaries were excluded, as were studies investigating only access to preventative screening. Analysis was completed with descriptive statistics and chi-square tests using SPSS (v.28).

Results: We included 1031 studies. Two thirds of studies had a retrospective design. Half of studies were conducted in the United States, with most of the remaining studies from Canada, Australia and Western Europe. Almost half of high-income countries were not represented in any literature. The most frequently studied procedures were kidney transplant, breast surgery and coronary revascularization. Social equity was the most frequently studied access domain among most specialties and most broad geographic regions. Research from countries with public systems produced more research investigating timeliness, while studies from countries with private systems produced more research evaluating affordability. Similar findings were seen among studies in pediatric populations.

Conclusions: Plentiful granular data exists assessing access to surgery in high-income countries. However, it is concentrated in euro-western nations with nearly half of countries being left behind, and focuses primarily on elective procedures such as transplants and cancer surgeries with little data on emergency lifesaving procedures which are integral to surgical access. Future studies are needed to characterize access to surgery in high-income countries with high-quality data which is more inclusive of the full global community. This data will hopefully support advocacy efforts to work toward a global community that provides timely, affordable, equitable and safe access to surgery for all.

Jump Back to Abstract List

A5

Title: From Flames to Facts: Unveiling Discrepancies in Burn Patient Documentation

Authors: Matthew Boroditsky BHSc MD[1], Jenny Xiao BSc MSc[1], Fagun Jain MSc[1], Sabina Dobrer MA[1], Erik Vu MSM MD FRCPC DRCPSC[1], Anthony Papp MD PhD FRCSC[1,2]

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Background: Comprehensive and accurate documentation in major burns is essential for initial and ongoing patient management. Inaccurate or incomplete documentation in this patient population may have significant and potentially preventable negative downstream consequences.

Objective: This project aims to determine the completeness and accuracy of burn patient documentation in a tertiary care referral burn center through various time points from admission to final burn TBSA determination. This includes the identification of discrepancies in burn patient workup and TBSA documentation from initial ED presentation to final assessment by the Plastic Surgery Burns Consultant. We aim to generate awareness of the impact of initial burn documentation and potential adverse sequelae.

Methods: Retrospective chart review from January 1, 2016 – December 31, 2021, was completed through the BC provincial burn registry. All patients admitted to VGH with a burn requiring Plastic Surgery consultation were recorded. We excluded isolated first-degree, ocular, inhalational, and burns not requiring burn unit admission. Time, date, etiology, place, injury circumstances, anatomic location, TBSA, depth, treatment provided, and follow-up were collected and compared across ED and Plastic Surgery documentation. Incomplete records were defined by the absence of the burn data points within the patient's chart. Plastic surgery and ED documentation were analyzed for completeness using descriptive statistics.

Results: 358 patients were included in the analysis, with most burn injuries presenting in male patients (76%), occurring at home, and involving the head and neck. Burn etiology, circumstances, place, and anatomic location were well reported and consistent across plastic surgery and initial admission documentation. Documentation discrepancies were the most evident for burn depth and TSBA estimations. The median TBSA calculated at admission by ED was 20 (IQR: 19.8) compared to a median TBSA of 14 (IQR: 16) in the Plastics cohort ($p< 0.0019$). Differences were especially significant for TBSA estimates of burns <10% and 10-25% ($p<0.0001$), with a trend to overestimate TBSA. Deeper burns (second and third degree) were largely over-reported on initial ED presentation compared to final Plastics TBSA determination. Furthermore, 81% of initial documentation was incomplete, with 66% of records missing initial treatment, 49% lacking TBSA, and 39% lacking burn depth. Of the incomplete initial records, 37% were direct transfer patients from peripheral sites.

Conclusions: Significant discrepancies were appreciated in the initial ED documentation of burn injuries, with overestimations in TBSA and burn depth. Over 80% of initial documentation was incomplete, with TBSA omitted in 49% of charts. This was seen in both local and peripheral transfer consultations. Overall, there is a collective need for improved awareness and education surrounding accurate and complete patient documentation in major burns.

Jump Back to Abstract List

A6

Title: Does Timing Matter? Early vs. Late Tympanostomy Tube Placement in Infants with Cleft Lip and Palate: A Pilot Study

Authors: Madeleine Volfbeyn[1], Katie Garland[1], Brendan McNeely[2], Marija Bucevska[1], Young Ji Tuen[1], Neil Chadha[2], Jugpal Arneja[1]

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[2]Division of Otolaryngology – Head and Neck Surgery, BC Children's Hospital, University of British Columbia, Vancouver, BC

Background: The timing of cleft lip and cleft palate repair varies between institutions. In Canada, lip repair is generally completed between 3 to 6 months old and palatoplasty is performed by 1 year of age. To date no current study has directly compared the efficacy and outcomes of tympanostomy tube placement at the time of lip repair versus at the time of palate repair in children with cleft lip and palate. The goal of this pilot study was to compare clinical quality of life and hearing outcomes in patients with cleft lip and palate that received tympanostomy tubes at lip repair versus palate repair.

Objective: To assess the safety of tympanostomy tube placement at the time of lip repair in patients with cleft lip and palate.

Methods: The current study was a prospective randomized controlled trial at a single pediatric centre. Ten patients with a diagnosis of incomplete or complete non-syndromic cleft lip and palate and no previous surgery for lip repair or tympanostomy tube placement were included. All patients were enrolled between 0-12 weeks old. Patients were randomized into one of two groups; the "Early Group" received tympanostomy tubes at the time of lip repair whereas the "Late Group" received tympanostomy tubes at palate repair. Basic demographic information, audiology reports, and adverse events were collected for all patients. Independent sample t-tests were performed with a p-value of less than 0.05 considered significant.

Results: Ten patients were included; five patients in each group. In the Early Group, 80% were male, 80% had a complete cleft of the lip and palate, 80% had a left-sided cleft, and 20% had a bilateral cleft. In the Late Group, 40% were male, 100% had a complete cleft of the lip and palate, 40% had a left-sided cleft, 40% had a right-sided cleft, and 20% had a bilateral cleft. Average age at lip repair was 6.20 months (SD 1.96) in the Early Group and 4.28 months (SD 0.88) in the Late Group. The average age at palate repair was 12.7 months (SD 0.83) in the Early Group and 11.1 months (SD 1.33) in the Late Group. On average, patients in the Early Group required 0.7 (SD 0.45) tube replacements compared to 0.2 (SD 0.45) replacements in the Late Group ($p<0.01$). There was no significant difference between the two groups for number of follow-ups relating to their tympanostomy tubes ($p=0.37$), the incidence of otorrhea ($p=0.17$), or objective hearing assessment using the pure tone average post tympanostomy tube placement ($p=0.78$).

Conclusions: Patients who received tympanostomy tube placement at lip repair required more tube replacements than patients that received them at the time of palate repair. There was no significant difference in the rate of otorrhea, number of follow-up visits, or pure tone average on objective hearing assessment. A multi-center randomized controlled trial is warranted to further investigate this research question.

Jump Back to Abstract List

A7

Title: Reducing Surgical Site Infections in Patients Undergoing Pancreatectomy. A Quality Improvement Initiative

Authors: Richard Gilbert[1], Michael Bleszynski[1], Stephanie Chartier-Plante[1], Stephen Chung[1], Graziano Oldani[1], Maja Segedi[1], Megan O'Brien[2], Kristen Kidson[3], Allison Mah[4], Peter Kim[1]

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Background: Nearly 75 patients undergo pancreaticoduodenectomy (Whipple procedure) at Vancouver General Hospital every year. Historical data shows that 52% of patients will develop a surgical site infection (SSI). Patients who develop SSI following pancreaticoduodenectomy experience increased length of hospital stay and worse quality of life. This prolonged recovery often delays their ability to receive adjuvant chemotherapy and can impact their overall survival. Previously published local data from our group demonstrates that over 80% of patients undergoing pancreaticoduodenectomy do not receive appropriate prophylactic antibiotics at the time of surgery.

Objective: To reduce surgical site infections by 50% in patients undergoing pancreaticoduodenectomy at Vancouver general hospital by January 2024 (Target = 26% from 52%)

Methods: We will thus perform a quality improvement project to ensure all patients receive appropriate antibiotic coverage at the time of their surgery. Our goal is for 95% of patients to receive Piperacillin-Tazobactam at the time of their surgery. Outcomes will include rates of surgical site infection. Balancing measures will include rates of opportunistic infections.

Results: From January 1, 2023, to September 1, 2023, 55 patients underwent pancreaticoduodenectomy. 50 (91%) patients received appropriate antibiotics and 15 (27%) developed a surgical site infection. Risk factors for SSI included preoperative biliary drainage (93% SSI vs. 30% no SSI) and incorrect antibiotic dosing (53% SSI vs 95% no SSI). There were no observed opportunistic infections during this time period.

Conclusions: We were able to reduce surgical site infections in patients undergoing pancreaticoduodenectomy by 48% with our quality improvement initiative. We have also identified a subset of patients that are at high risk for SSI and can be targeted for additional interventions.

Jump Back to Abstract List

A8

Title: The Carbon Footprint of the Vascular Surgery Operating Room

Authors: Ningzhi (Tony) Gu, MD., Jerry C.L. Chen, MD., MSc., FRCSC
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Background: Climate change is the single greatest threat to global human health, contributing to changes in disease patterns, water and food insecurity, vulnerability in shelter and human settlements, climatic volatility, and population growth and migration. Healthcare generates between 8 - 10% of all greenhouse gas emissions. Surgical care accounts for a significant proportion due to equipment and drug use, sterility requirements, and life support systems. There are currently minimal data to characterize this carbon consumption. This data is integral to identifying opportunities to reduce our footprint.
Objective: The purpose of this study was to determine the carbon utilization of common vascular interventions and to identify variables associated with increased carbon utilization.
Methods: We conducted an observational study of all elective and urgent vascular surgery procedures performed at Vancouver General Hospital in a two-month period in 2023. All waste generated was weighed and cataloged per hospital waste practices. Additional characteristics of the procedures were also collected. Carbon utilization was determined by applying DEFRA greenhouse gas life-cycle conversion factors to the mean waste produced. These factors consider greenhouse gas emissions generated in the initial production and eventual disposal. Variables associated with increased carbon production were evaluated by linear regression models with log-transformed outcomes.
Results: 58 procedures were included. Complex endovascular aortic procedures were the most carbon intensive (69.35kg CO2), equivalent to driving a medium-sized vehicle 369 kilometers. Dialysis access procedures (11.5kg CO2) and minor amputations (10.6kg CO2) were the least carbon intensive. Open surgical bypasses (28.4kg CO2) and cerebrovascular procedures (20.3kg CO2) produced a moderate amount of carbon. Endovascular interventions were 51% more carbon intensive than open interventions (95% CI: 28%, 77%; $p < 0.01$). Aortic interventions were 63% more carbon intensive than non-aortic interventions (95% CI: 28%, 109%; $p<0.01$). In both models, there was nearly a half percent increase in carbon generated for each minute of additional operating time ($p<0.01$). Blood loss was not consistently associated with carbon utilization.
Conclusions: Climate change is a major threat to human health. The environmental impact of day-to-day surgery is rarely considered but clearly significant. More invasive procedures were associated with increased carbon utilization, particularly if they are endovascular or aortic. The duration of the case, but not blood loss, was also associated with increased utilization. Further work should be done to identify additional variables and therefore opportunities for carbon reduction.

Jump Back to Abstract List

A9

Title: Routine Thymectomy in The Surgical Treatment of Renal Hyperparathyroidism should be Abandoned

Authors: Michael Y Guo[1], Michal Pillar[2], Neraj Manhas[1], Adrienne Melck[3].
Affiliations: [1]Division of General Surgery, University of British Columbia, Vancouver, BC
[2]School of Medicine, University of British Columbia, Vancouver, BC
[3]Department of Endocrine Surgery, St. Paul's Hosputal, Vancouver, BC.

Background: The role for routine thymectomy at the time of parathyroidectomy in patients with renal hyperparathyroidism (HPT) is unclear with few studies to guide decision-making. Patients with renal HPT are more likely to have supernumerary parathyroid tissue in the thymus, so proponents of thymectomy tout lower risk of recurrent disease, but thymectomy may increase surgical risks.

Objective: We aim to compare rates of recurrent disease and complications in patients who underwent subtotal parathyroidectomy with and without thymectomy for renal HPT.
Methods: A cohort of patients who underwent surgical treatment for renal HPT between Jan 1, 2010 to Oct 1, 2022 was retrospectively reviewed at a tertiary endocrine surgery referral center. Presence of parathyroid tissue in resected thymus glands was identified by reviewing pathology reports. A multivariate logistic regression was used to compare baseline characteristics, recurrence rates, surgical complications between those who underwent thymectomy vs. no thymectomy.
Results: Of 107 patients who underwent subtotal parathyroidectomy (64 for secondary HPT and 43 for tertiary HPT), 29 (27.1%) underwent concomitant thymectomy. Recurrence occurred in 15 patients (14%) and occurred almost exclusively in patients with secondary HPT with 1 exception. Thymectomy did not affect recurrence (OR: 0.33, 95%CI: 0.06-1.28, $p=0.14$), but was associated with permanent hypoparathyroidism (OR: 4.62, 95%CI: 1.67-13.18, $p=0.003$). Incidence of other operative complications was rare (0 hematomas, 1 recurrent laryngeal nerve injury). Fewer parathyroid specimens and secondary HPT increased the odds of thymectomy ($p=0.04$). Parathyroid glands were found in 6 thymectomy samples (20.7%).
Conclusions: The therapeutic yield of routine thymectomies is questionable due to the lack of association with disease recurrence, increased likelihood of permanent hypoparathyroidism, and the presence of parathyroid tissue in only a small portion of the resected specimens.

Jump Back to Abstract List

A10

Title: Spasmodic Dysphonia Patients' Perception of Pain with Botulinum Toxin Injections

Authors: Austin Heffernan MD[1] and Amanda Hu MD FRCSC[1]
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Background: Spasmodic dysphonia (SD) is a voice disorder characterized by the involuntary contraction of laryngeal intrinsic muscles. There are three subtypes, adductor, abductor, and mixed SD which have a prevalence of 5.9 per 100,000 people. This condition causes patients to have a lower quality of life and more depressive symptoms, hyposmia, hypogeusia and insomnia than the general population. Electromyography (EMG) guided laryngeal botulin toxin (botox) injections is the gold standard treatment for this condition. This therapy is provided to awake patients without anesthesia. It has an associated failure rate of 6 to 30.2% which has been associated with patient reported pain. Interestingly, no previous studies have explored the patient reported pain associated with EMG guided laryngeal botox injections.
Objective: To evaluate spasmodic dysphonia patients' perception of pain associated with laryngeal botox injections and to determine factors associated with higher pain scores relative to other included patients.
Methods: Prospective cohort study. Adult patients with adductor spasmodic dysphonia that presented to a tertiary laryngology practice for BTX injections were recruited from March to July 2022. Patients completed the visual analog scale (VAS) pre-procedure to quantify predicted pain. Ten minutes post-procedure they completed VAS and the short form McGill Pain Questionnaire (SF-MPQ). Factors that may affect pain were extracted from charts. Descriptive statistics, univariate, and multivariate analyses were conducted (alpha = 0.05).
Results: One hundred and nineteen patients were included (63 ± 14yo, 26% Male). SF-MPQ reported mild pain (4.12 ± 4.05 out of 45) with a pain intensity of none to mild (0.70 ± 0.89 out of 5). Bilateral injections yielded significantly higher SF-MPQ scores (5.19 ± 4.66) than unilateral injections (3.30 ± 3.30) ($p = 0.012$). There was a significant VAS reduction from pre 28.9 ± 24.6mm (out of 10mm) to post 24.5 ± 22.3 ($p < 0.001$). On multiple regression analyses, receiving a bilateral injection significantly ($p < 0.05$) contributed to a model that predicted higher pre-VAS ($p = 0.013$). Bilateral injections ($p < 0.05$) and higher VHI-10 ($p < 0.05$) contributed to a model that predicted higher total SF-MPQ ($p = 0.001$) and affective SF-MPQ ($p = 0.001$) scores. Not being a professional voice user (PVU) significantly ($p < 0.05$) contributed to a model that predicted higher post-VAS ($p = 0.008$) scores.
Conclusions: BTX injections were well tolerated with low pain scores. Risk factors associated with higher relative predicted or experienced pain included bilateral vs unilateral injection, PVU status and higher VHI-10. Utilizing these factors laryngologists could identify patients who may perceive more pain with BTX injections, allowing the practitioner to adjust preprocedural counselling and pain management with the goal of improving the patient experience.
Jump Back to Abstract List

