THE UNIVERSITY OF BRITISH COLUMBIA

Department of Surgery
Faculty of Medicine

31st Annual

CHUNG RESEARCH DAY

November 3, 2025

Academic Sessions from 8:00AM to 2:45PM

8:15 AM - 9:15 AM KEYNOTE ADDRESS

ZOOM
ID 99652 04124
PASSCODE 042124

OR

IN PERSON
PAETZOLD EDUCATION CENTRE
VANCOUVER GENERAL HOSPITAL

6:00PM-9:30PM - DINNER

IN PERSON

UNIVERSITY GOLF CLUB

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Message from the Department Head, Dr. Ahmer Karimuddin

Dear friends,

As we mark our 31st annual **Chung Research Day**, my first as Head, I want to take a moment to reflect on what this day represents for us as a Department. It is our *premiere academic event* — a day when we come together as a community to listen, learn, and celebrate the research that defines the UBC Department of Surgery.

Across divisions, campuses, and hospitals, we will see and hear the extraordinary work of our colleagues and trainees — people who, every day, strive to solve problems both simple and complex; who bring curiosity, creativity, and courage to their work; and who are willing to share their discoveries with all of us.

Chung Day is our chance to say that we *see* one another — that we recognize the dedication it takes to ask difficult questions, to persist through setbacks, and to translate ideas into real-world impact.

This event also reminds us of the power of community. As clinicians, scientists, educators, and learners, we each work within our own areas of expertise — but on Chung Day, those boundaries dissolve. We come together to celebrate excellence, to inspire one another, and to remind ourselves that the purpose of our science is to improve the lives of patients and communities across British Columbia and beyond.

I also want to acknowledge those whose vision and generosity have made this day possible. Dr. Gary Redekop, whose leadership as Head over the past decade strengthened the academic foundation of our Department, helped shape the thriving research culture we now enjoy. And, of course, **Dr. Wally and Dr. Madeleine Chung**, whose remarkable endowment continues to sustain this event — transforming it into a true province-wide forum for surgical research and innovation.

Thank you all for being part of this journey. I look forward to celebrating not just research, but the spirit of excellence and community that defines who we are.

Ahmer Karimuddin
Head, Department of Surgery
November 2025

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.

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"*

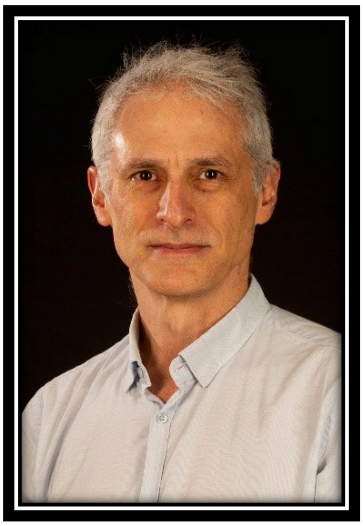
2022 Dr. Chad Ball, Professor of Surgery and Oncology at the University of Calgary*.*
"Surgical Innovation: Failure, Success, and Everything in Between"

2023 Dr. Jodi Sherman, MD, Associate Professor of Anesthesiology at the Yale School of Medicine*. "Healthcare and Its Pollution: Balancing Patient Safety and Public Health"*

2024 Dr. Susan Mackinnon, Minot Packer Fryer Professor of Surgery, Director of the Center for Nerve Injury and Paralysis, Professor of Plastic and Reconstructive Surgery, Washington University School of Medicine "Cultivating Joy and Well-being for Performance, Innovation and Paradigm Shifts"

Chung Lecturer 2025

Robert Brownstone, MD, PhD, FRCSC, FCAHS



Dr. Brownstone is Professor and Head of Neurosurgery at the University College London Queen Square Institute of Neurology. He completed his B.Sc. (computer science), MD, and PhD (physiology) degrees at the University of Manitoba, post-doctoral training in neurophysiology at the University of Copenhagen, and neurosurgical training at Manitoba (FRCSC). He was a neurosurgeon-scientist in Canada for 20 years before moving to the UK in 2015. His mechanistic research focuses on how the brain and spinal cord control movement, and how the responsible neural circuits go awry in diseases that affect movement. He aims to bi-directionally translate from bedside to bench to bedside to reduce neurological symptoms that impair quality of life. To this end, he is a co-founder of a company (Sania Therapeutics Inc) aimed at developing specific gene therapies to treat neurological symptoms. He is a Fellow of the Canadian Academy of Health Sciences, and a Fellow of the Academy of Medical Sciences.

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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. Robert Brownstone** ***Professor and Head of Neurosurgery, University College London Queen Square Institute of Neurology*** ***"In the pause, knowledge is born"***		
	MORNING SESSION 1 7.5-minute paper with 2.5-minute discussion Chair: Dr. Rachel Liu Hennessey		
9:15	Faran, Muhammad		***Neurosurgery***
		127	Location of Neurostimulation Affects Short-term Emotional Wellbeing Outcomes in Parkinson's Disease Patients
9:25	Ong, Kenneth		***Neurosurgery***
		165	Right Vagal Nerve Stimulation for Epilepsy – Case Series and Systematic Review of the Literature
9:35	Senger, Jenna-Lynn		***Plastic Surgery***
		179	Synergistic effects of conditioning electrical stimulation and exercise training on motor recovery, bone density, and neural plasticity following distal nerve transfer
9:45	King, Melissa		***Cardiac Surgery***
		141	British Columbia's 10-Year Experience of Open Descending Thoracic Aortic Repair Using Left Heart Bypass Versus Venoarterial Extracorpeal Membrane Oxygenation
9:55	Zhao, Hedi		***Plastic Surgery***
		193	Scaphoid Advanced Fixation Equipment (SAFE) – A Novel Approach to Scaphoid Fracture Management
10:05	Dang, Alexa		***Plastic Surgery***
		121	What is the Impact of Treatment De-Escalation on Patient Reported Outcomes in Patients with T1-T2 Oropharyngeal Cancers? A Secondary Analysis of the ORATOR Studies
10:15	Chae, Hyunwoong Harry		***Urological Sciences***
		115	Chlorhexidine-induced Anaphylaxis in the Setting of Renal Transplantation and Urologic Surgeries: A Case Series

10:25		**REFRESHMENT BREAK**	
		MORNING SESSION 2 7.5-minute paper with 2.5-minute discussion Chair: Dr. Jenna-Lynn Senger	
10:40	Leclerc, Curtis	***Radiation Oncology***	
	145	Treatment with Stereotactic Ablative Radiotherapy for up to 5 Oligometastases in Patients with Cancer: Long-Term Outcomes of the Non-randomized Phase 2 SAbr-5 Clinical Trial	
10:50	Mansouri Dana, Helia	***Otolaryngology-Head and Neck Surgery***	
	157	The Effectiveness of Inhaled Methoxyflurane vs Placebo for Pain Relief in Outpatient Sinus Procedures: A Double-blind, Randomized, Placebo-Controlled Trial	
11:00	O'Reilly, Emily	***Radiation Oncology***	
	166	Effect of Same-Day Volumetric Modulated Arc Therapy on Resource Utilization in Rapid Access Palliative Radiotherapy Clinics Using a Radiation Oncologist-Initiated Automated Planning Script	
11:10	Lee, Jaimie	***Plastic Surgery***	
	146	Immediate Lymphatic Reconstruction to Reduce Breast Cancer-Related Lymphedema Risk after Axillary Lymph Node Dissection	
11:20	Al-Hakim, Durr	***Vascular Surgery***	
	102	Standard vs. Short Neck Endovascular Aortic Repair Using Polymer-Based Seal Ring Grafts: A Retrospective Cohort Study	
11:30	Mazi, Riichi	***Pediatric Surgery***	
	159	Non-Consumable Instrumentation for Pediatric Inguinal Hernia Repair - A Quality-Improvement Audit	
11:40	Niu, Bonnie	***General Surgery***	
	164	Lessons Learned: A Review of Canadian Appendectomy Malpractice Litigation Cases	
11:50	Sheikh-Oleslami, Sara	***Plastic Surgery***	
	180	Plagiarism in Manuscripts Submitted to the Plastic Surgery Journal: A Comprehensive Analysis of iThenticate Scores	

12:00		**LUNCH**	
		SIMULTANEOUS SESSIONS 3-Minute Talks	
12:10	*Jump to Simultaneous Presentations A schedule*	Session A – Paetzold Lecture Theater Chair: Dr. Michael Peacock	***Zoom: Meeting ID 99652 042124 Passcode 042124 Select Simultaneous Session A***
12:10	*Jump to Simultaneous Presentations B schedule*	Session B – Paetzold Multi-Purpose Room Chair: Dr. Rola Ajjawi	***Zoom: Meeting ID 99652 042124 Passcode 042124 Select Simultaneous Session B***

AFTERNOON SESSION 7.5-minute paper with 2.5-minute discussion *Zoom: Meeting ID 99652 042124 Passcode 042124 Select Plenary* Chair: Dr. Eitan Prisman		
13:20	Billau, Mathilde	***General Surgery***
	110	Facilitating Access to Acute Surgical Care for Indigenous Patients: A Strength-Based Approach
13:30	Adams, Jayd	***Branch for Global Surgical Care***
	101	Evaluating Our Framework for Sustainability in Global Surgery Partnerships: Continuing Conversations Through Quality Improvement
13:40	Shum-Tim, Lukas	***Branch for Global Surgical Care, Pediatric Surgery***
	181	Evaluation and Validation Assessment of a Low Cost, Low-Fidelity Cricothyroidotomy Simulator
13:50	El-Kefraoui, Charbel	***General Surgery***
	126	Preliminary Results from the SUPERHERO Study – Standardizing Use of Pain medication to Eliminate post-Robotic Hernia Repair Opioids: a Prospective Cohort Study
14:00	Tholl, Samuel	***Otolaryngology-Head and Neck Surgery***
	186	Are AI-Generated Otolaryngology Patient Education Materials Clinically Ready? A Systematic Review of Readability, Quality, and Safety
14:10	Kwon, Jamie	***Otolaryngology-Head and Neck Surgery***
	144	Novel Intraoperative 3D Specimen Scanning to Optimize Postoperative Radiation Therapy Planning for Head and Neck Cancer
14:20	Birk, Rohan	***Otolaryngology-Head and Neck Surgery***
	112	Scapular Tip Osseous Free Flap in (Sub-)Total Nasal Reconstruction Using Virtual Surgical Planning: Clinical, Functional and Cephalometric Outcomes
14:30	Khalid, Muhammad Uzair	***General Surgery***
	139	Can Artificial Intelligence Replace the Rectal Cancer Multidisciplinary Conference? A Single-Center Study

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. Critically appraise the design, methodology, and results of current surgical research projects.
2. Apply evidence presented to inform and improve surgical practice and patient care
3. Enhance skills in communicating and presenting scholarly work effectively
4. Identify opportunities for interdivisional collaboration and future research.

Session A

12:10 pm – 13:10 pm

3-minute paper with 1-minute discussion

Chair: Dr. Michael Peacock

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
152	Branch for Global Surgical Care, Pediatric Surgery	Livergant, Rachel	Who's Training Tomorrow's Pediatric Surgeons? A Global Review of Pediatric Surgery Postgraduate Training Programs in Low- and Middle-Income Countries
163	Cardiac Surgery	Nguyen, Quynh	Identifying the Molecular Signature Underlying Hypertrophic Cardiomyopathy Using a Multi-Omic Approach
188	Branch for Global Surgical Care, Pediatric Surgery	van Riswijk, Hannah	Exploring the Central African Republic's Surgical Landscape: A Qualitative Analysis Pre-Implementation of a Surgical Task-Shifting Approach
103	General Surgery, Vascular Surgery	Al-Hakim, Durr	Duodenocaval Fistula as a Late Complication of Inferior Vena Cava Leiomyoma Resection and Caval Reconstruction: A Case Report
113	General Surgery	Brahmbhatt, Shaily	The Permanent vs. Absorbable Sutures in Primary Repair of Umbilical Hernias (PAPYRUS) Protocol: A Canada-wide, Multicentre, Single-blind, Randomized Controlled Trial
117	Radiation Oncology	Chan, Jonathan	Root Cause Analysis of Omissions and Delays in the Initiation of Neoadjuvant Chemotherapy in Eligible Patients with Breast Cancer
124	General Surgery, Thoracic Surgery	Donaldson, Alexandra	Enhancing Documentation Compliance in Esophagogastroduodenoscopy (EGD) for Esophageal Cancer
130	General Surgery	Forrester, Emma	The Impact of Intraabdominal Pressure on the Human Microbiome: A Scoping Review
131	Otolaryngology	Friesen, Danica	Neurokinin-1 Receptor Antagonists for Postoperative Nausea and Vomiting in Otolaryngology Surgeries: A Scoping Review
134	Neurosurgery	Hounjet, Celine	Spontaneous Regression Of Vestibular Schwannomas: A Clinical And Radiographic Characterization
135	Pediatric Surgery	Bilal, Hooria	Carbon Emissions and Waste Consumption of Infant Inguinal Hernia Repair: A Prospective Analysis
136	Plastic Surgery	Jiang, Tony	DIEP Flap Harvest with the Apple Vision Pro: A Feasibility Study
143	Otolaryngology	Kwon, Jamie	Towards Intraoperative Transcervical Ultrasound Assisted Transoral Robotic Surgery
147	Radiation Oncology	Li, Jim	Does Limiting Hotspots Outside the GTV Decrease the Risk of Vertebral Compression Fracture in Patients Being Treated with Spine SABR? A Single Institution Experience

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Session B

12:10 pm – 13:10 pm

3-minute paper with 1-minute discussion

Chair: Dr. Rola Ajjawi

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
151	Otolaryngology	Liew, Reeve	Coblation Intracapsular Tonsillotomy: Postoperative Bleeding Rates at BC Children's Hospital
158	Otolaryngology	Marshall, Amelie	Virtual Surgical Planning for Intraoperative Dental Implant Placement in Head and Neck Reconstruction
160	Otolaryngology	McNeely, Brendan	A low-cost electrolarynx for voice rehabilitation following total laryngectomy: A comparative study
161	Otolaryngology	Moise, Alexander	Imposter Syndrome Among Otolaryngology Residents: A Canadian Cross-Sectional Survey
162	Otolaryngology	Motasaddizarandy, Mina	Modified Draf IIc vs Draf III: A Retrospective Cohort Study Comparing Outcome in CRS Patients
194	Otolaryngology	Needham, Cole	Will Ice Decrease Spasmodic Dysphonia Patients' Perception of Pain with Botulinum Toxin Injections?
169	Otolaryngology	Pan, Diane	A Clinical Evaluation of In-House Virtual Surgical Planning for Craniomaxillofacial Reconstruction
171	Neurosurgery	Rebchuk, Alexander	Delays in Transfer of Rural Aneurysmal Subarachnoid Hemorrhage Patients in British Columbia
175	Otolaryngology	Sandle, Caleb	Extracellular Vesicles with miR-142-3p Drive CAF Subtype Activation in Oral Cancer
177	Pediatric Surgery	Scheepers, Frances	The Power of Pretend: Caregiver Perspectives on Sham Feeding for Infants with Long Gap Esophageal Atresia
183	Otolaryngology	Steininger, Tayo	Virtual Pre-planning of Mandibular Reconstructions: Update on a Phase II/III Randomized Controlled Clinical Trial
184	Otolaryngology	Tabari, Azin	Effect of Bupivacaine with Epinephrine/Topical Vasoconstrictor Injection on Intraoperative Bleeding During Endoscopic Sinus Surgery: A Double-Blind, Randomized Controlled Trial
187	Otolaryngology	Tholl, Samuel	Effectiveness of a Near-Peer Teaching Model for an Otolaryngology Bootcamp for Medical Students
190	Branch for Global Surgical Care	Vilayil, Ruth	Medical Improv as an Effective and Innovative Method for Surgical Trainees to Learn Non-Technical Skills
154	Branch for Global Surgical Care,Pediatric Surgery	Malik, Peter	Molding Mastery: Validation of a 3D-Printed Simulator for Pediatric Inguinal Hernia Repair

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Title: Evaluating Our Framework for Sustainability in Global Surgery Partnerships: Continuing Conversations Through Quality Improvement

Authors: Jayd Adams[1,2], Brian Kasagga[1,3], Catherine Binda[1,4], Mathanky Jeyakumar[1,5], Faizal Haji[1,6], Shahrzad Joharifard[1,6], Emilie Joos[1,7]

Affiliations: [1] Global Surgery Lab, Branch for Global Surgical Care, Department of Surgery, University of British Columbia, Canada, [2] Faculty of Medicine, University of British Columbia, Canada, [3] Department of Surgery, Makerere University School of Medicine, Uganda, [4] Department of Surgery, University of Ottawa, Canada, [5] Schulich School of Medicine and Dentistry, Western University, Canada, [6] BC Children's Hospital, British Columbia Canada, [7] Vancouver General Hospital, British Columbia, Canada

Purpose: Our group previously used a modified Delphi consensus method to develop a Framework for Sustainable Global Surgery Partnerships (GSPs). Our intention was for the framework to be used as a living resource that could be adapted as expertise and sustainability in global surgery continue to evolve. The aim of the current project was to continue dialogue surrounding sustainability in GSPs through an evaluation of our Framework for Sustainability.

Methods: We used purposive sampling to invite surgical care providers that have contributed to a GSP within the last 15 years to evaluate our framework. We distributed a Qualtrics survey to collect qualitative and quantitative feedback from identified experts. Participants were asked to rate their agreement with the pillar definitions, evaluation metrics, and to rank the order of importance of the evaluation metrics, in addition to offering free text comments.

Results: Twenty-seven experts from 11 different countries representing all 6 World Health Organization health regions participated in this evaluation study. Study participants indicated that they were using the framework as a quality improvement tool (11/26, 42.3%), to guide the creation of a new GSP (8/26, 30.8%), or both (2/26, 7.7%). Participants generally Agreed or Strongly Agreed with the pillar definitions: Stakeholder Engagement (23/27, 85.2%), Multidisciplinary Involvement (22/23, 95.7%), Context Relevant Education and Training (22/23, 95.7%), Bilateral Authorship (22/25, 88.0%), Outcomes' Measurement (19/22, 86.4%), and Multisource Funding (15/23, 65.2%). Participants also generally demonstrated agreement that evaluation metrics for each pillar were concrete and realistic: Stakeholder Engagement (21/24, 77.8%), Multidisciplinary Involvement (18/23, 78.3%), Context Relevant Education and Training (22/23, 95.7%), Bilateral Authorship (22/23, 95.7%), Outcomes' Measurement (18/22, 81.8%), and Multisource Funding (12/21, 57.1%). Many experts raised the concern that the checklist is too labour intensive, while others felt that every item was relevant and important. Participants identified the most and least important evaluation metrics for each, allowing us to propose a revised and shortened framework.

Conclusions: We continue to emphasize the use of the framework in a reflective yet actionable way to further promote sustainability within global surgery projects and partnerships, while presenting a revised and shortened version to potentially allow for more efficient discussions around project sustainability between global surgery partners.

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Title: Standard vs. Short Neck Endovascular Aortic Repair Using Polymer-Based Seal Ring Grafts: A Retrospective Cohort Study

Authors: Durr Al-Hakim, BSc[1], Meghan McGillivray, MD[2], Maja Grubisic, MSc[3], Keith Baxter, MD FRCSC[2], Jason Faulds MD 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, BC

Background: Polymer-based seal ring endografts are indicated for endovascular abdominal aortic aneurysm (AAA) repair (EVAR) in patients with hostile infrarenal aortic anatomy, including short, conical, calcified, or thrombus-laden necks. Their advantages include polymer-mediated sealing, suprarenal fixation to mitigate late neck degeneration, and a low-profile design suited for small or tortuous access vessels.

Objective: In the largest Canadian series, this retrospective study evaluates outcomes of polymer-based seal ring endografts in standard and short infrarenal neck anatomies to define their application in complex EVAR.

Methods: We retrospectively reviewed all infrarenal EVARs using Endologix Ovation Prime, Ovation iX, or Alto device at a tertiary centre between 2020 to 2024. Patients with infrarenal neck length under 14mm were classified as short neck (SN) and greater than 14mm as standard neck (STN). Primary outcome was aortic reintervention. Secondary outcomes included perioperative complications, limb thrombosis, length of stay (LOS), and mortality. Mann-Whitney and chi-squared tests were used for continuous and categorical variables, respectively (IBM SPSS V30.0).

Results: Fifty-two patients underwent EVAR (40.4% SN and 59.6% STN). Overall, 88.5% were male, 75% had history of smoking, and 63.5% had hypertension. Mean AAA diameter was 5.9 ±0.8cm, mean infrarenal neck length was 23.1 ±13.9mm, and mean infrarenal neck diameter was 23.1 ±3.4mm. The incidence of neck thrombus, calcification, angulation, and conical morphology did not differ between groups ($p > 0.05$). Palmaz stenting, used for reinforcement of proximal seal, was required in 9.5% of SN vs. 6.5% of STN cases ($p=0.68$). The mean follow-up period was similar between groups (24.2 months in SN vs. 20.1 months in STN). Aortic reintervention occurred in one STN patient (3.2%, $p=0.68$). Limb complications, including iliac stent stenosis, non-occlusive iliac dissection, and limb thrombosis, did not differ between groups (4.8% SN vs. 3.2% STN, $p=0.78$). Median hospital LOS was 2 days (2 [IQR 2-3] in SN vs. 2 [IQR 1.5-2] in STN, $p=0.15$). There were no 30-day mortalities or aortic-related mortalities during the follow up period.

Conclusions: In this Canadian series, polymer-based seal ring endografts demonstrated favorable feasibility and low complication rates in both standard and short neck aortic anatomies. These findings support the safety and efficacy of Ovation devices in anatomically complex cases, including hazardous proximal seal zones, expanding EVAR eligibility for high-risk patients while achieving low perioperative morbidity.

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Title: Duodenocaval Fistula as a Late Complication of Inferior Vena Cava Leiomyoma Resection and Caval Reconstruction: A Case Report

Authors: Durr Al-Hakim, BSc[1], Meghan McGillivray, MD[2], Peter Kim, MD FRCSC[3], Jason Faulds, MD FRCSC[2], Keith Baxter, MD FRCSC[2]

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Background: Inferior vena cava (IVC) leiomyosarcoma is a rare malignancy with poor prognosis that often requires surgical resection and vascular reconstruction. Postoperative duodenocaval fistula (DCF) carries a mortality rate of 40% and warrants high suspicion in patients presenting with unexplained fever or sepsis after IVC reconstruction.

Case Presentation: A 77-year-old male with prior IVC leiomyosarcoma resection, PTFE graft reconstruction, and neoadjuvant radiotherapy 9 years ago presented with two weeks of fever, rigors, and abdominal pain. Computed tomography (CT) revealed duodenal ulceration with PTFE graft erosion and gas-containing thrombus. Esophagogastroduodenoscopy (EGD) confirmed a 2cm duodenal ulcer with visualization of graft in the duodenal lumen near the pancreatic ampulla. Given the high risk of sepsis, urgent multidisciplinary repair involving vascular and hepatobiliary surgery was performed. The PTFE graft was resected and replaced with a cryopreserved aortic allograft and left renal vein reconstruction. The duodenal defect was repaired with Roux-en-Y duodenojejunostomy, jejunojejunostomy, and gastrojejunostomy. The patient recovered without complications, with graft cultures growing *P. kudriavzevii*, and he was discharged home on antifungal and anticoagulation therapy after a 7-day hospital stay.

Discussion: Approximately DCF cases are first identified during laparotomy or post-mortem, given non-specific and delayed presentations occurring months to years after IVC reconstruction. In our patient, DCF was facilitated by previous radiation and use of ringed PTFE material. Prompt multimodal imaging, including CT, MRI, and EGD, was critical for early detection and localization of graft erosion, which guided multidisciplinary operative planning by vascular and hepatobiliary surgery. Visualization of the ulcer's location relative to the pancreatic ampulla enabled surgical planning of isolated duodenal reconstruction, avoiding the morbidity of a Whipple procedure. Furthermore, the use of cryopreserved allograft minimized risk of re-infection without the morbidity associated with deep vein harvest required for autogenous reconstruction.

Conclusion: Recurrent sepsis or unexplained fever in patients with prior IVC reconstruction warrants high suspicion for DCF and urgent multimodal imaging with coordinated multidisciplinary surgical planning. When anatomically feasible, we report IVC reconstruction using a cryopreserved allograft combined with isolated duodenal repair as a safe and less morbid alternative to autogenous vascular reconstruction and Whipple procedure, resulting in successful management in our patient.

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Title: Surgical Approaches and Outcomes in Olfactory Groove Meningiomas: A Retrospective Study

Authors: Afaf Alhatmi , Eleina Lucas, Serge Makarenko **Affiliations:** Faculty of Medicine, Division of Neurosurgery, University of British Columbia, Vancouver, BC

Background: Olfactory groove meningiomas are rare tumors, accounting for approximately 4% to 13% of all intracranial meningiomas [(1).] These tumors arise from the dura around the cribriform plate and can span the anterior skull base from the crista galli to the tuberculum sella, often involving the optic pathway and anterior circulation [(2)]. Due to their proximity to critical neurovascular structures such as the optic nerves, internal carotid artery, and anterior cerebral artery, and their potential invasion of the frontal skull base, achieving complete resection is often challenging [(3).]Since the first published account of a surgically removed OGM by Francesco Durante in 1885, there has been an ongoing debate regarding the best surgical approach and management for OGMs of various sizes[(4).]Fom the historical bifrontal craniotomies with bilateral partial lobectomy proposed by Cushing and Dandy in 1938 to the current state-of-the-art microsurgical and endoscopical approaches, there is a continuing debate as to the optimal treatment strategy of such lesions[(5–7)]Among this sizeable array of surgical approaches, the most commonly used nowadays are the subfrontal approach, the interhemispheric approach, the supraorbital key- hole approach, and the pterional approach. Other surgical corridors such as the cranio-orbitozygomatic and the transbasal, as well as the various endoscopic techniques, have passionate advocates and undeniable advantages; their application, however, is rather limited. Choosing the optimal surgical approach is critical for providing adequate exposure to the tumor, dura, bone, and vasculature, as well as for ensuring effective reconstruction and closure. Poor selection of an approach can lead to significant postoperative complications, including cerebral edema and cerebrospinal fluid leaks. This research seeks to address these challenges by evaluating surgical outcomes across different approaches, with the goal of identifying strategies that optimize tumor removal while minimizing complications and improving overall patient outcomes.

Objective: To evaluate and compare the clinical outcomes associated with different surgical approaches for olfactory groove meningiomas in terms of tumor resection rates, postoperative complications, and recovery. This study will be a retrospective cohort study analyzing the surgical management and outcomes of patients with olfactory groove meningiomas Data will be collected from Vancouver General Hospital for the past five years

Study Population: Inclusion Criteria: Patients diagnosed with olfactory groove meningiomas confirmed by imaging and histopathology, patients who underwent surgical treatment (any approach), sufficient clinical, surgical, and follow-up data available.

JUSTIFICATION:

Olfactory groove meningiomas despite being rare, present unique surgical challenges due to their proximity to critical neurovascular structures. A clear understanding of optimal surgical approaches is essential to improve patient outcomes. Despite advancements in surgical techniques, there is ongoing debate regarding the optimal approach for achieving complete tumor resection while minimizing complications such as cerebrospinal fluid leaks, cerebral edema, and neurovascular injury. Existing studies on olfactory groove meningioma management are often limited by small sample sizes, or a lack of comparative analysis across various approaches. This retrospective study is justified by the need to address this gap by involving a large, diverse dataset to evaluate and compare the outcomes of different surgical techniques. The findings will provide valuable insights into the factors influencing surgical decision-making, improve patient outcomes through better technique selection, and contribute to evidence-based guidelines for olfactory groove meningioma management.

Conclusions: Still finalizing the data analysis.

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Title: The Role of Cannabis in Recurrent Adolescent Gynecomastia: A Case Series

Authors: Mark Ashamalla[1], MSc; Kathryn McDermid[2]; Rebecca Courtemanche[2], MSc; Kathy Vuong[2], BSc; Jugpal Arneja[2], MD MBA FRCSC

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Background: Gynecomastia, the benign proliferation of male breast glandular tissue, is common in adolescence and can recur after surgery. Cannabis has attracted attention as a potential risk factor due to its endocrine-disrupting effects, particularly following its legalization for recreational use in Canada in 2018. However, evidence linking cannabis to gynecomastia remains conflicting. Understanding its association with postoperative recurrence is critical given the physical and psychological consequences of recurrent gynecomastia.

Objective: To describe cases of recurrent gynecomastia in adolescent males following surgical excision and explore potential associations with postoperative cannabis use.

Methods: A retrospective case series was conducted involving adolescent males who reported cannabis use and underwent gynecomastia excision surgery by the senior author between May 2009 and May 2025 at BC Children's Hospital. Patients who reported cannabis use after the initial procedure and later had surgery for recurrence were narratively described.

Results: Of 119 surgical patients, 11 reported cannabis use at any time point. 3 of 11 (27%) patients reported cannabis use post-operatively and required reoperation. All had normal endocrine work-ups, no relevant systemic health changes, and stable BMI, except for one patient who experienced a BMI reduction from 27.5 to 20.4 kg/m² due to increased physical activity and improved diet. Case 1 underwent bilateral excision at 15-years-old and reoperation at 17-years-old, reporting weekly cannabis use. Case 2 had unilateral excision at 17-years-old and reoperation at 19-years-old, six months after ceasing cannabis. Case 3 had unilateral excision at 17-years-old and contralateral surgery at 21-years-old, with monthly cannabis use prior to recurrence.

