

# UNSTOPPABLE

## ICISA 2026

**International Congress of the Israel Society of Anesthesiologists**

**הכנס השנתי של איגוד הרופאים המרדימים בישראל**

# ABSTRACTS BOOK

KALEIDOSCOPE
Conferences | Events | Exhibitions

**ICISA 2026 - UNSTOPPABLE**
**17-19 November 2026 | Tel Aviv, Israel**

With resilience and renewed determination, we are excited to invite you to attend the International Congress
of the Israel Society of Anesthesiologists (ICISA 2026).

Our theme, UNSTOPPABLE, celebrates the vibrant, evolving world of anesthesia and intensive care: Science, education, and innovation combine to advance patient care.
Over three inspiring days, we will focus on Foundations meet the Future: Cutting-edge developments, interactive panels, and hands-on learning showcasing unstoppable advances in brain, lung, and heart monitoring and management for anesthesia and ICU care across the ages.

We are honored to welcome renowned international speakers and leading experts, whose participation reflects the strength and solidarity of our global community. Their insights will ensure an engaging, forward-looking program that showcases the very best in clinical practice, research, and innovation. The congress will also feature novel educational strategies, including simulation-based learning, advanced hands-on workshops, and Serious Games to experience clinical challenges in an immersive learning environment.

The Venue

The congress will be held at the David Intercontinental Hotel, Tel Aviv. Its conference facilities will accommodate the scientific sessions, professional exhibition and educational activities.
We expect more than 1,000 participants from Israel and around the world, to exchange ideas, strengthen collaborations, and celebrate the unstoppable spirit that drives our profession forward.

Please save the date - November 17-19, 2026 - and join us in Tel Aviv for an unforgettable experience where science meets passion, and together we shape the future of anesthesia and intensive care.

We continue to honor the memory of all those who lost their lives, and we extend our heartfelt support and wishes for full physical and emotional recovery to all the injured, and their families.

Together, we are UNSTOPPABLE –in our shared commitment to better care for every patient.

**Carolyn Weiniger,** *ICISA 2026 President*
**Aeyal Raz,** *Chair of Scientific Committee*
**Dafna Willner,** *Chair of Organizing Committee*

# INVITED SPEAKERS



## Prof. Anne-Marie Camilleri Podesta

*Malta*

Dr. Anne Marie Camilleri Podesta is a Consultant in Anaesthesia and Intensive Care at Mater Dei Hospital, Malta. She is a Board Member of the European Society of Anaesthesiology and Intensive Care (ESAIC) and Chair of its National Anaesthesiologists Societies Committee (NASC), where she promotes collaboration and harmonisation among national anaesthesiology societies across Europe and contributes to ESAIC's strategic direction. She also serves as an EDAIC Part 2 Examiner and is an active member of several ESAIC committees, including Sustainability, Patient Safety and Quality, Guidelines, and Train the Trainer.

At the national level, Dr. Camilleri Podesta is President of the Association of Anaesthesiologists and Intensivists of Malta (AAIM). She contributes to specialist accreditation and training, organises the annual Recognition and Acute Care Treatment (ReACT) course, and chaired Malta's first international anaesthesia conference, Focus on the High Risk Patient, in February 2025. She has also organised a Research Masterclass in Malta.

She leads Research and Audit in Anaesthesia at Mater Dei Hospital and serves as a Foundation Training Programme Director and Educational Supervisor for Malta's Foundation Programme. She is a Visiting Lecturer at the University of Malta and a tutor with Queen Mary University of London. An Educator for the European Resuscitation Council, Dr. Camilleri Podesta is a Director and Instructor for multiple life support courses, including Generic Instructor, Advanced Life Support, Immediate Life Support, and European Paediatric Life Support. She has taught extensively across Europe and internationally.

Dr. Camilleri Podesta is a frequent invited speaker at international conferences and has lectured at multiple Euroanaesthesia congresses. Since 2018, she has been a faculty member of the ESAIC Train the Trainer Masterclass and has organised several such courses in Malta.