A11

Title: SinoNasal Microbiota Transfer (SNMT) to Treat Recalcitrant Chronic Rhinosinusitis: A Case-Series
Authors: Sandeep K. Gill[1]; Juan C. Hernaiz-Leonardo[1,2]; Thaddeus J. Edens[3]; Athenea Pascual[2]; Chris Tang, MSc[1]; Judy Fan[2]; Andrew Thamboo[2]; Warren Mullings[4]; Saad Alsaleh[5]; Bader M. Alim[2]; Amin Javer[2]; Amee R. Manges[1,6]
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[4] Department of Surgery, University Hospital of the West Indies, Mona, Jamaica
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[6] British Columbia Centre for Disease Control, Vancouver, BC, Canada
Background: Recalcitrant chronic rhinosinusitis (rCRS) patients who fail standard treatment have few therapeutic options available. Microbiome altering therapies could be a viable treatment option for this patient population.
Objective: To determine the efficacy and safety of a sinonasal microbiota transfer (SNMT) with or without pre-treatment with antimicrobial photodynamic therapy (aPDT) for improving sinonasal endoscopic outcomes and symptom scores in rCRS individuals.
Methods: In this three-arm, open-label, randomized case-series, nine adult rCRS patients were randomized into three groups: SNMT only, aPDT + SNMT, or aPDT only control. Patients allocated to aPDT arms were treated at baseline (i.e., day 0) and on day 7. SNMT procedures were done on days 7 and 8. The primary outcome was the improvement of $\geq$1 pts in the Modified Lund Kennedy (MLK) score at 30 days post intervention. Secondary outcomes included SNOT-22 scores, University of Pennsylvania Smell Identification Test scores (UPSIT), and frequency of adverse events.
Results: Three of the nine recruited patients were randomized into the SNMT arm, four into the aPDT + SNMT arm, and two into the aPDT only arm. Two out of three patients in the SNMT arm improved their MLK scores at 30 days, which increased to 3/3 patients at 45- and 180-days post intervention. None of the patients in the aPDT + SNMT arm improved at 30 days post intervention, but 2/4 patients improved after 45 days. At 180 days post intervention, none of the aPDT + SNMT patients showed any improvement in their MLK score compared to baseline. Finally, the two aPDT only patients had a transient improvement in their MLK scores between 30 and 90 days but reported worse MLK scores compared to baseline after 180 days post intervention. None of the participants exhibited severe adverse events.
Conclusions: Our case series suggests that SNMT alone could be a viable treatment strategy for properly selected rCRS patients. A double-blind, placebo-controlled, randomized trial testing SNMT for rCRS is currently underway.
Jump Back to Abstract List

A12

Title: Development and Validation of the Sinonasal Endoscopic Score (SiNES) for Chronic Rhinosinusitis
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Background: Although there are several endoscopic grading systems for chronic rhinosinusitis (CRS), they are limited in their range and applicability.
Objective: To develop a SiNonasal Endoscopic Score (SiNES) that builds upon the strengths of previous systems while directly addressing their limitations.
Methods: The SiNES system was developed by consensus after multiple rounds of guided discussions. Face, content, and convergent validity were investigated. The system was validated using an independent sample of 79 CRS individuals from two referral centres from September 2021 to February 2022. Each patient underwent a sinonasal endoscopy and filled out multiple PROM questionnaires. Three independent rhinologists graded endoscopic videos using the SiNES and modified Lund-Kennedy (MLK) scores. Inter-rater and test-retest reliability were assessed via the intraclass correlation coefficient (ICC). SiNES and MLK scores were correlated with PROMs using a Spearman correlation.
Results: The resulting SiNES system evaluates independent sinonasal anatomical spaces regarding edema, discharge, and scarring. Face, content, and convergent validity were deemed satisfactory by the study authors and an independent panel of Otolaryngologists. Inter-rater reliability was excellent for the SiNES (ICC [95% CI]: 0.91 [0.87 to 0.94]) and good for the MLK score (ICC [95% CI]: 0.82 [0.73 to 0.88]). Test-retest reliability was excellent for both systems (ICC > 0.9 for all reviewers). No correlation was seen between endoscopic scores and PROMs.
Conclusions: The SiNES system is an accurate and reliable grading framework applicable to all CRS subtypes. It can be utilized in clinical and research settings and improves upon previously published systems.
Jump Back to Abstract List

A13

Title: Thymomatous Myasthenia Gravis after Total Thymectomy at a Tertiary-Care Surgical Centre: a 20-Year Retrospective Review
Authors: **Caroline Huynh**[1,2], Sohat Sharma[1,2], Arthur Vieira[4], Fagun Jain[1,2], Yejun Lee [1,2], Dorsa Mousa-Doust[1], Kristin Jack[5], Michelle Mezei[5], Kristine Chapman[5], Hannah Briemberg[5], Kyle Grant[1], James Choi[1], John Yee[1], Anna McGuire[1,2,3]
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Background: The landmark multicenter Randomized Trial of Thymectomy in Myasthenia Gravis (MGTX) confirmed improved clinical outcomes with thymectomy in patients with non-thymomatous myasthenia gravis (MG). Since then, total thymectomy with medical management has been considered the standard of care. We aim to report our centre's incidence of thymomatous MG as well as thymic and tumor histopathological characteristics, in comparison to those without MG. Remission rates, with or without medical management, will also be reported. We hypothesize that the background thymic tissue and histology of thymoma in thymomatous MG differs than non-thymomatous MG. We also hypothesize that remission rates will be higher in non-thymomatous MG, and in patients with ongoing maintenance for MG.
Methods: A retrospective review of a prospectively maintained database was queried for consecutive thymectomy cases performed at a large tertiary-care centre from 2001-2021 A subsequent retrospective review of the Neurology Department electronic medical record system to collect MG medical management data and follow-up. Univariate and multivariate regression analysis were used, with adjustments for patient and tumor characteristics.
Results: Overall 422 thymectomies were conducted. MG involved 160 (37.9%) cases, with 78 (49%) incident thymomatous MG. Mean age was 54 years (SD 16) and 59% were female. A younger mean age (49.2 vs. 57.8 years, $p<0.0001$) and trend for smaller tumor size (4.2 vs. 5.6 cm, $p=0.08$) were associated thymomatous MG. Germinal hyperplasia ($p<0.001$), and thymoma ($p=0.39$) were more often found with MG ($p<0.001$; $p=0.018$); as was WHO B2 histopathology ($p=0.004$). WHO AB thymoma, thymic cysts and carcinoma were less likely to be seen with MG ($p<0.001$). There was no difference in complete MG remission rate post-thymectomy for thymomatous vs non-thymomatous MG (46.9% vs 53.1%, $p=0.994$).
Conclusions: WHO B2 thymoma as well as germinal cell hyperplasia and cystic lesions were more likely to be associated with MG. There were no difference in remission rates in thymomatous vs non-thymomatous MG. Future research should focus on the role of T-lymphocyte immune response in pathophysiology of thymomatous MG.
Jump Back to Abstract List

A14

Title: Factors Associated with the Surgical Management of Early-Stage Breast Cancer in the Million Women Study
Authors: Nicole Jedrzejko[1,2], Toral Gathani[2,3], Sarah Floud[2], Isobel Barnes[2]
Affiliations: [1]Division of General Surgery, University of British Columbia, Vancouver, BC;
[2]Cancer Epidemiology Unit, Department of Population Health, University of Oxford, Oxford, UK; [3]Department of Breast Surgery, Oxford University Hospitals NHS Foundation Trust, Oxford, UK
Background: Evidence is inconclusive on factors associated with the surgical management of early-stage breast cancer (in situ and Stage 1-2 invasive disease).
Objective: This prospective cohort study investigates the associations of sociodemographic, reproductive, and lifestyle factors on primary surgery (mastectomy versus breast-conserving surgery [BCS]) and post-mastectomy reconstruction (PMR) in the United Kingdom (UK)'s Million Women Study.

Methods: Over 1.3 million UK women completed recruitment questionnaires from 1996-2001 providing information on factors of interest. Prospective follow-up via linked national cancer registries and hospital procedure datasets provided information on breast cancers and their surgical management. Multivariable logistic regression estimated associations in odds ratios (OR) of each factor with surgical outcomes in women with early-stage breast cancer.
Results: Between 1996-2018, 44,872 women underwent primary surgery (76% BCS, 24% mastectomy) for incident in situ (8,236, 18%) or Stage 1-2 invasive breast cancers (36,636, 82%). Adjusting for all other factors, older age was most strongly associated with higher odds of mastectomy over BCS by 64% (adjusted OR 1.64, 95%CI 1.32-2.04) and 80% (aOR 1.80, 1.62-1.99) for women ≥70 years with in situ and invasive cancers, respectively, compared to <60 years. Modest associations with mastectomy over BCS were also observed for higher socioeconomic deprivation, nulliparity, lower body mass index (BMI), smoking, and minimal alcohol intake. PMR was performed in 13% of all mastectomies and was positively associated with menopause hormonal therapy use and increased parity, while participants aged ≥60, with BMI ≥30, and reduced alcohol intake were less likely to undergo PMR. Older age was most strongly associated with lower odds of PMR by 86% (aOR 0.14, 0.08-0.24) and 92% (aOR 0.08, 0.06-0.11) for women ≥70 years with in situ and invasive cancers, respectively, compared to <60 years in final models.
Conclusions: Age at diagnosis was most strongly associated with surgical management in UK women with early-stage breast cancer over 22 follow-up years.
Jump Back to Abstract List

A15

Title: The Evolution and Contributions of the Canadian Journal of Surgery: A Bibliometric Study
Authors: Rachel S. Leong[1], Sam M. Wiseman[1]
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Background: The Canadian Journal of Surgery (CJS) is Canada's longest published surgical journal. For over 66 years it has contributed to significantly advancing the science of surgery, patient care and outcomes through publication of high-quality research. Bibliometric analysis is a method used for discovering publication and citation trends through analysis of scientific data.
Objective: The objective of this study was to perform a bibliometric analysis of all papers published in the CJS since its indexing in 1968, to identify impactful contributions and trends in publication, and thus an overview of its impact in the field.
Methods: Bibliometric data from all publications in the CJS from January 1, 1968 to December 31, 2022 were extracted from the Web of Science Core Collection database. Descriptive and visual bibliometric analyses was performed using Bibliometrix and VOSViewer software, respectively. VOSViewer was used to visualize co-citation and co-occurrence analyses.
Results: There were 6,290 documents, excluding meeting abstracts, published in the CJS during the 54-year study period. The average age of these documents was 28 years, with an average citation per document rate of 9.596 and an annual growth rate of 0.69%. Most of these publications were original papers (n=4,465 documents (70.99%)), reported by Canadian centers (n=3,207 (50.99%)), and from authors affiliated with universities in Ontario (n=4,275). There were 5 classic cited papers published. The most common keywords for CJS papers were management (n=205), surgery (n=215), and outcomes (n=112).
Conclusions: Bibliometric analysis of the CJS provides an overview of the impact and contributions of this journal. We identified the most productive countries, provinces, institutions, authors, and topics. The CJS has, and continues to be, an important part of Canadian surgical discourse through its continued dissemination of quality research.
Jump Back to Abstract List

A16

Title: The Impact of Motivational Interviewing on Hearing Aid Use: A Randomized Controlled Trial
Authors: Alice Q. Liu[1] , Printha Wijesinghe[1], Carol Lau [2], Jane Sun [3] , Charles Fontaine [4], Cole Needham[1], Desmond A Nunez[1]
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Background: Hearing loss is the third leading global cause of disability and is associated with poorer quality of life. Hearing aids are the predominant treatment, however, hearing aid uptake and use rates are lower than the prevalence of disabling hearing loss.
Objective: This study aims to investigate the impact of one-on-one motivational interviewing (MI) sessions on hearing aid use among new adult users.
Methods: A multi-center, prospective, randomized controlled trial with a pre- and post-tests design. New hearing aid users ≥ 18 years of age were recruited from Vancouver, Canada and randomly assigned to a treatment or control group. The treatment group attended a one-on-one MI session delivered by a practicing MI therapist in addition to standard audiological care. The control group received standard audiological care only. Data was collected at baseline and at 1, 3, 6, and 12 month follow-ups. The primary outcomes were hearing aid device-logged hours of use and patient-reported outcomes recorded using the International Outcome Inventory for Hearing Aids (IOI-HA). Student t-test was used for analysis.
Results: 67 participants (mean age 64.2 years, 44.8% female) have been recruited. There was no statistical difference between MI and control cohort for age, gender, average hearing loss in dB, or word recognition score. The majority (71.6%) of participants self-identified as Caucasian and 52.2% already had follow-up that extended to 12-month data. At one month, device-logged hours were 9.0 hours for the left and right ear in the MI cohort and 7.6 hours for the left and right ear in the control cohort ($p = 0.091$ for left ear, $p = 0.081$ for right ear); the IOI-HA was 27.7 in the MI cohort and 26.4 in the control cohort ($p=0.192$). While the MI cohort trended towards higher device-logged hours and IOI-HA scores across all the follow-up time frames (1, 3, 6 and 12 months), none of these values were significant.

Conclusions: Current follow-up data does not demonstrate a significant effect of one-on-one MI on hours of hearing aid use or patient reported quality of life. More patients are being recruited to increase the power of this conclusion.
Jump Back to Abstract List

A17

Title: Program Director Perspectives on the Implementation and Experiences of the Competence by Design Curriculum in Canadian Radiation Oncology Training Programs.
Authors: Emily O'Reilly[1], Paris Ann Ingledew[2], Barbara-Ann Millar[3], Barbara Strang[4], Joanne Alfieri[5], Martin Korzeniowski[6], Meredith Giuliani[7].
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[5]McGill Faculty of Medicine and Health Sciences, Montreal, Quebec.
[6]Kingston Health Sciences Centre, Kingston, Ontario.
[7]Princess Margaret Cancer Centre, Toronto, Ontario.
Background: The Competence by Design (CBD) curriculum is a new model of structuring residency training, introduced in 2017, as part of a shift towards Competency Based Medical Education. It was adopted by Canadian Radiation Oncology (RO) programs in 2019. A number of medical specialty programs have assessed experiences surrounding the implementation of the CBD curriculum; however, to our knowledge this has not been formally assessed in RO residency programs in Canada.
Objective: The purpose of this study was to elicit the perspectives of current and previous RO Resident Program Directors (PDs) on the implementation and experiences of the CBD Curriculum. More specifically, it aimed to examine the implementation, impact on resident assessment and learning environment, administrative considerations, benefits, and challenges.
Methods: The study conducted standardized interviews with current and previous Canadian RO PDs. An Interview Guide was developed to obtain information related to the study question. Thirty-minute virtual interviews were conducted and transcribed. The transcriptions were qualitatively analyzed using thematic analysis, identifying common themes and sub-themes.
Results: The results of this study have demonstrated that the implementation of the curriculum has longitudinally improved with faculty development sessions, following an initial learning curve related to logistical challenges. Increased frequency of feedback has improved resident assessment, balanced with the ongoing challenge of Entrustable Professional Activity (EPA) completion and a higher administrative workload. EPAs have been found to allow for a greater diversity of clinical encounters and increased accountability with the entrustment scale. Specific to RO, CBD is also anticipated to allow for increased exposure to practice management skills while in Transition to Practice and tailoring of training to future practice or fellowship needs.
Conclusions: The emerging themes from the qualitative results of this study reveal signals consistent with existing literature, as well as themes specific to RO. Moving forward, further interviews will be conducted. This will be followed by an iterative analysis with a second coder, member checking for respondent validation, and continued analysis of emerging themes. The insights gained from this study may inform strategies and approaches to improve the curriculum in the future.
Jump Back to Abstract List