Conclusions: These findings suggest a possible association between cannabis use and recurrent gynecomastia in adolescents following surgery. However, stigma around cannabis use and legal restrictions for minors may have led to underreporting, representing important study limitations. Further research is needed to better define this relationship. In the meantime, our results highlight the value of incorporating discussions about risk of recurrence in this setting into preoperative counseling for adolescents undergoing gynecomastia surgery.

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Title: Machine Learning Algorithms for Predicting Extranodal Extension in Head and Neck Squamous Cell Carcinoma: Findings From A Systematic Review and Meta-Analysis

Authors: Arshbir Aulakh[1], Masih Sarafan[1], Amardeep S. Sekhon[1], Khanh Linh Tran[2], Ameen Amanian[2], Farahna Sabiq[3], Cornelius Kürten[2], Harman Parhar[2], Eitan Prisman[2]

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Background: Extranodal extension (ENE) strongly influences prognosis and treatment in head and neck squamous cell carcinoma (HNSCC). Current CT-based interpretation is hampered by variability among radiologists. Advances in machine learning (ML) may improve diagnostic detection of ENE.

Objective: To assess the accuracy of ML algorithms in identifying ENE on CT imaging compared with radiologist assessment.

Methods: We searched MEDLINE, EMBASE, Scopus, Cochrane, and Web of Science (2000–2025) for studies evaluating ML for ENE prediction. Two reviewers independently screened and extracted study characteristics, including design, number of patients and lymph nodes, primary tumor subsites, HPV status, ML architecture, and comparator groups. Diagnostic performance outcomes (AUC, sensitivity, specificity, accuracy, PPV, NPV) were recorded. Methodological quality was assessed using the 42-item Checklist for Artificial Intelligence in Medical Imaging (CLAIM). Pooled estimates of AUC were calculated.

Results: Six studies involving 1,407 patients and 2,870 lymph nodes met the inclusion criteria. Five were retrospective and one prospective, published between 2018–2024. Populations included HPV-positive and HPV-negative oropharyngeal, oral cavity, and mixed HNSCC cohorts. The studies applied a range of machine learning methods, most commonly deep learning image-analysis models. One study used a radiomics-based approach that relied on quantitative imaging features, while another employed an explainable model (GMGENet) designed to highlight which regions of a lymph node influenced the prediction. Radiologists served as comparators in nearly all studies. ML algorithms achieved a pooled AUC value of 0.92, with sensitivity ranging from 67% to 91% and specificity ranging from 72% to 96%. In contrast, radiologists demonstrated lower pooled AUC of 0.65, with sensitivity ranging from 24–96% and specificity from 43–96%, reflecting wider performance variability.

Conclusions: ML significantly outperformed radiologists for ENE detection, indicating potential as a clinical decision-support tool. More accurate preoperative ENE assessment could reduce unnecessary surgery in HPV-positive disease, minimize the risk of trimodality therapy, and improve selection of adjuvant chemoradiation. Integration of ML into diagnostic pathways, supported by prospective trials, may advance individualized treatment and reduce morbidity in HNSCC.

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Title: Rural-Urban Disparities in Head and Neck Cancer: A Systematic Review and Meta-Analysis of Overall Survival, Time to Diagnosis, and Stage at Diagnosis

Authors: Arshbir Aulakh[1], Kim Siwak[2], Barinder Kaila[1], Eitan Prisman[4], Kathryn Roth[5]

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Background: Head and neck cancer (HNC), which includes cancers of the lip, oral cavity, nasopharynx, oropharynx, hypopharynx, larynx, paranasal sinuses, and nasal cavity, is the seventh leading cause of cancer worldwide. Patients in rural areas often face barriers such as delayed treatment and limited access to healthcare services, which can affect HNC outcomes. Therefore, understanding rural–urban disparities in HNC results is essential for developing fair and effective cancer care strategies.

Objective: To systematically analyze rural-urban differences in overall survival (OS), stage at diagnosis, and time to diagnosis among patients with HNC.

Methods: MEDLINE, Embase, Web of Science, and Cochrane Library databases were searched from inception until June 2025. Studies were included if they were authored in English and compared OS, stage at diagnosis, and/or time to diagnosis between rural and urban populations. Statistical analyses were conducted using Review Manager software, and the methodological quality of the included studies was evaluated using the Newcastle Ottawa Scale.

Results: Eighteen studies involving 704, 571 patients with HNC were included. The combined results showed that patients living in rural areas had significantly worse OS than their urban counterparts (adjusted hazard ratio (aHR): 1.20; 95% CI: 1.09, 1.32; p=0.0002). A subgroup analysis based on disease stage found no significant difference between rural and urban populations for early (I/II) and advanced (III/IV) stages (OR: 0.97; 95% CI: 0.90, 1.06; p=0.53 and OR: 1.07; 95% CI: 0.96, 1.19; p=0.22, respectively). Additional subgroup analyses indicated rural patients were more likely to present with T4 disease and N2 disease compared to urban patients (OR: 1.21; 95% CI: 1.03, 1.42; p=0.02 and OR: 1.08; 95% CI: 1.03, 1.14; p=0.002, respectively). Data regarding time to diagnosis remains controversial.

Conclusion: Living in rural areas is linked to poorer OS and more advanced T and N stages. These geographic inequalities in HNC outcomes emphasize the need for targeted efforts to ensure timely and equitable medical care.

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Title: Assessing Short-Term Hearing Disability and Health-Related Quality of Life Treatment Response in Profound Acquired Unilateral Sensorineural Hearing Loss (USNHL) Patients: Systematic Review and Meta-Analysis

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Background: Single-sided deafness (SSD) affects spatial hearing and speech-in-noise perception, significantly impacting quality of life. Treatment options include invasive methods such as bone conduction devices (BCDs) and cochlear implants, as well as non-invasive approaches like BCDs worn on headbands and contralateral routing of signal (CROS) devices. The relative effectiveness of these interventions on hearing disability and health-related quality of life (HRQoL) remains uncertain.

Objective: To compare invasive and non-invasive hearing solutions in adults with SSD, focusing on short-term patient-reported outcomes (PROMs) for hearing disability and HRQoL, as well as treatment-related adverse effects.

Methods: A systematic review was conducted across PubMed, EMBASE, Cochrane, Web of Science, CINAHL, and ClinicalTrials.gov (up to August 2024). Eligible studies included prospective studies and randomized controlled trials reporting pre- and post-treatment PROMs in adults with SSD. Extracted outcomes were hearing disability (APHAB, SSQ) and HRQoL measures (HUI3, NCIQ, EQ-5D, GBI).

Results: Seventeen studies (n=338) were included, comprising one RCT and sixteen prospective observational studies. Invasive solutions significantly improved hearing-disability PROMs compared to no treatment (SMD –14.71; 95% CI –23.48 to –5.93; p=0.001). Non-invasive solutions showed no significant improvement (SMD –8.75; 95% CI –21.94 to 4.45; p=0.19). No significant difference was observed between headband BCDs and CROS devices (SMD 3.74; 95% CI –1.27 to 8.75; p=0.14). Adverse events were reported in five studies of invasive devices, with complication rates ranging from 0% to 21%.

Conclusions: Invasive hearing solutions markedly improve hearing disability outcomes in adults with SSD, while non-invasive options show limited benefits. Further research is necessary to directly compare invasive and non-invasive methods and to assess their effectiveness and safety in patients with SSD.

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Title: Clinical Landscape of Multiple Intracranial Meningiomas: A Retrospective Investigation into Tumor Behavior, Surgical Outcomes, and Future Therapeutic Strategies

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Background: Multiple intracranial meningiomas (MIMs) account for approximately 10% of all meningiomas and are characterized by distinct biological behavior and management challenges compared to solitary meningiomas. Etiology remains uncertain, with theories suggesting monoclonal spread, multicentric tumorigenesis, or radiation-induced origins. Evidence from large series suggests that lesion multiplicity is independently associated with poorer survival and shorter progression-free survival. Despite their prevalence, MIMs progression patterns and optimal management strategies remain unclear, as treatment must balance surgical risks with the need for long-term disease control and favorable functional outcomes for patients.

Objectives: To characterize the clinical, radiographic, and surgical features of MIMs and analyze their natural history, including tumor growth rates, recurrence patterns, and long-term prognosis through a retrospective review of patients treated at Vancouver General Hospital (VGH), and to evaluate outcomes of surgical and conservative management, with the aim of identifying principles that could inform future treatment guidelines.

Methods: Patient records meeting MIMs criteria and treated at VGH were reviewed, including clinical records, imaging reports, operative notes, and pathology findings. Lesions were tracked longitudinally with tumor burden, growth rates, and recurrence patterns recorded and assessed over set time frame. Missing or inconsistent data were flagged. Clinical outcomes, recurrence rates, extent of resection, surgical complications, and the role of adjuvant therapy were recorded, as well as demographics.

Results: Preliminary review shows that patients demonstrate heterogeneous patterns of disease progression. Tumor clustering along the falx and superior sagittal sinus was common, often complicating surgical decision-making. While many lesions remained radiographically stable, others demonstrated progression despite initial descriptions of stability, highlighting the importance of volumetric assessment. Surgical outcomes reflected literature trends: recurrence occurred despite aggressive resections (Simpson grade I/II resections), particularly in parasagittal tumors with sinus involvement. Patients frequently present with histologically distinct lesions within the same individual, underscoring the biological heterogeneity of MIMs. Observation of small, asymptomatic lesions was safe in most cases, supporting selective rather than prophylactic resection.

Conclusions: MIMs are biologically and clinically distinct entity from solitary meningiomas, requiring tailored management and surveillance strategies. Our preliminary findings support a pragmatic approach: resection of symptomatic or high-risk lesions, with conservative observation of stable, asymptomatic tumors, complemented by long-term surveillance. The heterogeneity in clinical behavior and recurrence risk emphasizes the need for standardized analysis and reporting, long-term imagining and clinical follow-up, and multicenter collaboration to refine treatment guidelines.

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Title : Facilitating Access to Acute Surgical Care for Indigenous Patients: A Strength-Based Approach

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Background : Indigenous patients in Canada continue to face inequities in access to surgical care and worse outcomes compared to non-Indigenous populations. While quantitative studies have shown higher morbidity, mortality, and complications, few have qualitatively explored the root causes from Indigenous perspectives. Existing research highlights systemic racism, mistrust, and cultural unsafety, but surgical care remains underexamined. In British Columbia, Indigenous peoples represent 5.9% of the population, and the Vancouver Coastal Health region includes 14 First Nations communities. Vancouver General Hospital's (VGH) Acute Care Surgery (ACS) and Trauma services care for Indigenous patients from both urban Vancouver and rural or remote communities, making it an important setting to examine barriers and facilitators to care.

Objectives : This study aimed to qualitatively identify patient- and provider-defined facilitators and barriers to equitable acute surgical care, generating recommendations for the ACS and Trauma services at Vancouver General Hospital with broader relevance across Vancouver Coastal Health facilities and British Columbia.

Methods : Guided by a Two-Eyed Seeing framework and a strength-based lens, semi-structured interviews were conducted with Indigenous patients and family members (n=11), nurses (n=7), surgeons (n=5), an Elder (n=1), and an Indigenous Patient Navigator (IPN, n=1). Recruitment occurred through hospital wards for trauma, ACS services and the emergency department, huddles and use professional networks. Interviews were transcribed verbatim, coded inductively, and analyzed thematically in NVivo. Triangulation across respondents ensured a balanced understanding of barriers and facilitators.

Results : A total of 25 respondents participated, including patients, family members, nurses, surgeons, an Elder, and an Indigenous Patient Navigator. Six themes emerged. Communication was consistently identified as the cornerstone of care: while patients valued clear and direct explanations, many hesitated to ask questions due to fear or past negative experiences. Trust and safety were shaped by historical and ongoing racism, yet relational effort, humility, and respect for patient autonomy were powerful tools for rebuilding trust. Indigenous identity and relatability, particularly through the presence of Indigenous staff and Patient Navigators, enhanced belonging, advocacy, and cultural safety. Cultural supports such as Elders, smudging, and traditional medicine were meaningful facilitators, though individual needs varied. The role of Indigenous Patient Navigators was seen as pivotal, with early engagement improving continuity and navigation, though limited staffing restricted impact. Finally, strong family, community, and band supports were protective in healing, while logistical and financial burdens, particularly from rural transfers, placed disproportionate strain on Indigenous patients.

Conclusion : Access to acute surgical care for Indigenous patients is shaped by intersecting barriers of systemic racism, communication gaps, and rurality challenges. However, resilience, relational care, cultural supports, and Indigenous Patient Navigators emerged as powerful facilitators. To advance equity in surgical care, findings support: (1) expansion of Indigenous Patient Navigator programs, (2) enhanced cultural safety training contextualized to acute surgical settings, (3) system-level supports for rural transfers and discharge planning, and (4) prioritization of strength-based, Indigenous-led models of care. These strategies are essential to improve Indigenous patient experiences at VGH and contribute to reconciliation in surgical care delivery across British Columbia. ***Jump back to Research Day Schedule***

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Title: Situational Analysis of Surgical Availability and Accessibility in the Central African Republic

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Background: Perioperative mortality remains underexplored in many African countries, despite the continent carrying the world's highest burden of surgical disease. The Central African Republic (CAR) is one of the most resource-limited and conflict-affected countries globally, which is compounded by a critically low physician-to-population ratio of less than one doctor for every 100,000 people. A recent review of available literature highlighted the scarcity of reliable data on surgical capacity in the CAR, underscoring the urgency of evaluating existing systems to inform future surgical strengthening initiatives.

Objective: To evaluate the availability and accessibility of surgical services in the CAR using the World Health Organization (WHO) Tool for Situational Analysis.

Methods: Data was collected by Médecins Sans Frontières (MSF) personnel across nine hospitals in the CAR using a standardized Google Form version of the WHO Tool for Situational Analysis. Variables measured included the number of specialists by field, annual surgical case volume by procedure, surgical safety, and availability of infrastructure such as electricity, imaging, and essential investigations amongst much more. Data were collated and **visualized** using Microsoft Power BI to generate descriptive charts and maps highlighting current disparities.

Results: Preliminary findings reveal wide variability in practitioner training, with surgical and anesthetic care often being provided by general doctors or non-physicians. Most operations are non-elective, with relatively few Bellwether procedures (Cesarian section, laparotomy, open fracture repair). None of the surveyed hospitals had access to advanced imaging such as computed tomography or magnetic resonance imaging, and none had the capacity to perform open reduction internal fixation of fractures or non-Burr hole craniotomies. Additionally, less than one third of the population can reach a hospital within two hours of travel.

Conclusions: These early results demonstrate profound gaps in surgical capacity across the CAR. Strengthening surgical services will require targeted investment in training, equipment, and hospital functionality, guided by reliable, context-specific data. ***Jump back to Research Day Schedule***

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Title: Scapular Tip Osseous Free Flap in (Sub-)Total Nasal Reconstruction Using Virtual Surgical Planning: Clinical, Functional and Cephalometric Outcomes

Authors: Alex Chen[1], Rohan Birk[1], Cornelius Kürten[1], Khanh Linh Tran[1], Amelie Marshall[1], Amanda Ding[1], Antony Hodgson[2], Sidney Fels[3], J. Scott Durham[1], Eitan Prisman[1]

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Background: Rehabilitation or reconstruction of the nose after ablative surgery poses multifaceted challenges to the treatment team due to both the functional and aesthetic role of the nose. The scapular free flap, with its unique geometry, abundance of vascularity and soft tissue options, has recently been applied for these complex nasal reconstructions. However, there is very limited description regarding this experience in terms of virtual surgical planning (VSP), surgical technique, or patient outcomes.

Objective: The objective of this study is to assess the utility of VSP in total nasal reconstruction with the scapular free flap. We evaluate clinical and pathological results, bioinformatical image-analysis (cephalometric measurements) and patient-reported outcomes.

Methods: Eight consecutive (sub-)total nasal reconstructions were planned with in-house VSP and intraoperatively guided using 3D-printed models and cutting guides. Patient-reported outcomes (SCHNOS, NAFEQ, DASH) were administered. Cephalometric measurements on the pre-operative, virtual plan, and post-operative models were collected.

Results: From 01/2023 to 08/2024, VSP was successfully applied to simultaneous nasal resection and scapular harvest and reconstruction in eight cases, with an average operative time of 258±122.1 minutes. Patients reported adequate functional and aesthetic outcomes (SCHNOS cosmesis sub-scale: 34±39.4/100, NAFEQ function sub-scale: 22.4±4/35) as well as low donor site morbidity (21.5±15.2/100), with no nasal stenosis recorded in five of eight cases. There were small differences between the pre-operative and post-operative, and between the virtual plan and post-operative cephalometric measurements.

Conclusions: This is the largest case series involving the scapular free flap for complex nasal reconstruction, and the first to utilize VSP for the preplanning of each reconstruction. This technology aided the surgeons in accurately recreating the pre-operative nasal structure and following the reconstructive plan. The scapular free flap can be used in the reconstruction of complex nasal defects with low morbidity and good patient-reported outcomes.

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Title: The Permanent vs. Absorbable Sutures in Primary Repair of Umbilical Hernias (PAPYRUS) Protocol: A Canada-wide, Multicentre, Single-blind, Randomized Controlled Trial

Authors: Shaily Brahmbhatt[1], Do Hee Kim[2], Zach Sagorin[1], Rachel Liu Hennessey[1]

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Background: Umbilical hernias, or a primary hernia centred at the umbilicus, can be found in over a quarter of the population and account for over 15% of hernia repairs performed in Canada annually. Primary repair with absorbable or non-absorbable suture is often employed for smaller defects measuring less than 2 centimetres. While non-absorbable sutures may have greater tensile strength, the use of absorbable sutures may be associated with fewer foreign body reactions. Despite the prevalence of these repairs, there is a lack of prospective, controlled data on outcomes in umbilical hernia repairs closed primarily with absorbable versus non-absorbable suture.

Objective: The objective of this study is to determine whether absorbable polydioxanone suture is non-inferior to permanent polypropylene suture for primary open repair of umbilical hernias in resulting recurrence, post-operative complications, and quality of life at 24 months following surgery.

Methods: This will be a nationwide, multi-centre, prospective, parallel arm, non-inferiority, randomized, single-blinded, controlled trial of patients undergoing elective suture repair of small (≤2cm) primary umbilical hernia comparing a non-absorbable (polypropylene) suture control group versus an absorbable (polydioxanone) suture intervention group. The primary endpoint is recurrence at 24 months. Secondary endpoints include surgical site infections, surgical site infections requiring intervention, and postoperative complications. Quality of life (QoL) will be assessed using the Hernia-Related Quality of Life Survey (HerQLes) and the 12-item Short Health Survey (SF-12) at baseline, 30 days, 12 months, and 24 months. Recruitment will take place over five years, starting in the Fall of 2025. Follow-up assessments will be conducted at the outpatient clinic at 30 days, 6 months, and 2 years following surgery, including physical exams and imaging as needed.

Statistical Analysis: All analyses will follow the intention-to-treat principle. Time-to-event outcomes will be assessed using Kaplan-Meier survival analysis, log-rank tests, and Cox models. QoL will be analyzed with repeated measures ANOVA and paired t-tests with Bonferroni correction. Interim analyses, conducted annually, will assess safety and feasibility using Haybittle-Peto guidelines. Exploratory subgroup analyses will be conducted for body mass index, hernia size, smoking and study site. Analyses will be conducted in R (v4.5.0)

Discussion: Current guidelines note a scarcity of data to formulate recommendations on suture type in primary umbilical hernia repairs. The PAPYRUS trial will address this gap by evaluating outcomes, including recurrence, surgical site occurrences, infections, and quality of life in patients with small umbilical hernias to inform evidence-based suture selection.
ClinicalTrials.gov Identifier: NCT07156188

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Title: Rheumatological Adverse Events Associated With The Use of FDA Approved Biologics in Chronic Rhinosinusitis with Nasal Polyps and Asthma: A Systematic Review

Authors: Lauren Caswell[1], Masih Sarafan[1], Andrew Thamboo[2]

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Background: Biologic therapies including dupilumab, omalizumab, and mepolizumab have transformed the management of chronic rhinosinusitis with nasal polyps (CRSwNP) and asthma by targeting type 2 inflammatory pathways. However, emerging evidence suggests that rheumatological adverse events associated with the use of these biologics may be more prevalent in clinical practice than reported in pivotal trials. The comparative rheumatological safety profiles and risk patterns among these biologics remain poorly characterized, limiting informed clinical decision-making.

Objective: To systematically evaluate the prevalence, types, and characteristics of rheumatological adverse events associated with FDA-approved biologic medications (dupilumab, mepolizumab, and omalizumab) across all their FDA-approved indications, and to elucidate whether certain underlying conditions predispose patients to specific patterns of rheumatological adverse events under biologic therapy.

Methods: A comprehensive search was conducted with five databases (MEDLINE, EMBASE, Web of Science, SCOPUS, and CENTRAL) in accordance with PRISMA guidelines. Eligible studies included randomized controlled trials, clinical trials, cohort studies, case-control studies, case series, case reports, and post-marketing surveillance reports. Two reviewers independently screened, extracted data, and assessed risk of bias using validated tools. Outcomes of interest included the frequency, type, timing, severity, and resolution of RAEs, as well as biologic-specific and condition-specific safety profiles.

Results: Analysis of 210 studies encompassing over 27,000 participants revealed substantial differences in rheumatological adverse event profiles among biologics. Dupilumab demonstrated the highest overall incidence with a distinctive "arthro-ocular syndrome" characterized by arthralgia, conjunctivitis, and fatigue as predominant manifestations. Mepolizumab showed classical inflammatory patterns with notable signals for serious conditions including temporal arteritis and polymyalgia rheumatica. Omalizumab demonstrated the most favorable safety profile with predominantly mild musculoskeletal symptoms. Importantly, underlying conditions significantly influenced adverse event risk, with atopic dermatitis patients showing consistently elevated rheumatological manifestation rates exceeding 7% regardless of biologic choice. Cross-condition analysis revealed arthralgia as the most common manifestation across all biologics and conditions, while condition-specific patterns emerged for other rheumatological events.

Conclusions: This systematic review reveals distinct rheumatological risk signatures for each FDA-approved biologic in CRSwNP and asthma treatment. The findings demonstrate significant variation in both incidence and pattern of adverse events, with underlying patient conditions serving as important independent risk factors.

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Title: Chlorhexidine-induced Anaphylaxis in the Setting of Renal Transplantation and Urologic Surgeries: A Case Series

Authors: Hyunwoong Harry Chae[1], Julena Foglia[2], Juan Ruiz[3], Jacqueline Trudeau[2], Christopher Nguan[3]

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Background: Chlorhexidine is a widely used antiseptic in perioperative and acute care settings. Chlorhexidine-induced anaphylaxis is an underrecognized but potentially life-threatening condition. Patients undergoing kidney transplantation (KT) or urological procedures may be at higher risk due to increased exposure from chronic hemodialysis or repeated sterile urinary catheterizations.

Methods: Using data from formal reports made to the Vancouver Coastal Health perioperative anaphylaxis clinic, we retrospectively reviewed all patients who experienced an anaphylactic reaction to chlorhexidine in perioperative or acute care settings and summarized characteristics of cases related to KT and urological surgeries.

Results: From 2017-2023, there were 12 cases (10 patients) of anaphylactic reactions to chlorhexidine in all perioperative and acute care settings at our centre. Nine (9/12; 75%) cases involved chlorhexidine-coated central venous catheters (CVC). Five (5/12; 41.7%) cases occurred in patients who were previously or currently on dialysis. Four cases (4/12; 33.3%) occurred during KT surgery (in 3 patients, including one with two separate KT attempts), and one case (1/12; 8.3%) occurred during a laparoscopic nephroureterectomy. Of these 5 KT/urological surgeries involving chlorhexidine anaphylaxis, 2 KTs and 1 nephroureterectomy were aborted during surgery, 1 KT was cancelled, and 1 KT was successfully completed. Two of the three aborted or cancelled KT surgeries ultimately received successful KT at a later date. Three cases (60%) had a grade 3 anaphylactic reaction (life-threatening hypotension and/or severe bronchospasm), and two (40%) had a grade 4 reaction (requiring cardiopulmonary resuscitation).

Conclusion: The incidence of chlorhexidine anaphylaxis at our institution was approximately 1/15,000 - substantially higher than the 1/100,000 incidence rate in general populations reported in the literature. With 41.7% of chlorhexidine anaphylaxis cases occurring in patients undergoing KT or urological surgeries, this population may be at increased risk. Implementation of chlorhexidine-free protocols in operating rooms for these surgeries should be considered to mitigate risk for anaphylaxis.

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Title: Characterization of Clinical, Systemic, and Socioeconomic Factors That May Affect the Timing of Initial Management of Patients with Posterior Urethral Valve

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Background: Posterior urethral valves (PUV) are a leading cause of urinary tract obstruction in children and can result in chronic kidney and bladder diseases. Delayed diagnosis and treatment have been associated with poorer clinical outcomes. The timing of management may be affected by clinical, health system, and socioeconomic factors.

Objective: To characterize clinical, systemic, and socioeconomic factors as potential barriers to healthcare access, measured by timing of posterior urethral valve (PUV) management.

Methods: We retrospectively reviewed PUV patients managed at our institution from 2000-2019. Primary outcomes were time to first imaging (renal ultrasound and/or voiding cystourethrogram) and surgery. Univariate analyses assessed associations with clinical (antenatal suspicion, prematurity), system (NICU admission, transfer status, hospital distance), and socioeconomic factors. Socioeconomic status was assessed using the Canadian Index of Multiple Deprivation (CIMD) scores and quintiles, which include situational vulnerability, residential instability, economic dependency, and ethnocultural composition.

Results: Sixty-two PUV patients were included. Median age at imaging was 5 days and at surgery was 14 days. Antenatal suspicion of PUV was present in 53.3% (32/60), prematurity in 27.6% (16/58), NICU admission in 57.7% (30/52), and transfer from another hospital in 51.7% (30/58) of patients. Median distance from hospital was 69.8 km. Median CIMD scores were: situational vulnerability –0.25, residential instability –0.21, economic dependency –0.36, and ethnocultural composition –0.39. Antenatal suspicion of PUV was associated with earlier imaging ($p < 0.001$) and surgery ($p < 0.001$). Prematurity was also associated with earlier imaging ($p = 0.048$) and surgery ($p = 0.028$). Neonatal intensive care unit (NICU) admission was associated with both earlier imaging ($p = 0.002$) and surgery ($p = 0.02$). Higher ethnocultural composition scores were associated with a longer time to surgery ($p = 0.05$). Imaging and surgery timing were not significantly associated with transfer status, distance from hospital, or other CIMD dimensions.

Conclusions: Patients with antenatally suspected PUV, prematurity, and NICU admission had earlier imaging and surgery. Most socioeconomic factors were not barriers to PUV management, but higher ethnocultural composition scores were associated with longer time to surgery. Disparities in care of PUV patients related to ethnocultural factors merit further study.

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Title: Root Cause Analysis of Omissions and Delays in the Initiation of Neoadjuvant Chemotherapy in Eligible Patients with Breast Cancer

Authors: Jonathan Chan[1], Jaimie Lee[1], Kathryn Isaac[1], Alan Nichol[2]

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Background: Chemotherapy before surgery, or neoadjuvant chemotherapy (NACT), is indicated for patients with high-risk breast cancers. NACT may improve surgical outcomes by downstaging the primary tumour and facilitating breast conservation. In addition, the pathological response to NACT informs prognosis and guides adjuvant treatments. Clinical guidelines indicate that NACT should begin within 28 days of diagnosis. However, steps such as referrals, tests, and consults between the cancer diagnosis and the start of NACT often induce delays, potentially worsening patient outcomes.

Objective: Determine key obstacles preventing patients with eligible breast cancers from receiving NACT and key reasons for treatment delays in patients receiving NACT.

Methods: We identified patients in BC Cancer records from January 1st, 2024, to December 31st, 2024, who were eligible for NACT based on age and tumour characteristics: 80 years old or younger with a new diagnosis of triple-negative or HER2-positive clinical stage II or III breast cancer. Data were collected on biomarker status, staging, histology, treatments, and treatment timing. If possible, the main reason for delay or omission of NACT was found for each patient.

Results: Of 100 patients identified, 73 received NACT, 26 received surgery first, and one declined all treatment. Among the 27 patients who did not receive NACT, the most common reasons were: 37% (10/27) not offered NACT after meeting with medical oncology, 30% (8/27) not being referred to medical oncology and 7% (2/27) declining NACT. Reasons for NACT omission were unclear in 22% (6/27) of charts. The median time from diagnosis-to-any treatment was 40 days [IQR 30.3-53.8], with median diagnosis-to-NACT time of 40 days [30.0-53.0] and median diagnosis-to-surgery time of 41.5 days [30.5-64.5]. Only 17% (17/100) of patients received either NACT or surgery within 28 days of diagnosis. The top reason for delays to NACT was observed in the 71% (39/54) of patients who waited more than 21 days for consultation with medical oncology. Reasons for NACT delay and omission were similar across BC health regions.