## Prof. Maurizio Cecconi

*Milano, Italy*

Professor Maurizio Cecconi, Cav. O.M.R.I., MD, MD(Res), FRCA, FFICM
Maurizio Cecconi is an anesthesiologist, intensive care specialist, and Chair of Anesthesia and Intensive Care Units at Humanitas Research Hospital in Milan, Italy. He is the Vice Scientific Director for Clinical Research and the Coordinator of the PhD PRIME (Personalized Care and innovation in Medicine and Engineering) at Humanitas University in Milan.

He studied in Italy (University of Udine), Spain (Universidad Autonoma de Madrid), the UK (St George's University of London), and the USA (Harvard Medical School), He worked for 14 years as an NHS Consultant UK, before joining Humanitas in Milan, Italy in 2018.

He has authored more than 500 peer-reviewed articles and has an H-Index of 102. His research focuses on improving outcomes in perioperative care, data science and artificial intelligence, and the physiology of shock, acute respiratory failure, and sepsis. He is the Past President of the European Society of Intensive Care Medicine, which he led through the COVID-19 pandemic. He designed and directed the EU-funded C19_SPACE training course, which provided 20,000 healthcare workers with practical training in record time during the pandemic. He is part of the Surviving Sepsis Campaign and has collaborated with WHO on the COVID-19 and Influenza Clinical Guidelines.

He has been named by JAMA has one of the most influential healthcare leaders of the pandemic. In 2020, the Italian president nominated him Knight of the Order of Merit (O.M.R.I) of the Italian Republic. In 2025 he received the ESICM Society Medal.



## Prof. Maxime Cannesson

*Los Angeles, CA, USA*

Maxime Cannesson, MD, PhD, is a board-certified anesthesiologist with more than 20 years of experience in academic medicine, leadership, education, research, quality, and technology development, working collaboratively within and among various countries, departments, academic institutions, and industry. He is Professor and Chair of the Department of Anesthesiology and Perioperative Medicine at UCLA. He has published more than 270 peer reviewed articles and three textbooks.



## Prof. Daniela Filipescu

*Bucharest, Romania*

Daniela Filipescu, MD, PhD, DESAIC, FESAIC, is a cardiac anaesthesiologist, Professor of Anaesthesia and Intensive Care Medicine at the "Carol Davila" University of Medicine and Pharmacy and Head of the Cardiac Anaesthesia and Intensive Care Unit II at the Emergency Institute for Cardiovascular Diseases in Bucharest, Romania.

Professor Filipescu is currently the President of the World Federation of Societies of Anaesthesiologists (WFSA) and has served as President of the European Society of Anaesthesiology and Intensive Care (ESAIC).

She is the Chair of the Scientific Committee of the National Congress of the Romanian Society of Anaesthesia and Intensive Care and co-chair of the multidisciplinary group for the implementation of Patient Blood Management.

Professor Filipescu is also co-chair of the WFSA perioperative PBM Working Group.



## Dr. Leo Krivskiy

*Southampton, England*

Leo Krivskiy is a Consultant Anaesthetist working at the University Hospital Southampton. Having completed his medical and anaesthetic training in Moscow, he then moved to the UK in 2002. He trained in the south of England, having made it his home. Dr Krivskiy has been closely involved in helping his Ukrainian colleagues since the annexation of Crimea in 2014, which has eventually led to him setting up his charity Ukrops. In December 2024 Leo undertook a solo transatlantic row in support of his charity in a classic boat with no prior maritime experience. He is going to share his experience of rowing across the full length of the Atlantic which took him 96 days.



## Prof. Ron Samet

*Baltimore, MD, USA*

Professor Ron E. Samet, MD, is Associate Professor of Anesthesiology and Chief, Division of Trauma Anesthesia, at the R Adams Cowley Shock Trauma Center, University of Maryland School of Medicine (UMSOM), Baltimore, Maryland. He founded the UMSOM's Regional Anesthesia and Acute Pain Medicine program in 2007 and has two decades of clinical and academic experience in advanced trauma care and regional anesthesia techniques. In 2024, he established the International Support for Anesthesia and Critical Care in Israel (ISAACC18), an initiative that supports anesthesiology departments across Israel with clinical staffing, education, and collaborative partnerships.