A18

Title: Breast Cancer Outcomes of Patients With pT4b Disease: A Population-Based Retrospective Analysis
Authors: Nicolas Siriani-Ayoub[1], Theodora Koulis[2], Lovedeep Gondara[3], Caroline Speers[3], Rekha Diocee[3], Caroline Lohrisch[3,4], Alan Nichol[1,3], Pauline Truong[2]
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Background: Breast cancers with non-inflammatory skin involvement are classified as pT4b in the TNM staging system. With wide variations in tumor size and clinical characteristics among the pT4a-d subgroups, optimal treatment and outcomes in patients with pT4b disease is controversial.
Objective: This study evaluates recurrence and survival outcomes in patients with pT4b tumors compared to other pT4.
Methods: Subjects were 680 patients referred to a Canadian institution with newly diagnosed non-metastatic breast cancer between 2005 and 2015. Clinicopathologic and treatment characteristics, locoregional recurrence-free survival (LRRFS) and breast cancer-specific survival (BCSS) were compared between patients with pT4b (n=354, 52%) to pT4a (n=78, 11.5%) and pT4d (n=248, 36.5%) disease. pT4c tumors (pT4a + b) were excluded to minimize confounding. Multivariable analysis was used to identify variables significantly associated with LRRFS and BCSS.
Results: Median age of pT4a, pT4b and pT4d patients were 63, 63, and 56.5 years, respectively (p<0.001). Among pT4b patients, subtypes were luminal A (24.9%), luminal B (32.5%), HER2-positive (25.7%), and triple negative (12.4%). Corresponding rates were 41.0%, 23.1%, 29.9%, and 15.3% among pT4a patients and 10.9%, 21.8%, 38.7%, and 23.4% among pT4d patients. Patients with pT4a disease had smaller tumors 2.1-5cm (56.4%), while patients with pT4b and pT4d disease had larger tumors >5cm, 55.6% and 43.5%, respectively (p<0.001). Mastectomy was the most common surgical treatment: 69.2% in pT4a, 76.3% in pT4b, and 85.1% in pT4d (p<0.001), with clear margins in 61.5%, 66.4% and 77% of pT4a, b and d cases, respectively (p=0.003). The majority of pT4a, b and d subgroups received chemotherapy and hormone therapy (39.7%, 28.5%, and 25%, p<0.001). Adjuvant radiotherapy was most commonly used in pT4a and b (56.3% and 50.2%), while neoadjuvant radiotherapy was more commonly used in pT4d disease (42.7%); (p<0.001). In pT4a, pT4b and pT4d subgroups, 10-year LRRFS were 85.4%, 85.1% and 82.8%, (p=0.40) and 10-year BCSS were 55.5%, 50.4%, and 47.9%, respectively (p=0.04). Locoregional

recurrence was more common with >=4 positive nodes (p=0.025), positive margins (p=0.005), luminal B (p=0.008), and triple negative subtypes (p=0.003). LRRFS and BCSS were improved with hormone therapy with or without chemotherapy and with adjuvant or neoadjuvant RT (all p<0.05). On multivariable analysis, factors associated with lower LRRFS and BCSS were >= 4 positive nodes, luminal B, and triple negative subtypes, while positive margin was associated with lower LRRFS (all p<0.05).
Conclusions: No significant difference in 10-year LRRFS was observed between pT4b compared to pT4a and pT4d breast cancer. 10-year BCSS was significantly better with pT4a disease. Advanced nodal stage, luminal B and triple negative disease were associated with worse LRRFS and BCSS. Systemic therapy and locoregional RT were significantly associated with better LRRFS and BCSS.
Jump Back to Abstract List

A19

Title: Promoting Sustainable Food Choices in Hospital Cafeterias Using Behavioural Insights
Authors: Karina Spoyalo[1,2], Nicole Viduka[2], Sarah-Jean Dixon[2], Liam Devine[2], Andrea MacNeill[1], Jiaying Zhao[3]
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[3]Department of Psychology, University of British Columbia, Vancouver, BC
Background: Food-related pollution contributes 30% of global greenhouse gas emissions. Encouraging sustainable diets is a priority in combating the climate crisis. Low-carbon foods not only reduce emissions but improve nutrition and health, yet, despite these benefits, changing dietary behaviour remains a challenge. The field of Behavioural Insights (BI) has shown promising results using "nudges" to influence consumer choices and successfully increase sustainable meal purchases across various food service settings. Here, we apply BI to hospitals, where the delivery of sustainable meals would align with a mandate to restore and promote health.
Objective: This study aims to encourage the uptake of environmentally sustainable dishes in a hospital retail setting using two behavioural nudges: salience and availability.
Methods: This two-phase study included a survey of cafeteria consumers regarding sustainable food preferences, followed by a before and after study at two hospital sites: Vancouver General Hospital (VGH) and Lions Gate Hospital (LGH). Cafeteria dishes were classified using a median sustainability cut-off based on protein-related emissions. Foods below the median value (fish, poultry, and vegetarian) were categorized as sustainable, while those above the median value (red meat and shrimp) were categorized as unsustainable. Behavioural interventions included: 1) increasing the salience of sustainable lunch dishes at VGH through attractive posters and physical displays at the hot food counter while simultaneously removing displays of unsustainable dishes, and 2) increasing the availability of sustainable dishes on the lunch menu at LGH. Two weeks of baseline sales data from March 2023 were compared to sales during the three-week intervention period and two-week post-implementation period at each site. A Chi-square test was used to compare sustainable and unsustainable sales.
Results: Survey results (N=1165) indicated that cafeteria consumers identified low availability, high prices, and limited awareness as barriers to purchasing sustainable dishes. During phase two, 3948 and 2831 dishes were purchased at VGH and LGH, respectively. At VGH, two sustainable hot entrée dishes and two sustainable grill dishes were featured each day using the above-described salience techniques. No changes were made to the displays at LGH. At VGH, the availability of sustainable dishes remained constant throughout the study (50% and 71% at the hot entrée and grill stations, respectively). In comparison, at LGH the availability of sustainable dishes increased from 74% at baseline to 82% during the intervention period. At both sites, the sales of sustainable dishes increased significantly between baseline and intervention periods, from 76% to 79% at VGH (p<0.05) and 39% to 48% at LGH (p<0.05).
Conclusions: Altering the choice architecture of hospital retail settings by increasing availability and attractiveness of foods is an effective strategy in promoting the uptake of sustainable dishes.
Jump Back to Abstract List

A20

Title: Influence of Gender on the Delivery of Breast Cancer Care from Diagnosis to Treatment: A Systematic Review
Authors: Sophia Tan[1], Retaj Ramadan[2], A.J. Lowik[3], Kathryn V Isaac[1]
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Background: Breast cancer is a global health burden. Although screening and treatment programs have improved breast cancer survival for Canadians, it is unclear if there is a disparity in cancer burden and care received by transgender and Two-Spirit patients.
Objective: This study aimed to examine the burden of breast cancer in transgender and Two-Spirit populations, explore how gender modality and identity may impact the delivery of breast cancer care, and identify recommendations for the provision of more inclusive, high-quality cancer care in these patient populations.
Methods: This systematic review was conducted based on the PRISMA framework. PubMed/MEDLINE (OVID), Embase (OVID), and Web of Science databases were searched using keywords. Two independent reviewers performed selection and data extraction of studies that met inclusion criteria related to breast cancer in adult transgender and/or Two-Spirit patients.
Results: Of 6,360 articles screened, 46 studies were included, all of which focused on binary-identified trans people, with none addressing nonbinary of Two-Spirit people's experiences of cancer care. Based on this review, there is no clear association between gender affirming hormone therapy and risk of breast cancer care in transgender populations. Patient-provider and system barriers in the delivery of breast cancer care were identified, including lack of trust, gaps in provider knowledge, discrimination, and insufficient population-wide data collection and research. Recommendations based on reported issues in the delivery of breast cancer care include expanding data collection practices and collection to more inclusive of all gender identities and modalities, ensuring cancer screening is a component of all transgender people's healthcare, and providers' respect for and usage of the name and pronouns preferred by the patient to avoid cisnormative assumptions.

Conclusions: Transgender and Two-Spirit populations experience barriers to the delivery of breast cancer care, although the burden of breast cancer may not differ for these populations. Developing effective guidelines that encompass all gender identities and modalities is crucial, given the growing burden of breast cancer among transgender and/or Two-Spirit individuals.

Jump Back to Abstract List

A21

Title: Left Vertebral Artery Revascularization in Distal Aortic Arch Surgery: Comparative Study of Patients with and without Aberrant Left Vertebral Anatomy

Authors: Eimaan Shergill[1]; Farhad R. Udwadia MD, MBE[2]; Maja Grubisic BSc, MSc[3]; Konrad Salata MD, PhD, FRCSC[2]; Jonathan Misskey MD, MSc, FRCSC[2]; Jason Faulds MD, MHSc, FRCSC[2]

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Objective:

Left vertebral artery revascularization is indicated in surgery involving Zone 2 of the aortic arch and is typically accomplished indirectly via subclavian artery revascularization. For aberrant left vertebral anatomy, direct revascularization is indicated. Our objective was to compare outcomes of indirect subclavian artery and direct vertebral artery revascularization for the treatment of aortic arch pathology.

Methods:

A retrospective cohort study was conducted at a single tertiary hospital. Patients who underwent open or endovascular vertebral artery revascularization from 2005 to 2022 were included. Those that underwent direct vertebral revascularization were compared to those that were indirectly revascularized via subclavian artery revascularization. The outcome of interest was a composite outcome (any of death, stroke, nerve injury, thrombosis). Three univariate logistic regression models were fitted to quantify the strength of differences between the indirect and direct cohorts.

Results: A total of 143 patients underwent vertebral artery revascularization during the study period. Median length of admission was 10 days (IQR, 6-20 days). Twenty-one (14.7%) patients underwent direct vertebral revascularization. Demographics were similar between the direct and indirect groups. The incidence of composite outcome, bypass thrombosis and hoarseness were significantly higher between the direct and indirect groups (42.9% vs. 18.0%, p=0.019; 33.3% vs. 0.8%, p<0.0001; 57.1% vs. 18.0%, p<0.001, respectively, Table 1). The direct group was ~3x more likely to experience the composite outcome than the indirect group (odds ratio [OR], 3.41; 95% CI,1.28,9.08); similarly, the direct group was ~6x more likely to have hoarseness compared to the indirect group (OR, 5.88; 95% CI, 2.21, 15.62).

Conclusions: Direct vertebral revascularization was associated with higher rates of bypass thrombosis, composite outcome (death, stroke, nerve injury and thrombosis) and hoarseness. Patients with aberrant vertebral anatomy are at higher risks of these complications compared to patients with standard arch anatomy.

Jump Back to Abstract List

A22

Title: Impact of Device Representatives in the Operating Room on Clinical Outcomes during Standard Infra-Renal Endovascular Repair of Aneurysm (EVAR)

Authors: Farhad Udwadia MD, MBE[1], Laveniya Kugathasan BSc[1], Raja Choudhary[1], Sally HJ Choi MD[1], Gary K Yang MD, PhD[1,2]

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Objective:

To review the association between the presence of device representative in the operating room with peri- and post-operative EVAR outcomes.

Methods:

A retrospective case-control study was carried out for patients undergoing standard infra-renal EVARs at a single institution from 2019-2022. EVARs for which endograft device representatives were present were compared to those without. Demographic and comorbidity data between the two groups were compared, as well as peri-operative data including surgical time, fluoroscopy time, the utilization of extra endografts/stents and the presence of endoleaks at the 6-week appointment. Mortality and the presence of endoleaks at the 6-month visit were also assessed.

Results:

A total of 90 standard EVARs were analyzed in the 3-year period. Sixty-four surgeries were carried out with device representatives present. Age (77 +/- 1; both groups), sex (92.1% male vs 92.3% male) and comorbidities were not significantly different between the two groups (Table 1). Surgeries with device representatives present had similar surgical time (76 +/- 5 vs 71 +/- 4 min; p = 0.60) and total fluoroscopy time (16 +/- 1 vs 16 +/- 2 min; p = 0.95) compared to the group without. There was a trend towards lower rates of additional endograft/stent implantation (9.3% vs 15.3%) and a shorter length of stay (2.2±0.3 vs 3.8±2.1 days, p = 0.25) with device representatives present, but this was not statistically significant (Table 2). Follow-up comparison looking at mortality, Type 2 endoleak presence at the 6-week and 6-month mark were also comparable.

Conclusion:

Device representatives provide important technical and clinical support to OR staff. The benefit of their active presence needs to be balanced with ethical concerns regarding conflicts of interest and patient privacy. In our study, we did not identify any statistically significant difference in clinical outcomes between standard infra-renal EVARs performed with or without device representatives.
Jump Back to Abstract List

A23

Title: Planetary Health Courses around the World: An Environmental Scan
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Background: The operating room is a significant contributor to climate change and has detrimental effects on health. However, surgeons, trainees, and OR staff are unaware of the severe impacts of unsustainable OR practices on the environment. Studies support planetary health in clinical education, but there is no data on the availability and structure of planetary health courses.
Objective: This environmental scan aims to discover available courses, compare curriculum content, and examine whether courses are available in countries that are most polluting and most vulnerable to climate change.
Methods: Publicly available curricula were reviewed on websites of the top ten universities from each region (Africa, Asia, Australia/New Zealand, Europe, Latin America and North America), based on US News 2022-2023 Universities rankings. The characteristics evaluated included: learning objectives and summary content of the course, available languages, whether the country is most polluting or most vulnerable to climate change (according to Concern and Carbon Brief websites), cost and duration, type of course, and if there was any approach to the relationship between surgery and planetary health.
Results: Sixty universities were analyzed. 13 courses were found, with 0 in Africa and Asia, 2 in Australia/New Zealand, 5 in Europe, 3 in Latin America, and 3 in North America. 12 courses (92.30%) provided strategies for action, but none addressed the relationship between planetary health and surgery. 10 courses (76.92%) were available only in English, 1 (7.69%) in Portuguese, 1 (7.69%) in Spanish, and 1 (7.69%) in both English and Portuguese. 7 courses were based in highly polluting countries (58.33%), but 0 were found in countries most vulnerable to climate change. Cost varied between courses, with 4 (30.76%) courses being free and the most expensive being £27,000. The duration of the course varied from 4 days to 1 year. The course types included 4 (30.76%) post-grad courses, 3 (23.07%) online courses, 2 (15.38%) for medical students and 2 (15.38%) for health professionals.
Conclusions: The implementation of planetary healthcare courses in clinical curricula to educate students and the current workforce is essential for the proper implementation of sustainable initiatives for Planetary Health and to reduce carbon emissions from hospitals. Further research is needed to expand course availability to countries most vulnerable to climate change and to develop course frameworks with more information about mitigating the environmental impacts of surgery.
Jump Back to Abstract List

A24

Title: Multiple Positive Imaging Tests are Often Redundant when Diagnosing Acute Appendicitis: A Real-World Analysis of More Than 27,000 Cases
Authors: Akie Watanabe[1], Michael Guo[1], Christina Schweitzer[1], Sam M. Wiseman[1]
Affiliations: [1]Department of Surgery, University of British Columbia, Vancouver, BC
Background: Obtaining multiple diagnostic imaging tests for acute appendicitis may be unnecessarily costly.
Objective: This study evaluates the utility of multiple (>1) positive imaging tests (MPIT) when diagnosing acute appendicitis.
Methods: Patients undergoing emergency appendectomy diagnosed with ultrasound, CT, and/or MRI were included from the American College of Surgeons National Surgical Quality Improvement Program (2016-2019). Associations between number of positive imaging tests (only 1 positive (1PIT) vs. MPIT), demographics, and final pathology (acute appendicitis, normal appendix, other pathology including appendiceal tumor, etc.) were explored using binary or multinomial logistic regression. MPIT costs were estimated using Medicare data.
Results: Amongst 27,516 patients undergoing appendectomy, 2% had MPIT, of which 2% had a normal appendix and 4% had other final pathology. Adjusting for baseline characteristics, those who underwent MPIT (vs. 1PIT) had similar odds of having a normal appendix (OR 1.53, 95% CI 0.83-2.82, p=0.17), but significantly higher odds of other pathology (OR 2.74, 95% CI 1.72-4.33, p<0.001), compared to acute appendicitis, on final pathology. MPIT was more common amongst patients who were younger (OR 0.98, 95% CI 0.98-0.99, p<0.001) and female (OR 0.61, 95% CI 0.51-0.73, p<0.001) but other final pathology was more likely in patients who were older (OR 1.01, 95% CI 1.00-1.01, p=0.001) and female (OR 0.59, 95% CI 0.50-0.69, p<0.001). MPIT was associated with an additional cost of $209.41 USD per patient.
Conclusions: MPIT may add value for older female patients who have suspected other appendiceal pathology; however, careful consideration should be given to balance diagnostic yield with unnecessary resource utilization from redundant imaging.
Jump Back to Abstract List