Conclusions: Most high-risk breast cancer patients eligible for NACT in BC are not receiving it within the recommended timeframe. Furthermore, many patients potentially eligible for NACT were not seen by medical oncology to consider the treatment. Strategies to improve triage for NACT-eligible patients to medical oncology may improve guideline adherence and lead to better patient outcomes.

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Title: Neurosurgical Management and Quality of Life in Patients with Petrous Apex Cholesterol Granuloma

Authors: Yoojin Choi MD PhD[1], Ryojo Akagami MD FRCSC[1]

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Background: Cholesterol granulomas are rare cysts in the petrous apex surrounded by foreign body giant cells. They can present with a wide range of symptoms including headache, hearing loss, tinnitus, vertigo and facial nerve palsy. Due to their low prevalence, there is a gap in our understanding of how these patients should be managed. Importantly, no studies have assessed the impact of cholesterol granulomas on the quality of life for patients, which is arguably one of the most crucial measures that can help inform a surgeon's clinical decision.

Objective: The primary objective of this study is to understand the impact of cholesterol granulomas on the patients' quality of life.

Methods: This is a retrospective chart review of cholesterol granuloma cases managed by a single surgeon at Vancouver General Hospital between 2000 and 2025. It is a descriptive study focused on clinical decisions and patient outcomes as measured by symptoms, radiographic evidence and patients' self-reported data on quality of life. Non-normal data are analyzed using non-parametric tests on SPSS version 31.0.

Results: A total of 14 patients with cholesterol granuloma were identified, of which 6 were treated conservatively and the remaining 8 surgically. The median age of the study population was 43 (range 32-61) with 79% being male. Of those who were symptomatic (8/14), dizziness/balance issues (6/8) and cranial nerve VI palsy (4/8) were the most common presenting symptoms. Others included headache, tinnitus, pain and sensory changes. Interestingly, there were no differences in the baseline self-reported quality of life for patients who were later treated non-operatively versus operatively. However, follow-up surveys demonstrated that patients who were treated operatively had improved quality of life. Of note, all patients reported less bodily pain (p=0.026) and emotional toll ("feeling worn out"; p=0.026) post-operatively, and these in turn enhanced their ability to spend more time on work or physical activities (p=0.020) as well as accomplish tasks previously affected by emotional problems (p=0.046). All surgically managed patients reported resolution of their presenting symptoms caused by cholesterol granuloma.

Conclusions: Surgical management of cholesterol granuloma may have a significant effect on both physical and emotional health, ultimately improving the quality of life for patients.

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Title: Prognostic Factors for Intraoperative Venous Congestion in Deep Inferior Epigastric Perforator Flap Breast Reconstruction

Authors: Danielle Cohen[1], Frances Perry[2], Rebecca Spounge[3], Esta Bovill[1], Penny Brasher[4], Sheina Macadam[1]

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Background: Intraoperative venous congestion during a DIEP flap can cause flap failure. Some surgeons routinely include a secondary venous outflow to mitigate this, but this may increase operative time and surgical complexity thereby raising morbidity and length of stay in hospital. Literature suggests that intraoperative venous congestion is related to a persistently dominant superficial venous system of the abdominal wall. Therefore, identifying prognostic factors preoperatively could help predict high risk patients to facilitate surgical planning, shorten operative time, and reduce complications.

Methods: A systematic search of Ovid MEDLINE supplemented with citation harvesting was used to identify studies. Two independent reviewers screened the papers to determine relevance, and data was extracted by a single reviewer. A retrospective chart review of DIEP flap patients from our university hospitals between 2008 – 2021 was done to collect patient data and preoperative CT scans were studied to collect anatomic data. The results of the local study and studies identified in the review were combined by random-effects meta-analysis of the most studied prognostic risk factors.

Results: Our cohort consisted of 301 patients (411 flaps) with an intraoperative venous congestion event rate of 8.8% (36/411). The rapid review identified 118 unique citations of which 12 papers were deemed relevant. These papers reviewed over 50 prognostic risk factors; the number of events per study ranged from 1 to 87 (median=10.5). The most studied factors were active smoker, prior abdominal surgery, preoperative radiotherapy, hypertension, diabetes, BMI, number of perforators, SIEV diameter,and suprascarpal fat thickness. Two studies investigated direct/atypical connections between the superficial and deep venous systems. Estimates of the pooled odds ratio (95% CI, number of studies) are: active smoking OR=0.94 (0.45 to 1.94, N=5), prior abdominal surgery OR=1.32 (0.67 to 2.63, N=2), preoperative radiotherapy OR = 0.63 (0.36 to 1.08, N=4), hypertension OR = 0.95 (0.61 to 1.48, N=4), diabetes OR = 1.78 (0.89 to 3.59, N=3). Estimates of the pooled average difference (95% CI, number of studies) are: flap thickness average difference -2.40 (-5.24 – 0.54, N=2) and BMI average difference -0.67 (-1.71 – 0.37, N=2). Individual studies reported odds ratio (95% CI, number of studies) as indirect connection OR = 40.6 (6.9 to 380.7, N=1) and atypical connection OR = 5.3 (1.6 to 19.6, N=1).

Conclusions: Based on pooled analysis, clinical and anatomic factors likely predictive of intraoperative venous congestion are diabetes and low BMI/thinner flaps. For patients with these risk factors, we believe it is safe to perform DIEP flap reconstruction, however they should be counselled on their increased risk for venous congestion, and we recommend including a secondary venous outflow procedure in the operative plan. Single, small studies have suggested substantially increased risk of venous congestion for atypical or indirect venous congestions. Additionally, we recommend that all patients undergo preoperative CT scanning to assess for atypical / indirect venous connections. Inadequate reporting of study results was common and limited the meta-analyses. More complete reporting of the results of prognostic studies is imperative to advance prognostic factor identification

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Title: Dosimetric Outcomes for Stereotactic Radiotherapy in Early-Stage Non-Small Cell Lung Cancer and Interstitial Lung Disease: A Secondary Analysis of the ASPIRE-ILD Trial

Authors: Alexa Dang,[1,2] David A. Palma,[2] Edward Wang,[2] Pencilla Lang,[2] Andrew Warner,[2] Houda Bahig,[3] Alexander V. Louie,[4] Stephen Harrow,[5] Meredith E. Giuliani,[6] Brock J. Debenham,[7] Christopher J. Ryerson,[8] Stewart Gaede,[9]

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Purpose: Stereotactic ablative radiotherapy (SABR) in the setting of interstitial lung disease (ILD) is associated with higher toxicity risks. This dosimetric analysis of the ASPIRE-ILD trial evaluates doses delivered to targets and organs at risk (OARs), and correlations between baseline factors and outcomes, to better inform patient selection and treatment planning.

Methods: Radiation plans were centrally collected and reviewed, and descriptive statistics were used to assess doses to targets and OARs. Unadjusted Cox proportional hazards and logistic regression were performed, respectively, to identify predictors of overall survival (OS), local control (LC), and related adverse events grade ≥ 2 based on the Common Terminology Criteria for Adverse Events (CTCAE) version 4. Linear regression was performed to identify significant predictors of the Functional Assessment of Cancer Therapy: Lung (FACT-L), Cough Severity Scale, and pulmonary function testing (PFT) at 6 months.

Results: The cohort included 39 patients with early stage lung cancer and ILD treated with SABR (50 Gy in 5 fractions every other day). Thirty-five patients were treated with a volumetric modulated arc therapy (VMAT) technique, while the remaining four patients were treated using Cyberknife®. The mean internal gross tumor volume (iGTV) and planning target volume (PTV) for the entire cohort were 12.0 ± 11.2 cc and 33.9 ± 22.0 cc, respectively. The mean ± SD Dmax was 64.2 ± 6.3 Gy (128% of prescription). On unadjusted analyses, LC decreased with increasing tumour size (measured as either iGTV size [p=0.038] or PTV size [p=0.033]). The risk of grade ≥ 2 adverse events increased with higher heart Dmax (p=0.020) and heart D15cc (p=0.025), and with increasing fibrosis surrounding the primary tumour (measured as the Hounsfield unit density of lung immediately surrounding the PTV [p=0.006]). Worse OS was associated with ILD sub-type (specifically connective tissue disease-associated ILD and idiopathic pulmonary fibrosis [IPF]), previous ILD treatment, current ILD treatment, home oxygen use, and larger iGTV and PTV sizes. Smoking cessation, a diagnosis of IPF, and higher baseline forced vital capacity (FVC) were associated with improved FACT-L scores at 6 months. None of the examined OAR dosimetry and planning metrics were predictive of PFT values.

Conclusion: Several factors were associated with clinically relevant outcomes after SABR in patients with ILD, including some that are modifiable (e.g. radiation dose to the heart and smoking cessation). SABR delivered to highly fibrotic areas of lung was associated with higher toxicity. Smoking cessation may be important in preserving quality of life after treatment.

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Title: What is the Impact of Treatment De-Escalation on Patient Reported Outcomes in Patients with T1-T2 Oropharyngeal Cancers? A Secondary Analysis of the ORATOR Studies

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Purpose: This study evaluates the impact of treatment de-escalation from 70 Gy to 60 Gy on patient reported outcomes and toxicity for patients with T1-2 p16-positive oropharyngeal carcinomas treated with primary radiotherapy as part of the ORATOR trials.

Methods: Patients with p16-positive squamous cell carcinoma of the oropharynx treated with primary radiotherapy in the ORATOR and ORATOR2 randomized trials were included. Patient demographics, tumor and treatment characteristics were compared between patients who received radiation with 70 Gy (ORATOR) vs. 60 Gy (ORATOR2). Outcomes examined included quality of life (QOL), toxicity, feeding tube use, overall survival (OS) and progression-free survival (PFS). QOL scores were assessed as changes at 1-year from baseline, using the MD Anderson Dysphagia Inventory (MDADI) and the European Organisation for Research and Treatment of Cancer (EORTC) Core 30 (C-30) and Head-and-Neck 35 (HN-35) scales.

Results: The cohort included 59 patients, 29 patients treated with 60 Gy and 30 patients with 70 Gy. There were fewer smokers, both current and previous, in the group treated with 60 Gy (48% [n=14] vs. 80% [n=24], p=0.011). The proportion of patients receiving chemotherapy was similar: 69% [n=20] in the 60 Gy cohort and 77% [n=23] in the 70 Gy cohort (p=0.51). Comparing QOL changes at 1-year in the 60 Gy cohort vs. 70 Gy cohort respectively, the 60 Gy cohort demonstrated improved MDADI total (mean ± SD change +1.9 ± 12.2 vs. -5.8 ± 11.3, p=0.035), and functional (+5.5 ± 12.7 vs. -3.3 ± 12.2, p=0.023) scores. The 60 Gy cohort demonstrated significantly better outcomes at 1-year in several EORTC QOL domains: global health status, fatigue, nausea/vomiting, appetite, constipation, pain, xerostomia, sticky saliva, and coughing (all $p < 0.05$). Patients treated with 60 Gy had significantly lower rates of grade 2-3 dysphagia and grade 2-3 mucositis (all $p < 0.05$). There was no significant difference in percutaneous feeding tube use at 1-year (n=0 in the 60 Gy cohort vs. n=1 in the 70 Gy cohort). There were no significant differences in OS (3-year 100% in the 60 Gy cohort vs. 97% in the 70 Gy cohort) or PFS (3-year also 100% and 97% respectively).

Conclusion: Dose de-escalation from 70 Gy to 60 Gy for p16-positive patients with early-stage squamous cell carcinoma of the oropharynx was associated with better QOL across numerous domains, reduced toxicity, and did not impact OS or PFS in this study.

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Title: Variability in the Vein of Trolard: Implications for Neurosurgical Planning

Authors: Ahad Daudi[1], Mehdi Tabesh[1], Mostafa Fatehi[2]

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[2]Division of Neurosurgery, University of British Columbia, Vancouver

Background: The venous drainage of the cerebral cortex is a critical consideration in neurosurgery, where injury to cortical veins can lead to major neurological complications. The vein of Trolard, the largest superficial anastomotic vein, connects the superficial middle cerebral vein to the superior sagittal sinus and plays a central role in cortical venous outflow. While traditionally described as running through the postcentral or marginal sulcus, its size and trajectory vary widely, influenced by neighboring anastomotic veins. The vein may instead traverse the central sulcus or extend further anteriorly, creating significant challenges for surgical planning. Misidentification or inadvertent sacrifice of this vein risks severe intraoperative complications, including venous infarction and hemodynamic instability.

Objective: To characterize the vein of Trolard's displacement relative to the marginal sulcus, evaluate hemispheric asymmetry, sex-related differences, and the impact of sagittal pathology on its trajectory, and to evaluate evidence for a bimodal anterior–posterior distribution.

Methods: We conducted a single-centre retrospective analysis at Vancouver General Hospital using two-dimensional magnetic resonance angiography (MRA). Measurements were obtained from the dominant vein to the marginal sulcus. Inter-rater reliability was assessed using paired t-tests, Wilcoxon signed-rank tests, and intraclass correlation coefficients. Displacement relative to the sulcus was tested with one-sample t-tests, hemispheric asymmetry with paired t-tests, and sex and sagittal pathology differences with Welch's t-tests on averaged reviewer measurements. Distributional modality was explored using Gaussian mixture modeling.

Results: A total of 390 subjects were analyzed, yielding 780 hemispheric measurements (mean age 57 years, 45% male), with sagittal pathology present in 19%. Inter-rater reliability was excellent (ICC ≈ 0.90), permitting averaging of reviewer measurements. Across the cohort, the vein of Trolard was significantly displaced relative to the marginal sulcus (all $p < 0.001$) with no hemispheric asymmetry ($p = 0.37$). Sagittal pathology showed a trend toward left-sided displacement ($p = 0.052$) but was not significant on the right. Sex differences were evident, with males and females differing in both hemispheres ($p = 0.012$ left, $p = 0.001$ right). Gaussian mixture modeling confirmed a bimodal anterior–posterior distribution.

Conclusion: The vein of Trolard demonstrates consistent displacement from the marginal sulcus with a bimodal anterior–posterior distribution, influenced by sex but not hemisphere. These findings highlight the importance of recognizing variability in venous anatomy to minimize the risk of misidentification and venous injury during neurosurgical intervention.

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Title: The Prognostic Significance of Lymph Node Metastases Characteristics in Papillary Thyroid Carcinoma: a Scoping Review.

Authors: Gurvir Singh Dhutt[1], Laura Ellis[1], Sam Wiseman[1]

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Background: Lymph node metastases are common in papillary thyroid carcinoma (PTC). The ATA, ESMO, and NCCN classify pathological N1 disease (defined as <5 micrometastases measuring <0.2cm) as having a low risk of recurrence (<5%). However, there is controversy regarding the thresholds that should be used for lymph node characteristics in predicting PTC recurrence risk.

Objective: Perform a scoping review to explore the prognostic significance of lymph node characteristics in predicting risk of recurrence in PTC patients.

Methods: Following the PRISMA guidelines, the PubMed, Embase, and Web of Science databases were searched and supplemented by hand searching reference lists to identify articles published from database inception until October 2024. Title/abstract and full-text screening and subsequent data extraction using a standardized table were performed by two independent reviewers. Findings were synthesized narratively.

Results: A total of 172 studies were included. Most studies were retrospective cohort design and reported from South Korea, Japan, and China. The most investigated variables were number of metastatic lymph nodes, the presence of extranodal extension (ENE), size of metastatic lymph nodes, lymph node ratio (LNR), and location of nodal metastases (central vs. lateral neck compartments). In general, an increased number of metastatic lymph nodes (commonly >5), presence of ENE, larger size of metastatic lymph nodes (commonly >3 cm), higher LNR (commonly ≥0.3 or ≥0.4), and lateral compartment metastases were all associated with higher recurrence rates.

Conclusions: The findings of this review are consistent with ATA, ESMO, and NCCN guidelines but further question whether current recommendations adequately reflect the risk of cancer recurrence based on metastatic nodal characteristics. However, the lack of standardized definitions and terminology complicate the interpretation of findings and limit generalizability. Future studies should focus on exploring long-term recurrence risk in an exclusively PTC patient population while incorporating standardized definitions and terminology for lymph node characteristics and recurrence.

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Title: Enhancing Documentation Compliance in Esophagogastroduodenoscopy (EGD) for Esophageal Cancer

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Background: Esophagogastroduodenoscopy (EGD) is a pivotal procedure for diagnosing and managing esophageal cancers. Comprehensive and structured documentation of intra-operative findings is essential for accurate staging, treatment planning, and multidisciplinary communication. Inadequate documentation can lead to repeated procedures, delayed treatments, and increased healthcare costs.

Objective: This study aims to evaluate the current state of EGD documentation within Fraser Health, implement an educational intervention using a standardized checklist, and assess its impact on documentation compliance.

Methods: One hundred consecutive EGD reports for patients undergoing esophagectomy for esophageal cancer were reviewed retrospectively and scored on a 6-point scale comprising the critical intra-operative findings that should be documented during EGDs for esophageal cancer.
The second phase of this study will be to implement an educational intervention with the aim of improving documentation. A standardized documentation checklist will be distributed to all gastroenterologists and general surgeons within Fraser Health monthly for three months. The checklist will outline critical intra-operative findings that should be documented during EGDs for esophageal cancer, which were included in the 6-point scoring system used in this study. Practitioners will be encouraged to integrate the checklist into their routine documentation practices. Following the intervention, 100 consecutive EGD reports will be reviewed prospectively and scored using the same scale. Paired t-tests will be utilised to compare documentation scores before and after the intervention.

Results: Pre-intervention preliminary analysis reveals a mean score of 3.13 +/- 1.75, with the most commonly undocumented features being the location of the Z-line and top of gastric folds. The most well-documented features were the proximal location of the lesion from the incisors and the presence or absence of concurrent gastric abnormalities.

Conclusions: Within Fraser Health EGD reports, gastroenterologists and general surgeons are currently documenting approximately 50% of important intraoperative features required for appropriate patient triage and management for new esophageal cancers. Our quality improvement study aims to ameliorate documentation compliance following an educational intervention which is presently ongoing.

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Title: To Scan or Not To Scan: A Systematic Review on Imaging Protocols for Children with Hearing Loss Related to Bacterial Meningitis

Authors: Aaryan Dwivedi[1,2], Alexander Moise[1,2], Fainess Mwakasimba[1], Fred Kozak[1,2], Amjad Tobia[1,2], Mark Felton[1,2]

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Background: Bacterial meningitis (BM) causes sensorineural hearing loss in up to 30% of children, with cochlear ossification developing within weeks and progressively limiting the window for cochlear implantation (CI). Early imaging is critical, yet uncertainty persists regarding optimal timing, as scanning too early may miss progressive changes and scanning too late may forfeit CI candidacy. Despite the clear need for standardized imaging protocols, both the optimal modality and timing after BM remain undefined, with no evidence-based synthesis currently available.

Objectives: This systematic review evaluated clinical factors, imaging modalities including Magnetic Resonance Imaging (MRI), Computed Tomography (CT), or both, and scanning schedules to determine their effectiveness in (1) detecting early ossification and (2) guiding timely Cochlear Implantation (CI) in children.

Methods: We searched MEDLINE, Embase, CENTRAL, and Web of Science from inception to June 2025 for pediatric BM cases with cochlear imaging. Two reviewers independently screened studies and extracted data on demographics, infection-to-imaging interval, imaging modality and timing, ossification detection, and CI outcomes.

Results: Thirteen studies were included, comprising 2 case reports, 1 case series, and 10 retrospective cohort studies, with a total of 1,441 patients and a median of 20 patients per study. Pathogens were reported in 10 studies, most commonly Streptococcus pneumoniae (n=8), followed by H. influenzae and N. meningitidis. Ten studies reported profound SNHL from BM; one reported variable severity and another did not quantify hearing loss. Hearing loss was the imaging trigger in all cases. Ossification was assessed by high resolution CT (HRCT) (n=4), T2-MRI (n=2), or both (n=7). Initial imaging timing post-BM was reported in 12 studies, with a highly variable range of 10 days to >1 year. Cochlear ossification was detected on imaging in 12 of the 13 studies. In one study, imaging showed partial obliteration within the semicircular canals, but intra-operative findings revealed ossification in both scala tympani. CI was performed in all studies, with 11 reporting intraoperative fibrosis, granulation, or ossification. Studies described that MRI showed moderate-to-strong correlation with surgical findings, while CT demonstrated variable and often poor predictive accuracy, underestimating ossification despite reported accuracy up to 83.5%. T2-weighted MRI was overall more reliable for detecting early or subtle changes relevant to timely CI across studies.

Conclusions: Given the urgency of timely CI post BM, children with hearing any loss after BM should undergo urgent imaging within the first month using both T2-weighted MRI and HRCT to detect early ossification and preserve candidacy for timely CI.

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Title: Preliminary Results from the SUPERHERO Study – Standardizing Use of Pain medication to Eliminate post-Robotic Hernia Repair Opioids: a Prospective Cohort Study.

Authors: Charbel El-Kefraoui[1,2], Matthew Walker[1,2], Yuwei Yang[1,2], Chieh Jack Chiu[1,2], Adam Meneghetti[1,2], Rachel Liu Hennessey[1,2]

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Background: Canada is facing an epidemic of opioid misuse, exacerbated by physician prescription habits. Surgeons play a significant role in the opioid crisis. Thus, minimizing postoperative opioid use remains a critical goal in surgical care.
Abdominal wall reconstruction (AWR) traditionally involves significant opioid consumption. Robotic-assisted techniques may improve pain management and decrease narcotic use.

Objective: This prospective cohort study aims to evaluate the impact of robotic-assisted AWR in reducing opioid consumption.

Methods: Patients undergoing elective AWR were enrolled into either a robotic-assisted or open surgery group. A standardized pain management protocol was implemented in the robotic group and a multimodal analgesic protocol (including epidurals) was implemented in the open group. Primary outcomes included total inpatient opioid consumption (in oral morphine equivalents [OME]), and opioids prescribed at discharge. Secondary outcomes included pain scores, patient satisfaction, and postoperative opioid consumption.

Results: Fourteen patients were included in this analysis (robot-assisted [8], open [6]). Baseline patient characteristics were similar between groups. In-hospital opioid use was significantly lower in the robotic group (199±27 OME) compared to the open group (789±32 OME, p=0.016). Despite the difference in opioid consumption, reported pain scores were comparable between groups. The robotic group had a significantly shorter hospital length of stay (1.5±0.8 days vs. 5.7±1.2 days). No significant difference was observed in the amount of opioids prescribed at discharge; however, patients in the robotic group consumed a smaller proportion of their prescribed opioids (~25% vs. ~50%). There were no differences between groups in postoperative pain levels, functional impact of pain, or need for additional medical care for inadequate pain control.

Conclusions: Robotic-assisted AWR may be associated with a significant reduction in opioid consumption, without compromising pain control. These findings suggest that robotic surgery, in combination with a standardized pain regimen, may play a role in reducing opioid use in AWR.

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Title: Location of Neurostimulation Affects Short-term Emotional Wellbeing Outcomes in Parkinson's Disease Patients

Authors: Muhammad Faran BMSc[1], Hailey Chae[2], Danielle A. Pietramala BSc[3], Sabrina Nadeem[4], Franziska A. Schmidt MD[3,5], Evan Wilson BEng[3], Nancy E. Polyhronopoulos RN[3], Mandeep K. Sandhu RN[3], Jessica Dong RN[3], Natasha Sarai RN[3], Fidel Vila-Rodriguez MD PhD[1,6], Christopher R. Honey MD DPhil[1,3], Stefan Lang MD PhD[1,3*]

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Background: Emotional wellbeing is a major contributor to quality of life (QoL) in Parkinson's disease (PD) patients. While subthalamic nucleus deep brain stimulation (STN DBS) is an established treatment for the motor symptoms of PD, its impact on emotional wellbeing remains unclear. Some studies have suggested that the location of neurostimulation may explain the variability observed in emotional wellbeing outcomes. However, studies investigating this matter have also yielded inconsistent findings.

Objective: The objective of this study was to determine the effect of STN DBS on emotional wellbeing at six months and one year, and to examine whether the location of neurostimulation influences outcomes.

Methods: We retrospectively analyzed data from 94 PD patients who underwent bilateral STN DBS between 2008 and 2023 in British Columbia, Canada. Emotional wellbeing was measured using the emotional wellbeing index (EWI) of the Parkinson's disease questionnaire-39 (PDQ-39), including subdomains for anxiety (EWI-A) and depression (EWI-D). Changes at six months and one year post-DBS were analyzed using linear mixed-effects models, controlling for confounding variables. For further analysis, the cohort was separated into responders and non-responders to identify the percentage of patients who showed a clinically relevant improvement in EWI scores over time. Volume of tissue activated (VTA) was calculated for each subject and related to clinical outcomes to identify stimulation sites associated with significant improvements in EWI.

Results: At the group level, we found no significant difference in EWI at six months and one year after STN DBS. However, EWI-A showed significant improvement at both six months ($p < 0.001$) and one year ($p = 0.045$). EWI-D remained unchanged. At six months, 37.1% of patients were responders and 62.9% were non-responders. At one-year, 35.7% of patients were responders and 64.3% were non-responders. Stimulation of the dorsal STN was associated with improved EWI outcomes at six months, but not at one-year ($p < 0.05$ FWE corrected).

Conclusions: There is significant variability in EWI scores following STN DBS. Greater than a third of patients experience a clinically meaningful improvement in EWI at six months and one year post-DBS. Metrics related to anxiety significantly improved over time, whereas metrics related to depression did not show a change. In the short term, stimulation of the dorsal STN may explain the significant variability observed in EWI scores.

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Title: Outcomes of High-Dose Hypofractionated Radiotherapy for Bulky Non-Spine Bone Metastases

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Background: Stereotactic ablative radiotherapy (SABR) is resource-intensive and not appropriate for all patients. High-dose non-SABR regimens, including 30 Gy in 5 fractions or 24 Gy in 3 fractions, are increasingly used to palliate symptoms and to achieve local control (LC) with less resource utilization than SABR. However, evidence for their use for bulky (≥ 5 cm) non-spine bone metastases (NSBM) is limited. This study investigates outcomes for bulky NSBMs following 30Gy/5 or 24Gy/3.

Methods: A retrospective review was conducted of all BC Cancer Vancouver patients treated with 30Gy/5 or 24Gy/3 to bulky NSBMs between April 2019 and June 2024. Demographic, clinical, dosimetric, and outcome data were collected. LC was computed per lesion; progression-free survival (PFS) and overall survival (OS) were computed per patient. Survival analyses were done using the Kaplan-Meier method.

Results: Twenty-seven patients (median age 65.0 years) were included. Median follow-up was 18.5 months. The most represented primaries were RCC (33%), prostate (11% castrate-resistant; 7% castrate-sensitive), lung (15%), colon (7%), and bladder (7%). Lesions were most commonly located in rib (33%), ilium (22%), and scapula (11%). Median gross tumour volume was 44.6 cm^3. Median planning target volume was 131.6 cm^3. Target lesions were painful prior to radiation in 22 patients. Fifteen lesions had extraosseous extension. One (4%) patient had a local failure. Local control at 1 year was 94%. Median OS after RT was 31.6 months (95% CI: 11.0-52.2). Median PFS was 8.6 months (95% CI: 2.7-14.5). One (4%) patient had a fracture after radiation.

Conclusion: The 30Gy/5 and 24Gy/3 regimens offer effective LC and low fracture risk for bulky NSBMs.

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Title: Comprehensive Review of the Role of Telemedicine in Surgical Care in Urban and Rural Settings across North America and Australia: A Scoping Review.

Authors: Emma Forrester[14], Fariha Rahman[1], Mohammad Omer[1], Grace Perez[2], Caitlin McClurg[3], Aaron Johnston[2], Adrian Harvey[5], Ali Bayrouti[1], Austin A. Barr[1], Farah Ali[1], Adam Guthrie[1]

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Background: Healthcare disparities between rural and urban settings are a well-documented but a persistent issue. Access and availability of resources have long plagued rural communities, ultimately worsening health outcomes. The COVID-19 pandemic has only further emphasized these gaps in care. However, the pandemic has also forced the healthcare system to enter a new age of medicine – with telemedicine at its core. Medicine has evolved to embrace remote care but lacks guidance on best practices for effective use of telemedicine. Current literature has partially addressed telemedicine's role in surgery, but not in the context of rural versus urban settings. The versatility of telemedicine can address the unique challenges of rural surgical care. This study aims to explore the literature on the use of telemedicine in surgical care comparing urban and rural settings in North America and Australia. With a focus on identifying patterns of telemedicine practices between these settings. By uncovering both gaps and strengths in current telemedicine practices, we hope to provide novel solutions to disparities in surgical care, particularly those affecting rural communities.

Methods: This scoping review utilizes comprehensive searches across Medline, Embase, Cochrane, Scopus/Web of Science, and ProQuest Dissertations & Theses Global. The search strategy integrates themes of surgical care, telemedicine, and geographic focus on North America and Australia, with article selection guided by JBI methodology and PRISMA-ScR guidelines. Each included paper was based on double-blind review screening with set inclusion and exclusion criteria. Data was extracted utilizing Quadratics software.

Results: Preliminary synthesis had identified three relevant themes: (1) trainee competency in virtual care models is a necessity, as telemedicine enhances accessibility and continuity of care for rural patients while reducing travel, wait times, and patient-related costs; (2) variability in implementation across surgical subspecialties limits opportunities for standardized training; (3) evidence of improved efficiency and patient satisfaction demonstrates the need to integrate digital health literacy in curricula.