## Prof. Emilia Guasch

*Madrid, Spain*

Emilia Guasch is an obstetric anaesthesiologist, and she currently works at Quirón-Hospital Universitario Fundación Jiménez Díaz. Madrid. She is also Honorary Professor of Anaesthesia and Intensive Care Medicine at Universidad Autónoma de Madrid. Spain.

Dr Guasch is current member of ESAIC Board as non-officer member, and Vicepresident of European Board of Anesthesia-UEMS. She has held responsibilities in the obstetric committee of ESAIC, as WFSA Council European representative (2020-24) and in her National Society (SEDAR), as Vice-president (2013-21).

Dr Guasch´s main research interests include labour analgesia and anesthesia, postpartum haemorrhage and obstetric patient safety. She is author of the European Minimum standards in obstetric anesthesia and analgesia departments in Europe, among other papers.
She currently chairs WFSA obstetric anesthesia committee.



## Dr. Ilona Bobek

*Budapest, Hungary*

Dr. Ilona Bobek graduated in Medicine (1987) and specialized in Anaesthesiology and Intensive Care Medicine (1991) at the Semmelweis Medical University, Budapest, Hungary. Her second degree is a Diploma in Healthcare Management (2009). She undertook additional training and experience in Canada, Belgium, and the United States. More recently, she is Head of the Department of Anaesthesiology and Intensive Care Medicine at DPC-OHII, in Budapest, Hungary. She was awarded the scientific degree of PhD in Medical Sciences and spent her sabbatical at Department of Nephrology, San Bortolo Hospital, Vicenza, Italy. She is member of several professional societies and was a member of ESA Board of Directors.

Over the course of her wide-ranging clinical practice she has had contact with almost every field within anaesthesia and intensive care medicine. Over the last 15 years she had been personally involved in the anaesthesia and intensive care of major vascular and cardiac surgery, heart transplantation, haematological and bone-marrow transplanted patients, and seriously burned patients.

Her research interests include early diagnosis of Acute Kidney Injury, indications and techniques of perioperative renal replacement therapies for cardiovascular, burned and haematological patients, and haemodynamic monitoring during renal replacement therapies.
She played a fundamental role in the intensive care treatment during the COVID-19 pandemic in Hungary.

She is author of some 67 peer-reviewed publications (+14 book chapters), which have been cited more than 2800 times.



## Prof. Mervyn Singer

*London, England*

Mervyn Singer is Professor of Intensive Care Medicine at University College London with research interests in sepsis, haemodynamics, monitoring and diagnostics, extending from basic mechanisms through translational studies to clinical practice.



## Prof. Ruthi Landau

*New York, NY, USA*

Dr. Ruthi Landau is the Virginia Apgar Professor of Anesthesiology and serves as the Division Chief of Obstetric Anesthesia at Columbia University in New York.

She is a past President of SOAP, the current chair of the SOAP Centers of Excellence Committee, and the Editor-in-Chief of the International Journal of Obstetric Anesthesia (IJOA).

She has authored over 200 articles and is invited to lecture on genomics and anesthesia, critical care obstetrics, neuraxial labor analgesia, enhanced recovery after cesarean delivery, pain during cesarean delivery, and ethnic/racial disparities in maternal health care.



## Prof. David Reich

*New-York, NY, USA*

David L. Reich, MD, the Horace W. Goldsmith Professor of Anesthesiology, Professor of Artificial Intelligence, and Professor of Pathology, was named Chief Clinical Officer of the Mount Sinai Health System in 2024 and has been President of The Mount Sinai Hospital since 2013.