A25

Title: The Role of Breast Implant Surface Texture in the Development of Capsular Contracture and Breast Implant Associated Anaplastic Large Cell Lymphoma: A Review of Cellular and Molecular Pathways
Authors: Hannah Wells[1], Jenny C.C. Yang[1], Emma Nicholson[1], Kathryn V. Isaac[1]
Affiliations: [1]The Division of Plastic Surgery, Department of Surgery, University of British Columbia
Background: Implant-based breast reconstruction may be associated with long-term morbidity, including Capsular Contracture (CC) and Breast Implant Associated Anaplastic Large Cell Lymphoma (BIA-ALCL). Implant surface texture has been implicated in the development of

both CC and BIA-ALCL. To mitigate the risk of these capsular diseases, implant surface texture has been altered and can be classified as: smooth, microtextured, and macrotextured.
Objective: This study aims to provide a comprehensive summary of current evidence on the influence of implant surface texture on cellular and molecular mechanisms involved in the etiopathogenesis of CC and BIA-ALCL. The results of this study will be used to inform mathematical modeling of CC etiopathogenesis at a cellular and molecular level.
Methods: This scoping review was conducted in accordance with the methodological framework set out by Arksey and O'Malley. The following databases were used: MEDLINE (ovid), Embase (ovid), Web of Science, and Scopus. Inclusion criteria were: studies published in English and examining a molecular or cellular pathway by which implant texture leads to CC or BIA-ALCL. Excluded articles were reviews and those examining solely the clinical presentation of CC or BIA-ALCL.
Results: Etiologies of CC include prolonged duration of inflammation, increased myofibroblast density, parallel arrangement of collagen fibers, and biofilm formation. Smooth implants are associated with lower collagen density in a parallel arrangement, reduced thickness of capsules, and reduced sheer frictional force when compared with textured implants. Microtextured implants appear to trigger a reduced macrophage response and decreased fibroblast activation as compared to smooth and macrotextured surfaces. Bacterial counts on microtextured and smooth surfaces are also significantly lower than that of macrotextured surfaces. Both micro- and macrotextured implants have increased quantities of matrix metalloproteinases and activation of TNF-α pathway, as compared to smooth implants with increased activation of the TGF-β1 pathway. Evidence supporting the higher rate of CC seen with smooth implants includes parallel collagen arrangement and increased activation of TGF- β1. Etiopathogenesis of BIA-ALCL is associated with increased T-cell activation and oligoclonal expansion, JAK/STAT signaling pathway, and possible bacterial induced inflammation.
Conclusions: Implant surface texture alters the cellular and molecular mechanisms in the chronic inflammatory process leading to CC and BIA-ALCL. Microtexturization may be superior to macrotexturization due to the reduced immune response and biofilm formation. Given the complex biological system of cellular and molecular events in CC and BIA-ALCL, a mathematical model integrating these influences may be optimal to deduce the etiopathogenesis.
Jump Back to Abstract List

A26

Title: The Impact of Extracellular Vesicles Derived from Lung Adenocarcinoma Cells on Cancer-Associated Fibroblasts Differentiation
Authors: Jessica Trejo[1], Rebecca Towlee[1], Cathie Garnis[1,2]
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Background: Lung cancer is the leading cause of cancer deaths worldwide, largely due to metastasis. Its main subtype is lung adenocarcinoma (LAC). Communication between cancer cells and cells within the tumor microenvironment, such as fibroblasts, can promote metastasis. This interaction can be mediated by extracellular vesicles (EVs) transferring bioactive cargo. Thus, we hypothesize that fibroblasts can be activated into cancer-associated fibroblasts (CAFs) by LAC-derived EVs through specific pathways.
Objective: The aim of this study is to identify the impact of EVs derived from LAC cells in lung fibroblasts
Methods: For EV isolation, conditioned media derived from H2073 and H1437 LAC cell lines went through ultracentrifuge cycles after debris removal. Then, Nanoparticle Tracking Analysis was used for quantification and size characterization and EV-associated markers were assessed by western blot (WB). For lung fibroblast activation, H6013 primary cells were treated with 1xPBS, TGFB (10 ng/ul) or EVs ($7.13x10^{11}$) every 24 hours over 3 days. Protein (for WB) and RNA (for gene expression profiling) were harvested 24 hours after treatment. RNA was extracted using the Qiagen miRNeasy kit and sequenced by Illumina NextSeq2000.
Results: Most vesicles produced by both cell lines were between 50 and 250 nm in diameter indicating isolation of mostly exosomes. Fibroblasts treated with TGFB or EVs had an increase in CAF markers (mainly α-SMA), especially in the EV group compared to the PBS treatment group. The activated fibroblasts shared differentially expressed genes in the TGFB and EV treatments; however, there were some genes only deregulated in the EV-treated group, indicating a unique pathway to CAF activation.
Conclusions: LAC EVs have a role in CAFs differentiating and may do so using an unconventional pathway. Further understanding of the genes distinct to the EV-treated fibroblasts could lead to the identification of novel targets involved in CAF activation, and thus aid in the development of novel therapeutics that could improve patient outcomes.
Jump Back to Abstract List

A27

Title: Differentially Expressed miRNA Expression Levels in Paired Serum and Plasma Samples of Patients with Sudden Sensorineural Hearing Loss
Authors: Reyhaneh Abgoon[1,2], Printha Wijesinghe[1,2], Hakha Behmanesh [2,4], Cathie Garnis[1,5], Desmond A Nunez[1,2,3*],
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Background: Hearing loss the third leading cause of human disability is increasingly prevalent. It is much more often acquired than genetic in origin**.** Sudden sensorineural hearing loss (SSNHL) is a type of acquired idiopathic hearing loss. Some small, non-coding RNAs, microRNAs (miRNAs) have been found to be differentially expressed in SSNHL patients' serum compared to controls. miRNAs are transmitted in both. There is conflicting evidence on the scope and scale of miRNA expression in serum and plasma in normal individuals and in patients with myocardial infarcts. The relative expression levels of miRNAs in the serum and plasma of patients with SSNHL is unknown.

Objective: We sought to determine if there are differences between the serum and plasma expression levels of miRNAs previously identified to be differentially expressed in SSNHL patients (miR-128-3p/-132-3p/-375-3p/-590-5p/-30a-3p/ -140-3p/-186-5p/-195-5p).
Methods: Serum and plasma of adult SSNHL patients were collected at presentation or during subsequent clinical follow-up. Total RNA including miRNAs were extracted using miRNeasy Mini Kit, reverse transcribed with a cDNA synthesis kit utilizing a preamplification step and quantified in real-time PCR machine. Relative miRNA expression levels normalized to hsa-miR-191-5p were calculated using the delta Ct method ($2^{\Delta Ct}$). Mean expression levels of the miRNAs of interest were compared between serum and plasma with paired t-test (SPSS version 26).
Results: Paired serum and plasma samples from 17 (9 male) SSNHL patients' (mean age 51.9 years, Std. deviation 13.9 years) were analyzed. There was no inter-group difference in the mean plasma and serum expression levels of miR-128-3p/-132-3p/-375-3p/-590-5p/-30a-3p/ -140-3p/-186-5p/-195-5p.
Conclusions: Plasma or serum samples are equally suitable for studies of potential miRNAs as SSNHL disease markers.
Jump Back to Abstract List

A28

Title: Child Life Specialists in the Treatment of Acute Pediatric Burns: A Systematic Review
Authors: Knight, Paige,[1] Kore, Zoe,[2] Hynes, Sally[1,3]
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[3]Department of Pediatric Plastic Surgery, British Columbia Children's Hospital, Vancouver, BC
Background: Children undergoing acute burn care may experience pain and anxiety affecting their ability to tolerate wound care procedures. Non-pharmacological support, including Child Life Specialists (CLS), may compliment pharmacological treatments in both inpatient and outpatient settings to reduce pain and anxiety. CLS support is particularly relevant in pediatric burn care; however, there is a paucity of literature on the impact of CLS interventions for pediatric burn care.
Objective: This review aims to synthesize the current understanding of CLS in pediatric burn care and inform future research on the role of CLS.
Methods: A systematic review of peer reviewed databases (Embase, CINAHL, MEDLINE, Scopus) and gray literature (Google Scholar, Proquest, Papers First) was conducted up until 28 April 2023. Search terms included 'burn care' and 'child life specialist*.' Included studies focused on acute burn care and patient centered outcomes as primary outcomes, and non-clinical studies, such as reviews, were excluded. The protocol was published on PROSPERO, and PRISMA guidelines were followed. Data on study type, burn characteristics, pain, and anxiety were extracted and analyzed descriptively.
Results: Seventy-one unique studies were found. Five publications (three peer reviewed articles and two conference abstracts) were included. Across the five included publications (n=226) patient median/mean age ranged from 2.2 years to 7.8 years old. Two studies had a control group (n=121). There was incomplete reporting of burn characteristics. Mean/median TBSA ranged from 0.5% [IQR 0.5,2.0] to 9.17% (SD 10.25), with the upper extremity being the most frequently reported burn location (up to 66.7% of patients). CLS interventions included both inpatient and outpatient settings. Three studies reported a combination of pharmacological analgesia and CLS during burn care. CLS implemented interventions included distraction with electronics and/or toys (4/5), music (1/5), and directed play (1/5). Patient and parent perceptions of pain and anxiety were collected via validated measures. For the two studies with control groups, CLS interventions were associated with a reduction in pain. There was no statistically significant reduction in anxiety found.
Conclusions: This systematic review identified few published studies on the effect of CLS interventions in pediatric burn care, with heterogeneity in patient population and outcome measures. CLS interventions were associated with reduced pain in children undergoing acute burn care. Although we did not find a statistically significant reduction in anxiety, authors reported insufficient statistical power. Higher powered studies examining the role of CLS in pediatric burn care are needed to further elucidate the effect of CLS on pain and anxiety. Preliminary research supports the role of CLS interventions in reducing pain in pediatric burn care. We hope these findings stimulate further research, which may provide the evidence needed to fund CLS as a permanent member of multidisciplinary pediatric burn care teams.
Jump Back to Abstract List

A29

Title: Screening for Nephrolithiasis in Patients with Primary Hyperparathyroidism
Authors: Taryn Zabolotniuk[1], Michelle Kwon[2], Sam Wiseman[3]
Affiliations: [1]University of British Columbia General Surgery PGY-3. [2]University of British Columbia 3rd Year Medical Student. [3]Division of General Surgery, University of British Columbia, Vancouver, BC.
Background: Primary hyperparathyroidism (PHPT), characterized by excessive secretion of parathyroid hormone, is a known risk factor for nephrolithiasis. Studies have demonstrated that asymptomatic nephrolithiasis is found in up to 25% of patients with PHPT. However, there are currently no clear recommendations regarding screening for nephrolithiasis in patients with primary hyperparathyroidism, nor is it clear what proportion of asymptomatic screen-detected kidney stones result in urologic intervention. This retrospective chart review aimed to investigate the prevalence, characteristics, and management of nephrolithiasis in patients diagnosed with PHPT.
Methods: Medical records of patients who underwent parathyroidectomy for PHPT at a tertiary hospital in British Columbia between January 2016 and April 2023 were reviewed. Relevant demographic data, laboratory results, imaging reports, and urologic plan were collected. Patients with MEN1, MEN 2, lithium use, and neck radiation exposure were excluded. Descriptive statistics and appropriate statistical tests were utilized to analyze the data.
Results: A total of 414 patients with PHPT were included in the study, 311 female (75%) and 103 male (25%), with 122 (29.5%) of patients having a history of nephrolithiasis. Of the 292 patients with no history of stones, 54 (18.5%) were found to have asymptomatic stones on

renal imaging. Of the 49 patients that were seen by a urologist, 14 (28.6%) of them underwent urologic operative intervention. Serum ionized calcium (P=0.031), serum 25-hydroxyvitamin D (P=0.025) and 24-hour urine calcium (P=0.002) were the only independent predictors of nephrolithiasis.
Conclusions: This retrospective chart review demonstrates a notable prevalence of asymptomatic nephrolithiasis among patients with PHPT with a high proportion leading to urologic intervention. Therefore, highlighting the importance of screening for nephrolithiasis as part of PHPT workup.
Jump Back to Abstract List

Simultaneous Session B Abstracts

B1

Title: Applications of Natural Language Processing in Otolaryngology: A Scoping Review
Authors: Norbert Banyi[1], Brian Ma[2], Ameen Amanian[3], Arman Abdalkhani[3]
Affiliations: [1]The University of British Columbia, Faculty of Medicine, [2]Department of Cellular & Physiological Sciences, University of British Columbia, [3]Division of Otolaryngology–Head and Neck Surgery, Department of Surgery, University of British Columbia
Background: The application of Artificial Intelligence (AI) in otolaryngology has been a growing topic of interest, with past authors highlighting its potential applications to diagnostics, prognostics, and treatment planning. While these discussions have centered on broad AI applications, there has been more limited exploration of Natural Language Processing (NLP). NLP is a branch of AI that focuses on the machine's understanding, interpretation, and generation of human text and speech. Given the abundance of textual data in otolaryngology, from clinical notes to research publications, NLP holds promise as a tool to extract insights, optimize clinical workflows, and drive evidence-based practices.
Objective: Our aim is to review the current literature to elucidate the existing applications of Natural Language Processing (NLP) within the field of otolaryngology.
Methods: This study was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-analyses Extension for Scoping Reviews (PRISMA-ScR) checklist. A literature search was conducted on July 5, 2023 for all studies in the PubMed (MEDLINE), EMBASE, SCOPUS, Cochrane Library, Web of Science, and CINAHL databases. The inclusion criteria encompassed articles on the application of language-based models to otolaryngology patient care and research, including all study types, regardless of publication date, and gray literature. Non-relevant and non-English articles were excluded. The same reviewers extracted data from included studies using predefined categories and assigned levels of evidence based on the level of evidence hierarchy adapted from the 2011 Oxford Center for Evidence-Based Medicine (OCEBM) Classification.
Results: 78 of the 616 records identified by our search strategy were considered for full-text review following title and abstract screening, ultimately yielding 64 studies for inclusion. Thirty-five studies reported on methods of NLP used to aid in research, whereas 29 studies reported primarily on applications of NLP for patient care. The most common application of NLP was data extraction and/or analysis for research purposes (n=29). Other common (suggested) applications include patient education (n=6), data labeling (n=5), triaging (n=4), charting support (n=4), clinical decision support (n=4), EMR improvement (n=4), post-treatment surveillance or follow-up (n=3), and disease detection and diagnosis (n=2). Individual studies reported on the following applications: using voice data to detect laryngeal cancer, physician charting audits, analysis of fellowship applicant-institution fit, detection of spin in research articles, automated matching of patients with clinical trials, and prediction of research article citations. The median year of publication was 2021 (range: 1982, 2023). All studies were OCEBM level 3 (n=10), 4 (n=42), or 5 (n=12).
Conclusions: Our review reveals a growing application of NLP in otolaryngology, predominantly for data extraction and analysis in research, with most publications from the last two years. NLP demonstrates promise in diverse clinical applications, but is still in its infancy. High quality studies will be essential for future innovation and applications of NLP in otolaryngology.
Jump Back to Abstract List

B2

Title: Defining a Framework and Evaluation Metrics for Sustainable Global Surgical Partnerships: A Modified Delphi Study
Authors: Catherine Binda[1], Jayd Adams[2], Rachel Livergant[1], Sheila Lam[2], Kapilan Panchendrabose[3], Shahrzad Joharifard[1], Faizal Haji[1], Emilie Joos[1]
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[2]Faculy of Science, University of British Columbia, Vancouver, BC
[3]Max Rady College of Medicine, University of Manitoba, Winnipeg, MB
Background: Partnerships between high- and low-resourced settings are often created to address the burden of unmet surgical need. Reflecting on the negative, unintended consequences of asymmetrical partnerships, global surgery community members have proposed frameworks and best practices to promote sustainable engagement between partners, though these frameworks lack consensus. This project proposes a cohesive, consensus-driven framework with accompanying evaluation metrics to guide sustainability in GSPs.
Objective: To use expert consensus to build a concrete and realistic framework and checklist to evaluate sustainability in Global Surgery Partnerships (GSPs).
Methods: A modified Delphi technique with purposive sampling was used to build consensus on the definitions and associated evaluation metrics of previously proposed pillars (Stakeholder Engagement, Multidisciplinary Collaboration, Context-Relevant Education and Training, Bilateral Authorship, Multisource Funding, Outcome Measurement) of sustainable GSPs.
Results: Fifty global surgery experts from 34 countries with a median of 9.5 years of experience in the field of global surgery participated in three Delphi rounds. Consensus was achieved on the identity, definitions, and a 47-item checklist for the evaluation of the six pillars of

sustainability in GSPs. 29% of items achieved consensus in the first round, whereas 100% achieved consensus in the second and third rounds.