Conclusions: Telemedicine is not only a service innovation reshaping surgical care but should also be framed as an educational priority. Integrating virtual care competencies and digital health literacy into surgical curricula will equip future providers and its system wide use offers opportunities to for bridges gaps in rural surgical care.

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Title: The Impact of Intraabdominal Pressure on the Human Microbiome: A Scoping Review

Authors: Emma Forrester[1,3], Andrew W. Kirkpatrick[2], Caitlin McClurg[1], Jason Kreutz[1].

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Background: Shock and altered gut perfusion significantly influences the gut microbiome, which is crucial for immune function, metabolism, and wound healing. Raised intra-abdominal pressure constitutes intra-abdominal hypertension (IAH) and owing to compartment physiology equates to gut ischemia. Preliminary studies suggest that IAH may lead to a pathologically microbiome known as dysbiosis, its impact on patient outcomes is underexplored, particularly within medical education and the surgical community. IAH is a common clinical confounder across multiple disciplines, including obesity, pregnancy, abdominal trauma, and almost any critical illness. This raises critical questions: how are we addressing this in clinical practice and education? Currently, this concept is rarely discussed in any medical forums making it a key issue that needs to be brought to the forefront.

Methods: This scoping review utilizes comprehensive searches across Medline, Embase, Cochrane, and Scopus/Web of Science. The search strategy integrates themes of surgical care, intrabdominal hypertension, and microbiome impacts, with article selection guided by JBI methodology and PRISMA-ScR guidelines. Papers were selected via a double-blind process according to pre-set inclusion and exclusion criteria.

Results: Preliminary analysis of the literature highlights 3 main key points. (1) First, animal model studies have shown a direct connection between intra-abdominal hypertension contribute to gut ischemia resulting in bacterial translocation and systemic inflammation. (2) Secondly, observational studies in the ICU patients have noted a link between high abdominal pressures and rates of infection, higher rates of sepsis. And a greater likelihood of organ dysfunction. (3) Finally, intra-abdominal hypertension has been suggested to shift the microbiome composition, decreasing beneficial bacteria.

Conclusions: Intraabdominal hypertension is a common phenomenon seen commonly in acute care and surgery. There is a strong basis of animal model research suggesting direct connections between increased abdominal pressure, gut ischemia, and bacterial translocation. Intraabdominal hypertension is a foundational concept in critical care and yet, its impact on the gut microbiome remains grossly unexplored in clinical contexts. If high pressures indeed shift the microbiome this insight could profoundly transform both critical care and best practices.

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Title: Neurokinin-1 Receptor Antagonists for Postoperative Nausea and Vomiting in Otolaryngology Surgeries: A Scoping Review

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Background: Aprepitant is a novel selective neurokinin-1 receptor (NK1R) antagonist which has been extensively studied for the prevention of chemotherapy-induced nausea and vomiting, with emerging data on its use in preventing postoperative nausea and vomiting (PONV) in abdominal and gynecological surgery.

Objective: This scoping review aimed to assess the current state of the literature on the efficacy of NK1R antagonists in otolaryngology surgery in preventing PONV.

Methods: A scoping review was performed in accordance with the PRISMA extension for Scoping Reviews. The search strategy included Medline and was performed from inception to April 25, 2025 with the assistance of a librarian specialized in systematic reviews. Studies were reviewed by two independent reviewers, selecting all original studies reporting on postoperative nausea and/or vomiting outcomes with perioperative use of NK1R antagonists in patients undergoing otolaryngology surgery. Case reports, non-human studies or those in a language other than English or French were excluded.

Results: From 179 studies screened, four studies (n=426 patients) met inclusion criteria. Lee et al. (2023) reviewed 96 patients undergoing endoscopic pituitary surgery where 48 received aprepitant 80 mg orally 1-2 hours preoperatively and 48 did not receive any pre-operative anti-emetics. The aprepitant cohort experienced reduced vomiting comparatively (2.1% vs. 22.9%, p=0.002). Alam et al. (2023), in orthognathic surgery (n=80), administered aprepitant 80 mg orally 1 hour preoperatively compared to placebo plus ondansetron, significantly reducing nausea (2.5% vs. 27.5%, p=0.002) and vomiting (5% vs. 25%, p=0.01). Lim et al. (2013), in rhinological surgery (n=78), compared aprepitant 125 mg orally on surgery day versus control, significantly reducing PONV at 6 hours (3.9% vs. 29.2%, p=0.015). Trimas et al. (2015), in facial plastic surgery (n=172), administered aprepitant 40 mg orally within 1 hour preoperatively, observing significant nausea reduction (1.8% vs. 15.5%, p=0.02). NK1R antagonists demonstrated consistent effectiveness across various doses (40-125 mg), surgical procedures, and timings (1-2 hours preoperative) in preventing PONV compared to controls.

Conclusions: The current scoping review suggests NK1R antagonists may be useful in preventing PONV in otolaryngology procedures. It also highlights the paucity of literature reporting on use of NK1R antagonists within the field of otolaryngology surgery.

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Title: Systemic Outcomes Following Maxillomandibular Advancement for Obstructive Sleep Apnea: Systematic Review and Meta-Analysis

Authors: Connor Holmes MD[1], Amirpouyan Namavarian MD[2], Rafael Malinsky MD PhD[3], Mohamed Abdelwahab MD PhD[4], Badr Ibrahim MD[3]

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Background: Obstructive sleep apnea is a common and impactful sleep disorder associated with an elevated risk of systemic comorbidities. Maxillomandibular advancement surgery effectively reduces upper airway obstruction and improves sleep parameters, but its long-term systemic health benefits remain less well characterized. This systematic review and meta-analysis aimed to synthesize evidence on the sustained systemic health outcomes associated with maxillomandibular advancement in patients with obstructive sleep apnea.

Methods: A comprehensive literature search was conducted in PUBMED, EMBASE, CENTRAL, Scopus, and Web of Science from inception through 2024. Inclusion criteria encompassed original research studies (case series, cohort studies, and trials) that reported long-term systemic health outcomes after maxillomandibular advancement for obstructive sleep apnea. Two reviewers independently screened and extracted data. Risk of bias was assessed using the Newcastle-Ottawa Scale.

Results: Seven studies (N=271), with follow-up durations ranging from 6 months to over 11 years, met the inclusion criteria. All studies reported significant reductions in apnea-hypopnea index postoperatively. Four studies included in a meta-analysis demonstrated statistically significant reductions in systolic (mean difference: -8.64 mmHg; 95% CI: 3.04–14.24) and diastolic (mean difference: -5.27 mmHg; 95% CI: 2.02–8.52) blood pressure.

Conclusion: Maxillomandibular advancement for obstructive sleep apnea not only improves airway patency and sleep metrics but is also associated with meaningful and enduring systemic health benefits, including blood pressure reduction and enhanced neurocognitive function. Although the evidence suggests a positive long-term impact, further high-quality randomized controlled trials employing rigorous outcome measures (e.g., ambulatory blood pressure monitoring) are needed to fully delineate the persistent systemic effects of maxillomandibular advancement.

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Title: Systemic Outcomes Following Hypoglossal Nerve Stimulation for Obstructive Sleep Apnea: A Systematic Review and Meta-Analysis

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Background: Obstructive sleep apnea is associated with significant systemic health risks, including cardiovascular and metabolic complications, yet adherence to continuous positive airway pressure remains suboptimal. Hypoglossal nerve stimulation has emerged as an alternative therapy for patients with moderate to severe obstructive sleep apnea who cannot tolerate continuous positive airway pressure. This systematic review and meta-analysis aimed to synthesize evidence on the systemic health outcomes of hypoglossal nerve stimulation in adults with obstructive sleep apnea.

Methods: A comprehensive literature search was conducted in PubMed, EMBASE, CENTRAL, Scopus, and Web of Science from database inception to October 22, 2024. Studies were included if they reported on long-term systemic outcomes following hypoglossal nerve stimulation therapy for obstructive sleep apnea, including cardiovascular, metabolic, and mental health measures. Two reviewers independently screened articles and extracted data. Meta-analyses were performed for systolic and diastolic blood pressure changes using random-effects models.

Results: Eleven studies met inclusion criteria. Hypoglossal nerve stimulation consistently reduced apnea-hypopnea index into the mild range and improved patient-reported outcomes such as the Epworth Sleepiness Scale and Functional Outcomes of Sleep Questionnaire. Four studies included in the meta-analysis demonstrated a significant pooled reduction in systolic blood pressure (mean difference: −5.12 mmHg; 95% CI, −9.71 to −0.54; I^2 = 85%). No statistically significant reduction was observed for diastolic blood pressure. Preliminary evidence also suggests possible improvements in glucose metabolism and mental health outcomes, though findings were inconsistent and limited by study size and design.

Conclusion: Hypoglossal nerve stimulation may confer systemic health benefits in patients with obstructive sleep apnea, particularly through reductions in systolic blood pressure. Emerging evidence also points to potential metabolic and mental health improvements. Larger, high-quality randomized trials with longer follow-up are needed to validate and expand on these findings.

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Title: Spontaneous Regression Of Vestibular Schwannomas: A Clinical And Radiographic Characterization

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Introduction: Vestibular schwannoma are the most common benign tumour of the cerebellopontine angle. They typically demonstrate slow growth and some have even been found to spontaneously regress. Previous studies have attempted to identify demographic or imaging characteristics that predict regression with small case series.

Methods: Imaging was reviewed for 31 patients who demonstrated spontaneous regression to assess for predictive factors. Additionally, a clinical chart review was performed, and a survey was released to all participants therefor lifestyle factors were also included in the analysis. Additionally, the survey was released to a control group of patients who had demonstrated tumour progression and underwent resection. All patients received a survey by mail and telephone. Medical comorbidities and medications provided through patient questionnaire were corroborated with patient charts. Tumor volume was approximated using the formula $V = 4/3 \times \pi \times \text{length}/2 \times \text{width}/2 \times \text{height}/2$.

Results: No imaging characteristics were predictive of spontaneous regression. There were 18 survey respondents in the spontaneous regression and the control groups. There were 10/18 patients in the spontaneous regression group that demonstrated active herpes or VZV versus 3/18 in the control group. Additionally, those in the group that demonstrated growth had a longer history of cellphone use prior to diagnosis (15 vs 5 years)

Conclusions: This is the largest study to date to assess imaging characteristics to predict spontaneous regression and it failed to support previously published predictive factors. It is also the first publication to consider lifestyle factors in predicting spontaneous regression.

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Title: Carbon Emissions and Waste Consumption of Infant Inguinal Hernia Repair: A Prospective Analysis

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Background: Inguinal Hernia Repair (IHR) is a common pediatric procedure with different surgical approaches (open/minimally invasive surgery [MIS]) and anesthetic techniques (general anesthesia [GA]/caudal blockade), and different combinations produce varying levels of environmental impact.
Objective: This project aimed to quantify and compare differences in environmental impact by analyzing waste generation and carbon emissions arising from anesthesia and surgical processes.

Methods: A prospective, observational study of pediatric IHR cases in elective patients aged <1 year was conducted over 15 months. Data collection included patient demographics, physical waste output and anesthetic details. Cases were classified as open or MIS; anesthesia types were categorized as general anesthesia (GA), caudal anesthesia, or GA with caudal blockade.
Total carbon emissions were calculated by adding direct and indirect emissions. Indirect carbon came from direct weighing and categorization of all consumables (surgical vs. anesthetic, plastic vs. paper). Waste data was converted to carbon emissions as per US EPA normative data. Direct carbon came from total CO_2 equivalent inhaled from anesthesia was measured, along with the volume of CO_2 used for insufflation. Welch's t-test was used for analysis, with $p<0.05$ considered significant.

Results: Twenty patients were enrolled, with 13 cases of open IHR and 9 cases of laparoscopic IHR. The mean age was 11 weeks. GA was the most common type of anesthetic technique. MIS produced 22.3% more non-recyclable waste than open procedures ($p=0.0081$); no difference in recyclable waste ($p=0.291$). There was no significant difference in the total CO_2 emissions ($p=0.694$). On average, 7.13% of MIS CO_2 emissions arose from direct insufflation.

Conclusions: Overall, there was no significant difference between the total carbon footprint of MIS and open procedures. These findings suggest that surgical approach should be guided primarily by clinical considerations, with limited influence for environmental factors.

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Title: DIEP Flap Harvest with the Apple Vision Pro: A Feasibility Study

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Background: CT angiography (CTA) is commonly used to identify perforators for deep inferior epigastric perforator (DIEP) flap harvest. A key challenge in utilizing preoperative CTA data is the surgeon's ability to accurately translate perforator locations and vessel trajectories onto the patient during surgery.

Objectives: This study investigates the application of Augmented Reality (AR) to enhance the use of preoperative imaging, with the goal of improving DIEP flap planning and harvest precision.

Methods: Software was developed for the Apple Vision Pro to support AR integration in DIEP flap reconstruction. The accuracy of segmentation, registration, and projection was first evaluated using a phantom model to determine the reprojection error. AR-projected points were manually traced on the phantom surface, and the coordinates of both AR-projected and manually traced points were recorded relative to a predefined origin in physical space, with x and y coordinates collected for each point. The reprojection error was quantified as the average displacement between AR points and their corresponding manually traced counterparts. With institutional ethics approval, patients undergoing DIEP flap reconstruction consented to AR use in this single-surgeon feasibility trial. Segmented anatomy visualized in AR included abdominal soft tissue layers (skin, subcutaneous tissue, fascia, rectus muscle), the deep inferior epigastric artery, perforators, and their intramuscular course. Preoperatively and intraoperatively, the surgeon manipulated the AR visualizations to assess vessel trajectories and calibers, aiding in perforator selection. Furthermore, tissue could be segmented from the CTA, with the surgeon able to draw incision lines directly on the virtual model to calculate donor flap volume in real time, which were then projected onto the patient. The integrated PACS additionally allowed imaging to be reviewed in AR while maintaining sterility in the operating room, using hand and eye tracking as input methods.

Results: The average reprojection error in the phantom model was 2.08 mm. Sixteen patients underwent AR-assisted DIEP flap reconstruction. Automatic registration was achieved in an average of 7.4 seconds (n=6). Intraoperatively, accurate registration was confirmed between the AR visualizations and the real patient-specific anatomy following pedicle dissection.
The use of AR delineated vascular anatomy in relation to the rectus muscle, fascia, and subcutaneous tissue. AR enabled real-time visualization and interaction with CTA images and segmented anatomy, enhancing perforator selection, flap design, fascial incision planning, and intramuscular pedicle dissection.

Conclusion AR enables accurate translation of preoperative imaging for DIEP flap planning and intraoperative guidance. Based on this feasibility study, a randomized controlled trial is planned to evaluate its impact on operative time, surgical safety and decision making.

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Title: Feasibility of a Hands-Free Augmented Reality Fluorescence System for Intraoperative Flap Perfusion Imaging

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Background: Intraoperative perfusion assessment is critical for minimizing complications in reconstructive surgery, including partial flap loss and fat necrosis. Fluorescence angiography with indocyanine green (ICG) is widely adopted for this purpose; however, current handheld systems disrupt workflow, require additional personnel, and may be impractical in space- or resource-limited settings.

Objectives: This study introduces a hands-free fluorescence angiography device integrated with the Apple Vision Pro to enable real-time perfusion imaging in augmented reality (AR). The goal was to enhance intraoperative perfusion assessment while maintaining sterility and surgical efficiency.

Methods: A device capable of exciting and capturing ICG fluorescence was mounted onto the Vision Pro headset to enable direct video streaming into the AR environment. The system was evaluated in ex vivo and clinical cases to assess feasibility, image quality, registration accuracy, and workflow integration. Intraoperatively, SPY-PHI acquired perfusion maps were streamed into the headset and overlaid onto the surgical field in real time.

Results: Headset mounting enabled stable, hands-free operation without requiring an assistant. Perfusion maps were visualized in AR, aligned with patient anatomy, and updated in real time. Surgeons reported improved ergonomics, workflow efficiency, and situational awareness compared with handheld use. The system allowed uninterrupted instrument handling while simultaneously monitoring flap perfusion.

Conclusion: A Vision Pro mounted fluorescence system represents a novel approach to intraoperative perfusion imaging. By combining ICG angiography with AR in a hands-free, surgeon-directed format, this technology has the potential to improve flap monitoring, reduce workflow disruptions, and enhance intraoperative decision-making. Further clinical evaluation will determine its impact on operative outcomes and the fidelity of per-pixel perfusion mapping.

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Title: *Exploring Patient-Reported Quality of Life After Complex Abdominal Wall Reconstruction: A Qualitative Study*

Authors: Yu Xuan Jin[1], Daphne Lu[2], Helen Hsiao[1], Zaima Chowdhury[3], Nancy Van Laeken[3], Tracy Scott[4]
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Background: Complex abdominal wall reconstructions (CAWR) are performed for patients with large complex ventral or incisional hernias. Such hernias develop after surgeries for trauma, infection, or malignancy, and are associated with significant morbidity, increased healthcare costs, and reduced quality of life. While surgical outcomes for CAWR are well documented, patient-reported outcomes remain underexplored, such as with combined ventral hernia repair and panniculectomy (VHR-PAN). Emerging evidence suggests that VHR-PAN is a safe and cost-effective approach that improves cosmesis. Understanding patient experiences of CAWR is critical for patient-centered care and to guide surgical practices for those with complex hernias.

Objective: To explore how concurrent ventral hernia repair and panniculectomy affects patients' physical, emotional, and psychosocial well-being through patient-reported outcome measures.

Methods: A qualitative study was conducted with purposive sampling of adult patients who had previously undergone elective ventral hernia repair with abdominal wall reconstruction at St Paul's Hospital from January 1, 2014 to January 1, 2024. Patients with contaminated wound class and primary or parastomal hernia repairs were excluded. Semi-structured interviews including Likert-style questions on function, mesh sensation, appearance, and satisfaction, followed by open-ended questions about patients' recovery experience and post-operative quality of life were conducted. Transcripts were analyzed using Braun and Clarke's thematic analysis approach by two independent researchers until thematic saturation was reached.

Results: Thirteen patients (12 women, 1 man) were interviewed. Five key themes emerged: 1) *Body Image & Self-Perception:* Many participants described significant changes in self-image, both positive and negative. The majority of patients expressed increased satisfaction with their appearances following CAWR while others shared concerns regarding weight gain and abdomen shape. 2) *Psychosocial Distress and Uncertainty:* Some patients reported feelings of anxiety, depressive mood, and loneliness. Uncertainty regarding treatment options and the recovery experience prior to surgery was a common theme. 3) *Recovery Barriers:* Patients identified both internal (e.g. non-compliance) and external (e.g. lack of social support, physical limitations, age) factors that affected recovery. 4) *Pain & Complications:* Lingering pain and unexpected complications following surgery were reported in a few patients. 5) *Positive Reflections:* Despite challenges, many patients praised the quality of care afforded to them by the surgical team and reported satisfaction with final outcomes and symptom improvement.

Conclusions: Patients undergoing CAWR experience profound changes across physical, emotional, and social domains. Changes in body image, psychosocial impacts, and recovery challenges were recurring themes. These findings highlight the importance of incorporating patient voices into surgical care and support the integration of qualitative methods into surgical research to better address patient-centred outcomes.

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Title: Can Artificial Intelligence Replace the Rectal Cancer Multidisciplinary Conference? A Single-Center Study

Authors: Muhammad Uzair Khalid[1], Charbel El-Kefraoui[1], Alina Wang[1], Julian Wang[1], Terry Phang[1], Carl Brown[1], Amandeep Ghuman[1], Manoj Raval[1], Ahmer Azhar Karimuddin[1]

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Background: As rectal cancer management evolves, multidisciplinary conference (MDC) discussion becomes increasingly important in integrating expertise to optimize patient outcomes. Current artificial intelligence large language models (AI-LLMs) have demonstrated preliminary capacity to apply medical guidelines to specific patient scenarios.

Objective: This study assesses the ability of three publicly available AI-LLMs (Gemini®, Grok®, ChatGPT®) to predict rectal cancer MDC recommendations.

Methods: Adult patients presented to the MDC at a Canadian tertiary hospital with a new diagnosis of rectal adenocarcinoma prior to March 2025 were sequentially and retrospectively included in the study. Baseline demographic characteristics were recorded. Redacted patient vignettes were presented to each AI-LLM, and concordance between AI-LLM and MDC management recommendations was graded on a five-point Likert scale by three independent reviewers. The Cohen's κ coefficient was used to assess inter-rater agreement, and descriptive statistics, odds ratios, and multivariable regression used to assess each AI-LLM's performance. $p<0.05$ was considered significant.

Results: One hundred patients were included, with a median age of 61 years (range: 38-90). Most patients were male (70%), with a mean Charlson comorbidity index of 4.37 (range: 2-10). All 4 stages of rectal cancer were represented. Gemini had the highest average concordance with MDC recommendations (3.89/5), with ChatGPT (3.33/5) and Grok (3.01/5) showing similar performance. Inter-rater reliability was moderate to high, with an average weighted kappa score of 0.736 (range: 0.551-0.866). Forty-nine (49%) patients received at least one AI-LLM recommendation that was rated as highly discordant by at least one reviewer. Grok and Gemini concordance with MDCs increased with positive nodal status when patients have more limited options for management ($p<0.05$).

Conclusions: AI-LLMs have some ability to replicate MDC recommendations, but they struggle significantly with nuance. With further improvements, AI-LLMs can have a future role in healthcare decision support and guideline integration.

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Title: Facial Reconstruction with Free Tissue Transfer for Severe Pyoderma Gangrenosum: A Case Report and Review of The Literature

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Background: Pyoderma gangrenosum (PG) is a rare inflammatory skin disorder caused by inappropriate neutrophil activation. It typically presents as painful ulcers on the lower limbs but can uncommonly affect the trunk, upper limb and even the head and neck areas.

PG is characterized by pathergy, defined as worsening of the lesions due to local trauma such as biopsy or debridement. Therefore, the mainstay of treatment of PG remains medical, ranging from topical wound care to systemic immunosuppression. However, several recent studies have described surgical intervention as adjuncts to medical management with favourable outcomes.

Objective: To highlight a challenging case of severe PG involving the face, including the steps in diagnosis, medical management and successful reconstruction with free tissue transfer.

Methods: We conducted a detailed clinical review of a single patient diagnosed with pyoderma gangrenosum involving the face using the electronic medical records.

For the literature review, a comprehensive search was performed in PubMed, Embase, and Scopus databases from inception to November 2024. Keywords included “pyoderma gangrenosum”, “reconstruction”, “head and neck”, “free tissue transfer”. Eligible studies included case reports, case series, and reviews describing PG presentation, diagnostic approach, medical and surgical management, and outcomes.

Results: A 56-year-old female with intermittent nasal cocaine use presented with right neck pain and swelling and elevated inflammatory markers. She was treated with antibiotics but returned with worsening ulcers and abscesses two weeks later. Biopsy confirmed PG, and systemic corticosteroids were initiated by dermatology which stabilized her condition for a year. A severe relapse involving the left eye led to treatment with cyclosporine, which was effective but had to be discontinued due to acute kidney injury. Disease progression resulted in full erosion of the left eye and ear, deep soft tissue loss with exposed bone, and osteomyelitis. Infliximab and IV antibiotics were initiated and stabilized the disease. Plastic surgery was consulted, and surgical debridement, cultures, and biopsies were performed. Cultures grew MRSA; pathology showed only necrotic tissue which was taken as a sign of stable disease. After multidisciplinary discussion, reconstruction was performed with a latissimus dorsi free flap and split-thickness skin graft to the left face. The patient recovered well with complete flap survival and no signs of recurrence or pathergy.

Conclusions: PG of the head and neck is rare and poses diagnostic and therapeutic challenges. This case demonstrates that, with diligent medical management and a multidisciplinary approach, free tissue transfer can be a safe and effective reconstructive option for severe PG-related defects.

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Title: British Columbia's 10-Year Experience of Open Descending Thoracic Aortic Repair Using Left Heart Bypass Versus Venoarterial Extracorpeal Membrane Oxygenation

Authors: Melissa King[1], Jason Faulds[2], Yuliya Voloshyn[2,3], Eimaan Singh Shergill[2], Jong Moo Kim[1], Michael Janusz[1], Joel Price[1]

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Background: Open repair of descending thoracic aortic disease (DTAs) carries significant risks including mortality and end-organ malperfusion. Optimal perfusion methods are needed to facilitate safe replacement of the affected aorta. The conventional method is left heart bypass (LHB), and an emerging strategy is venoarterial extracorpeal membrane oxygenation (VA-ECMO). Selecting the optimal perfusion strategy is critical for successful repair and minimizing the risk of perioperative malperfusion.

Objective: Our objective was to report clinical outcomes after open DTA repair using a LHB or VA-ECMO strategy and describe the potential benefits of the different strategies.

Methods: A retrospective review was conducted of DTAA surgeries performed in British Columbia from 2013-2023. Inclusion criteria were adult patients undergoing open surgery with a LHB or VA-ECMO approach. Exclusion criteria were iatrogenic or traumatic aortic injury, and endovascular surgery. Data collected included patient demographics, mortality data, aortic complications (stroke, neurological deficit, organ failure), and surgical complications (re-operations, transfusion rates, re-interventions).

Results: We identified 100 patients who underwent LHB DTA repair, and 28 patients who underwent VA-ECMO DTA repair. The LHB group had a higher percentage of patients with dyslipidemia, peripheral arterial disease, and previous cardiac surgery, and the VA-ECMO group had a higher percentage of patients with a previous stroke. There was no significant difference between bypass pump time, intra-operative transfusion requirements, and days intubated. Paraplegia occurred in 2% of the LHB group, and there was no paraplegia in the VA-ECMO group. The LHB group had 4% in-hospital mortality, and the VA-ECMO group had no in-hospital mortality.

Conclusions: DTA repair with a VA-ECMO approach is safe with comparable outcomes to the conventional LHB strategy. The VA-ECMO strategy may confer the benefit of improved survival compared to LHB.

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Title: Enhancing Histology Learning Through Coloring: A Tool for Future Surgeons and Physicians

Authors: Anika Knowles, MSc, MD Candidate[1]; Dr. Tamara Franz-Odendaal[2]; Karen Pinder[3]

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Background: Histology education is cognitively and visually demanding. Students often perceive the subject as abstract, dense, or overwhelming. Yet histology plays a foundational role in medical education—particularly within surgical disciplines—by informing competencies such as tissue recognition, disease diagnosis, and intraoperative decision-making. Understanding normal and pathological tissue architecture supports interpretation of biopsies, identification of abnormalities, and anticipation of surgical outcomes. Improving histology education early in training can enhance diagnostic reasoning and surgical judgment.

Objective: This project explores the potential of a histology coloring book as a supplemental, multimodal educational resource designed to support engagement, conceptual understanding, and accessibility in histology learning. It also aims to strengthen foundational knowledge relevant to clinical and surgical practice.

Methods: The project included a literature review on cognitive learning theories and accessibility strategies in histological and anatomical education, alongside a cross-sectional online survey (n = 86) of students and professionals with histology experience. The survey explored learning preferences, challenges in histology, and opinions on coloring books as educational tools. Both quantitative and qualitative responses were analyzed to identify themes and opportunities for improvement.

Results: Survey respondents were primarily professional degree students (52%) and graduate students (26%), with the rest from related academic or clinical backgrounds. Although 95% of participants enjoyed histology, many reported difficulties distinguishing similar tissues—particularly connective (n = 30), nervous (n = 26), and epithelial (n = 25) subtypes. Over one-third had previously used a coloring book for anatomy or a similar subject, and most rated it as moderately to extremely effective. Benefits included large, labeled diagrams, repetition, and guided color-coding. Suggested improvements included unlabeled quiz pages, and intentional alignment with course content.

Conclusion: A histology coloring book is a promising supplemental tool aligned with learning theory and student-identified needs. It promotes active learning, reinforces visual recognition, and supports accessibility—including for learners with color vision deficiencies. Additionally, grayscale line diagrams offer an inclusive format that avoids reliance on color alone. As histology underpins surgical pathology and clinical decision-making, improving its instruction is directly relevant to surgical education and training. A newly developed website now serves as the main platform for this resource, offering a digital, printable coloring book and a downloadable PDF version. As the website is newly launched, its educational impact remains to be determined with broader user engagement.

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Title: Towards Intraoperative Transcervical Ultrasound Assisted Transoral Robotic Surgery

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Background: Transoral robotic surgery (TORS) has become a widely adopted approach for the resection of oropharyngeal squamous cell carcinoma (OPSCC) but remains fundamentally limited by its reliance on 3D endoscopic visualization, which constrains the surgeon's ability to assess tumor extent and navigate surrounding vasculature. Transcervical ultrasound (TUS) is an imaging technique that has potential to offer real-time cross-sectional visualization of soft tissue and Doppler visualization of vessels. This study aims to prospectively integrate intraoperative TUS (ITUS) during TORS and evaluate its accuracy and clinical utility.

Methods: ITUS was integrated into TORS procedures using the Tilepro™ function of the da Vinci robotic platform to display the live ultrasound feed at the surgeon console. Tumor volumes from ITUS, preoperative CT, MRI, and PET-CT were compared to gross pathology. Tumor-to-vessel distances were measured across modalities, and its potential in identifying tumors in unknown primary cases and visualizing surgical tools were explored.