Conclusions: We present the first framework for building sustainable GSPs using the input of experts from all World Health Organization regions. We hope this tool will help the global surgery community to find non-colonial solutions to addressing the gap in access to quality surgical care in low-resource settings.

Jump Back to Abstract List

B3

Title: Systematic Review of Airway Management in Mediastinal Goiter Surgery: Does Awake Intubation Decrease the Frequency of Airway Complications as Compared to Intubation After Induction of General Anesthesia?

Authors: Lindsay E Booth BSc(Hons)[1], Norbert Banyi[1], Peter Rose MD FRCPC[2], Shamir Karmali MD FRCPC[2], Donald W Anderson MD FRCSC[3], Oleksandr Butskiy MD FRCSC[3]

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Background: Mediastinal goiters can present a challenge for anesthetic management given their location and potential mass effect on the trachea. Awake fiberoptic intubation is the gold standard for intubation of anticipated difficult airways, however it is resource intensive and can be uncomfortable for patients.

Objective: To determine which patients with mediastinal goiters require awake fibreoptic intubation for thyroidectomy, if any.

Methods: A search of Medline, Embase, Web of Science, CINAHL, Scopus, and the Cochrane database for primary research studies reporting intubation techniques and outcomes for patients with benign mediastinal goiters undergoing total, hemi-, or partial thyroidectomies with awake or asleep intubation was performed in consultation with a library information specialist. Data pertaining to patient characteristics, anesthetic characteristics, intubation method, intubation difficulty, and extubation difficulty were extracted.

Results: Twelve studies were included in the analysis and data regarding 1002 unique intubations was extracted. The majority (87%, CI: 75-94%) of intubations were uncomplicated irrespective of intubation method. A random-effects model of subgroup differences between awake and asleep intubation was not statistically significant ($p = 0.95$). 407 (40.4%) patients were reported to have tracheal deviation at the time of intubation, however of the 126 patients who had intubation outcome reported by tracheal deviation status, only 24 (19.0%) had a complicated intubation. There were no failed intubations because of tracheal deviation.

Conclusion: Most patients with mediastinal goiters undergoing thyroidectomy can safely receive post induction intubation. Further study of preoperative factors associated with difficult airways in mediastinal goiter patients is required to further elucidate which patients stand to benefit from awake fiberoptic intubation.

Jump Back to Abstract List

B4

Title: Accuracy and Readability of Ankyloglossia Materials on Social Media

Authors: Lindsay Booth BSc(Hons)[1], Abdullah Aldaihani MD[2], Jacob Davidson MSc [3], Claire Wilson PhD[3], Claire Lawlor MD[4], Paul Hong MD, MSc, FRCSC[2], M. Elise Graham, MD, FRCSC, IBCLC[5]

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4 Department of Otolaryngology, Children's National Medical Center, Washington, DC

5 Department of Otolaryngology-Head and Neck Surgery, Schulich School of Medicine and Dentistry, Western University, London, Ontario, Canada

Background: The diagnosis of ankyloglossia is increasing, in part fueled by social media, leading to more frenotomies and excess medicalization of often normal anatomy.

Objective: To assess the accuracy and readability of social media content on ankyloglossia.

Methods: The top 200 Instagram posts tagged with #tonguetie, #liptie, or #buccaltie were collected using a de novo account. Post metadata, caption and content text were extracted. Accuracy of content was assessed using a 30-point scoring sheet based on clinical practice guidelines and expert consensus. Readability was assessed using the Flesch-Kincaid Grade Level, Flesch Reading Ease, and SMOG scales. Bias was scored using the JAMA Benchmark Criteria.

Results: 70 posts from 67 unique accounts met the inclusion criteria and were analyzed. Most (85.7%) of accounts were business accounts and run by a healthcare professional (69.7%). Only 25% of accounts were run by an IBCLC (International Board Certified Lactation Consultant). Readability of posts corresponded overall to a Flesh-Kincaid Grade Level of 9.1 (7.4 - 11.2). Overall bias score was ¾ on the JAMA Benchmark Criteria. Only 11% of posts contained no misinformation and 82.9% of posts had more than 50% of their content identified as misinformation.

Conclusion: Nearly all Instagram content on ankyloglossia contained misinformation and the reading level was above that recommended for the public. Alarmingly, most content was made by healthcare professionals, however little content was produced by physicians. As the public increasingly looks to social media for medical information, healthcare providers will need to correct medical misinformation.

Jump Back to Abstract List

B5

Title: Implications of Immediate Breast Reconstruction on Wait Times to Adjunctive Therapies: A Regional Canadian Cross-Sectional Study

Authors: Danielle Cohen, BSc[1], Sarika Verma, BSc[1], Karanvir S. Raman, MD, BBA[2], Maya Morton Ninomiya[3], Esta S. Bovill, MD, PhD[4], Christopher Doherty, MD, MPH[4] , Sheina A. Macadam, MD, MSH4, Nancy Van Laeken, MD[4], and Kathryn V. Isaac, MD, MPH[4]

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Background: Breast cancer therapy requires complex coordination of multidisciplinary care, and the addition of immediate breast reconstruction (IBR) further complicates this.

Objective: This study evaluates the impact of IBR on wait times to adjunctive therapies in breast cancer treatment.

Methods: A retrospective chart review identified 337 patients who underwent IBR following total mastectomy for therapeutic breast cancer treatment. Patients were divided into groups: Surgery First (SF) and Neoadjuvant Chemotherapy (NC). Wait times were compared against Canadian and global benchmarks. Further subgroup analysis evaluated the impact of reconstructive modality (alloplastic vs. autologous) on wait times.

Results: SF experienced longer wait times compared to NC with delays of 24 days in biopsy to treatment initiation (62 ± 51 vs 38 ± 28, p<.001), 25 days in first consultation to treatment initiation (47 ± 51.5 vs 22 ± 22, p<.001), and 23 days in transitioning from first to second treatment modality (62 ± 35 vs 39 ± 17, p<.001). Furthermore, 74% of SF, compared to 43% of NC, did not meet the benchmark of receiving surgery within 6 weeks of diagnosis (p<.001). Additionally, 61% of SF and 44% of NC waited longer than 8 weeks for radiotherapy (p=.048). Within subgroups, SF alloplastic had shorter wait times compared to SF autologous for biopsy to treatment by 14 days (60 ± 49.5 vs 74 ± 49, p=.007) and first consultation to treatment by 10 days (43 ± 51.5 vs 53 ± 59, p=.030). For SF alloplastic only 69% did not initiate treatment within 6 weeks of diagnosis compared to 84% of SF autologous patients (p=.014).

Conclusions: IBR patients receiving surgery first, particularly those undergoing autologous reconstruction, experience prolonged wait times. Multidisciplinary centers may help reduce delays in care.

Jump Back to Abstract List

B6

Title: Evaluating the Role of Computed Tomography Angiography in Measuring Great Saphenous Vein Diameter for Lower Extremity Bypass Patency

Authors: Danielle Cohen[1], Ningzhi Gu[2], Abdalla Butt[2], Jerry Chen[2], Jonathan Misskey[2]

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Background: Duplex ultrasound mapping of the great saphenous vein (GSV) is the gold standard for preoperative assessment prior to autogenous infrainguinal bypass.

Objective: The purpose of this study was to determine whether CT Angiography has a similar predictive ability to Duplex for determining short and long-term outcomes for infrainguinal bypass.

Methods: A retrospective case-control study was conducted on all patients with preoperative CT angiography who underwent primary infrainguinal bypass from 2010-2015 with a single segment of GSV. Demographics, procedural variables, and outcomes were collected retrospectively from a prospectively maintained operative database. Pre-operative CTAs were used to measure GSV diameter and short and long-term outcomes were determined using survival analysis.

Results: A total of 259 patients met the criteria for inclusion. The median GSV diameter was 4.18 mm. Grafts measuring ≤3.5mm versus >3.5 mm had a primary patency of 66±6% vs. 65±3%, 48±6 vs. 49±4%, and 30±7% ± 30±4% at 12, 24 and 60 months (P > 0.05). Secondary patency for grafts ≤3.5mm versus >3.5 mm was 94±3% vs. 90±2, 79±5% vs. 76±3%, and 52±6% vs. 48±4%, at 12, 24 and 60 months, respectively (P >0.05). Analyses of primary and secondary patency were unchanged for diameter thresholds of 3mm and 4mm (all P values > 0.05) or when using minimum vein diameter thresholds. Major adverse limb events at the time of the most recent follow-up were similar for grafts ≤3.5mm versus >3.0mm (13.8% vs. 12.6%; P = 0.458).

Conclusions: CT Angiographically determined great saphenous vein diameter was not predictive of primary autogenous infrainguinal bypass patency for short or long-term outcomes. These findings support the continued use of preoperative Duplex ultrasound mapping as the investigation of choice for all preoperative vein adequacy assessments.

Jump Back to Abstract List

B7

Title: Factors Associated with EEG-Based Selective Shunting in Carotid Endarterectomy for Symptomatic Carotid Artery Stenosis

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Background: The standard of care for patients with symptomatic, severe carotid artery stenosis includes carotid endarterectomy (CEA). During CEA, interruption of cerebral blood flow can be avoided by using a temporary shunt across the clamped internal carotid artery. Indications and strategies for shunting remain controversial, as studies have demonstrated similar results in routine, selective, and non-shunting populations. In our institution, we practice selective shunting based on EEG changes during clamping. Few studies have examined factors associated with shunting for carotid artery stenosis, and further paucity of data exists for EEG-based selective shunting for CEA in symptomatic carotid artery stenosis (SCAS).

Objective: To examine the associations between EEG-based selective shunt use in patients with SCAS undergoing CEA and patients characteristics, and postoperative complications.
Methods: A retrospective review prospectively collected data was conducted including all patients who underwent CEA for SCAS at a single institution from January 1, 2010 to December 31, 2020. Patients who were shunted were identified by review of operative reports. Baseline patient characteristics (including sex, age, comorbidities), medication profile (including single antiplatelet therapy, dual antiplatelet therapy, heparin infusion, and cholesterol medications), and postoperative complication rates (including stroke, transient ischemic attack, myocardial infarction, and death) were abstracted from patient medical records. Bivariate analysis with chi-square test was performed to investigate the relationship between each parameter and shunt use. Statistical significance was determined at $p < 0.05$.
Results: During the study period 750 patients underwent CEA for SCAS, of which 169 (23%) patients presented with stroke, while 581 (77%) patients presented with transient ischemic attack (TIA). Of these, 152 (20%) received an intraoperative shunt. There were no significant differences found in the clinical presentation (TIA vs. stroke), patient demographics, and comorbidities between the shunted and non-shunted groups. Baseline single antiplatelet therapy was associated with significantly decreased risk of shunt use (67.1% vs. 78%, $p<0.05$). No other associations were identified between medications and shunt use. No significant differences in postoperative complications were identified between the two groups.
Conclusions: Preliminary analysis of our cohort demonstrated an association between single antiplatelet therapy and decreased shunt use. There was no difference in postoperative outcomes and mortality between shunted and non-shunted patients. Our ongoing data analysis will investigate the relationships between anatomic factors such as an incomplete Circle of Willis, an isolated ipsilateral middle cerebral artery, and contralateral carotid artery stenosis, and the need for shunting.
Jump Back to Abstract List

B8

Title: Real-World Adverse Events after Type 2 Monoclonal Antibody Use in Chronic Rhinosinusitis with Nasal Polyps
Authors: Marisa Dorling BSc[1], Juan Carlos Hernaiz-Leonardo MD[2], Athenea Pascual PhD[2], Arif Janjua MD FRCSC[2], Andrew Thamboo MD FRCSC[2], Amin Javer MD FRCSC[2]
Affiliations: [1]Faculty of Medicine, University of British Columbia, Vancouver, BC
[2]Department of Otolaryngology – Head and Neck Surgery, University of British Columbia, Vancouver, BC
Background: Medical management of chronic rhinosinusitis (CRS) is now guided by inflammatory endotyping. Type 2 inflammation is primarily responsible in CRS with nasal polyps (CRSwNP) and this has led to treatment using monoclonal antibodies. Dupilumab, which binds the IL-4α receptor, and mepolizumab, binding IL-5, are two common mAbs used in Canada. Both biologics have demonstrated similar safety profiles in clinical trials. However, the lack of head-to-head studies warrants further attention.
Objective: To investigate the frequency and nature of adverse events related to type 2 biologic use in patients with CRSwNP, including dupilumab and mepolizumab.
Methods: This is a single-center retrospective study of real-world patient data. Patients were included if they have a diagnosis of CRSwNP, have undergone at least one endoscopic sinus surgery, and have taken at least two doses of dupilumab or mepolizumab. Data collected include demographic information such as age, sex, past medical and surgical history. The primary outcomes are the incidence of adverse events and the types of adverse events observed. Adjusted odds ratio was calculated to compare the two biologics using logistic regression modeling. Risk factors for developing adverse events were also investigated.
Results: 87 patients on dupilumab and 51 patients on mepolizumab were included in this study. 39 (45%) and 10 (20%) patients respectively encountered any adverse events, which differed from phase three trial data. The adjusted odds ratio of the adverse event rates between these two treatment groups was 3.8 (1.5-10.5). The most common adverse events for dupilumab were arthralgia (16%), rash (14%) and conjunctivitis or xerophthalmia (10%). The most common adverse events for mepolizumab were headache (6%) and fatigue (6%). Seven patients on dupilumab and three patients on mepolizumab experienced adverse events leading to discontinuation of therapy.
Conclusions: Dupilumab and mepolizumab have significantly different adverse event profiles. This study contributes to available data to help guide clinicians' decision-making on the use of type 2 biologics in patients with CRSwNP.
Jump Back to Abstract List

B9

Title: Factors Associated with Switching Biologics in Chronic Rhinosinusitis with Nasal Polyps
Authors: Marisa Dorling BSc[1], Masih Sarafan[2], Béatrice Voizard MD FRCSC [2], Arif Janjua MD FRCSC[2], Amin Javer MD FRCSC[2], Andrew Thamboo MD FRCSC[2]
Affiliations: [1]Faculty of Medicine, University of British Columbia, Vancouver, BC
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Background: Biologics have been used increasingly for the treatment of chronic rhinosinusitis with nasal polyps (CRSwNP). However, established guidelines for switching or simultaneous use of biologics do not exist.
Objective: We aimed to identify the clinical characteristics of patients with CRSwNP who required switching biologics and the factors associated with switching biologics.
Methods: This is a single-center retrospective study of real-world patient data. Patients were included if they have a diagnosis of CRSwNP and have undergone at least one endoscopic sinus surgery. Patients who remained on their initial biologic comprised the continuous group. Patients with sequential or simultaneous use of >1 biologic were allocated to the switched group. We compared the characteristics of patients who continued and switched biologics. The time to switch the biologics was assessed by type 2 inflammatory biomarkers and the presence of comorbidities, including asthma, NSAID-exacerbated respiratory disease (NERD), allergic fungal rhinosinusitis (AFRS), using the Kaplan–Meier method and a multivariate Cox proportional hazards model.

Results: 130 patients were included in this study. 27 (21%) patients switched biologics at least once, and 4 patients (3%) underwent two switches. Patients who required switching biologics were characterized by comorbid autoimmune condition, older age, female sex and lower blood eosinophil counts. Time to switch biologics was significantly shorter in the subgroup with comorbid autoimmune condition. The most common reason for switching biologics was inefficacy for either upper or lower airway (37% of switchers), followed by development of an adverse event (19% of switchers).
Conclusions: Comorbid autoimmune condition, female sex and lower blood eosinophils may be risk factors for switching biologics in CRSwNP. This study contributes to available data to help identify patients who may benefit from sequential or simultaneous use of biologics.
Jump Back to Abstract List

B10

Title: Can Histopathological Features Predict Outcomes in Grade 2 Meningiomas?
Authors: Madeline W. Elder[1], Alexander D. Rebchuk[2], Kira Tosefsky[1], Karina Chornenka[2], Stephen Yip[2], Serge Makarenko[2]
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Background: Meningiomas are the most common central nervous system tumor, accounting for 40% of primary intracranial tumors in adults. The WHO Classification of CNS tumors grades these tumors based on the presence of atypical (grade 2) or anaplastic (grade 3) histological features, or their absence (grade 1). Increasing grade is associated with worse recurrence and survival rates. Grade 2 tumors form a heterogeneous class both in their histological features and prognoses, and it remains unclear whether specific histological features can be used to predict outcomes within this class.
Objective: The goal of this study was to determine the prognostic value of atypical histological features currently used for classification of grade 2 meningiomas.
Methods: We used multivariate logistic regression and Cox regression to model the effects of each of seven histological features (proliferative index, brain invasion, small cell change, hypercellularity, sheeting, spontaneous necrosis and prominent nucleoli) on recurrence and survival in a large cohort of patients with grade 2 meningiomas, while controlling for the extent of resection, NF2 status, and exposure to adjuvant radiotherapy.
Results: We included 189 patients with mean age 57.4 +/- 14.6 years, 64% of whom were female. The median follow-up time was 64 (IQR: 20-96) months. There was no correlation between the presence of any atypical histological feature and recurrence or survival at 1 or 5 years, except for the relationship between proliferative index and survival at 1 year (OR = 0.044, 95% CI [0.0016, 0.48], p = 0.021). However, proliferative index was not significantly correlated with recurrence at 1 year (OR = 3.32, 95% CI [0.58-6.3], p = 0.26) or 5 years (OR = 1.98, 95% CI [0.69, 6.22], p = 0.21), or survival at 5 years (OR = 0.43, 95% CI [0.12, 1.66], p = 0.2).
Conclusions: In a large retrospective cohort of patients with grade 2 meningiomas we failed to find any relationship between specific histological features and recurrence or survival outcomes. Although histology has allowed us to broadly stratify meningiomas with the WHO grading system, this suggests it should not be used for prognostication of grade 2 tumors and highlights the importance of pursuing other approaches to prognostication.
Jump Back to Abstract List

B11

Title: Trends in Glioblastoma Outcomes before, during, and after the Covid-19 Pandemic: A Single-Centre Retrospective Analysis
Authors: Ru Guo[1], Serge Makarenko[2], Jessica Chan[3], Manik Chahal[4], Mostafa Fatehi[2]
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Background: Glioblastoma (GBM) is the most common malignant primary brain cancer found in adults. Recent clinical trials report a median overall survival (OS) of 14 months. The standard management of GBM involves surgical resection followed by chemoradiation with temozolomide. We aimed to compare survival outcomes before, during, and after the COVID-19 pandemic for GBM treated surgically at Vancouver General Hospital (VGH).
Methods: The VGH Neurosurgery database was queried for patients diagnosed with a glioblastoma from 2016-2022. Patients were excluded if they had a previous lower-grade glioma that progressed to glioblastoma. Charts were reviewed for patient age, dates of radiological diagnosis, presenting symptoms, date of death, chemotherapy, radiotherapy, and surgical data. Patients were categorized into pre-COVID (01/2016 – 02/2020), COVID (03/2020 – 12/2021), and post-COVID (01/2022-12/2022) groups.
Results: 9 patients were lost to follow-up due to relocation, leaving 283 patients in the final analysis. The pre-COVID (n=184), COVID (n=62) and post-COVID (n=37) groups had a median time from diagnosis to surgery of 6, 6, and 4 days, and a median OS of 8.7, 9.3, and 10.5 months, respectively. Notably, the average annual caseload was 44.2, 37.2, and 37 for the pre-COVID, COVID and post-COVID groups.
Conclusions: Despite the massive healthcare disruptions that COVID-19 caused, the median OS of GBM patients treated at VGH remained steady throughout the pandemic. There was a drop in number of cases during the pandemic that has yet to rebound fully. However, the *time-to-surgery* remained unchanged during all three periods. During the post-pandemic period we have observed a significant increase in median overall survival.
Jump Back to Abstract List

B12

Title: Predictive Factors of Success for Endovascular and Surgical Management of Neurogenic Thoracic Outlet Syndrome
Authors: Meghan He[1], Jenny Wang[2], Snehal Bindra[3], Lauren Jones[4], Sam Ahn[4]

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Background: Selection criteria evaluating candidacy for surgical management of nTOS is not well documented in literature.
Objective: We aim to characterize predictive factors for individuals most likely to benefit from endovascular and open surgical management of Neurogenic Thoracic Outlet Syndrome (nTOS).
Methods: We retrospectively analyzed charts of 444 nTOS patients from 2010-2019 who failed physical therapy (PT) and underwent percutaneous transluminal angioplasty (PTA) of the subclavian and/or internal jugular veins to enlarge the thoracic outlet space. Those who failed to benefit from PTA were further treated with open surgical decompression. We evaluated pre-treatment differences between patients who attained symptom management and patients who failed to improve with PTA and open surgery.
Results:
873 endovascular procedures from 444 nTOS patients (75% women, median age 49 years, range 16-90 years) were identified. 276 (62%) patients achieved symptom management with PTA alone and did not require further treatment. 167 patients were further treated with open surgery, of which 115 (69%) responded positively, 41 (25%) failed to improve, and 11 (7%) were lost to follow up. The mean follow-up period was 22 +/- 23 months.
In comparison to patients who required open surgery, patients who achieved success with PTA alone were significantly older in average age (51 vs 46 years, $p<0.01$), but otherwise comparable ($p>.05$) in gender (73 vs 77%), incidence of previous trauma (13 vs 10%), and incidence of comorbidities such as diabetes (15 vs 13%) and hypertension (45 vs 39%). No significant differences were found in pre-treatment factors for patients who improved versus failed to improve with open surgical decompression. Overall, 88% (391/444) of nTOS patients were successfully managed with this treatment algorithm.
Conclusions: The combination of PT and PTA was effective in avoiding open surgery in the vast majority of patients. Further research is needed to identify specific predictive factors for individuals most likely to benefit from PTA and open surgery for nTOS.
Jump Back to Abstract List

B13

Title: Clinical Outcomes of Medicare-Aged Patients with Neurogenic Thoracic Outlet Syndrome
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Background: Neurogenic Thoracic Outlet Syndrome (nTOS) has been most commonly diagnosed in young adults; however, there is a population of older nTOS patients that has not been well analyzed.
Objective: We compare herein the demographics and outcomes of nTOS patients age ≥65 and <65 years old undergoing physical therapy (PT), percutaneous transluminal angioplasty (PTA), and open surgical management of nTOS.
Methods: We retrospectively analyzed charts of 444 nTOS patients from 2010-2019 who failed physical therapy and underwent PTA of the subclavian and/or internal jugular veins. Those who failed to benefit from PTA were further treated with open surgical decompression. We used Student's t-test and chi square tests to evaluate differences between nTOS patients age ≥65 and <65 years old in risk factors and treatment outcomes.
Results: 873 endovascular procedures from 444 nTOS patients (75% women, median age 49 years, range 16-90 years) were identified. 68 (15%) patients were age≥65 (mean age 46) and 375 were age<65 (mean age 72). There was homogeneity in pretreatment factors among age groups: female sex 66 vs 77%, trauma 13 vs 10%, and previous nTOS interventions 9 vs 9%. However, older patients had a significantly ($p<.05$) higher incidence of comorbid diabetes (27 vs 13%), hypertension (78 vs 37%), and coronary artery disease 14 vs 3%) than patients age<65.
PTA in older patients was significantly more likely to involve more vessels than age<65 patients (4.38 vs 3.91, $p=0.01$), but there was no significant difference in frequency of stenting, thrombolysis or complications in endovascular nTOS management. Sustained symptom improvement with PTA alone was significantly more likely in older than younger patients (56/74=76% vs 246/520=47%, $p<0.01$). Amongst patients who failed to achieve symptom management with PTA alone, older patients were also significantly more likely to benefit from open surgical decompression (82 vs 43%, $p<0.05$) and have a longer average time between PTA and open surgery (179 vs 97 days, $p=0.19$) than younger patients. Overall, PT combined with PTA replaced the need for open surgery in 84% of age≥65 patients and 56% of age<65 ($p<0.01$).
Conclusions: Although nTOS is relatively uncommon in the Medicare-aged population, Older nTOS patients are significantly more likely than younger patients to benefit from PT and PTA. These results suggest that treatment should not be withheld because of elder age.
Jump Back to Abstract List

B14

Title: Automatic Data Extraction of Breast Cancer Pathology Reports Using Natural Language Processing (NLP) and Machine Learning (ML)
Authors: Christy O.T. Kwok[1], Gregory Arbour[2], Annah Zhang[1], Trevor Kwan[2], Jenna Hiemstra[1], Alan Nichol[1,3], Raymond Ng[2], Kathryn Isaac[1]
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[2] Data Science Institute, University of British Columbia, Vancouver, BC,
[3] Department of Radiation Oncology, BC Cancer, Vancouver, BC
Background: Currently, data extraction for breast cancer pathology reports with or without synoptic sections is manual, expensive, and time-consuming. The rise of Natural Language Processing (NLP) and Machine Learning (ML) tools for automated data extraction have unlatched new possibilities; however, automated natural language understanding of pathology reports can still be challenging. Recent advances in Large Language Models (LLMs), like Bidirectional Encoder Representations from Transformers (BERT) and ChatGPT, are able to capture a deeper sense of language context and flow, and shows more promise for more complicated extraction tasks.

Objective: The aim of this study was to determine the feasibility, accuracy, and efficiency of BERT models in automated data extraction of breast cancer pathology reports.
Methods: A total of 1,792 synoptics (structured) and 565 non-synoptics (unstructured) breast cancer pathology reports from the Provincial Health Services Authority were analyzed for patients diagnosed with ductal carcinoma *in situ*, an invasive carcinoma or both. Thirty-two fields of interest (FOIs), including tumor size, histologic type, Nottingham grade, and distance from closest invasive margin, were manually annotated. BERT NLP models were developed using the standard approach of splitting the dataset into non-overlapping training and test sets.
Results: Of the 32 FOIs extracted from structured reports, the BERT model yielded accuracies of 97.1% for FOIs that were explicitly present in the report and 98.5% for FOIs that were not explicitly stated, for an average accuracy of 97.7% across all FOIs. Rules added during troubleshooting of structured reports improved FOI accuracy, such as 'number of foci' from 30.7% to 98.8%. For unstructured reports, preliminary results of FOIs with binary values yielded an average accuracy of 91%.
Conclusions: Current state-of-the-art automated approaches use regular expressions to extract data from pathology reports; however, this approach is only feasible with structured reports. Initial results of the BERT model for structured reports surpass previous algorithm-based approaches using regular expressions (97.7% vs. 95.6%). Preliminary results for the BERT model for unstructured reports approaches human accuracy. The use of BERT models may significantly reduce operating time and expenses for data extraction, and shows promise for both clinical and research uses.
Jump Back to Abstract List

B15

Title: Rapid Review: Humanitarian Organizations and Existing Policy on Sustainable Surgical Care in Conflict and Post- Conflict Zones
Authors: Davy Lau[1], Irena Zivkovic[2], Shahrzad Joharifard[3],Emilie Joos[4], Naisan Garraway[4] **Affiliations:** [1]School of Medicine, University of British Columbia, Vancouver, BC
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Background: In conflict and post conflict settings, healthcare services need to be highly adaptable. Hence, most organizations that provide healthcare services in such settings have developed policies regarding the sustainability of surgical care after their departure. Identification of such current policies will serve as a foundation for improvements in this scope of care, with potential for standardization of approaches in the future.
Objective: To identify current methodologies via case examples in the literature of sustainable surgical care in conflict and post-conflict zones.
Methods: This project consists of a rapid review of the literature focused on humanitarian organizations' current models on sustainable surgical care in conflict settings. Our rapid review screened for articles that had language describing sustainable practices of care delivery. Sustainability was defined as meeting the criteria previously published in a Delphi consensus framework on the sustainability of global surgery partnerships.
Results: Thirty-one articles were included, out of 1057 screened, detailing the sustainable practices of 61 surgical care programs from 17 different organizations in conflict zones. The two most common organizations supporting these programs were MSF (n=32) and ICRC (n=7). Program dates ranged from 1946 to 2023. Regions of conflict included Eastern Europe, the Middle East, Southeast Asia, and sub-Saharan Africa. There were 54 surgical programs (88.5%) that included language demonstrating sustainable practices. However, only 1 program (3.2%) had an explicit policy on sustainability and continuity. The most common pillar of sustainability was "future-focused programming", with all 17 programs mentioning it. Examples included programs enduring over several years and decades of conflict, remaining in these areas post-conflict, investing in infrastructure and equipment, creating permanent centres of care, and successfully transitioning care to local healthcare workers. The least common pillar was "stakeholder engagement", with 11 programs including it. Examples included partnerships with local medical schools and facilities, the Ministry of Health, the local and federal governments, and community leaders.
Conclusions: Overall, while humanitarian organizations have historically adopted several sustainable practices in conflict zones, none of these organizations have a clear sustainability policy. It is pertinent that humanitarian organizations collaborate and create standardized sustainable policies applicable to all surgical work in conflict zones, to ensure long-lasting healthcare systems change in the communities that host these programs.
Jump Back to Abstract List

B16

Title: YouTube Videos as a Tool to Educate Medical Students about Careers in Radiation Oncology: A Characteristics Assessment
Authors: Sandy Lum-Wang[1], Brandon S. Chai[1], Paris-Ann Ingledew[2,3]
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Background: For medical students, choosing a residency specialty is an important and complex career decision that has major implications for their professional and personal lives. As the popularity of using YouTube as a source of information continues to rise, medical students may seek information about potential medical specialties on this social media platform. The high accessibility of YouTube videos may be significant for medical specialties such as radiation oncology which have been traditionally underrepresented in the medical school curriculum.