Results: ITUS-defined tumor volumes showed the highest correlation with ground truth pathology measurements ($R = 0.94$), followed by PET-CT (0.93), MRI (0.91), and CT (0.85). There were no statistically significant differences between imaging- and pathology-derived volumes ($p > 0.05$). ITUS identified nearby vasculature intraoperatively in all patients. All six tumors in patients with unknown primary disease were identified on ITUS.

Conclusions: This study establishes the technical feasibility and clinical potential of ITUS as a complementary imaging tool during TORS. ITUS enabled real-time visualization of tumor boundaries and adjacent vascular structures, offering information not otherwise available from endoscopic views or static preoperative imaging. Although ITUS offered valuable spatial insight, its clinical impact on outcomes such as positive margin rates, major hemorrhage rates, or operative time remains to be evaluated. Overall, ITUS holds promise for enhancing intraoperative decision-making during TORS, warranting further study in larger, multi-institutional cohorts with variable surgeon experience.

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Title: Novel Intraoperative 3D Specimen Scanning to Optimize Postoperative Radiation Therapy Planning for Head and Neck Cancer

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Background: Postoperative radiation therapy (PORT) following surgical resection for advanced head and neck cancer (HNC) requires accurate localization of high-risk positive or close margins. Traditional communication methods—written reports, surgical clips, and pathology review—fail to fully convey the complex three-dimensional (3D) spatial relationships and post-resection changes for accurate PORT targeting. We present a novel digital workflow that integrates intraoperative 3D scanned surgical specimens with histopathologic annotation to generate 3D specimen maps (3DSM), which enables direct visualization of patient-specific margin status within the spatial coordinate system to improve PORT planning.

Methods: This prospective study included patients with locally advanced HNC who underwent surgical resection and PORT between 2023 and 2024. Intraoperative 3D scanning was performed immediately after resection using a structured-light scanner. Following standard histopathology analysis, close (<2mm) and positive margins were annotated directly onto the 3D model surface. Resulting models were rigidly registered to PORT planning CT guided by anatomical landmarks (teeth, osteotomies). Volumetric overlap of 3DSM with clinical and planning target volumes (CTV and PTV) was assessed. Radiation oncologists (RO, n=8) reviewed an index case and completed pre- and post-exposure questionnaires comparing the perceived anatomical clarity, targeting accuracy, interpretability, and clinical utility of 3DSM for PORT planning.

Results: 3DSM of ten resected specimens including the mandible (n=4), maxilla (n=5), and nasal cavity (n=1) were acquired. Volumetric comparison demonstrated a 69.80 ± 23.54% (mean ± SD) overlap between the 3DSM and CTV, and 86.93 ± 14.73% overlap between the 3DSM and PTV. In 30% of cases, positive or close margins were not included in the traditionally delineated CTV. RO questionnaire results indicated that across all metrics, 3DSM was significantly more informative compared to traditional methods ($p<0.001$).

Conclusions: This study demonstrates the feasibility of a novel digital workflow for integrating 3DSM into PORT planning. Volumetric analysis revealed discrepancies in coverage of close or positive margins in traditionally delineated contours, suggesting limitations of conventional planning and the potential of 3DSM to improve PORT planning. Using open-source software and standard imaging modalities, our workflow is vendor-agnostic, scalable and adaptable across institutions, and readily generalizable to other anatomical sites. As a novel tool to enhance precision in PORT for HNC, 3DSM has potential to drive interdisciplinary collaboration towards spatially informed, patient-specific PORT planning.

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Title: Treatment with Stereotactic Ablative Radiotherapy for up to 5 Oligometastases in Patients with Cancer: Long-Term Outcomes of the Non-randomized Phase 2 SAbr-5 Clinical Trial.

Authors: Curtis Leclerc[1], Sarah Baker[1,2], Will Jiang[1,2], Benjamin Mou[1,3], Mitchell Liu[1,4], Alanah Bergman[4], Alexander Abraham[1,5], Devin Schellenber[1,2], Hannah Carolan[1,4], Nick Chng[6], Quinn Matthews[6], Alexander Benny[1], Scott Tyldesley[1,4], Robert Olson[1,6]

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Background: Despite the growing use of SABR for oligometastatic cancer, prospective data on long-term survival outcomes remain limited.

Objective: This study evaluated the long-term secondary trial endpoints of overall survival (OS), progression-free survival (PFS), local control rate, and prognostic factors in the population-based phase 2 SABR-5 trial.

Methods: The SABR-5 trial was a single-arm phase 2 study with the primary endpoint of toxicity, conducted at the 6 regional cancer centers across British Columbia (BC), Canada, during which time SABR for oligometastases was only offered on trial. Patients with up to 5 oligometastases (total or not controlled by prior treatment and including induced oligometastatic disease) underwent SABR to all lesions. Patients were 18 years of age or older, had an Eastern Cooperative Oncology Group (ECOG) score of 0 to 2, and had life expectancy ≥ 6 months.

Results: Between November 2016 and July 2020, 380 patients underwent SABR on trial. The 3 most common histologies were prostate (32.1%), colorectal (16.6%), and breast (11.1%). Most patients had 1-2 metastatic lesions (90.5%) treated. Median follow-up was 54.2 months (interquartile range, 29.3 - 60.4). Median OS was 64.6 months (95% confidence interval [CI], 61.0-68.1). Median PFS was 14.6 months (CI, 11.6-17.6). 5 -year OS, PFS, and local control were 58.6% (CI, 53.5 - 63.7), 20.3% (CI, 16.2 - 24.4), and 85.1% (CI, 82.0-88.1) respectively. On multivariable analysis, ECOG ≥1 (Hazard Ratio [HR], 1.53; p = 0.01), tumour diameter (HR, 1.13; p <.001), colorectal histology (HR, 2.25; p = 0.008), lung histology (HR, 4.25; p<.001), 1-2 treated lesions (HR, 2.17; p = 0.021), no upfront systemic therapy (HR, 1.79; p = 0.032) and no synchronous oligometastatic disease (HR, 1.56; p = 0.04) were significant independent predictors of worse OS. ECOG ≥1 (HR, 1.33; p = 0.019), tumour diameter (HR, 1.10; p<.001), no upfront systemic therapy (HR, 1.61; p = 0.009), oligoprogression (HR, 1.53; p = 0.010), and metachronous disease (HR, 1.47; p = 0.014) were associated with worse PFS.

Conclusions: In this large population-based cohort consisting of genuine oligometastatic, oligoprogressive, and induced oligometastatic disease, the median OS and PFS were 64.6 months and 14.6 months, respectively. The favorable OS and PFS may suggest a role for SABR beyond the genuine oligometastatic paradigm and highlight the potential benefit of durable local tumor control in this patient population.

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Title: Immediate Lymphatic Reconstruction to Reduce Breast Cancer-Related Lymphedema Risk after Axillary Lymph Node Dissection

Authors: Jaimie Lee[1], Maya Lee[2], Amy Bazzarelli[2], Carol Dingee[2], Elaine McKevitt[2], Jieun Newman-Bremang[2], Rebecca Warburton[2], Peter Davison[1], Jenna-Lynn Senger[1], Esta Bovill[1], Elliott Weiss[3], Melina Deban[2], Kathryn Isaac[1]

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Background: Breast cancer-related lymphedema (BCRL) develops in 10-40% of patients following axillary lymph node dissection (ALND) and radiation. BCRL is an important cause of lifelong morbidity for cancer survivors and there are no curative treatment options. Immediate lymphatic reconstruction (ILR) is a prophylactic surgical treatment option to reduce the risk of BCRL. ILR involves the microsurgical anastomosis of upper extremity lymphatics to axillary veins at the time of ALND, prior to the development of BCRL.

Objective: (1) Compare the incidence of BCRL between patients who underwent ALND with ILR and those who underwent ALND alone. (2) Determine the feasibility of implementing an ILR program between plastic surgeons and surgical oncologists at Vancouver Coastal Health (VCH) and Providence Health Care (PHC).

Methods: We conducted a retrospective review of patients for whom planned ALND, with or without ILR, was clinically indicated for breast cancer at VCH or PHC between January 1, 2024, and May 31, 2025. Patients were excluded if they had pre-existing lymphedema, evidence of distant metastasis, documented allergy to blue dye, or were pregnant. The primary outcome was the incidence of BCRL. Secondary outcomes included intra-operative factors such as the operative time, number and type of anastomoses, recipient vein selection, and associated breast surgery. Descriptive statistics were used to summarize patient and operative characteristics.

Results: A total of 110 patients were included, with 53 undergoing ALND with ILR and 57 undergoing ALND alone. Overall median age at surgery was 60 years (range 34-91) with majority having invasive ductal carcinoma (73% ILR, 60% ALND-only). Neoadjuvant chemotherapy was more common in the ILR cohort (75% vs 40%). Breast reconstruction was planned in 42% of ILR patients and in 21% of those undergoing ALND alone. The median operative time for ILR was 95 minutes (range 60-180). A total of 117 anastomoses were performed, with a median of 2 per case. The most frequent anastomosis techniques were intussusception (62%) and end-to-end (28%), and the most common recipient veins were the thoracoepigastric (24%), lateral pectoral (21%), and thoracodorsal (19%). On follow-up so far, stage 1 BCRL was developed in 3 patients (6%) in the ILR cohort and in 1 patient (2%) in the ALND-only cohort. Early surgical complications associated with the axillary surgeries included decreased range of motion and paresthesia in the ipsilateral arm.

Conclusions: ILR is an emerging prophylactic strategy for BCRL. Our findings suggest the procedure can be integrated into ALND surgery with coordinated efforts between plastic surgeons and surgical oncologists. Long-term follow-up of this cohort, in addition to a prospective study incorporating patient-reported quality-of-life questionnaires and longitudinal assessment is underway to further characterize the impact of ILR on BCRL incidence and breast cancer survivorship.

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Title: Does Limiting Hotspots Outside the GTV Decrease the Risk of Vertebral Compression Fracture in Patients Being Treated with Spine SABR? A Single Institution Experience

Authors: Jim (Zhang Hao) Li[1,2], Adrian Wai Chan[1,2], Alanah M Bergman[1,2], Haley Patrick[1,2], Mitchell Liu[1,2], Emma M Dunne[1,2]

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Background: Stereotactic ablative body radiotherapy (SABR) has been shown to offer better local control and less re-treatment rates compared to conventional external beam radiotherapy (cEBRT). For spine metastases, SABR has also been shown to have superior pain control. However, vertebral compression fracture (VCF) is a common complication after spine SABR, with the risk estimated to be over 10%. Research has shown that radiation dose can increase the risk of VCFs, but reducing the overall dose would sacrifice oncologic control. As a compromise, BC Cancer Vancouver has adopted a new constraint to limit the hotspots (HS) in the PTV – (GTV + 2 mm) region to < 110% of the prescribed SABR dose. We hypothesize that utilization of this institutional constraint would reduce the risk of VCF without increasing the risk of local recurrence (LR).

Objective: This study aims to test our hypothesis and evaluate the association of this new constraint on VCF rates and local control.

Methods: A retrospective review was conducted of all patients treated with SABR between October 2014 and December 2022 for de novo spinal metastases. Patients with pre- and post-treatment MRIs were selected for the study cohort. Clinical, dosimetric, and survival data were collected, and survival analyses were performed using the Kaplan-Meier method to compare outcomes between plans that respected and exceeded the institutional constraint.

Results: 70 patients were identified. They underwent SABR to 100 spine segments. 22 of these segments were treated with plans adhering to the institutional constraint while 78 were not. The median age was 64. 66% of patients were male. The most common histologies included castrate-sensitive prostate cancer (30%), breast (16%), and renal cell (11%). Most patients were ECOG 0 (50%) or 1 (43%). At a median 36 months of follow up, 28 patients died, there were 23 cases of VCF, and 20 cases of LR. There were no significant baseline differences between segments that adhered to the institutional constraint vs not. Spine segments that adhered to the constraint were less likely to develop a VCF than those that didn't ($p = 0.033$). The 48-month freedom from VCF were 95% (95% CI: 85-100%), and 66% (95% CI: 53-80%), respectively. There was no significant difference between the two cohorts for risk of LR ($p = 0.46$).

Conclusions: Spine SABR treatments using the institutional constraint is significantly associated with reduced VCF rates. It is not associated with an increased risk of LR. Therefore, the data supports integrating our institutional constraint into planning workflows in other cancer centres. Future prospective research could establish causality and help guide quality improvement initiatives.

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Title: Why Not a Cochlear Implant?" Understanding CI Refusal in Pediatric Candidates

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Background: Hearing deficits can significantly interfere with a child's linguistic acquisition, cognitive development, and social behavior. Early cochlear implantation (CI) in children with bilateral sensorineural hearing loss can restore language, academic achievement, and quality of life measures comparable to hearing peers. However, little is known about socioeconomic and psychosocial factors influencing CI decision in Canada's publicly funded healthcare system.

Objective: To investigate if certain parameters are associated with increased refusal of cochlear implant surgery in eligible pediatric candidates.

Methods: A 9-year retrospective chart review was conducted for patients aged 0-18 referred to a tertiary care pediatric Cochlear Implant team (CIT). Demographic and clinical data were analyzed descriptively. Mann-Whitney-U and Fisher's exact tests were applied to assess differences between families declined verses accepted CI. Univariate logistic regression quantified odds of refusal. Thematic analysis explored narrative reasons for refusal.

Results: Of 343 referrals from April 2015-May 2024 (50.4% female, median age 4 yrs, IQR 9), 205 patients were offered CI, 20 of whom declined (9.8%). Declining families had higher age at referral (11y vs. 2y, $p<0.001$), longer duration of hearing loss (5y v. 1y, $p=0.01$), and less family support (66.9% v. 25%, $p=0.015$). Each additional year of age and hearing loss increased odds of refusal by 15% and 21%, respectively. Extended family support decreased refusal odds by 83%, and absence of family history decreased refusal odds by 67%. A stated commitment to oral language reduced refusal odds by 76%. Common reasons for refusal included perceived adequacy of hearing aids, surgical risk concerns, and offers made primarily for environmental sound awareness rather than speech development. No significant association was found between refusal and family income or distance to the implant center, suggesting minimal financial/geographic barriers in the Canadian context.

Conclusions: Older age, prolonged auditory deprivation, and limited family support significantly predicted CI refusal, while oral language goals and supportive family networks favored acceptance. These findings highlight the importance of early referral, targeted counseling, and support systems to optimize CI uptake. In publicly funded systems, cultural beliefs, emotional readiness, and health literacy may be more influential than financial or geographic barriers in parental decision-making.

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Title: Gender-Inclusive Research Author Instructions: A Cross-Sectional Study of Otolaryngology Journal Submission Guidelines

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Background: Gender-diverse individuals increasingly seek otolaryngologic care, particularly in subspecialties such as facial plastics and laryngology. Although surveys suggest most otolaryngologists hold positive attitudes toward LGBTQ+ patients, many feel underprepared to meet the needs of gender-diverse individuals. Structural barriers and underrepresentation in research persist. Author submission guidelines in academic journals can play a critical role in promoting gender equity and inclusive research practices.

Objective: To evaluate the prevalence of gender-inclusive author submission guidelines in otolaryngology (ENT) journals and explore associations between gender inclusivity and journal performance metrics.

Methods: Cross-sectional analysis of all ENT journals indexed in Journal Citation Reports (Clarivate Analytics) under “Otorhinolaryngology/Otolaryngology” was performed in October 2024. 74 journals were included, and author guidelines were reviewed against six predefined inclusivity criteria: (i) gender-inclusive language examples, (ii) recommendations for inclusive language, (iii) distinction between sex and gender, (iv) provision of author resources, (v) name change policies, and (vi) general inclusivity statements. Journals meeting ≥1 criterion was classified as inclusive. 2023 performance metrics, including Journal Impact Factor (JIF), were compared using bootstrapped median differences (MD) with 95% confidence intervals (CIs).

Results: Of 74 journals, 48.6% (36/74) met at least one inclusivity criterion. The most frequent features were general inclusivity statements (61.1%), gender-inclusive language recommendations (41.7%), and educational resources (38.9%). Inclusive journals had significantly higher 2023 JIF (1.7 vs. 1.0; MD: 0.7; 95% CI, 0.2–1.4), Immediacy Index (0.30 vs. 0.15; MD: 0.15; 95% CI, 0.001–0.3), Journal Citation Indicator (0.91 vs. 0.44; MD: 0.47; 95% CI, 0.18–0.78), normalized Eigenfactor (0.42 vs. 0.13; MD: 0.289; 95% CI, 0.027–0.570), and Article Influence Score (0.432 vs. 0.289; MD: 0.2990; 95% CI, 0.033–0.478).

Conclusions: Fewer than half of ENT journals currently provide gender-inclusive submission guidelines, yet inclusivity is associated with stronger performance metrics. Updating journal policies to integrate inclusive practices is a timely, actionable strategy to promote equity and representation of gender-diverse communities in otolaryngology research.

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Title: Pediatric Decannulation Protocols: A Study of Clinical Decision-Making Among Canadian Pediatric Otolaryngologists

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Background: Long-term tracheostomy in children carries significant medical and psychosocial consequences. Decannulation represents a critical milestone in recovery, but inappropriate timing poses risks. Premature decannulation may lead to airway compromise, whereas delayed decannulation can prolong hospitalization, increase caregiver stress, and elevate healthcare costs. Despite its clinical importance, there are no standardized, evidence-based guidelines for pediatric decannulation. Current recommendations outline broad criteria for readiness, yet institutional practices vary widely, and little is known about national practice patterns in Canada.

Objective: To characterize current practice patterns in pediatric tracheostomy decannulation across Canada and identify opportunities to inform best practices for patient selection, complication reduction, and outcome optimization.

Methods: A 22-item survey consisting of multiple-choice and short-answer questions was distributed to members of the Canadian Society of Otolaryngology – Head and Neck Surgery via a WhatsApp group comprising pediatric otolaryngologists from across Canada between February and March 2025. Eligible respondents included physicians involved in pediatric tracheostomy decannulation. The survey collected data on physician demographics, institutional protocols, training background, patient characteristics, and decannulation and follow-up practices

Results: Sixteen responses were collected from seven provinces; one incomplete response was excluded. Most respondents had >15 years of practice (66.7%) and fellowship training in pediatric ENT (86.7%). Tracheostomy was most often performed before 12 months of age, and decannulation typically occurred between ages 3–6 years. Airway obstruction (93.3%) and craniofacial disorders (66.7%) were leading indications. Only 26.7% of institutions reported a formal decannulation protocol. Bronchoscopy was universally performed (80% rigid, 20% flexible), with capping (100%) and downsizing (80%) routinely used. Oximetry was used by 73.3%, while polysomnography was inconsistently applied. Post-decannulation monitoring varied, most often lasting 1–3 days (40%). Reattempts after failed decannulation ranged from case-dependent to fixed intervals of 3–12 months.

Conclusions: Canadian pediatric otolaryngologists demonstrate strong alignment with core international safety principles—airway assessment, capping, and inpatient monitoring—despite the absence of standardized protocols in most centers. However, variability persists in the use of adjunct testing, follow-up, and reattempt intervals. These findings highlight the need for national, evidence-informed decannulation pathways that balance patient safety with pragmatic resource considerations.

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Title: Coblation Intracapsular Tonsillotomy: Postoperative Bleeding Rates at BC Children's Hospital

Authors: Reeve Liew[1], Fainess Mwakisimba[2], Kiersten Pianosi[2]

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Background: Pediatric tonsillectomy is frequently performed for obstructive sleep apnea (OSA) and recurrent tonsillitis. Coblation intracapsular tonsillotomy (CIT) uses low-temperature plasma to precisely remove tonsillar tissue while preserving the capsule, aiming to reduce the risk of postoperative bleeding compared to traditional tonsillectomy methods. While studies from the UK and other countries report low postoperative bleeding and revision surgery rates following pediatric CIT, there remains a gap in Canadian literature. To our knowledge, this is one of the first retrospective chart reviews evaluating CIT outcomes in a Canadian pediatric population.

Objective: To evaluate the primary and secondary postoperative bleeding rates following CIT in a pediatric population at a tertiary care centre in Canada, with revision surgery rates as a secondary outcome.

Methods: A retrospective chart review was conducted to analyze medical records of all pediatric patients who underwent CIT at BC Children's Hospital between January 2019 and December 2024. Data was collected on demographics, surgical details, and postoperative outcomes, including length of hospital stay, emergency department visits, hospital readmissions, postoperative bleeding, and revision surgery. Rates of primary bleeding (<24 hours postoperatively), secondary bleeding (>24 hours postoperatively), and revision surgery were calculated and compared with the existing literature.

Results: 356 pediatric CIT procedures with or without adenoidectomy were identified. The median age at surgery was 6 years (IQR 4–8). Sixty percent of procedures were performed in males and 40% in females. Indications for CIT included isolated OSA (84%), isolated recurrent tonsillitis (3%), OSA and recurrent tonsillitis concurrently (10%), and others (3%). There were no primary postoperative bleeding events. Secondary postoperative bleeding occurred in 3 procedures (0.8%); none required surgical intervention, and one patient was readmitted overnight for observation. Nine procedures (2.5%) were deemed to require subsequent revision surgery, of which 7 (2.0%) had been surgically revised by the time of data collection. Reasons for revision surgery included recurrent tonsillar hypertrophy causing OSA (n = 5), chronic tonsillitis with tonsil stones (n = 1), and periodic fever, aphthous stomatitis, pharyngitis, and adenitis (PFAPA) syndrome (n = 1). The median time to revision surgery was 601 days (range 366–1335).

Conclusions: CIT is a safe and effective procedure at our tertiary ENT centre, with low rates of postoperative bleeding (0% primary, 0.8% secondary) and revision surgery (2.0%) that are comparable to those reported in the literature. The results of this study provide region-specific insights into pediatric CIT outcomes in Canada and support its viability as an alternative to traditional tonsillectomy methods.

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Title: Who's Training Tomorrow's Pediatric Surgeons? A Global Review of Pediatric Surgery Postgraduate Training Programs in Low- and Middle-Income Countries

Authors: Rachel J. Livergant[1,2], Olga L. Bednarek[2,6], Apanuba Puhama[2], Catherine J. Binda[2,7], Annika Ackermann[2,3], Irena Zivkovic[1,2], Emilie Joos[2,4], Mercedes Pilkington[2,8], Robert Baird[5], Shahrzad Joharifard[2,5].

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Background: Compared to High-Income Countries (HICs), Low- and Middle-Income Countries (LMICs) have significantly younger populations and bear a disproportionately high burden of morbidity and mortality from surgically treatable conditions. However, access to pediatric surgical care and trained specialists remains limited. Mapping existing pediatric surgery training programs in LMICs may assist prospective trainees and inform global surgery initiatives aimed at capacity building.

Objective: This review aimed to map out existing, formalized postgraduate pediatric surgery training in LMICs.

Methods: A comprehensive grey literature review was conducted to identify pediatric surgery training programs in LMICs. Sources included web browser searches, medical school and hospital websites, national surgical colleges, and other relevant platforms. Identified programs were categorized by World Bank income group and World Health Organization (WHO) region and mapped using Canva.

Results: Of 132 LMICs, 66 (50.0%) had at least one formal pediatric surgery program. By income group, 56.3% (n=31/55) of Upper-Middle-Income Countries (UMICs), 51.0% (n=26/51) of Low Middle-Income Countries (MICs), and 34.6% (n=9/26) of Low-Income Countries (LICs) had programs. Regionally, the European (n=14/18, 77.8%), Eastern Mediterranean (n=12/16, 75.0%), and South-East Asia (n=7/10, 70.0%) regions had the highest proportion of LMICs with pediatric surgery programs. The Western Pacific Region (n=6/17, 35.3%) and African Region (n=15/47, 31.2%) had the lowest proportions.

Conclusions: Access to pediatric surgery training programs in LMICs remains limited, with availability decreasing in proportion to national income level. There is an urgent need for sustainable, standardized training pathways—supported by formal accreditation initiatives—to enhance pediatric surgical capacity globally.

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Title: Skin Deep: An Evaluation of YouTube Videos on Acute Radiation Dermatitis in Patients with Breast Cancer

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Background: Acute radiation dermatitis (ARD) is a common adverse effect of breast cancer radiation therapy. As YouTube is increasingly used for health information, relevant and reliable videos may play an important role in patient education.

Objective: This study characterizes YouTube videos about ARD in breast cancer. Congruence with consensus guidelines is assessed.

Methods: Seven relevant YouTube searches were web-scraped using a custom Python script to yield a total of 350 videos which were rank-ordered based on frequency across searches and position in the results. After applying pre-determined inclusion criteria, the top 50 videos were analyzed using a validated assessment tool to assess general parameters, presentation, content, and reliability. Recent International and National Delphi consensus literature was reviewed to inform content analysis. Two independent reviewers were used for inter-rater reliability.

Results: Of 23 interventions, only three— prevention education, general skincare advice, and moisturizers—appeared in at least half the videos. Four of seven interventions recommended in international guidelines were entirely absent. Only two interventions (9%) were presented completely and accurately in at least 25% of the videos. 40% of the publishing channels had commercial affiliations, and 42% of videos integrated advertisements.

Conclusions: YouTube videos on ARD in breast cancer provide limited coverage of guideline-based prevention and management strategies. High rates of commercial affiliations and advertising underscore the potential for bias. Clinician awareness of these limitations can inform patient counseling about the benefits and risks of online health information.

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Title: Molding Mastery: Validation of a 3D-Printed Simulator for Pediatric Inguinal Hernia Repair

Authors: Peter R. A. Malik[1,2], Julia Haehl[3], Rachel Livergant[1,4], Lukas Shum-Tim[1,5], Kayoung Heo[1,6], Andreas Lindner[3], Oliver Muensterer[3], Shahrzad Joharifard[1,4]

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Background: Pediatric inguinal hernia repair (PIHR) is a common procedure performed using either open or laparoscopic techniques. Both approaches require detailed anatomical knowledge and specialized training. To address these training needs, we developed a low-cost, 3D-printed Pediatric Open and Laparoscopic Integrated Simulator for Inguinal Hernia Repair (POLISHeR).

Objective: This study aimed to validate POLISHeR as a simulation tool for essential PIHR skills.

Methods: Experienced pediatric surgeons and surgical trainees performed simulated PIHR using POLISHeR. Participants evaluated the simulator's face and content validity using a 5-point Likert scale. Two experienced pediatric surgeons assessed video-recorded simulations using procedure (PCL) and error (ECL) checklists. An Entrustable Professional Activity (EPA) scale measured participants' competence. Construct validity was assessed by comparing expert and trainee performance using the Mann–Whitney U test.

Results: Twenty-six participants completed simulations (open: n=11; laparoscopic: n=15), including 14 expert pediatric surgeons (open: n=5; laparoscopic: n=9). In laparoscopic PIHR, trainees made significantly more errors ($p < 0.001$), completed fewer key steps ($p < 0.001$), and received lower EPA scores ($p < 0.001$) than experts. In open PIHR, trainees made more errors ($p = 0.03$), had lower EPA scores ($p = 0.05$), and received lower PCL scores ($p = 0.410$), though not statistically significant. Experts reported strong anatomical realism and accurate step representation.

Conclusions: POLISHeR demonstrates strong face, content, and construct validity. It effectively differentiates between expert and trainee performance and represents an affordable, practical tool for teaching and evaluating PIHR skills.

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Title: The Effectiveness of Inhaled Methoxyflurane vs Placebo for Pain Relief in Outpatient Sinus Procedures: A Double-blind, Randomized, Placebo-Controlled Trial

Authors: Helia Mansouri Dana, Azin Tabari, Alexander Moise, Juan Carlos Hernaiz, Amin Javer[1]

Affiliations: [1]St. Paul's Sinus Centre, St. Paul's Hospital, Vancouver, BC

Background: In properly selected cases, outpatient endoscopic sinus surgery is a cost-effective and efficient method of addressing chronic sinusitis. Minor in-office sinus surgery is safely done under local anesthesia, which can cause discomfort and anxiety in patients. In addition, cases of higher complexity cannot be completed in the office given the current analgesic options, leaving patients to endure long waitlists for major surgery under general anesthesia while managing symptoms that reduce quality of life. Methoxyflurane is a quick-acting, inhaled analgesic that has been indicated for minor trauma and small procedures. There is a large body of literature exploring the role of this drug in emergency medicine and its effectiveness in treating acute pain, however few studies have investigated its use in the outpatient surgical setting.

Objective: The aim of this study is to investigate the effectiveness of methoxyflurane as a short-term analgesic during in-office sinus and turbinate reduction procedures compared to placebo.

Methods: From Feb 2025 to date, 21 participants have been recruited, with a target of 100 patients in total to achieve a power of 90% in data analysis. Research participants are equally stratified into two groups according to the type of procedure: sinus surgery or turbinate reduction procedures. They are next randomly assigned to a methoxyflurane or placebo arm from a pre-created randomization scheme stored on a centralized computer to ensure allocation concealment. Following the procedure, a visual analog scale (VAS) pain questionnaire is completed by the patient and used as the primary outcome. As methoxyflurane has anti-anxiety effects, we have measured the anxiety levels of patients pre-operatively, intra-operatively, and post-operatively using the VAS scale. Secondary outcome measures include the change in Sino-Nasal Outcome Test-22 (SNOT-22) pre- and post-operatively.