Objective: This study aims to characterize existing YouTube videos that inform medical students about careers in radiation oncology. We identify potential gaps in the current content that may guide future resource development to improve medical student knowledge of and recruitment into this undersubscribed specialty.
Methods: 6 different search terms related to careers in radiation oncology were entered on YouTube. The top 50 relevance-ranked results of each search were recorded for a total of 600 results. Results that were duplicates or not videos were removed, videos were systematically rank-ordered before being screened against pre-determined inclusion criteria, then the top 50 videos were reviewed by two independent reviewers using a video assessment tool. Quantitative parameters such as view count, like count, and comment count were observed, and thematic analysis was performed on video content.
Results: Publishing countries of the top 50 videos include United States (62%), India (20%), Australia (8%), Canada (4%), Great Britain (2%), Austria (2%), and unspecified (2%). The majority of videos were published predominantly in 2020 or later (76%), with the highest number of videos published in the year 2020 (38%). Preliminary qualitative analysis shows recurring themes reflecting radiation oncology as a career related to "meaningful impact", "compassionate care", "use of technology", "teamwork", and "research".
Conclusions: While thematic analysis continues, early trends exhibit a substantial disparity in distribution among publishing countries, underscoring potential benefits to promoting video publication from a diverse range of countries. This includes encouraging videos produced for Canadian audiences. While a significant portion of the published videos are recent, specifically within the last three years, the notable surge in video production during 2020 suggests that the onset of the COVID-19 pandemic and the resulting social distancing measures may have served as a catalyst for video creation. Therefore, it is important to sustain a steady flow of video publications over time to accurately capture any potential shifts in trends of radiation oncology careers, to ensure that medical learners continue receiving up-to-date information.
Jump Back to Abstract List

B17

Title: Intraoperative and Postoperative Complications for Repeat High Grade Glioma Resections with Concurrent Chemotherapy
Authors: Kenneth Ong BSc[1], Celine Hounjet, MD[1,2], Serge Makarenko, MD, FRCSC[1,2]
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***Background**:* High grade gliomas are aggressive primary brain tumors. Despite advances in treatment, the prognosis for these patients remains poor. Common chemotherapeutic agents used in treatment of this pathology include temozolomide, procarbazine, lomustine, and vincristine (PCV). It is unclear whether chemotherapy should be held during resection for high-grade gliomas (HGG), as perioperative risk profile is not clearly defined.
***Objective**:* To investigate the association between perioperative complication risk and adjuvant chemotherapy.
***Methods**:* We performed a retrospective review of 174 patients who underwent repeat surgical resection of HGGs. Patients were included if they had an initial resection of their recurrent tumour with adjuvant or concurrent chemotherapy administration. We collected the demographics, tumour characteristics, and presenting symptoms of patients. To identify side effects of concomitant chemotherapy agents, we collected information on tumour progression, survival, and peri-operative and post-operative complications. If a patient had multiple surgeries while undergoing concurrent chemotherapy, data was collected for each surgery and included in the analysis independently.
***Results**:* 16 patients met the inclusion criteria, 15 had a single procedure on chemotherapy, and one patient had three procedures with chemotherapy totaling 18 independent procedures. Concurrent chemotherapy drugs included TMZ (14) and lomustine (4). The average estimated blood loss for these surgeries was 180.0 ± 151.9 ml, with a range of 50 – 500 ml. Only 1 patient had an interoperative complication, which was described as severe bradycardia with a period of asystole that stabilized, with the rest of the operation proceeding smoothly. No patient had reported post-operative infection. Seven (43.8%) patients had newly reported postoperative complications which were all transient, lasting less than 7 days.
***Conclusions**:* The results of our case series did not demonstrate an increase in intraoperative or postoperative complications for patients undergoing re-resection for HGGs while on concurrent chemotherapy with TMZ or lomustine. These findings suggest that patients on TMZ and lomustine chemotherapy who need a repeat resection for recurrent high-grade gliomas should consider remaining on their chemotherapy regime as it has been shown to improve recurrence-free survival time in the literature.
Jump Back to Abstract List

B18

Title: COVID-Related Changes in the Epidemiology of Infective Intracranial Complications of Bacterial Sinusitis in British Columbia
Authors: Christy Richards[1], Isabella Watson[1], Ash Singhal[1], Faizal Haji[1], Mandeep S. Tamber[1]
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Background: Intracranial infections complicating bacterial sinusitis are relatively rare in the pediatric population. North American pediatric neurosurgeons have anecdotally noted an increase in these complications since the onset of the COVID-19 pandemic.
Objective: To describe the epidemiology of pediatric intracranial infection complicating bacterial sinusitis before and after the onset of the COVID pandemic at a single tertiary care neurosurgical center in Canada.
Methods: As part of a BC-initiated larger national study, children with intracranial infective complications of bacterial sinusitis (ICD-10 G6.0 and 6.2) treated operatively and non-operatively at BC Children's Hospital from 2016-2022 were included for retrospective analysis. Demographic, clinical, and microbiological data was collected, as were details of surgical interventions and outcome. Univariable analyses were performed where appropriate.
Results: There was no significant change in median quarterly case count before (January 2016-March 2020, total cases=19; median=1/quarter) vs after (April 2020-December 2022, total cases=14; median=1/quarter) pandemic onset; cases appear to have "frameshifted" from 2020 to late 2021/2022.

However, patient and intracranial disease characteristics may have changed. Children without coexisting chronic disease as classified by the Pediatric Medical Complexity Algorithm were disproportionately affected by intracranial complications after pandemic onset compared to before [$\chi^2(1, N = 33) = 6.33, p = .012$], an effect seen specifically in those requiring operative intervention. After pandemic onset, we observed a trend towards fewer patients visiting a primary care provider and reduced antibiotic usage prior to diagnosis of intracranial infection. A trend towards an increased incidence of subdural empyema, which typically appears later in the disease process, was also observed following pandemic onset.

Conclusions: Our single-center study demonstrated a shift in the epidemiology of intracranial infections secondary to bacterial sinusitis associated with the onset of the COVID pandemic, perhaps related to pandemic-induced disruptions of primary care delivery. Complete data from this pan-Canadian study is forthcoming.

Jump Back to Abstract List

B19

Title: Characteristics Assessment of YouTube Videos Related to Radioactive Iodine Therapy for Thyroid Cancer

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Background: Thyroid cancer is the most common cancer diagnosis in those aged 15-29. It has also become more common, with the number of cases increasing in recent years. YouTube is one of the most popular websites on the internet and is commonly used to obtain health information. Unsurprisingly, young adults who encompass a great proportion of patients with thyroid cancer, utilize YouTube to gain or share health related information. However, there are concerns regarding the quality and reliability of videos on YouTube and there is a lack of evidence evaluating the role radioactive iodine therapy videos have in thyroid cancer education.

Objective: This study uses a systematic approach to assess the characteristics and quality of YouTube videos related to radioactive iodine therapy for thyroid cancer.

Methods: Four search terms related to radioactive iodine therapy for thyroid cancer were inputted into the YouTube search bar. The top 50 videos across all four searches were identified after removing duplicates and applying the exclusion criteria. YouTube videos were evaluated using a prior video assessment tool that characterized videos based on the three domains: general parameters, video source parameters, and video content parameters. Two independent reviewers evaluated a random sample of 10 videos. The remaining 40 videos were assessed by one reviewer as there were minimal discrepancies and agreement in coding among the reviewers.

Results: Twenty-six videos were published within the past 3 years. Median video length was 4 minutes and 53 seconds. The three most common publisher affiliations were non-profits (15 videos), personal accounts (12 videos) and health care facilities/organizations (11 videos). Most of the videos originated in the United States, used an interview format, had physician presenters, and were directed towards patients. Seven major topics were identified in the top 50 videos, with a mean of 2.48 topics covered in each video. The major topic, radioactive iodine therapy, was divided into 8 main subtopics and the mean number covered in each video was 3.6. Highly covered topics included "side effects and risks" and "overview of RAI". Interestingly, "management of side effects" had low coverage. The reliability of the videos (measured by Modified DISCERN score) varied by publisher affiliation and presenter type.

Conclusions: The findings of this study demonstrated the role YouTube has in supporting patient understanding of radioactive iodine therapy for thyroid cancer based on video reliability and content. The study will guide physicians' recommendations for online resources and conversations with patients surrounding YouTube by proactively addressing knowledge gaps unfilled by the platform. Lastly, the results will help inform the development of new, reliable, and high-quality YouTube videos to support thyroid cancer education.

Jump Back to Abstract List

B20

Title: Anesthetic Techniques for Type 1 (Medialization) Thyroplasty: A Scoping Review

Authors: Amolpreet S. Toor BMSc (Hons)[1], Brendan McNeely MD MSc[2], Amanda Hu MD FRCSC[2], Peter Rose MD MSc FRCPC[3], Shamir Karmali MD FRCPC[3]

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Background: Type 1 (medialization) thyroplasty is a surgery commonly used to treat unilateral vocal cord paralysis, a condition characterized by hoarseness and/or aspiration secondary to glottic insufficiency. The operative goal of type 1 thyroplasty is to permanently medialize the paralyzed vocal cord towards the functional cord through the insertion of an implant. The anesthetic approach to medialization thyroplasty is distinct as the intraoperative visualization and functional evaluation of larynx is closely tied to surgical outcomes. Various methods of anesthesia are used for medialization thyroplasty although it remains to be determined which, if any, ensures the optimal patient safety, comfort, and surgical outcome.

Objective: To review the current literature to determine how the type of anesthesia influences medialization thyroplasty in adult patients.

Methods: A scoping review of EMBASE, MEDLINE, and Web of Science was performed. The study followed PRISMA-ScR guidelines and was registered on Open Science Framework (10.17605/OSF.IO/R3BV2). Study selection was independently performed by two investigators and any discrepancies were resolved by the senior investigator. Eligible studies included randomized controlled trials, cohort studies, and case series of minimum 5 patients. Studies involving type 2-4 thyroplasty procedures or vocal fold injections were excluded. English-language studies from database inception to July 2023 were included. The outcomes investigated included surgical outcomes (voice, perioperative complications, swallowing), healthcare resource utilization (operating time, length of stay), and patient-reported outcomes (pain, recovery). Study quality was assessed using level of evidence per the Oxford Centre for Evidence-Based Medicine.

Results: From 258 articles, 28 studies (1063 patients) were included. Most studies were recent with 16(57%) published after 2010. The most common anesthetic technique used was sedation (11/28[39%]), followed by general anesthesia (GA) (10/28[36%]) and local anesthesia (7/28[25%]). When utilizing GA, airway management approaches consisted of laryngeal mask airway (LMA) (8/28[29%]) and endotracheal tube (ETT) (4/28[14%]). Eleven studies (39%) reported intraoperative complications (e.g., desaturation), and 13(46%) studies reported postoperative complications (e.g., airway obstruction). Pre-operative/post-operative voice outcomes were assessed in 21(75%) studies, with maximum phonation time (13/28[46%]) being the most common, followed by acoustic analysis (11/28[39%]) and GRBAS perceptual assessment (9/28[32%]). Patient-reported voice assessments, including Voice Handicap Index (3/28[11%]) and Voice-Related Quality of Life (4/28[14%]), were less commonly assessed. Intraoperative fiberoptic visualization was utilized in 7(25%) studies; all of which investigated GA. Only one study assessed postoperative swallowing. No studies compared surgical or patient-reported outcomes between anesthetic techniques. Operative time (8/28[29%]) and length of stay in hospital/ICU (3/28[11%]) were seldom reported. One study reported greater operative time under GA/ETT than GA/LMA and local anesthesia. The median quality of the literature was level 4 without randomized controlled trial evidence. Given the heterogeneity in the studies, a meta-analysis was not performed.
Conclusion: The current literature demonstrated that medialization thyroplasty is performed under both procedural sedation or GA, with diverse approaches to airway management and minimal perioperative complications. Overall reporting of patient-reported outcomes, swallowing function, and healthcare utilization outcomes were limited. Similarly, the quality of the literature was low and remained without consensus. Future research using standardised outcome measures on the topic is warranted.
Jump Back to Abstract List

B21

Title: Effect of Pre-operative Corticosteroid Therapy on the Diagnostic Accuracy of Biopsies for Primary Central Nervous System Lymphoma: A Systematic Review and Meta-Analysis
Authors: Kira Tosefsky BSc[1], Alex Rebchuk MSc[2], Karina Chornenka BSc[3], David Chen BSc[2], Stephen Yip MD/PhD[3], Serge Makarenko MD[2]
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Background: Primary central nervous system lymphoma (PCNSL) is a highly aggressive non-Hodgkin lymphoma confined to the brain, spinal cord, cerebrospinal fluid and eyes. In immunocompetent patients, it represents 4% of all intracranial neoplasms and 4-6% of all extranodal lymphomas, with an annual incidence rate of 0.5 per 100,000 per year. Diagnosis is typically made by histopathologic evaluation of tissue obtained from stereotactic biopsy. Given that PCNSL is highly sensitive to corticosteroid-induced cell arrest, apoptosis and shrinkage, consensus recommendations state that corticosteroid therapy (CST) should be withheld prior to biopsy where clinically possible. However, patients often present to hospital with neurological symptoms or mass effect necessitating emergent CST prior to biopsy. Protocols for management in these cases vary widely, due to conflicting evidence surrounding the impact of preoperative CST on the diagnostic accuracy of biopsies in this population.
Objective: The objective of this study was to review the primary literature and perform a meta-analysis quantifying the effects of pre-operative corticosteroids on the diagnostic accuracy of biopsies for PCNSL.
Methods: We searched Ovid MEDLINE, Embase, Web of Science and Scopus databases for primary source, English language articles from database inception until 31 Dec 2022 using major search terms for PCNSL, corticosteroids and biopsy or histopathologic diagnosis. English-language studies involving immunocompetent adult patients who received histopathologic confirmation of de novo PCNSL diagnosis were included. Studies were excluded if they did not state whether corticosteroids were or were not administered prior to tissue diagnosis. Meta-analysis was performed to determine the effects of preoperative CST on nondiagnostic biopsy rates in the overall cohort. Additional subgroup and regression analyses were performed to assess the effects of type of surgery (stereotactic versus open), CST duration, CST dose and CST taper prior to surgery on rates of nondiagnostic biopsy.
Results: In the meta-analysis, preoperative CST, administered in 679 (57.9%) of patients, conferred an increased risk of nondiagnostic surgery with a risk ratio (RR) of 2.07 [95% CI: 1.06-4.07]. In subgroup analysis, we found that the difference in diagnostic biopsy rates between steroid pre-treated versus steroid naive patients was confined to the stereotactic biopsy subgroup (RR = 3.01 [95% CI: 1.21-7.49]) using a random effects model. However, tapering CST prior to biopsy did not significantly improve diagnostic rates (RR = 0.68, 95% CI: 0.30-1.55), and no significant effect on diagnostic rates was found for CST dose (p=0.18) or duration (p=0.44).
Conclusions: Our findings support withholding preoperative CST prior to stereotactic biopsy in patients with suspected PCNSL when tolerated. However, we did not find clear evidence in support of tapering CST prior to biopsy in patients for whom CST was already administered.
Jump Back to Abstract List

B22

Title: A Greenhouse Gas Emissions Inventory of Individually-Packaged Food Items at Vancouver General Hospital and Opportunities to Reduce the Environmental Costs of Inpatient Food Services
Authors: Karsten Niels-Roine[1], Annie Lalande[2,3], Neha Gadhari[3], Andrea MacNeill[2,3]
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Background: Food waste is prevalent in healthcare institutions; on average, up to 50% of food served to patients in Canada is not eaten. While the environmental impact of the wasted food itself is well characterized, the contribution of packaging has not been investigated. In a recent study at Vancouver General Hospital (VGH), up to 89% of individually packaged items served to patients, such as beverages and condiments, were discarded, the majority of which (up to 69% of items served) were returned unopened. The environmental impact of the packaging of these items, and its importance relative to the food waste itself, has not yet been characterized.
Objective: The objective of this study was to estimate the carbon footprint of individually-packaged food items served to inpatients at VGH.