Results: Our preliminary results include 21 patients: 6 each in the sinus procedure/Penthrox and sinus procedure/placebo arms, 4 in the coblation/Penthrox arm, and 5 in the coblation/placebo arm. In both groups, Penthrox resulted in lower mean VAS pain scores. At this early point in the study, the following mean VAS pain scores have been reported: 25 mm for the sinus/Penthrox group, 40 mm for the sinus/placebo group, 22 mm for the coblation/Penthrox group, and 35 mm for the coblation/placebo group. A difference of 15 mm on the VAS score between Penthrox and placebo groups, as seen in the sinus group, is considered the minimal clinically important difference (MCID), suggesting potential clinical relevance given the current data. Among the current participants thus far, anxiety data demonstrated a post-operative reduction in anxiety levels with Penthrox compared to placebo; further, the placebo group showed an increase in mean anxiety scores from the pre-operative to intra-operative period, while the Penthrox group showed a decrease. There are no clinical or statistical difference between SNOT22 scores in the Penthrox or placebo arms at this point. One instance of short-term headache has been reported as an adverse event after Penthrox use.

Conclusions: Penthrox appears to be clinically useful in improving patient anxiety and pain in the context of in-office sinus surgery. However, complete data collection is required for more robust results and conclusions. If significant, future results may inform a shift away from sinus procedures done in the operating room, improving wait times and patient recovery.

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Title: Endoscopic-guided transoral resection of maxillary ameloblastoma: a case series.

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Affiliations: [1]St. Paul's Sinus Centre, St. Paul's Hospital, Vancouver, BC

Objective: The aim of this case series is to introduce an endoscopically guided, transoral method for the resection of maxillary ameloblastoma as a minimally invasive procedure, with appropriate tumor margins.

Introduction: Ameloblastoma (AM) is a benign tumor of odontogenic origin which can arise in the mandibular region (80%) and the maxilla (20%). Although benign in nature, these tumors grow aggressively, leading to destruction of surrounding tissue, bone, and nerves. In severe cases, AM can lead to facial disfigurement, and especially in maxillary tumors, severe functional decline in swallowing, speech, and breathing, warranting appropriate surgical management.

Cases Summary: Our cases include that of a 64-year-old asthmatic male with recurrent allergic fungal rhinosinusitis with a left maxillary sinus AM, and removal achieved via exclusive transnasal endoscopic surgery. An additional 2 cases present a 63-year-old Middle Eastern female with a left maxillary tumor and a 68-year-old Caucasian male with a right maxillary tumor, both cases of recurring AM initially managed by endoscopic sinus surgery. For revision AM removal, the surgical approach involved access to the floor of the maxillary sinus through an incision on the upper jaw and endoscopic resection of tissue; this further allowed for the drilling of bone in involved areas of the maxillary bone without bone resection and facial reconstruction. Other areas of the maxillary sinus were resected using angled instrumentation and endoscopic removal of tumor and surrounding margins (1cm) for prevention of recurrence.

Conclusion: Endoscopic sinus surgery (ESS) offers a minimally invasive technique for sinonasal access. However, its application in ameloblastoma remains rare, with only seven reported cases using a transnasal endoscopic approach, four of which were exclusively endoscopic. One such case was previously reported by our team and is revisited in this series. ESS enables precise resection with enhanced visibility, and when combined with a transoral approach, can achieve wide-margin removal while minimizing facial incisions. This hybrid method presented here is a promising option for managing maxillary AM without radical surgery, hence avoiding the loss of function associated with maxillary bone resection and preventing the high rates of tumor recurrence as seen with conservative methods.

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Title: Localized sinonasal amyloidosis mimicking as acute invasive fungal sinusitis.

Authors: Helia Mansouri Dana, Azin Tabari, Hamid Masoudi, Amin Javer[1]

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Introduction: Sinonasal amyloidosis, a rare and atypical manifestation of localized amyloidosis, is a non-invasive tumor which occurs in the sinonasal passage and cavities, presenting with congestion, facial pain, and nerve damage. Amyloidosis is typically a systemic disease, involving amyloid protein aggregation in various tissues. A subtype of amyloidosis, termed primary amyloidosis, involves the aggregation of light chain immunoglobulins, as presented in this case., though it rarely localizes to the sinonasal tracts. To our knowledge, only 40 cases of sinonasal amyloidosis have been noted worldwide.

Case Summary: This is the case of a non-diabetic, non-asthmatic male in his 70s with a previous history of chronic recurrent sinusitis and multiple myeloma treated with chemotherapy, who presented with a 4-day history of right-sided facial pain, trismus, and right-sided facial nerve palsy with involvement of the buccal nerve. Endoscopy, CT imaging, alongside the patient's immunocompromised status was suspicious for acute fungal rhinosinusitis. The patient was taken to the operative room for emergency surgery, where a right-sided maxillary tumor was discovered. Tumor resection and intra-operative frozen section showed kappa and lambda immunostains, consistent with a diagnosis of localized amyloidosis. After resection, the patient's facial pain improved, and the patient was discharged after 3 days, with chemotherapy was re-initiated 7 days after discharge.

Discussion: This case was particularly complex due to overlapping clinical and imaging features with acute invasive fungal sinusitis, especially in the context of the patient's immunocompromised status from multiple myeloma and chemotherapy. Initial symptoms of facial pain and congestion were nonspecific, and imaging findings such as sinus opacification, bony erosion, and retroantral fat stranding raised suspicion for aggressive fungal infection. Histopathological analysis confirmed localized amyloidosis via immunostaining. Surgical drainage of the sinus cavities, tissue biopsy and immune staining are of utmost importance in the management of any case of rhinosinusitis to ensure appropriate diagnosis and management.

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Title: Virtual Surgical Planning for Intraoperative Dental Implant Placement in Head and Neck Reconstruction

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Background: Mandibular and maxillary reconstructions are commonly performed for defects arising from both malignant and benign tumours. Bony reconstruction with fibular free flaps can be optimized by virtual surgical planning (VSP), allowing surgeons to pre-plan reconstructions and utilize 3D-printed cutting guides in the operating room. While dental implants are essential for restoring occlusion and function, implant placement must be delayed until bony union is achieved, sometimes taking up to two years, thus prolonging functional rehabilitation. Placing dental implants at the time of surgery, intraoperatively, therefore offers a promising alternative to accelerate the process of dental restoration. This study aims to establish a workflow using our in-house VSP software to accurately plan and place dental implants at the time of surgery in mandible and maxilla reconstruction cases.

Methods: This prospective study included five patients who underwent mandible (n=3) or maxilla (n=2) reconstruction using a fibular free flap, with dental implants placed intraoperatively at the time of surgery. VSP was performed using an in-house software (Artisynth) to plan the resection, reconstruction, and dental implant placement preoperatively. Cutting guides were 3D-printed and sterilized to be used in the operating room to guide the reconstruction.

Results: Five patients successfully underwent intraoperative dental implantation using this workflow. The mean deviation in implant position between the preoperative reconstruction plan and the postoperative segmentation was 7.06mm.

Conclusions: Artisynth, the in-house virtual surgical planning software, developed at the Vancouver General Hospital, shows promise as a tool in supporting the placement of dental implants intraoperatively in mandible and maxilla reconstruction patients.

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Title: Non-Consumable Instrumentation for Pediatric Inguinal Hernia Repair - A Quality-Improvement Audit

Authors: Riichi Rohit Mazi[1], Asha Hui[1], Hooria Bilal[1], Prakash Krishnan[2], Robert Baird[3]

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Background: Pediatric Inguinal Hernia Repair (IHR) is a common elective procedure requiring basic reusable surgical equipment. Presence of unnecessary equipment inflates reprocessing costs, contributes to environmental waste, and may reduce operating room efficiency. We prospectively audited our practice, identifying instrument utilization patterns, thus reducing overall tray size and environmental impact. We are also evaluating whether open or laparoscopic IHR offers a smaller carbon footprint.

Methods: An external auditor assessed a convenience sample of 30 IHR cases by six surgeons conducted at the BC Children's Hospital over one year. Instrument usage was tracked per case and categorized as: never used=0%, rarely=1–49%, often=50–99%, always=100%. Data was recorded in a secure spreadsheet to quantify usage frequency and estimate reprocessing costs.

Results: The standard Pediatric IHR tray held ~80 individual instruments encompassing 39 distinct types. Of these, 10 (25.6 %) were never used, 15 (38.5 %) were rarely used, 13 (33.3 %) were often used, and only 1 (2.6 %) was used in every case. Core instruments were consistent across surgeons, whereas mid-frequency items varied with individual preference. Modelling shows that a streamlined tray of 40–50 essential tools would maintain clinical efficacy while reducing reprocessing time and cost. Preliminary carbon-footprint analyses suggest differences between open and laparoscopic approaches, but additional data are needed to determine which technique imposes the smaller environmental burden.

Conclusions: Simplifying the IHR instrument tray presents a viable method to reduce costs, improve efficiency, and minimize waste. Continued efforts to evaluate CO_2 usage and other ecological impacts will guide a more sustainable approach to pediatric hernia repair.

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Title: A low-cost electrolarynx for voice rehabilitation following total laryngectomy: A comparative study

Authors: Brendan McNeely, Ameen Amanian, Amanda Hu, Oleksandr Butskiy, Donald Anderson

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Background: An electrolarynx is an external device used to induce vibration of oral or pharyngeal mucosa creating understandable speech in patients who have undergone a laryngectomy. Current devices are prohibitively expensive ($1500 CAD) without sustainable replacement parts.

Objective: We aim to design, develop, and test a novel low cost electrolarynx alternative to the current commercially available electrolarynx. We seek to demonstrate that there is no subjective or objective clinical difference between the low-cost prototype electrolarynx device and the higher cost conventional electrolarynx.

Methods: Ten male participants who underwent total laryngectomy for laryngopharyngeal malignancies and tracheoesophageal puncture between 2018 and 2024. All participants underwent surgery at minimum 6 months prior to study participation and primary use of electrolarynx for everyday speech. Paired perceptual voice analysis for both the commercial and prototype electrolarynx was performed using voice recordings (“Rainbow Passage”) and randomly presented to four blinded clinicians using the GRBAS and visual analogue scales (VAS). Objective acoustic measures included fundamental frequency and vocal intensity. Voice Handicap Index-10 (VHI-10) evaluated self-reported voice quality.

Results: Mean difference between the commercial device and our protype in fundamental frequency was 19.3 (CI 1.5 – 37.1) and vocal intensity was 1.0 (CI -3.8 – 5.9). Mean difference among the four raters among perceptual analysis was the following: Grade -0.9, Roughness -0.8, Breathiness 0.025, Asthenia -0.3, Strain -0.1, and VAS 7.7 (CI 0.4 – 14.9). Mean VHI-10 was 15.3 (CI 11.95 – 18.65).

Conclusions: Our study demonstrates the successful design, development and testing of a novel low cost electrolarynx prototype with minimal to clinical difference when compared to the commercially available electrolarynx.

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Title: Imposter Syndrome Among Otolaryngology Residents: A Canadian Cross-Sectional Survey

Authors: Alexander Moise, MDCM[1], Ying Jie Li[2], Yvonne Chan, MD, FRCSC[3], Elise Graham, MD, FRCSC[4], Amanda Hu, MD, FRCSC[1]

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Background: Impostor syndrome (IS) is common among medical professionals, manifesting as self-doubt and feelings of inadequacy despite demonstrated achievement. IS is associated with increased psychological distress, lower well-being, and negative effects on career progression. The burden of IS in Canadian OHNS residency training has not been well studied.

Objective: To assess the national prevalence and severity of imposter syndrome (IS) among Canadian Otolaryngology – Head and Neck Surgery (OHNS) residents and to explore associations between IS, demographic factors, and self-efficacy.

Methods: A national cross-sectional survey was distributed to OHNS residents in English and French using the Dillman Tailored Design Method over an eight-week period. The survey included the Clance Impostor Phenomenon Scale (CIPS) and the General Self-Efficacy Scale (GSES). Responses were analyzed with t-tests, ANOVA, and multivariable regression.

Results: Fifty-six(56) OHNS residents participated (response rate: 34%), including 29 men and 27 women. Mean CIPS score was 61.43 (SD 15.52), with 44.6% meeting criteria for “significant” imposterism (CIPS score 61-80). Women reported significantly higher impostor scores than men (mean CIPS: 65.9 vs. 57.0; $p = 0.038$). Among those who experienced intense impostorism (CIPS >80), 71.4% were women and 28.6% men. Year of residency was significantly associated with IS ($p=0.024$), with PGY-1 residents exhibiting the highest CIPS scores (62.5) compared to PGY-5 (48.1). Mean GSES was 31.75 (SD 3.46), with no significant variation across demographic groups. However, self-efficacy was inversely correlated with IS (Pearson’s $r = -0.366$, $p = 0.005$).

Conclusions: Impostor syndrome is common among Canadian OHNS residents, particularly women and those in early training. Higher impostor scores are linked to lower self-efficacy, underscoring the need for structured support and wellness initiatives within residency programs.

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Title: Modified Draf IIc vs Draf III: A Retrospective Cohort Study Comparing Outcome in CRS Patients

Authors: Mina Motasaddizarandy[1], Azin Tabari[1], Juan Carlos Hernaiz-Leonardo [1], Amin Javer[1]

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

Background: Chronic rhinosinusitis (CRS) is a common inflammatory condition affecting approximately 11% of the global population, with substantial impacts on quality of life. Endoscopic frontal sinus surgery is often indicated for patients with recalcitrant CRS. While the Draf III procedure is a well-established approach for managing severe or bilateral disease, it carries a high complication and revision burden due to its extensive nature. In response, a less invasive technique, the modified Draf IIc, has been proposed. This approach consists of bilateral Draf IIb procedures with anterior superior nasal septum resection and preservation of the interfrontal sinus septum and frontal beak.

Methods: This retrospective cohort study included adult patients (≥18 years) with CRS who underwent revision frontal sinus surgery at a tertiary sinus center. Patients underwent either a modified Draf IIc or Draf III procedure, all performed by a single senior surgeon to ensure procedural consistency. Demographic, clinical and radiologic data were collected. To evaluate surgical outcomes at one year postoperatively, SNOT-22 scores, Sinonasal New Endoscopic Staging (SiNES) and the need for a revision surgery (minor in the office or major in the operating room) were assessed. Only patients with a minimum postoperative follow-up of three months were included in the analysis.

Results: The initial analysis demonstrated that in the 36 patients that were analyzed (18 per group), both groups had similar sex distribution (10 M, 8 F), and comparable rates of biologics use (39%). The modified Draf IIc group was younger (mean age 58.4 vs. 63.9 years) and had higher rates of asthma (78% vs. 50%) with lower rates of chronic rhinosinusitis with nasal polyps (CRSwNP) (72% vs. 78%). At 1-year follow-up, the modified Draf IIc group had a lower revision rate compared to the Draf III group (5.6% vs 11.1%). Additionally, the mean SNOT-22 score was lower in the modified Draf IIc group (33.55 vs. 39.93).

Conclusions: These findings suggest that modified Draf IIc provides comparable or better outcomes than Draf III, despite being less invasive.

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Title: Identifying the Molecular Signature Underlying Hypertrophic Cardiomyopathy Using a Multi-Omic Approach

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Background: Hypertrophic cardiomyopathy (HCM) is an inherited condition characterized by left ventricular hypertrophy in the absence of abnormal loading conditions, with a prevalence of 1:200–1:500. It is inherited in an autosomal dominant pattern with variable penetrance and expressivity, most often caused by pathogenic variants in sarcomeric genes. HCM is a major cause of heart failure, arrhythmia, and sudden cardiac death; however, the molecular mechanisms driving its pathophysiology remain poorly understood.

Objective: To investigate the molecular mechanisms underlying HCM using an integrative approach combining clinical data, imaging, histology, and single nuclei RNA sequencing.

Methods: Patients undergoing septal myectomy for obstructive HCM were included. Baseline clinical characteristics and preoperative imaging (echocardiography and cardiac MRI) were collected. Septal tissue obtained intraoperatively was flash-frozen for histological and single nuclei RNA sequencing analyses. Control tissues were obtained from donor hearts declined for transplant without prior cardiac history.

Results: Fifteen patients with HCM and four control samples were included. Baseline characteristics reflected a typical HCM cohort. Imaging demonstrated marked left ventricular hypertrophy, significant LVOT obstruction, hyperdynamic systolic function, restrictive diastolic filling, and systolic anterior motion of the mitral valve. Histology revealed significantly increased myocardial fibrosis and hypertrophy in HCM compared to controls. Single nuclei RNA sequencing identified transcriptional differences across multiple cell types, with evidence of altered cellular pathways and increased heterogeneity in the HCM septum compared to controls.

Conclusions: In addition to sarcomeric dysfunction, activation of pathological pathways in both cardiomyocytes and non-cardiomyocytes contributes to the disease phenotype in HCM. These findings highlight the importance of cellular cross-talk and suggest that mechanisms beyond the sarcomere are central to the pathogenesis of HCM.

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Title: Lessons Learned: A Review of Canadian Appendectomy Malpractice Litigation Cases

Authors: Dr. Bonnie Niu MD[1]; Dr. Christina Schweitzer MD, FRCSC[1]; Dr. Sam Wiseman MD, FRCSC[1]

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Background: Malpractice litigation is a concern for all physicians, and retrospective reviews of malpractice cases can identify areas to improve patient safety and quality of care. Appendectomies remain one of the most common emergency operations that General Surgeons perform in Canada, and review of litigation cases can help inform risk mitigation strategies in the perioperative management of appendectomies, thereby improving patient outcomes and surgical practice.

Objective: To review the appendectomy surgery malpractice litigation case law in Canada to understand trends in appendectomy surgery complications and develop recommendations for risk mitigation for appendectomy surgeons and improve care for their patients.

Methods: This retrospective study of previous malpractice litigation case law was performed using cases obtained from the publicly accessible Canadian Legal Information Institute. Cases were included if they related to malpractice in the surgical management of emergency appendectomies where a general surgeon was a defendant. Cases were reviewed by two investigators then by a third where there was disagreement.

Results: The search identified 299 cases, 16 of which met study criteria. Notably, five cases pertained to misdiagnosis, 4 to post-operative complication management, 3 to non-disclosure of intra-operative complications or findings and 1 to inadequate discharge instructions for returning to care.

Conclusions: These findings suggest ways to improve patient care and mitigate risk for surgeons in the surgical management of appendicitis, for example to document potential differentials where there is diagnostic uncertainty and to document and disclose intraoperative complications to patients.

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Title: Right Vagal Nerve Stimulation for Epilepsy – Case Series and Systematic Review of the Literature

Authors: Kenneth Ong[1], Michael A Rizzuto[1], Maggie Hou[2], Annika Weir[3], Chantelle Hrazdil[4], Ash Singhal[3], Mostafa Fatehi[1]

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Background: Vagus nerve stimulation (VNS) is an established therapy for refractory epilepsy, traditionally implanted on the left to avoid potential cardiac complications attributed to right-sided placement (R-VNS). These concerns are largely based on animal models, with limited human evidence.

Methods: To better understand the field, we performed a systematic review of all published cases of R-VNS and a retrospective review of all patients in our quaternary neurosurgical center (Vancouver General Hospital) who received R-VNS.

Results: The review identified nine studies involving 53 patients. Transient cardiac abnormalities occurred in four patients. Ten patients experienced non-cardiac side effects, typically wheezing or other respiratory side effects, with three requiring device deactivations. Seizure control was comparable in 74.2% of patients. Our institutional series of seven patients identified no cardiac complications. Two experienced transient non-cardiac symptoms, and one experienced hoarseness and stridor requiring stimulation adjustment. Six patients had prior L-VNS, with R-VNS providing similar seizure control in four cases.

Conclusion: This study presents an updated systematic review and institutional case series to better characterize the safety and efficacy of R-VNS. Although traditionally avoided due to cardiac concerns, symptomatic cardiac complications with R-VNS were not regularly documented compared to L-VNS. R-VNS appears safe and effective in select patients, though larger studies are needed to clarify long-term safety, and respiratory side effects have been described.

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Title: Effect of Same-Day Volumetric Modulated Arc Therapy on Resource Utilization in Rapid Access Palliative Radiotherapy Clinics Using a Radiation Oncologist-Initiated Automated Planning Script

Authors: Emily O'Reilly, MD[1]; Maryam Golshan, PhD[2]; Nick Chng, PhD, FCCPM[3]; Leigh Bartha, BSc, ACT[4]; Leanna Drummond, BSc, RTT[4]; David Hoegler, MD, FRCPC[5]; Nathan Becker, PhD, FCCPM[2]; Benjamin Mou, MD, FRCPC[5].

Affiliations: [1]BC Cancer Vancouver, Radiation Oncology; [2]BC Cancer Kelowna, Medical Physics; [3]BC Cancer Prince George, Medical Physics; [4]BC Cancer Kelowna, Radiation Therapy; [5]BC Cancer Kelowna, Radiation Oncology.

Background: Rapid access palliative (RAP) radiotherapy (RT) clinics enable patients to access urgent same-day consultation, simulation, and treatment. Although volumetric modulated arc therapy (VMAT) can improve conformality, many RAP-RT clinics use unplanned field-based techniques for efficiency.

Objective: This study aimed to examine the effect of same-day volumetric modulated arc therapy (VMAT) implementation using the Northern Plan Automation Service Treatment Planning Automation Service (NoPAUSE-TPAS), an automated planning script, on patient throughput in RAP-RT clinics at a regional cancer centre.

Methods: This retrospective study included all patients seen in RAP-RT clinics between February-August 2024 following introduction of NoPAUSE-TPAS, compared to a data set from January-July 2019. Baseline characteristics were analyzed using descriptive statistics. Measures of resource utilization and quality pertaining to consultations, computed tomography simulation slots, and time to treatment delivery were assessed.

Results: RAP-RT clinics saw 202 patients in 2024 and 213 in 2019. In 2019, 195 patients received RT to 249 sites, compared to 189 patients who received RT to 246 sites in 2024. Most patients (70%) received RT to one site. Bone was the most common site treated (71%). The most common fractionation was 8Gy/1 (57%). Of the bone metastases, 66.5% were treated with a single fraction in 2019, compared to 81.4% in 2024. Most patients (94.9% in 2019 and 90.5% in 2024) started RT the same date as consultation. Within the 2024 cohort, 54.1% of sites were treated with an unplanned technique and 45.9% with VMAT. Of the sites treated, 78.0% were eligible for NoPAUSE-TPAS. Of the eligible sites, 58.9% of received treatment with VMAT, with 84.9% of these delivered on the same date as consultation. Median time for NoPAUSE-TPAS radiotherapy plan optimization was 12 minutes.

Conclusions: Same-day VMAT using NoPAUSE-TPAS was implemented in RAP-RT clinics with no scheduling changes impacting patient throughput and similar resource utilization compared to historical data. Utilizing automation technology to improve efficiency can enable same-day VMAT for palliative RT.

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Title: A Systematic Review of Radiation Therapy Versus Repeat Surgery for the Management of Recurrent Parotid Pleomorphic Adenoma in the Head and Neck

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Background: Pleomorphic adenoma (PA) is the most common salivary gland tumor, predominantly affecting the parotid glands. Although benign, PAs have a 9% lifetime conversion rate to malignancy. Therefore, the primary treatment modality for PA is surgical resection. However, PA frequently recurs, and the standard of care for the management of recurrent PA is currently debated between repeat surgical resection or radiation therapy.

Objective: To identify differences in outcomes and recurrence rates in the management of recurrent parotid pleomorphic adenomas (RPPA) between repeat surgical excision and radiation therapy alone.

Methods: A systematic review was performed, adhering to the PRISMA guidelines and examined studies published from 1986 to 2022 that evaluated radiation and surgical treatments for RPPA after initial surgical resection. Three studies met the inclusion criteria, providing data on demographics, treatment details, and outcomes.

Results: The review included 11 studies with 148 cases of first-time recurrence of PPA. Of that group, 86 patients underwent radiation treatment (including adjuvant therapy) and 62 underwent surgical resection only. Recurrences were more frequent in the surgery group (72.6%) compared to radiation (16.3%). In one study, all 44 patients initially treated with radiation eventually underwent surgery, as the surgeon was not satisfied with the clearance of the disease. Both groups reported similar rates of complications such as malignant transformation, secondary malignancies, and facial paralysis, with no notable differences between the modalities.

Conclusions: Radiation therapy as a sole treatment for recurrent pleomorphic adenoma is rarely reported, with its use most often limited to cases deemed inoperable. The available studies were limited by heterogeneity in data reporting and reliance on outdated surgical techniques. The variability of findings and the lack of contemporary approaches underscore the need for high-quality research. Future studies should incorporate modern surgical and radiation techniques while also evaluating patient treatment regret to better inform clinical decision-making and promote patient-centered care.

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Title: Vestibule Obliteration of Cochlear Incomplete Partition Type I – A Case Series

Authors: Emily Oulousian[1], MDCM, Mark Felton[1], MBChB, MSc, FRCSC, Frederick Kozak[1], MD, FRCSC, Amjad Tobia[1], MD

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Background: Inner ear malformations (IEM) represent approximately 20% of congenital hearing loss. Incomplete partition type I (IP-I) constitute 20% of IEMs and is known to have a particularly increased risk of recurrent meningitis. Vestibule plugging has been performed for cerebrospinal fluid (CSF) gushers and otolith dysfunction, though it is rarely described in the literature as management of IP-I.

Objective: To summarize the clinical and radiological characteristic of pediatric IP-I, and to recommend transcanal endoscopic vestibule obliteration for the treatment of CSF leakage in children with IP-I.

Methods: This retrospective case series reviewed the clinical presentation, imaging characteristics, and management of pediatric patients diagnosed with IP-I at a tertiary pediatric centre. Treatment approaches were evaluated with a focus on the feasibility and outcomes of transcanal endoscopic vestibule obliteration.

Results: 75% (3/4) of the children, all of whom were of Asian descent, presented with a history of meningitis, and all had profound SNHL. Two patients had cochlear implants. In total, two children had right-sided IP-I, one left-sided, and one with bilateral IP-I. Stapes footplate deformity was noted in 75% of patients (3/4), and the remaining patient was found to have a round window bony defect. One patient underwent vestibule obliteration prophylactically after recurrent episodes of acute otitis media. Transcanal endoscopic repair of CSF leakage secondary to IP-I was performed via obliteration of the vestibule with temporalis muscle and fascia. We observed a success rate of 100%. All patients had a stable post-operative course and are doing well with regular, yearly follow-up.

Conclusions: Vestibule obliteration is a safe and effective surgical approach for the prevention and treatment of CSF leaks in children with IP-I, both in the setting of recurrent meningitis and prophylactically in high-risk patients. The transcanal endoscopic approach provides excellent visualization of the inner ear structures and facilitates minimally invasive repair. Given the rarity of IP-I and the associated risk of meningitis, early recognition and timely intervention are critical.

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Title: A Clinical Evaluation of In-House Virtual Surgical Planning for Craniomaxillofacial Reconstruction

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Background: Craniomaxillofacial reconstruction remains a challenging area of head and neck surgery, where the bone defect is removed and replaced with the patient's donor bone. Traditionally, the donor bone is harvested and shaped in a free hand fashion (FHS) to recreate the original anatomy, which may be a time-consuming and iterative process, largely relying on the surgeon's own expertise and judgement. Virtual surgical planning (VSP) with 3D-printed cutting guides recently emerged as a method to optimize reconstructive accuracy, postoperative outcomes, and operative efficiency, and has seen rapid advancement to improve automation and precision. At our own institution, we first implemented an in-house VSP workflow in 2015 and have since continued to refine our technology. As a high-volume tertiary care centre, we have yet to evaluate the evolution of our in-house VSP workflow and compare postoperative outcomes of VSP to FHS for craniomaxillofacial reconstruction.

Methods: This study includes a retrospective cohort from 2015-2021 and a prospective cohort from 2021-2024. Operative times and postoperative outcomes were compared between patients who received VSP and FHS. The prospective cohort also included patient-reported outcomes from questionnaires completed preoperatively and at 1-, 6-, and 12-month postoperatively, and scores were compared across VSP and FHS. Additionally, VSP application, case volume, and outcomes were compared across total study duration (2015-2024).

Results: A total of 388 patients were included: 164 who received FHS and 224 who received VSP. Taking all mandibular, maxillary, and nasal defects together, overall operative time was lower for VSP compared to FHS (249 vs 336min, $p<0.001$), although ischemia time and length of hospital stay did not differ. The VSP cohort also showed lower recurrence (13% vs 28%, $p<0.001$) and improved overall survival rates (88% vs 73%, $p<0.001$).

Conclusions: This review summarizes our institutional experience with VSP across nearly a decade of research and development and demonstrates how VSP may help to reduce operative time and improve oncologic outcomes.

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Title: Evaluating Online YouTube Videos for Hodgkin Lymphoma Patient Education

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Background: Hodgkin lymphoma (HL) is a rare but highly treatable malignancy of the lymphatic system. Due to limited public awareness, accessible and high-quality online educational resources are essential for patient education. YouTube, a widely used platform, has the potential to disseminate health information, though video quality and reliability vary.

Objective: To systematically evaluate the characteristics, content, accuracy, and reliability of YouTube videos related to HL patient education. These findings may inform the development of accessible, high-quality online educational content and help physicians and patients better understand the reliability and variability in available resources, supporting physician guidance and patient discernment when engaging with health information online.

Methods: A combination of search terms was used to create a rank-ordered list of 50 YouTube videos relevant to HL. All data was analyzed using a previously validated video assessment tool. Video characteristics, source, and content coverage were systematically recorded. Accuracy and reliability of videos were assessed using a consensus document based on evidence-based medical sources and the modified DISCERN tool, a validated instrument for evaluating the reliability of health-related video content.