Methods: A greenhouse gas (GHG) emissions inventory was carried out using PAS 2050 methodology. Production GHG emissions from materials and packaging, foodstuff, and transportation were calculated. Individually-packaged beverages, condiments, and snacks were identified from regular food item orders by VGH food services between July 2022 and June 2023. Each item was disassembled into its individual food and primary packaging components, and weighed. Secondary packaging, such as plastic wrap, was also collected for each individual item, and similarly assessed. GHG emissions factors were applied to the individual components.
Results: In total, 51 types of individually packaged food item, such as milk cups, nutritional supplements, and crackers, were assessed. Total purchased volume of these 51 categories over one year at VGH amount to 6,255,432 individual items. GHG emissions from these items were estimated at 412 TCO_2e/year. Most of the GHG emissions were attributable to the food component of the item (56-84%). Packaging accounted for 7-29% of GHG emissions, transportation 9-20%, and waste handling 0-1%. Milk (2%) was the largest contributor to annual GHG emissions of individually-packaged items (73.5 TCO_2e, 18%), with the nutritional supplement Ensure Plus a close second (69.6 TCO_2e, 17%). Notably, of all individually packaged items, Ensure Plus had the highest proportion of emissions due to packaging (28%). Two emissions reduction scenarios were examined. When all disposable packaging was eliminated for all items analyzed, emissions were reduced by 16.5% (59.6 TCO_2e). When fewer items were served unnecessarily, so that the percentage of unopened packages for all items was reduced to 10%, emissions were reduced by 20.1% (72.5 TCO_2e).
Conclusions: Most of the GHG emissions from individually-packaged food items are attributable to the food itself, despite single-use items having more packaging than bulk items. This study suggests that waste reduction measures would be more impactful in mitigating the environmental impact of hospital food than packaging reduction measures, though for some items such as nutritional supplements, sourcing items with less carbon-intensive packaging could also have a meaningful impact.
Jump Back to Abstract List

B23

Title: A Comparison of Daytime vs Overnight Liver Transplant from a Single Canadian Centre
Authors: S Punnen[1], J Zhong[2], Y Yang[1], L Streith[1], S Chung[1], M Bleszynski[1], P Kim[1], S Chartier-Plante[1], M Segedi[1]
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Background: Liver transplantation is highly technical and is commonly performed overnight to avoid disruption to elective cases. Overnight work in medicine, however, is related to negative outcomes.
Objective: To compare patient outcomes in liver transplants performed during daytime compared to evening, and overnight.
Methods: Liver transplants from 2012-2020 at VGH were reviewed retrospectively. Daytime was classified as 7am-3pm, evening from 3pm-11pm and overnight from 11pm-7am. Demographics, preoperative characteristics, intraoperative metrics, and postoperative complications were collected. Regression models were used to control unbalanced demographic variables. Comparisons between groups used a Kruskal Wallis test, 2-way ANOVA or Fischer's exact test. Survival analysis with Kaplan Meier curves were performed for mortality and graft failure.
Results: 549 patients underwent liver transplant with 32.6% during daytime, 18.9% as evening and 48.5% as overnight. Overnight patients had lower rates of prior liver transplant (6.00% vs 12.85% vs 14.42%, $p=0.01$). There was a significant difference in NDD organ use between daytime, evening and overnight (86.44% vs 71.57% vs 62.79%, $p<0.001$). There was no difference in overall mortality (12.8% vs 8.7% vs 11.7%, $p=0.41$) or graft failure (12.3% vs 6.7% vs 9.8%, $p=0.21$). There was no difference in operative variables including time, blood loss and fluid use. Daytime patients had a longer cold ischemic time (CIT) (610.8 vs 347.8 vs 371.4 mins, $p<0.001$) but a lower reoperation rate (32.4% vs 39.4% vs 47.7%, $p=0.005$) compared to evening and overnight. There were no differences in other complications or post-operative metrics.
Conclusions: Despite longer CIT, daytime patients had lower reoperation rates with no difference in graft failure or mortality compared to evening or overnight. Overall, there are patient benefits to daytime liver transplant. Future work is needed to examine resource utilization feasibility and healthcare provider burnout to provide a holistic conclusion on transplant start times.

B24

Title: A Qualitative Analysis of Medical Student Reflections Following Participation in a Canadian Radiation Oncology Studentship
Authors: Brandon S. Chai[1], Meredith Giuliani[2], Joanne Alfieri[3], Jeffrey Cao[4,5], Andrea Bezjak[2], Michael Kim[6], Che Hsuan David Wu[7], Nauman Malik[8], David Y. Mak[2], Paris-Ann Ingledew[9,10]
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Background Radiotherapy is a key cancer treatment modality that will continually be required with the predicted rise in cancer incidence. However, recent workforce projections predict a shortage of Canadian Medical Graduate-trained radiation oncologists. Exposure to radiation oncology in the Canadian medical school curricula is limited, and thus mentorship and research opportunities like the Canadian Association of Radiation Oncology (CARO)-Canadian Radiation Oncology Foundation (CROF) Dr. Pamela Catton Summer Studentship

program attempt to bridge this gap and stimulate interest in the specialty. In 2020, due to the COVID-19 pandemic, the studentship pivoted to incorporate virtual research mentorship and case-based discussions.
ObjectiveThis study explores the impact of COVID-19 on the studentship, the students' perceptions of the program, and its impact on the students' medical training and career choice.
Methods All 15 studentship participants during 2020-2022 submitted program completion essays reflecting upon their experiences. These essays were obtained from the CARO Education Committee and anonymized. Thematic analysis was carried out to interpret the anonymized essays systematically with Nvivo. Two independent reviewers coded the essays. Themes and sub-themes were established by identifying connections between coded excerpts. Consensus was achieved through multiple rounds of discussion by iteratively reviewing each theme and sub-theme with respect to the coded excerpts. Representative quotes were used to illustrate the themes and sub-themes.
Results The themes elucidated confirmed that the studentship was feasible during the pandemic and that the students perceived it to be beneficial. Students participated in case-based discussions and research, with participation in clinical experiences as permitted by public health restrictions. Perceived benefits of the program included mentorship and networking opportunities; gaining practical and fundamental knowledge in radiation oncology; developing clinical and research skills; and creating positive attitudes towards radiation oncology and the humanistic aspect of the field. The studentship supported medical specialty selection by helping define student values, shaping perceptions of the specialty characteristics, and promoting self-reflection upon students' personal needs.
Conclusions This study informs future iterations of the studentship to promote radiation oncology in Canadian medical school curricula. It may serve as a model for studentships in other specialties that have limited exposure and similar challenges with medical student recruitment.
Jump Back to Abstract List

B25

Title: Effect of After-Hours Surgery on Outcomes in High Grade Glioma Patients
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Background: High grade gliomas are common malignant brain tumors with poor long-term survival. Maximal safe resection is the standard of care in management of high-grade gliomas and extent of resection is associated with expected survival. There is little evidence on the impact of evening and weekend surgical resection on the outcomes in patients with gliomas.
Objective: Our primary objective was the rate of gross total resection in patients undergoing surgical resection during regular hours versus after-hours. Secondary objectives included operative time, estimated blood loss, length of stay, intraoperative complications, postoperative complications, reoperation within 30 days, postoperative performance score and 6-month mortality rates.
Methods: A retrospective chart review was conducted on high-grade glioma patients requiring emergent surgery between January 1st, 2021 – March 31st, 2023. After hours was defined as surgical resection on the weekend and/or evening (> 50% of surgical time between 1630 – 0700). We identified 19 patients who underwent emergent high grade glioma resection during after-hours. They were matched to patients undergoing high grade glioma resection during regular hours. We collected information on patient characteristics, tumour characteristics, surgical outcomes.
Results: A total of 38 patients were included in this study (19 after-hours, 19 regular hours). There were eighteen grade 4 gliomas and one grade 3 glioma in each group. There was no significant difference in age, sex, and tumor size between the groups (all $p > 0.05$). There was no significant difference in the extent of resection between the two groups ($p = 0.2093$). Total operative time and estimated blood loss was significantly higher in the regular hours group (both $p < 0.05$). Length of stay was significantly longer in the after-hours group ($p = 0.0369$). There was no significant difference in rate of intraoperative complications, post-operative complications, reoperation, and death at 6 months between the two groups (all $p > 0.05$).
Conclusions: Timing of surgery does not predict extent of resection in high grade gliomas. Safety of after-hours high grade glioma resection is comparable to surgery during regular hours.
Jump Back to Abstract List

B26

Title: Axillary Ultrasound for Early Stage Invasive Breast Cancer
Authors: Karen Jiang, Crystal Ma, Yuwei Yang, Elaine McKevitt, Jin-Si Pao, Rebecca Warburton, Jieun Newman-Bremang, Melina Deban, Amy Bazzarelli
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Background: Among women with clinical T1/T2 invasive breast cancer and involvement of 1-2 positive sentinel nodes, sentinel lymph node biopsy (SLNB) is non-inferior in overall and disease-free survival compared to axillary lymph node dissection (ALND). However, axillary ultrasound (AxUS) may not be sensitive enough to distinguish between minimal and heavy nodal metastasis in early, clinically node negative disease, potentially leading to overtreatment.
Objectives: This study compares axillary operation rates in patients who did and did not receive preoperative AxUS, to assess its utility and risks for overtreatment.
Methods: This is a retrospective cohort study of patients with T1/T2 invasive breast tumors that were clinically node negative between July 2018-July 2020 and underwent an axillary operation. Two-sample t-tests or Wilcoxon rank sum tests were used for continuous data analysis while Fisher exact tests were used for categorical variables.
Results: Of 1437 cases analyzed, 746 had preoperative AxUS and 691 did not. Age, tumor biomarkers, histology, and nodal stage were not statistically different between groups. 1385 cases received SLNB or targeted axillary dissection and 52 received ALND or SLNB converted to ALND. Patients who had preoperative AxUS received more ALND compared to patients who did not (5.6% vs. 1.4%, $p<0.001$). There was no significant difference in the number of additional axillary surgeries, including completion ALND (2.0% vs. 2.3%, $p=0.77$).

Conclusion: Eliminating preoperative AxUS was associated with fewer ALND procedures, yet there was no significant difference in the number of additional axillary surgeries pursued postoperatively.
Jump Back to Abstract List

B27

Title: Evaluating Online YouTube Resources for Cervical Cancer Brachytherapy
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Background: Cervical cancer remains the third most common cancer in females aged 25-44 years, with brachytherapy as an important modality of treatment. Patients often rely on the internet to seek cervical cancer information; however, few studies have evaluated the quality of these resources.
Objective: The aim of this study is to describe and evaluate the current landscape of YouTube videos available to patients on cervical cancer brachytherapy.
Methods: Using a clear-cache Chrome browser in incognito mode, YouTube was searched using "cervical cancer brachytherapy", "cervical cancer radiation brachytherapy", and "cervical cancer brachytherapy treatment" on January 30, 2023. Videos were sorted by relevance and the first 50 videos from each search was collected. Videos were excluded if they were not in English (either audio or in-video subtext) or >1 hour in duration. Duplicates were removed. Videos were aggregately ranked and evaluated for general parameters, source information, and content. Two coders evaluated the first 10 videos to ensure consistency. Descriptive analyses were applied.
Results: Of 150, 47 unique videos were included in the analysis. Videos were published between November 2, 2009 and January 27, 2023, with 53.2% of videos published within the past 3 years as of February 2023. Median length was 4 minutes 42 seconds. Median view, like, and comment counts were 8150, 43, and 3, respectively. Over half of videos (55.3%) were published from the USA. Videos were most commonly published by a healthcare facility/organization (36.2%), or else a commercial (21.3%) or personal (17.0%) account. Most videos were presented by a physician (53.2%), unknown (27.7%), or patient (19.1%), often as an interview (42.6%). Videos largely targeted patients (66.0%) compared to healthcare professionals/students (34.0%). Around half generally discussed the spectrum of treatments for cervical cancer including surgery, chemotherapy, and radiation therapy (53.2%), as well as described brachytherapy (48.9%) and its use in treating cervical cancer (46.8%). Commonly, videos discussed logistics of brachytherapy treatments (36.2%), treatment applicators (34.0%), and brachytherapy advantages and disadvantages (27.7% each). Few explained the procedure (19.1%) or described side effects (12.8%). Only 12.8% were for commercial purposes, and 4.3% contained grossly misleading/inaccurate information.
Conclusions: This study provides an overview of the videos available to patients on cervical cancer brachytherapy. Videos generally presented a balanced overview of the treatments for cervical cancer, including brachytherapy. However, few videos included pertinent patient-relevant information such as brachytherapy side effects. This may inform physicians of the limitations of online videos and guide the development of additional patient educational resources. Further research should appraise other online resources for cervical cancer radiation therapy.
Jump Back to Abstract List

B28

Title: Wounded Glioma Syndrome: Neurologic Worsening in Patients with Subtotal Resection in High-Grade Gliomas
Authors: Crystal Ma[1], Michael Rizzuto[1,2], David Chen[2], Mostafa Fatehihassanabad[1,2], Serge Makarenko[1,2]
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Background: First line treatment for high-grade gliomas (HGGs) is surgery and subsequent radiation and chemotherapy. A greater extent of surgical resection generally results in better survival for patients with HGGs. Although the ideal treatment is gross total resection (GTR), this approach is not always feasible owing to the infiltrative quality of these tumors. Subtotal resection (STR) may also be pursued to minimize injury to eloquent areas. One of the challenges with STR in the early post-operative period is that residual tumor can lead to post-operative edema, swelling, and worsening neurologic function. Our aim is to investigate if residual tumor after STR entails post-operative neurological injury and deficit, whether this may be due to inflammation or another physiological process.
Objective: Our primary objective is to determine whether STRs of HGGs (WHO Grades 3 and 4) are associated with an increase risk of post-operative neurological worsening, specifically within the first 30 days post-operatively. Our secondary objectives are to investigate other factors associated with post-operative neurological worsening and characterize other relevant complications. We also aim to quantify the percent of resection that is associated with the development of neurological deficits, and, subsequently, establish a threshold of a safe amount of residual tumor to leave behind to avoid neurological worsening.
Methods: This is a retrospective chart review involving collection of data, with further tabulation and analysis of variables using univariate and multivariate analyses to look for correlation between extent of resection and neurologic deficit. Specifically, 146 charts were reviewed, and 79 patients were eligible. Information pertaining to preop and postop neurological deficits, as well as tumor characteristics noted on pre and postop imaging were collected. Potential biases (single centre study, selection bias, ascertainment bias, surgical technique bias) in data collection will be addressed during the data analysis/manuscript preparation stages of this study.
Results: We hypothesize that patients with HGGs who have undergone STRs will experience an increased risk of post-operative neurological worsening within the first 30 days post-operatively.
Conclusions: STR results in residual tumor that may be associate with neurological worsening and other post-operative complications. Our aim is to whether STRs result in immediate post-operative neurological deficits, specifically 30 days after surgery, identify associated factors, characterize other complications, and report an ideal threshold for resection that minimizes neurological deficits.
Jump Back to Abstract List

B29

Title: Intraoperative Teaching Methods, Models, and Frameworks: A Scoping Review for Surgical Resident Education

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Background: The traditional apprenticeship model for intraoperative surgical education involves residents accumulating knowledge and skills through repeated exposure and practice in the operating room. As Canadian post-graduate medical education implements a Competency by Design framework, there is an increasing focus on documented, frequent assessments and deliberate feedback discussions. The apprenticeship style of teaching faces the challenge of embracing this more structured educational philosophy. Therefore, we aimed to consolidate the existing literature on intraoperative teaching strategies and highlight areas for future research.
Objective: The objective of this scoping review is to review the research conducted regarding the implementation of various teaching frameworks for surgical learners and to present their feasibility, benefits, and limitations within surgical residencies, as well as areas for future research.
Methods: Two independent investigators searched MEDLINE, EMBASE, and ERIC for intraoperative teaching strategies for surgical resident education. A librarian was consulted for the development of the search strategy. English articles focusing on procedural surgical resident education until April 30, 2023, were reviewed.
Results: 3050 abstracts were reviewed, and 67 studies (2.2%) were included. The most common study type was single cohort studies (29%), followed by survey studies (17%). The majority of articles were carried out in General Surgery (50%), or a combination of surgical specialties (17%).
Conclusions: Various intraoperative teaching frameworks (BID), assessment tools (Zwisch Scale, OpTrust) and teaching strategies (takeover, educational timeout) were identified. The BID model encompasses perioperative teaching time points and suggests a universal organizational approach to intraoperative teaching that would likely be compatible with documented competency assessments for residents. Future research should examine effects on long-term resident performance and alignment of intraoperative teaching strategies with competency-based education milestones.

Jump Back to Abstract List

B30

Title: A Narrative Review of the Factors that Determine Hearing Aid Satisfaction and Use

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Background: Audiometrically confirmed hearing loss is predominantly managed with hearing aids. However, hearing aid users report low satisfaction rates and use of their devices.
Objective: Our study aims to identify the factors that determine hearing aid use and satisfaction among adults.
Methods: PubMed, MEDLINE, and EMBASE databases were systematically searched for articles published from January 1990 to January 2021. Included studies were published in English, in peer-reviewed journals, with a minimum sample size of 20 subjects, and an adult study population. Studies were excluded if they solely focused on the technical aspects of the hearing aid, without investigating the factors associated with hearing aid use or satisfaction. The search was performed independently by two investigators.
Results: 539 articles were identified from the search, and 66 met this review's inclusion criteria. 38 of these studies investigated factors associated with hearing aid use and 33 investigated satisfaction. Audiometrically classified hearing impairment severity, self-recognition of hearing loss, preconceptions of hearing aid benefit, hearing aid self-management ability, and speech perception in noisy environments were all statistically significant factors associated with hearing aid use. Hearing impairment and hearing aid use setting correlated with user satisfaction. Gender and age were not associated with increased hearing aid satisfaction or use.
Conclusions: The findings of this review indicate that various factors influence hearing aid use, and satisfaction among adults. These results can provide a basis for interventions relating to hearing aid promotion, and guide patient centered discussions and future research targeting increasing hearing aid use rates.

Jump Back to Abstract List