Results: The median view count was 18,245, with a range from 115 to 2,827,256 views. On average, videos were 6 minutes and 33 seconds long, and 52% (26/50) had been published within the past three years. Most videos originated from North America and were posted by channels with a wide range of subscriber counts and audience sizes. Videos commonly covered topics such as treatment options, diagnosis, prognosis, and symptoms.

Conclusions: Preliminary observations suggest that YouTube videos on HL vary in quality and comprehensiveness, with certain key topics potentially underrepresented. These findings highlight the need for more comprehensive, high-quality online resources to support patient education about HL.

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Title: Delays in Transfer of Rural Aneurysmal Subarachnoid Hemorrhage Patients in British Columbia

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Background: Treatment of aneurysmal subarachnoid hemorrhage (aSAH) in a high-volume center by experienced cerebrovascular and neuroendovascular surgeons improves outcomes.

Objective: We studied whether rural aSAH patients experience treatment delays in British Columbia.

Methods: Vancouver Ruptured Aneurysm Database (VRAD) started in 2023 to prospectively capture consecutive aSAH patients at Vancouver General Hospital (VGH), an academic neurosurgical hospital with comprehensive stroke center capabilities. We included patients ≥18 years-old, presenting ≤72h post-ictus and excluded untreated aneurysms and patients not residing in British Columbia. Patients were classified as rural or urban using the provincial government categorization of rurality.

Results: We included 84 patients, 65.5% urban and 34.5% rural, with mean age 57.7 years (SD: 15.6) and 64.3% female. Aneurysm treatment consisted of 75% microsurgical clipping and 25% endovascular techniques. Median time from ictus to VGH was 5.9h [IQR: 2.6-16.6] urban and 13.2h [IQR: 8.3-27.8] rural, p=0.001. Median transfer time was 4.7h [IQR: 2.5-8.8] urban and 11.9h [IQR: 6.7-13.5] rural, p=0.006. Ictus to treatment time was 5.9h longer for rural patients, p=0.077.

Conclusions: Rural aSAH patients in British Columbia take 7.3 hours longer to reach a neurosurgical center capable of comprehensive aneurysm treatment compared to urban patients. Improved inter-hospital transfer systems may reduce geographic disparities for aSAH in British Columbia.

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Title: Association Between Aneurysmal Subarachnoid Hemorrhage and Risk of Suicide

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Background: Aneurysmal subarachnoid hemorrhage (aSAH) is a devastating disease with high morbidity and mortality. Amongst aSAH survivors, only 36-55% regain functional independence and 61.7% report depression. Whether there is an association between aSAH and suicide is unknown.

Objective: We systematically reviewed the literature to evaluate the association between aSAH and risk of suicide

Methods: MEDLINE, Embase, PsychINFO were searched from inception until April 1, 2025 using keywords for non-traumatic (aneurysmal) subarachnoid hemorrhage, suicide, and suicidal ideation. We included patients ≥18 years old, aSAH, primary literature, and texts published in English. Reviews, meta-analyses, and case series with ≤5 patients were excluded. Method of aSAH diagnosis and suicide were extracted alongside reported count data and adjusted estimates of relative risk (RR). Pooled RR estimates of suicide were calculated using a random-effects models.

Results: We identified 241 unique studies in our search. Ten advanced to full-text review and two were included in the meta-analysis. Our cohort included 20,661 aSAH survivors (47.4% male) in which 90 deaths by suicide (65% male) were reported. Total follow-up time was 228,854 person-years. Aneurysmal SAH survivors had a higher risk of suicide compared to non-aSAH persons (RR = 1.79, 95% CI: 1.46-2.19), after adjusting for age, sex and time period ($p<0.001$).

Conclusions: We found that aSAH survivors are 1.8 times more likely to die by suicide than individuals without aSAH. Despite this increased risk, suicide in the cause of death in small minority of aSAH patients. There is a paucity of primary literature investigating this association. It is important for clinicians to recognize the increased risk of suicide following aSAH and to screen appropriately for depression and suicidal ideation in aSAH patients.

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Title: Understanding Patient Factors and their Implications on Surgical Treatment Choice in Ductal Carcinoma in Situ

Authors: Meghan Boersma Robertson[1], Evelyn Kuo[1], Yuwei Yang[1], Jieun Newman-Bremang[1], Melina Deban[1], Jin-Si Pao[1], Carol Dingee[1], Rebecca Warburton[1], Elaine McKevitt[1], Amy Bazzarelli[1]

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Background: Breast cancer is the most common cancer affecting women in Canada. For ductal carcinoma in situ (DCIS), patients may choose breast conserving surgery (BCS) with radiation therapy or mastectomy (MT). There is no clear evidence whether patient factors (PF) are associated with choice of BCS or MT.

Objectives: This study aims to determine whether PF (age, socioeconomic status, distance of residence from radiation center, body mass index, comorbidities, and tumor size) influence surgical treatment choice in DCIS patients.

Methods: This retrospective, single-center cohort study included patients with pure DCIS on core biopsy between 2017-2021 undergoing first surgery. Exclusion factors included tumor factors prompting MT over BCS. Data were analyzed using descriptive statistics and inferential methods, including univariate and multivariable logistic regression to determine PF affecting surgical choice.

Results: This study included 356 patients: 317 underwent BCS, 39 underwent MT. Only larger tumor size was associated with MT procedure (p=0.047). Younger age may be a factor influencing reconstruction among MT patients (p=0.082).

Conclusions: Of PF examined, tumor size was the only factor significantly associated with surgery performed. This study is limited as a single-center study in an urban center. Further study is needed to explore this question amongst patients throughout the province in both urban and rural settings as well as to examine other PF such as race and language.

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Title: Comparison of Mandibular Morphological Variation Post Reconstructive Surgery based on Number of Segments: A Retrospective Analysis

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Background: Despite an understanding of causes of many complications relevant to mandibular reconstruction, quantifying the postoperative morphological changes to mandibles post-reconstruction is understudied.

Methods: The study retrospectively analyzed 16 patients who underwent mandibular reconstruction surgery with fibular free flap due to squamous cell carcinoma. Each patient's 5-day postoperative (POD5) and 1-year postoperative (PO1Y) scans were segmented into models and subsequently compared and analyzed using cephalometric measurements (using anatomical landmarks) and volumetric comparisons (using Hausdorff-95 distance and DICE coefficient). Total bone volume and surface area were also computed.

Results: Larger deviations were found in reconstructions with a higher number of osteotomies. The DICE coefficient difference between POD5 and PO1Y mandibles was 0.825 ±0.032 for 1-2 segment reconstructions and 0.692 ±0.018 for 3-4 segment reconstructions. The intercondylar distance demonstrated changes of 0.472 ± 1.985 for 1-2 segment reconstructions and -4.3750 ± 1.918 for 3-4 segment reconstructions. Furthermore, the HD95 between POD5 and PO1Y mandibles was 2.81 ±0.982 mm for 1-2 segment reconstructions and 7.38 ±2.02 mm for 3-4 segment reconstructions.

Conclusions: There is a much higher amount of morphological change after surgery for patients who receive 3-4 segment reconstructions than there is for those who receive 1-2 segment reconstruction. Physicians often favor larger numbers of segments to negate facial asymmetry and rebuild aesthetics. However, this study may suggest that this decision should be reconsidered in some cases. In order to foster desirable healing and remodeling of the reconstructed bone, lower numbers of segments may need to be used.

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Title: Extracellular Vesicles with miR-142-3p Drive CAF Subtype Activation in Oral Cancer

Authors: Caleb Sandle[1], Rebecca Towle[1], Cathie Garnis[1,2]

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Background: Oral squamous cell carcinoma (OSCC) is the most common form of head and neck cancer, accounted for 4.5% of all cancer diagnoses in 2020, and has a poor 5-year survival rate of ~60%. The role of the tumor microenvironment (TME) in promoting tumor progression and metastasis has become increasingly evident over the last ~20 years. Cancer-associated fibroblasts (CAFs) account for a considerable component of the TME and heavily affect tumorigenesis and progression of solid cancers. CAF activation, wherein resident fibroblasts or other cells are transformed into CAFs, is mediated by tumor-derived signals, including TGFβ signaling, extracellular vesicles (EVs), and other secreted factors. The roles of EVs in CAF activation and of CAF subtypes in OSCC remain understudied. Notably, miR-142-3p, found to be enriched in OSCC EVs, has been implicated in anti- and pro-tumorigenic processes across various cancer types. Our prior work showed that OSCC-derived EVs, with and without miR-142-3p overexpression (OE), alter the TME by modulating angiogenesis, hypoxia, and CAF subtype dynamics. Investigating how EVs and EV-packaged miR-142-3p influences CAF activation and subtypes could reveal novel therapeutic options.

Objective: To investigate how EVs and EV-packaged miR-142-3p influences activation of different CAF subtypes and expression of various CAF and TME markers in OSCC.

Methods: Various miR-142-3p OE cell lines were established using viral vectors. EVs were isolated using differential centrifugation from OSCC cell line Cal27 and miR-142-3p OE Cal27's. Nanoparticle tracking analysis and western blots were used to quantify and characterize EVs. Various cell lines were also incubated with EVs and miR-142-3p OE EVs. Differences in expression of CAF/TME markers were investigated via RT-qPCR and western blotting. Separately, primary human oral fibroblasts (HOrF's) were treated with EVs, miR-142-3p OE EVs, PBS, or TGFβ for 72 hours. Fluorescence activated cell sorting (FACS) isolated CAFs into subsets based on CAF markers CD29 and FAP. The potential effect on the TME of these CAF subsets was analyzed through co-culture assays.

Results: CAF marker expression was altered in cell lines with intracellular miR-142-3p OE or after incubation with miR-142-3p OE EVs. Population differences in CD29/FAP subsets were observed in EV-treated versus TGFβ-treated HOrFs. Two subsets (CD29+/FAP+ and CD29+/FAP-) which differed in population percentage with TGFβ or EV treatment, exhibited distinct potential effects on the TME in co-culture assays.

Conclusions: Our results show that miR-142-3p OE, intracellularly and in EVs, affects activation and subtype dynamics of CAFs and expression of CAF/TME associated markers in OSCC. Tumor-derived EVs also show activating and subtyping of CAFs distinct from canonical TGFβ activation, with separate subsets differentially affecting tumorigenic processes. Further delineation of the interaction between tumor-derived EVs, tumor-derived EVs packaged with miR-142-3p, and CAFs allows for better understanding of how various tumorigenic processes may be supported and in turn provides possible novel therapeutic targets. ***Jump back to Research Day Schedule***

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Title: *Identifying Barriers to Accessing Liver Transplantation in British Columbia - a Retrospective Review*

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Background: There are gaps in literature, regarding whether geographical location and social determinants of health (including race, ethnicity, and income) lead to disparities in liver transplant access in British Columbia (BC), Canada.

Objectives:
Primary – to identify socioeconomic and geographical barriers to timely access to liver transplant evaluation and listing in British Columbia (BC), Canada.
Secondary – To investigate whether patients who are in certain socioeconomic subgroups are at higher risk for post-transplant complications, specifically mortality and graft loss, and length of stay post-transplant in the first year.

Methods: Retrospective chart review of all adult patients listed for and receiving liver transplants in BC, Canada from 2010-2023. Multivariable regression analysis was done to determine the effect of sex, ethnicity, distance to transplant centre Vancouver General Hospital (VGH), socioeconomic status (approximated by VANDIX Socioeconomic Deprivation Index) and primary diagnosis on time from referral to first clinic visit, time from referral to transplant listing, and post-operative complications.

Results: In terms of patient ethnicity, 72.7% of patients were Caucasian, 9% were Asian (including Filipino), 7.7% Asian Indian, and 4.5% Black, Latin American, Middle-Eastern, and other multiracial patients. Interestingly, distance from patient postal code to VGH was significantly associated with time to first clinic visit ($p = 0.04$). A higher VANDIX score (greater socioeconomic deprivation) was also significantly associated with a longer time to first transplant clinic visit (IRR = 1.26, $p < 0.001$). However, distance to VGH and VANDIX score were not significantly associated with time from referral date to transplant listing. Asian Indian patients had a significantly shorter average time from referral to first transplant clinic visit (IRR = 0.724, $p = 0.028$) and to transplant listing (IRR = 0.639, $p = 0.002$) compared to Caucasian patients. Autoimmune Chronic Active Hepatitis, Hepatitis B and C, Cryptogenic cirrhosis, Primary Biliary Cirrhosis, Sclerosing Cholangitis and Metastatic Tumors all had a significantly longer time to transplant listing compared to Alcohol Induced Cirrhosis.

Conclusions: Ethnicity, geographical location, and primary diagnosis of patients seemed to have significant effects on time from referral to first transplant clinic visit and time to transplant listing in BC, Canada.

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Title: The Power of Pretend: Caregiver Perspectives on Sham Feeding for Infants with Long Gap Esophageal Atresia

Authors: Frances Scheepers[1], Sela Grays[2], Marianne Vidler[2], Shahrzad Joharifard[1,2]

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Background: Neonates with long gap esophageal atresia (LGEA) often experience oral aversion and prolonged feeding difficulties, even after surgical repair. Sham feeding, providing non-nutritive oral experiences, may help support feeding skill development and caregiver bonding prior to anastomosis. This study explores the clinical and psychosocial impact of sham feeding in this population.

Methods: We conducted a mixed-methods study of neonates who sham fed following implementation of a standardized protocol at our tertiary hospital. Demographic, surgical, and feeding data were collected via retrospective chart review. Caregiver perspectives were captured through semi-structured interviews, which were audio-recorded, transcribed, and thematically analyzed using a structured framework. Coding was iterative and refined through team consensus.

Results: Eight infants with LGEA underwent sham feeding. Most were female (75%) with a median gestational age of 36.8 weeks at delivery. The majority (75%) had type A EA, while 2 (25%) had type C EA-TEF. Mean age at final surgery was 96 days. Half underwent primary anastomosis, while the remainder underwent traction. Six (75%) had an anastomotic leak. Eight mothers participated in qualitative interviews. Five major domains emerged: (1) parental experience, including improved bonding and restored normalcy; (2) impact of sham feeding, encompassing avoidance of oral aversion; (3) support and communication, highlighting provider knowledge and peer connections; (4) logistical and practical challenges, such as privacy concerns and navigating feeding routines, and (5) knowledge and expertise acquired and transferred.

Conclusion: While clinical benefits remain unproven, sham feeding appears to offer meaningful psychosocial benefits for caregivers of infants with LGEA. These findings support ongoing use and evaluation of sham feeding

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Title: Predictors of Poor Speech Outcomes Following Primary Palatoplasty for Patients with Cleft Palate: Do Social Determinants of Health Impact VPI?

Authors: Frances Scheepers[1], Tara Mathur[1], Sheryl Palm[2], Travis Gordon[1,2,] Rebecca Courtemanche[2], Stephanie Cooper[2] Sophia Shayan[2] Ye Shen[2] Jugpal Arneja[1,2]

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Introduction: Cleft palate is one of the most common congenital craniofacial anomalies and an intact palate is necessary for normal speech development. Many factors may impact the development of speech outcomes following a primary palatoplasty for cleft palate repair. This study aims to assess the impact socioeconomic status, ethnicity and geographical location have on the development of post-operative velopharyngeal insufficiency (VPI), an unfavorable speech outcome.

Methods: A retrospective chart review of patients who were non-syndromic and had their cleft palate repaired at BC Children's Hospital (BCCH) between 2005-2015 was conducted. Data collection included patient demographics, primary palatoplasty and secondary speech surgery details, as well as speech assessment factors, namely the diagnosis of VPI. Data analysis and multivariable logistic regression were performed in R.

Results: Two hundred and nine patients met the inclusion criteria, 80 of which developed VPI. Patients with complete cleft palate had a higher rate of VPI (47%) compared to those with incomplete cleft palate (24%), (OR 2.31, p = 0.012). For those with complete cleft palate, there was a 19% greater likelihood of developing VPI for every month older the patient was at the time of their initial palate repair (OR 1.19, p = 0.045). Indigenous identity was approaching significance (OR 2.55, p = 0.065) as a predictor for VPI, but due to a wide confidence interval (95% CI [0.95, 7.17]) it requires further investigation. Driving distance to the hospital, average income, geographical location and sex assigned at birth were not significant predictors of VPI.

Conclusions: Severity of cleft palate and age at repair for patients with complete cleft palate were found to be significant predictors for the development of VPI. Indigenous identity and other social determinants of health were not statistically significant but may be an area for further research. These findings may help ensure clinicians are more prepared to address patient, surgical, and social factors to improve speech outcomes for all patients.

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Title: Conditioning electrical stimulation and exercise training synergistically enhance motor recovery, gait, bone density, and neural plasticity following distal nerve transfer

Authors: Jenna-Lynn Senger[1], Ming Chan[2], Christine A Webber[3], Karyne Rabey3

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Background: Although slow rates of nerve regeneration is a well-known limiting factor following peripheral nerve injury, the impact of muscle atrophy, bone loss and spinal cord plasticity on functional recovery are much less understood.

Background: Recovery after lower-limb peripheral nerve injury is limited by slow axonal growth, early muscle atrophy, disuse osteopenia, and delayed functional recovery due to impaired neuronal plasticity. Distal nerve transfers (DNTs) shorten regeneration distance but functional outcomes remain modest and unreliable.

Objective: To test whether postoperative exercise training (EX) and preoperative conditioning electrical stimulation (CES) augment muscle reinnervation, bone mineral density (BMD), gait recovery, and spinal cord plasticity after lower-limb DNT.

Methods: Adult male Sprague–Dawley rats (n=108) underwent right common fibular nerve crush, followed by DNT using a tibial nerve branch to reinnervate tibialis anterior. Animals were randomized to: (i) DNT alone, (ii) CES (tibial nerve stimulation 7 days pre-DNT), (iii) EX (treadmill, 1 h/day from post-DNT day 3), or (iv) CES+EX. Three experiments assessed: i) early axonal regeneration (2 weeks; n=28), ii) functional recovery with short-term exercise (4 weeks; n=40), and iii) functional recovery with long-term exercise (12 weeks; n=40). Outcomes included histological neuromuscular junction (NMJ) reinnervation, micro-CT (tibial bone), weekly kinetic/kinematic gait analyses (7–12 weeks), and spinal BDNF/VGLUT-1 expression.

Results: Both CES and EX improved recovery versus DNT alone, with a synergistic, greatest benefit in the CES+EX combination cohorts. CES+EX accelerated dorsiflexion recovery ($p<0.05$), restored gait symmetry ($p<0.01$), and increased weight-bearing and stance time on the injured limb ($p<0.01$). NMJ reinnervation was highest with CES+EX (short-term: 65.7±2.2%; long-term: 93.9±3.3%), exceeding EX, CES, and DNT (all $p<0.001$). Tibial BMD improved with EX and was further optimized by CES+EX (short-term: 0.19±0.01 g/cm³ vs DNT 0.09±0.01; long-term: 0.20±0.01; $p\leq0.01$). Early axonal extension at 2 weeks was greater in all treated groups vs DNT and numerically highest with CES+EX (8.1±0.9 mm vs CES 6.1±0.5, EX 6.2±0.6; all > DNT 2.1±0.5 mm). EX (alone or with CES) increased spinal BDNF and VGLUT-1; CES alone had minimal effect on these markers.

Conclusions: CES combined with structured postoperative exercise synergistically enhances functional recovery after DNT, with concordant gains in muscle reinnervation, gait biomechanics, BMD, and spinal plasticity. Perioperative CES+EX is a promising, clinically feasible strategy to improve outcomes after lower-limb nerve reconstruction.

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TITLE: Plagiarism in Manuscripts Submitted to the Plastic Surgery Journal: A Comprehensive Analysis of iThenticate Scores

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Background: Plagiarism significantly impacts the integrity and credibility of scientific research. Many journals utilize plagiarism detection software, such as iThenticate, to screen submissions. This study aims to provide a detailed analysis of iThenticate scores for manuscripts submitted to the Plastic Surgery Journal, assessing manuscript characteristics and subsequent editorial decisions.

Methods: A retrospective, descriptive analysis was conducted of manuscripts submitted to the Plastic Surgery Journal between 2021-2024. Detailed data including manuscript submission date, type, area of plastic surgery, country of corresponding author, number of peer reviews completed, editorial decisions, and iThenticate similarity scores were systematically collected. Submissions with high similarity scores (>20%) were specifically examined.

Results: A total of 1,042 manuscripts were submitted between 2021 and 2024. Most submissions were Original Articles (58%), followed by Case Reports (21%) and Review Articles (10%). The mean similarity score across all submissions was 17.8% ± 12.7%, ranging annually from 18.1% (2021) to 14.7% (2024). Manuscripts with similarity scores >20% represented 31.7% (n=330) of submissions, predominantly Original Articles (62%) and largely originating from Asia (45%). Desk rejections occurred in 72% of these cases, with an eventual rejection rate of 77%. Accepted manuscripts had significantly lower similarity scores (mean 13.5%) compared to rejected manuscripts (mean 19.8%, $p<0.0001$).

Conclusions: High iThenticate similarity scores were strongly associated with rejection, validating plagiarism screening as an effective editorial tool. Routine use of similarity checks preserved reviewer resources and may have contributed to declining overlap rates over time. Because similarity percentages require contextual interpretation, continued emphasis on editorial judgment, consistent journal policies, and targeted author education—particularly for at-risk groups—will be essential to uphold the integrity of academic publishing

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Title: Evaluation and Validation Assessment of a Low Cost, Low-Fidelity Cricothyroidotomy Simulator

Authors: Lukas Shum-Tim[1,2,3], Vedanth Desaigoudar[4], Abdullah Mashat[3,5], Han Hsiao[3,6], Peter R.A. Malik[3,7], Kevin R. Malone[3,8], Mohamed H. Abdalla[3,9], Shrivatsan Rajagopalan[4], Nicolas Mourad[3,6], Cecily Bos[2], Emilie Joos[3,10], Shahrzad Joharifard[3,11]

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Background: Cricothyroidotomy is a critical emergency airway procedure performed when standard methods of airway management fail or are not feasible. With a reported incidence as low as 2.3 out of 1000 tracheal intubation attempts, the hands-on learning experience is limited. This is an opportunity for simulation. Unfortunately, commercial cricothyroidotomy simulators are expensive, which can hinder the acquisition of training materials, especially in lower-resource settings. To address this inequitable access, we designed a low cost, low-fidelity cricothyroidotomy simulator from an egg carton, a 500 mL water bottle, a nitrile glove, and homemade slime—materials that are accessible worldwide. It has a 0.53USD and a 0.05USD per unit and per-use cost, respectively, and can be built in less than five minutes.

Objective: Generate validity evidence for our low cost, low-fidelity cricothyroidotomy simulator to be used for formative assessment and deliberate practice.

Methods: We used Messick's validity framework to guide our validation assessment. Novices and experts filled a demographic survey, performed a cricothyroidotomy on the simulator and filled a post-procedure evaluation questionnaire of the simulator. Their performance was videotaped and subsequently assessed by two trauma surgeons using standardized Procedure-Specific (PCL) and Error Checklists (ECL) to generate a final timed score. Novice and expert mean scores were compared using a 2-tailed Mann-Whitney U test. Raters' intraclass correlation and the Cronbach's alpha for the PCL, ECL and post-procedure questionnaires were calculated to measure reliability.

Results: A total of 26 participants were recruited, with 19 participants in the novice arm and seven in the expert arm. Experts successfully completed more tasks (PCL z=-2.52, p=0.012), committed fewer errors (ECL z=-3.07, p=0.002), had better raw scores (z=-2.69, p=0.007) and final scores (z=-3.21, p=0.001) when compared to novices. The novice pre-test confidence level (Mean=1.68, SD=0.80) increased post-test (Mean=3.80, SD=0.63). Post-procedure questionnaire responses were consistent, with a Cronbach's α=0.84 for novices and a Cronbach's α=0.97 for experts. Raters' scoring on the PCL and ECL also demonstrated excellent internal consistency (PCL Cronbach's α=0.86 and ECL Cronbach's α=0.85). The PCL and ECL had intraclass correlations of 0.54 (95% CI [0.19, 0.75]) and 0.36 (95% CI [0.01, 0.64]), respectively.

Conclusions: We successfully developed a valid, low cost, low-fidelity cricothyroidotomy simulator for formative assessment in novice learners where cricothyroidotomy can be practiced in a safe learning environment. Further research needs to be done to determine how this simulator could be more efficient for continuing professional development, perhaps by adding extraneous cognitive load elements in the study design.

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Title: Variations in Management of Blunt Splenic Injury by Trauma Center Training Status

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Background: Pediatric trauma surgeons have been the vanguard of non-operative management of blunt splenic injury. National guidelines put forward by trauma and pediatric societies continue to support a focus on non-operative management of blunt splenic injuries as the standard of care for hemodynamically stable children, regardless of splenic injury grade. Yet variability in management strategies persists across institutions.

Objective: This study aims to evaluate variations in pediatric blunt splenic injury management between centers with pediatric surgical fellowships compared to institutions without fellowship programs. By examining practice patterns across a national pediatric database, the aim is to identify opportunities to standardize care, optimize outcomes and better an understanding of the dissemination and implementation of national guidelines.

Methods: The Pediatric Health Information System (PHIS) is a comparative database for clinical and resource utilization data for 49 free-standing children's hospitals. It was reviewed for all patients 18 years old or younger admitted with splenic injuries between 2016-2024. Injury severity scores (ISS) were estimated using ICD-10 diagnostic codes. Penetrating injuries were excluded. Primary outcome was splenic surgery or embolization identified by ICD-10-PCS code.

Results: A total of 8,226 patients with blunt splenic injury were identified. 448 (5.5%) patients underwent splenic intervention. Of these, 137 (1.7%) required endovascular intervention alone, 304 (3.7%) required surgical intervention alone, and 7 (0.1%) required both endovascular intervention and surgical intervention. Multivariable logistic regression, controlling for demographics, injury severity, and hospital characteristics, demonstrated that patients treated at hospitals with a pediatric surgery fellowship were less likely to undergo a splenectomy (OR 0.61, 95% CI 0.43-0.88, p<0.01), any splenic surgery (OR 0.56, 95% CI 0.41-0.78, p<0.01) or endovascular interventions (OR 0.47, 95% CI 0.30-0.75, p<0.01).

Conclusions: Considerable variability persists among hospitals regarding the proportion of pediatric patients who require invasive procedures for treating blunt splenic injuries. This study suggests that institutions with pediatric surgery fellowships are more likely to adhere to national guidelines, likely reflecting broader institutional infrastructure that supports non-operative management, including trauma resuscitation pathways, ICU monitoring, and supportive care.

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Title: Virtual Pre-planning of Mandibular Reconstructions: Update on a Phase II/III Randomized Controlled Clinical Trial

Authors: Tayo Steininger[1], Jovan Cheema[1], Eitan Prisman[1]

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Background: Patients diagnosed with oral cavity cancer (OCC) are often required to undergo mandibular reconstruction, due to invasion of the cancer into the surrounding facial bones. Typically, this reconstruction is afforded by transplanting the patient's own fibula or scapula, where the surgeon attempts to recreate the curved contour of the native mandible in a free hand fashion (FHS). Virtual surgical planning (VSP) has emerged as a method to improve the reconstruction and reduce surgical time, by planning of the reconstruction in a controlled setting and creating 3D printed surgical cutting guides that facilitate the execution of the virtual plan.

Objective: Phase II of the trial assesses feasibility of patient recruitment and retention, as well as fidelity of intervention. Meanwhile, Phase III will assess union rate of the bone segments at 12 months for each site, as well as functional outcomes, patient-reported quality of life (QoL), complication rates and reconstruction accuracy.

Methods: Patients undergoing mandibular reconstruction with a scapula or a fibula free flap were consented and randomized into one of two treatment arms in a 1:1 ratio: either the current standard of care using FHS, or VSP. If randomized to VSP, the trial research engineers virtually planned the reconstruction. All patients were subject to follow-up for 12 months following their treatment.

Results: 71 patients have been recruited at Vancouver General Hospital and 35 patients at the London Health Sciences Center since October 2022. 45 patients in Vancouver and 14 in London have at least one year of follow up. The average VSP vs. FHS operative ischemic times at the Vancouver and London sites are 59.3 vs. 63.8 minutes and 169.5 vs. 148.0 minutes, respectively. 64% of patients assessed for bony union have achieved full union in the VSP treatment arm at VGH, with all patients achieving at least partial union. Meanwhile, only 25% of those assessed in the FHS arm achieved full union, with 12.5% having non-union.

Conclusions: An interim review of the Phase III trial suggests that VSP shows promise for demonstrating improved clinical outcomes for bony union at one-year post-treatment. It also suggests that surgical outcomes, specifically ischemia times, may not differ significantly between the two treatment arms.

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Title: Effect of Bupivacaine with Epinephrine/Topical Vasoconstrictor Injection on Intraoperative Bleeding During Endoscopic Sinus Surgery: A Double-Blind, Randomized Controlled Trial

Authors: Azin Tabari [1], Juan Carlos Hernaiz [1], Manal Al Noumani [1], Leonora Beltran [1], Amin Javer[1]

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Background: Endoscopic sinus surgery (ESS) is an increasingly utilized technique for managing a variety of sinonasal pathologies and for accessing skull base lesions. Among these, chronic rhinosinusitis (CRS) remains the most common indication. ESS is frequently performed alongside procedures such as nasal septoplasty. Despite advances in technique**, intraoperative bleeding continues to pose a significant challenge,** compromising surgical visibility and increasing the risk of complications and prolonged operative time. This study evaluates the effectiveness of submucosal injection of 0.25% bupivacaine with epinephrine in reducing intraoperative bleeding, total blood loss, and surgical duration, as compared to a sham injection during ESS.

Objective: We hypothesize that submucosal injection of 0.25% bupivacaine with epinephrine during endoscopic sinus surgery significantly reduces intraoperative bleeding, total blood loss, and operative time compared to sham injection.

Methods: This interim analysis includes the first 21 patients enrolled out of a planned total of 80 participants. Patients were randomized to receive either a submucosal injection of 0.25% bupivacaine with epinephrine or a sham injection during endoscopic sinus surgery (ESS).The **primary outcome** was intraoperative bleeding, assessed using the Boezaart bleeding score, evaluated separately for two surgical components: endoscopic septoplasty and ESS. **Secondary outcomes** included intraoperative mean arterial pressure, total blood loss, operative time, and postoperative pain .Due to the small sample size and the associated risk of type I errors, **no formal hypothesis testing** was performed. Continuous and ordinal data are reported descriptively as mean ± standard deviation (SD) or median [interquartile range, IQR], stratified by treatment group.

Results: Of 21 patients analyzed (10 Injection, 11 Sham), median Boezaart scores were lower in the Injection group for the nasal septum region (median 1.0 [IQR 0]) compared to Sham (2.3 [IQR 1.1]). Scores in the sinus region were also numerically lower in the Injection group (1.46 [IQR 1.06]) versus Sham (2.21 [IQR 0.46]). Mean arterial pressure during surgery was similar between groups. The Injection group had lower mean blood loss (128 ± 51 mL) compared to Sham (366 ± 144 mL), while surgical time was comparable (Injection: 95.7 ± 18.3 minutes; Sham: 108.1 ± 21.6 minutes). Postoperative pain scores across all measured time points (1 to 4 hours post-op) showed similar trends between groups, with mean scores ranging from 2.6 to 2.9 in the Injection group and 2.1 to 2.8 in the Sham group. Final analyses will include the full sample and apply conventional hypothesis testing thresholds ($p < 0.05$).

Conclusions: Submucosal injection of 0.25% bupivacaine with epinephrine appears to reduce intraoperative bleeding without significantly affecting operative time, mean arterial pressure, or postoperative pain. Statistical significance may be impacted by sample size. These preliminary results suggest that this technique may improve surgical field visibility and operative efficiency.

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Title: Surgical Outcomes and Complication Rates of Parasagittal and Falcine Meningiomas: A Single Centre Retrospective Review

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Background: Meningiomas account for roughly 30% of primary central nervous system tumors in adults. Surgical outcomes are strongly influenced by tumor location, which determines the feasibility of gross total resection (GTR) and risk of complications. Parasagittal and parafalcine meningiomas, located along the midline, are often underestimated in complexity due to their proximity to the superior sagittal sinus, bridging veins, and eloquent cortex.

Objective: To compare complication rates and surgical outcomes across parasagittal/falcine, convexity, skull base, multifocal, and intraventricular meningiomas.

Methods: A retrospective review was conducted of all patients who underwent surgical resection of a meningioma at Vancouver General Hospital between January 2020 and December 2024. Tumor location was categorized as parasagittal/parafalcine, convexity, skull base, multifocal, or intraventricular, based on neuroradiology reports. Baseline variables collected included age at diagnosis, sex, preoperative neurological deficits, preoperative Glasgow Coma Scale (GCS), and reoperation status. Tumor characteristics were also recorded. Outcomes of interest included extent of resection, intraoperative and postoperative complications, and overall survival. Comparisons were made across tumor location groups. Categorical variables were analyzed using Fisher's exact test or chi-squared test with a p-value <0.05 statistically significant.

Results: Until now, we reviewed 214 patients with 78 males (36%) and 136 females (64%), with a mean age at diagnosis of 58 years. Tumor locations included parasagittal/parafalcine (20%), convexity (21%), skull base (48%), multifocal (11%), and intraventricular (1%). Intraoperative complications occurred in 6 patients (2.8%) and postoperative complications in 28 patients (13.1%). No significant differences in intraoperative complications. For postoperative complications, overall differences between groups did not reach significance ($p=0.076$); however, pairwise testing showed higher complication rates in multifocal compared to convexity tumors ($p=0.018$), and in skull base compared to convexity tumors ($p=0.040$), with a trend toward higher rates in parasagittal/parafalcine compared to convexity tumors ($p=0.055$). GTR was achieved in 136 patients (64%) and differed significantly by tumor location ($p=0.037$), with convexity tumors more frequently completely resected than skull base tumors ($p=0.005$), and a trend toward higher rates compared to parasagittal/parafalcine tumors ($p=0.063$).

Conclusions: In this preliminary analysis, postoperative complications were more frequent in multifocal and skull base meningiomas compared to convexity tumors. Extent of resection was influenced by location, with gross total resection most achievable in convexity meningiomas and least achievable in skull base tumors. Data collection is ongoing, with review of an additional 215 charts in progress. Final results from the complete cohort will be available at the conference.

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Title: Are AI-Generated Otolaryngology Patient Education Materials Clinically Ready? A Systematic Review of Readability, Quality, and Safety

Authors: Samuel Tholl[1], Ralph Justin Uy[1], Norbert Banyi[1], Daniel Shirvani[1], Andrew Thamboo[1], Ameen Amanian[1]

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Background: With the recent surge in popularity of large language models (LLMs) such as ChatGPT, patient use has the potential to become a clinical reality. Patients are increasingly turning to LLMs for health-related questions and patient education materials (PEMs) when a physician is not available. However, major concerns remain, including factual inaccuracies, guideline discordance, low readability, and harmful answers. Currently, no comprehensive synthesis of the performance of LLM-generated PEMs exists in the otolaryngology literature.

Objective: To evaluate how LLMs perform in generating PEMs for otolaryngology patients, focusing on readability, quality, and safety.

Methods: This systematic review was conducted on February 19th, 2025, and utilized MEDLINE, EMBASE, CENTRAL, CINAHL, Web of Science, and SCOPUS databases. PRISMA guidelines were followed with independent duplicate screening and data collection, and a third reviewer for conflict resolution. Cross-sectional studies evaluating LLM-generated PEMs or answers to hypothetical patient questions were included. Outcomes included Flesch Reading Ease (FRE), Flesch-Kincaid Grade Level (FKGL), and SMOG scores for readability, and DISCERN scores for quality. Recommended readability standards were FRE scores ≥ 70 (easy to read), FKGL scores ≤ 6 (corresponding to a 6th grade level), and SMOG scores ≤ 8 (corresponding to an 8th grade level). DISCERN scores ≥ 51 indicated acceptable quality information allowing for informed decisions.

Results: Of 225 screened studies, 34 were included. All studies used ChatGPT (v. 3.5 or 4.0 when specified). The most common subspecialties were rhinology (29.4%), otology (26.5%), and head and neck oncology (23.5%). The median of reported mean scores for FRE, FKGL, SMOG, and DISCERN were 40.7 (IQR 14.6), 12.1 (IQR 4.05), 11.3 (IQR 2.0), and 34.9 (IQR 24.9), corresponding to 12th grade level readability and poor quality. When prompts were explicitly specified to generate simpler answers (i.e. at a 6th grade reading level), readability scores increased by 45% to a median FRE of 65.9, while grade-level scores decreased by 31% to a median 7th grade reading level, highlighting the importance of specific prompting. Twenty (58.9%) studies described a subset of generated responses that were inaccurate, guideline discordant, or potentially harmful if adhered to, while six (17.6%) studies had overall accuracy rates of >90%.

Conclusions: LLM-generated PEMs were difficult to read and written at a 12th grade level, well above the recommended 6th grade level. Based on DISCERN scores, PEM quality was poor. These findings raise concerns about the usability of LLM-generated medical information by patients, as there are no mechanisms to guarantee readability or quality. Additionally, the high rate of errors in generated responses suggests that without oversight, LLM-generated materials are currently unsuitable for unsupervised patient education. Clinician review and quality checks, specifically regarding prompt input, are essential for effective and safe use. LLM ethics must also be prioritized to ensure medicolegal compliance.

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Title: Effectiveness of a Near-Peer Teaching Model for an Otolaryngology Bootcamp for Medical Students

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*Helia Dana Mansouri and Samuel Tholl are co-first authors**

Background: Otolaryngology emergencies, such as severe epistaxis and airway obstruction, are common clinical situations that medical students report feeling unprepared to handle, due to limited exposure of ear, nose, and throat (ENT) content in Canadian undergraduate medical curricula. Near-peer teaching, an educational approach in which teaching is delivered by peers who are slightly more knowledgeable in a certain topic, can help address underrepresented content by enhancing accessibility, relevance, and learner confidence. This model is also reported to foster hands-on skill development to a greater degree than traditional faculty-led teaching. However, near-peer teaching delivered by medical students in otolaryngology education remains underexplored.

Objective: To evaluate the effectiveness of a near-peer teaching otolaryngology bootcamp delivered by medical students and a resident, focusing on changes in student knowledge and procedural confidence in managing common ENT emergencies.

Methods: An otolaryngology bootcamp was designed consisting of a pre- and post-workshop quiz and survey, brief lectures, and three simulation stations. Teaching was delivered by an otolaryngology resident (PGY-2) and two third-year medical students. Eligible participants were UBC medical students without prior ENT workshop experience. Before the bootcamp, students completed a pre-workshop quiz on ENT knowledge and a survey assessing confidence in epistaxis management, cricothyrotomy, and nasolaryngoscopy. This was followed by brief lectures on each procedure and corresponding hands-on simulation stations. An identical post-workshop quiz and survey were administered to evaluate changes in knowledge and procedural confidence.

Results: A total of 16 medical students completed the bootcamp (mean age 25.8 +/- 3.1 years). The median quiz score significantly increased from 7/21 pre-workshop to 17/21 post-workshop ($p=0.0005$, 95% CI: 6.0-11.5). Self-reported confidence in epistaxis management, cricothyrotomy, and nasolaryngoscopy significantly improved post-workshop, with median score increases from 2/4 to 3/4 ($p=0.0014$), 1/4 to 3/4 ($p=0.0009$) and 1/4 to 3/4 ($p=0.0014$) respectively. When asked whether participants would attend a similar workshop again or recommend the workshop to a peer, the median score was 4/4 for both questions.

Conclusions: Our near-peer taught otolaryngology bootcamp effectively improved knowledge and procedural confidence in epistaxis management, cricothyrotomy, and nasolaryngoscopy amongst UBC medical students. The bootcamp was well-received with high satisfaction and was feasible to coordinate. In the future, this near-peer workshop model led by a resident and medical students can be applied to other underrepresented areas in medical school curricula to stimulate surgical education.

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Title: *Exploring the Central African Republic's Surgical Landscape: A Qualitative Analysis Pre-Implementation of a Surgical Task-Shifting Approach*

Authors: Hannah van Riswijk[1,2], Stella Perside Nganaye[3], Nathan Gbanade Packo[3], Tharcisse Mulindwa[4], Francis Kowoho[3], Hannah Wild[5], Madeleine Kruth[1], Leah Birch[1], Leah Rosenkrantz[1], Juanita Haagsma[2], Shahrzad Joharifard[1], Emilie Joos[1]

Affiliations: [1]Department of Surgery, Global Surgery Lab, University of British Columbia, Vancouver, Canada**,** [2]Erasmus University Medical Center, Rotterdam, The Netherlands, [3]Faculty of Medicine, University of Bangui, Bangui, Central African Republic, [4]Médecins Sans Frontières France, Bangui, Central African Republic, [5]Department of Surgery, University of Washington, Seattle, Washington.

Background: Surgical care is a critical yet often neglected component of global health programmes and health systems in conflict-affected and low-resource settings. After decades of conflict and underfunding, the Central African Republic (CAR) has one of the world's most fragile health systems, and the life-expectancy is among the lowest globally. The small surgical workforce is disproportionately concentrated in the capital. A proposed solution is to upskill medical doctors through surgical task-sharing/task-shifting (TS/S), such as the Vital Surgery Training Programme (VitalSurg): created in partnership between the UBC Global Surgery Lab and Médecins Sans Frontières (MSF), piloted in South Sudan, and planned for implementation in CAR.

Objective: To our knowledge, no national-level study has provided insight into the status of surgical services in CAR. This study aims to address this gap, by assessing key informants' perceptions of CAR's surgical system to facilitate context-relevant implementation of VitalSurg.

Methods: Semi-structured key informant interviews (KII) and focus group discussions (FGDs) with key stakeholders from the Ministry of Health, Université de Bangui, MSF, and several urban and rural hospitals were conducted. Interview themes included surgical capacity, surgical education, availability and accessibility of surgical care, contextual factors related to the provision of surgical care, and barriers and facilitators of a TS/S approach in CAR.

Results: 20 KII/FGDs with a total of 55 participants were conducted in CAR between July 1st and August 31st 2025. Findings confirmed that CAR's healthcare system faces significant challenges to deliver timely and accessible surgical care. Patients, especially in rural areas, face various geographical, health literacy, political, security, cultural, religious, and economical barriers to access care. Extreme shortages of qualified personnel leave general doctors or even health assistants and first aid workers to perform surgeries. Surgical providers are limited by lack of technical infrastructure/equipment and anesthesia. Medical and surgical education is available, but only in the capital and remains financially inaccessible for many. The implementation of a surgical TS/S approach to address some of these challenges was deemed feasible and acceptable. The interviews helped identify key elements for successful and sustainable implementation of the intervention in this challenging environment, such as rural containment strategies, embedment into the local academic/government system, and practical prerequisites.

Conclusions: Key stakeholders highlighted an urgent need for improvement of surgical care in CAR and seemed optimistic regarding the successful implementation of a surgical TS/S approach nationally. Understanding CAR's current surgical landscape and responding to the identified critical barriers/facilitators will offer guidance to the implementation of VitalSurg in CAR.

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Title: Margin Communication in Head and Neck Cancer: A Review of 3D Specimen Scanning and Mapping Technologies

Authors: Aaryamaan V. Verma[1], Adam Dorner[1], Jamie Kwon[2], Linh Tran[2], Eitan Prisman[2]

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Background: Head and neck oncologic surgery presents persistent challenges due to complex anatomy, difficulties in margin status assessment, and the need for clear interdisciplinary communication. Existing methods of margin status assessment such as inked margins, two-dimensional diagrams, and verbal descriptions, are limited in capability and thus, prone to miscommunication. Furthermore, there is often a disconnect between surgical resection margins and radiation planning. To optimize patient outcomes, it's essential to have accurate intraoperative and postoperative margin localization; of accurate, alongside a shared understanding of margin status across surgery, pathology, and radiation oncology. Three-dimensional (3D) specimen scanning has emerged as a promising tool to enhance communication and collaboration amongst surgeons, pathologists and radiation oncologists.

Methods: This scoping review aimed to synthesize current evidence on three-dimensional (3D) specimen scanning in head and neck cancer, focusing on applications in margin assessment, interdisciplinary communication, and integration into postoperative radiation planning. The review was conducted in accordance with PRISMA-ScR, with systematic searches of MEDLINE, Embase, Web of Science, and the Cochrane Library performed without date restrictions. Eligible studies included human subjects undergoing surgical resection with 3D specimen scanning and reporting postoperative or radiation outcomes. Data extraction and JBI quality appraisal were performed independently by two reviewers, with disagreements resolved by a third.

Results: Across the included studies, it was commonly observed that most studies used structured-light scanners and CAD software with consistent workflows involving specimen scanning, annotation, post-processing, and, in some cases, report generation. Additionally, integration with platforms such as 3D Slicer, PowerPoint, and Paint 3D was also described. Applications of the technology occurred at multiple time points, including intraoperative scanning with frozen section correlation, postoperative specimen mapping for pathology reporting, tumor board communication and adjuvant treatment planning, and retrospective accuracy assessment. Some studies reported frequent margin mislocalization (>1 cm error, poor reproducibility), with higher error rates in complex anatomy, uncertainty in conventional reports, and limited uptake of 3D mapping in eligible cases. Barriers to adoption included variable favourability, technical literacy, and infrastructure needs, with no study achieving full integration into RT planning software or automated translation to CT/MRI platforms.

Conclusions: 3D scanning and specimen mapping offer a practical, interdisciplinary solution to one of the most persistent challenges in head and neck cancer surgery. The technology shows promise across surgical, pathological, and oncological workflows, but larger-scale integration and validation are required to fully realize its benefit. With further development, it has the potential to transform margin-informed decision-making in real time and improve downstream care.

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Title: Medical Improv as an Effective and Innovative Method for Surgical Trainees to Learn Non-Technical Skills

Authors: Kaid van Kampen[1], Katherine Sliwowicz, Ruth Vilayil[3]

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Background: Non-Technical Skills for Surgeons (NOTSS) have been identified as an integral component of surgical training.There is still a significant gap in research on effective teaching models. Medical improv is an innovative educational technique known to enhance interpersonal and intrapersonal skills, including communication, collaboration, and leadership among health care professionals. It remains underused in Surgical Education. This pilot project explores how medical improv can be used to effectively teach NOTSS to surgical residents compared to a didactic approach.

Objective: Our aim is to determine whether a medical improv workshop is an impactful and acceptable tool to deliver NOTSS training for Surgical Foundations residents compared with traditional lecture format.

Methods: UBC first-year cross-discipline surgical residents participated in both a medical improv and didactic workshop during designed class time. Eighteen participants completed 3 surveys in our crossover survey study with a baseline survey and 1 following each intervention. The surveys assessed participants' knowledge of NOTSS and their confidence in performing the skills described after each intervention along with their enjoyment of the session and applicability using Likert Scales. Basic descriptive statistics were performed for preliminary analysis; further analysis is in progress.

Results: For both sessions, participants' confidence in explaining NOTSS improved following each session. In addition, mean scores of participants indicated both interventions improved teamwork and would positively impact their clinical work. Medical improv was rated higher in engagement and enjoyment, while the didactic session was perceived to be more likely to increase patient care and safety but less enjoyable.

Conclusions: Medical improv appears to be an effective addition to the surgical educators' armamentarium, showing potential to increase engagement and enjoyment of the material, which is associated with long term retention. This study is limited by sample size. A future study could explore how medical improv improves rated NOTSS skills via simulation-based assessment post intervention.

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Title: Natural History, Surgical Outcomes, and Survival Prediction Score of Duret Hemorrhage

Authors: Catherine Wang BSc[1], Alexander Rebchuk MD MSc[2], William Guest MD PhD[3], Serge Makarenko MD[2]

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Background: Duret Hemorrhages (DH) occur in the midbrain and pons secondary to sudden increased intracranial pressure causing shearing of brainstem perforators. DH are thought to overwhelmingly portend a poor prognosis, however there is debate surrounding whether surgical intervention can lead to favorable clinical outcomes.

Objective: (1) To characterize survival and functional outcomes following DH and compare between patients receiving neurosurgical intervention versus expectant management; (2) derive a simplified DH Survival Prediction Score (DSPS) for 30-day mortality.

Methods: We retrospectively reviewed the records of patients diagnosed radiographically with DH between 2000 and 2024 at our institution. Outcomes were reported with 30-day mortality and 1-year Glasgow Coma Scale (GOS) score. The effects of potential prognosticators (age, pupil size/response, brainstem reflexes, neuroimaging features) on each outcome were first assessed using univariable logistic regressions; significant predictors were advanced to a multivariable logistic model. Adjusted effect sizes were scaled to generate a DSPS. DSPS score-to-mortality risk conversion was performed with a univariable logistic regression. Calibration was evaluated by observed vs predicted mortality across score strata.

Results: We included 92 patients in our study (61% male; mean age 60.2±20.5 years). Head trauma accounted for 62% of cases. Majority (53%) of patients had acute subdural hematoma, followed by intracranial hematoma (33.7%), epidural hematoma (6.5%), chronic subdural hematoma (3.3%), and aneurysmal subarachnoid hemorrhage (3.3%). Radiographic evidence of uncal herniation was seen in 64.1% cases and basal cistern effacement in 40.2% cases. Thirteen patients (14.1%) underwent neurosurgical interventions including hematoma evacuation, decompressive craniectomy, burr hole drainage, and EVD placement. Thirty-day mortality was negatively predicted by a age (OR 1.05, 95% CIs: 1.02-1.09, p<0.001), GCS of 3 (OR 3.63, 95% CIs: 1.22-10.76, p=0.021), abnormal pupil size (OR 8.36, 95% CIs: 2.02-34.70, p=0.003), and abnormal pupil response (OR 37.1, 95% CIs: 2.15-228, p<0.001), but positively predicted by preservation of brainstem reflexes (OR 0.01, CIs: 0.01-0.11, p<0.001). One-year GOS was similarly negatively predicted by age (OR 1.06, 95% CIs: 1.03-1.09, p<0.001), pupil size (OR 7.29, 95% CIs: 1.73-30.72, p=0.007), absent motor response (OR 3.15, 95% CIs: 1.01-9.80, p=0.047), and positively by brainstem reflexes (OR 0.01, 95% CIs: 0.001-0.09, p<0.001). A 4-point DSPS (abnormal brainstem reflexes=2; abnormal pupil size=1; age ≥ 65=1) closely approximates the probability of 30-day mortality: with 0.75% (score 0), 8.9% (score 1), 55.6% (score 2), 94.1% (score 3), and 99.5% (score 4). Calibration showed close agreement between predicted and observed mortalities.

Conclusions: In contrast to historical perception, radiographical diagnosis of DH is not universally fatal. Our 4-point DSPS facilitates early prognostic stratification and may inform surgical decision-making.

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Nephrolithiasis in Primary Hyperparathyroidism: A Systematic Review of Predictive Markers and Surgical Outcomes

Authors:
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Background:
Nephrolithiasis is a classic and morbid complication of primary hyperparathyroidism (pHPT), often prompting investigation and surgical referral. Despite parathyroidectomy being the definitive treatment, variability exists in stone risk and metabolic derangements post-operatively. This systematic review aims to evaluate the current evidence on predictors of stone formation in pHPT patients, and the impact of surgery on stone-related outcomes.

Methods:
A systematic review of observational studies was conducted using the MEDLINE and Embase databases. Extracted data included clinical and biochemical predictors of nephrolithiasis in pHPT, as well as post-parathyroidectomy outcomes.

Results:
The prevalence of nephrolithiasis in pHPT is substantially higher than in the general population. Across studies, predictors of stone formation in pHPT included hypercalciuria, hypercalcemia, higher oxalate excretion, higher parathyroid hormone levels, and delayed diagnosis. Emerging markers such as urinary Ca/Mg ratio, hypomagnesemia, and select CASR gene polymorphisms also show promise in identifying at-risk patients. Notably, parathyroidectomy significantly reduces stone recurrence and improves biochemical profiles, but does not eliminate stone risk, often due to persistent metabolic abnormalities or epidemiological predispositions.

Conclusion:
Nephrolithiasis in pHPT remains clinically significant yet incompletely defined. This review underscores its multifactorial nature and the need for individualized risk assessment beyond routine lab testing. Early targeted imaging may be more effective than universal screening. Parathyroidectomy significantly reduces stone burden, but long-term surveillance is warranted in patients with persistent risk factors. Future studies should refine predictive models and explore adjunct medical therapies for stone prevention post-parathyroidectomy.

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Title: Scaphoid Advanced Fixation Equipment (SAFE) – A Novel Approach to Scaphoid Fracture Management

Authors: Henry Zhao[1], Ashvin Moro[2], Matthew Hickey[2], Alexander Seal[1], Nicholas Carr[1], Antony Hodgson[2,3]

Affiliations: [1]Division of Plastic and Reconstructive Surgery, University of British Columbia, Vancouver, BC, [2]School of Biomedical Engineering, University of British Columbia, Vancouver, BC
[3]Department of Mechanical Engineering, University of British Columbia, Vancouver, BC

Background: Scaphoid fractures account for 60-85% of all carpal bone fractures in adults, with estimates of its incidence approximating 12.4 to 29 in 100,000 each year. These injuries have significant implications, both economically and in terms of quality of life. While surgical management often yields superior outcomes compared to conservative approaches, the procedure is complicated by the challenge of accurately identifying the ideal axis for guidewire placement. To address this issue, we developed Scaphoid Advanced Fixation Equipment (SAFE), a novel, adjustable drill guide that leverages biplanar fluoroscopic images and computer vision to obtain a precise drill trajectory, and in this study, we validate the accuracy and precision of the device.

Methods: The efficacy of the SAFE device was evaluated in synthetic models and animal specimens. To determine the operator's ability to accurately identify an appropriate drill entry point, experienced hand surgeons were asked to independently select the optimal guidewire entry point on seven synthetic scaphoid models. Variability in their selections was quantified using an optical navigation system (NDI Polaris Vega). Evaluation of device-software performance was assessed on four porcine specimens, and these were drilled according to registration target coordinates calculated by our proprietary SAFE image analysis software. Final guidewire trajectories were confirmed with fluoroscopic imaging. Usability and performance refinements were conducted iteratively. Descriptive statistics were performed.

Results: Evaluation of the operator's ability to reliably identify an appropriate drill entry point yielded a mean deviation of 1.79 mm (SD 0.43 mm) from the cumulative average of their selections. In the assessment of the device-software performance, SAFE demonstrated high precision in guidewire placement. The actual trajectory of the k-wire closely approximated the calculated trajectory and consistent, sub-millimetric variations were documented. User feedback emphasized improved procedural confidence and procedural familiarity compared to the standard of care. No device-related failures were encountered during the testing period.

Conclusions: In this study, SAFE has demonstrated the ability to address the key technical challenges in scaphoid fracture fixation: accurate and reproducible guidewire placement. It has the potential to transform scaphoid fracture management by improving access to surgery and consistency within and between surgeons' practices, thus reducing complications, healthcare-related costs, and enhancing patient outcomes.

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Title: Will Ice Decrease Spasmodic Dysphonia Patients' Perception of Pain with Botulinum Toxin Injections?

Authors: Cole Needham1 , Majid Aldossary1 , Amanda Hu1

Affiliations: 1 University of British Columbia, Division of Otolaryngology Head & Neck Surgery, Vancouver, BC, Canada Background: Electromyography (EMG)-guided injections of botulinum toxin (BTX) is the most common treatment for Spasmodic Dysphonia. The procedure is performed in awake, unsedated patients and is associated with mild pain. Cryotherapy has strong short-term analgesic effects and is used to good effect in acute sports injury, dental conditions, and post-op recovery from orthopedic surgery. It may decrease the perceived pain of EMG-guided BTX injections. Objective: This study aims to investigate the effect of an ice compress applied to the skin overlying the anterior neck before trans-cricothyroid membrane BTX injection.

Methods: A prospective randomized controlled trial with crossover design of adductor spasmodic dysphonia patients >18 years of age who were randomly assigned to receive either the treatment or control arm on their initial visit, then receiving the other arm on their subsequent visit 3-4 months later. The treatment arm received an ice compress applied to their anterior neck for 2 minutes directly before the injection(s), followed by standard laryngological care. The control arm was standard laryngological care. Demographic data was collected on initial visit. Patients rated their pain on the Short-Form McGill Pain Questionnaire and provided voice handicap index (VHI-10) scores after both visits. A final questionnaire was given upon completion of both visits that asked patients which arm they preferred and whether they felt more/less/the same pain/anxiety when comparing the ice compress to the control arm. Student t-tests were used for statistical analysis where appropriate.

Results: 89 patients (mean age 63.3 years, 73.0% Female, mean BMI 24.7±4.8) were recruited. The average time since diagnosis was 9.85±8.13 years and the average number of prior injections was 36.1±35.4. VHI-10 scores did not significantly differ between arms (control= 22.2±8.6, treatment= 20.6±9.5). No significant differences in mean or variance were found between SF-MPQ descriptive (control= 5.94±6.67, treatment= 5.72±6.34), visual analogue (control= 25.8±23.7, treatment= 25.4±24.2), or present pain intensity (control= 0.94±1.05, treatment= 0.90±0.89) scores. The final questionnaire showed that 51% of patients preferred the treatment arm. 4.5% of patients reported more pain with ice than without, 33.0% reported less pain with ice, and 62.5% reported similar pain with ice. 4.5% of patients reported more anxiety with ice than without, 16.0% reported less anxiety with ice, and 79.5% reported about the same anxiety with ice.

Conclusions: Ice compresses did not significantly affect adductor spasmodic dysphonia patient reported pain associated with botulinum toxin injection. Ice was not associated with any risks to the patient and therefore may be of use to a minority of patients.

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Chung Research Day Reception and Awards Celebration

Please join us at the beautiful **University Golf Club**
5185 University Blvd, Vancouver, BC

6:00 PM
Cocktails, networking, and celebration of our community

6:30 PM Awards Announcements
Awards in recognition of excellence in research and mentorship
- **Research Mentorship Award**
- **Dr. H.W. Johnson Early-Career Investigator Award**
- **Dr. R.J. Finley Senior Scholar Award**

Outstanding surgical research presentations:
- **Best Plenary Presentation Awards**
- **Best Short Oral Presentation Awards**

7:00 PM
Dinner service with Chung Day Lecturer Evening Talk

We look forward to a memorable evening honouring excellence and the achievements of our faculty, staff, and trainees.