Dr. Reich was Chair of the Department of Anesthesiology from 2004–2014 and served as President of the Medical Board in 2011–2012. Prior to his anesthesiology training, Dr. Reich completed two years of residency in general surgery at Harbor/UCLA Medical Center in Torrance, California. He received his BS degree with highest distinction from Pennsylvania State University and his medical degree from Jefferson Medical College of Thomas Jefferson University in Philadelphia. After arriving at Mount Sinai in 1984, Dr. Reich completed a residency in anesthesiology and a fellowship in cardiothoracic anesthesia. His honors include the 2011 Physician of the Year from Mount Sinai Nursing, the Mount Sinai Alumni Association Jacobi Medallion in 2014, the 2021 Heart of Gold Award from the NY Heart Association, the 2021 August Heckscher Founder Award for Community Service from CIVITAS, the 2021 Empire Whole Health Heroes Award from Empire Blue Cross Blue Shield and Crain's New York Business, and Pace University's 2022 Changemakers in Healthcare Award. An academic cardiac anesthesiologist, he has published more than 200 articles, editorials, and book chapters. As a hospital executive, he has enhanced safety and quality by forming an institute for critical care medicine, rapidly deploying digital innovation tools including AI-enhanced clinical decision support, and leading in COVID-19 care and diagnostics.



## Dr. Sara Goldhaber-Fiebert

*Stanford, CA, USA*

Dr. Sara Goldhaber-Fiebert is a Clinical Professor of Anesthesiology at Stanford University School of Medicine and a global leader in patient safety, focused on helping both patients and clinicians to thrive. SGF's work spans theory and practice, research and implementation, on topics including: emergency manuals and cognitive aids, labelled scrub caps with names and roles, psychological safety and enabling speaking up, crisis resource management, interprofessional simulation, and human factors.

For ASA, SGF serves on the Committee on Patient Safety and Education and she co-founded the Emergency Manuals Implementation Collaborative, which is now hosted by Anesthesia Patient Safety Foundation, with many free resources that can be found at www.emergencymanuals.org
At Stanford, SGF combines clinical work, especially for Head and Neck difficult airway cases, teaching, simulation, mixed-methods research, quality improvement, and multiple related leadership roles. The Stanford Anesthesia Cognitive Aid Program shares cost-free the Stanford Emergency Manual, for electronic, printed, & App formats at https://emergencymanual.stanford.edu/ with > half a million downloads in multiple languages and implementations at leading institutions globally.



## Prof. Julia Wendon

*London, England*

Professor Wendon has worked at Kings college London since 1992. She is driven by patient care and the provision of research, education and training for Intensive care professionals. Her focus of interest is critically ill liver patients and their management and associated immune dysfunction.
In addition to clinical practice, she has undertaken clinical leadership roles, Head of Liver services, Head of Intensive Care, and Executive Medical Director. She has completed 2 terms as a Board Member of the Faculty of Intensive Care Medicine.
She is now at Hadassah within GICU



## Prof. Ram Roth

*New-York, NY, USA*

Dr. Ram Roth is Associate Professor and Acting Chair of Anesthesiology at Mount Sinai Hospital of Queens. He completed the ASA Executive Physician Leadership Program at Kellogg School of Management. Dr. Roth co-edited The Role of Anesthesiology in Global Health: A Comprehensive Guide (Springer, 2014) and has extensive experience in bariatric anesthesia and difficult airway management. He has been a frequent speaker at the Israel Society of Anesthesiologists Congress since 1996.



## Prof. Daniela Ionescu

*Cluj-Napoca, Romania*

Professor in Anaesthesia and Intensive Care at Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania, Daniela Ionescu received her medical degree in 1989 at the same university. Currently, Head of Department of Anaesthesia and Intensive Care, Iuliu Hatieganu University of Medicine and Pharmacy, Cluj-Napoca, Romania and of Clinical Department of Anesthesia and Intensive Care at Institute for Gastroenterology and Hepatology, in Cluj-Napoca. She organizes Conference on Perioperative medicine and critical care in Cluj-Napoca, Romania.

She is member of the Board of Romanian Society of Anesthesia and Intensive Care and member of Outcome Research Consortium, Cleveland, USA. She is also chair of Onco-anaesthesia group-ESAIC and of Association for Research in Anesthesia and Intensive Care-Cluj-Napoca. Most recently, she is Member of Nomination Committee of ESAIC.

Daniela Ionescu authored and co-authored over 160 publications.

Her main research interests include influence of perioperative and anesthetic interventions on short and long-term outcome in cancer patients, bacterial infections in cirrhotic patients, PBM.
Prof Ionescu was invited speaker to numerous international anesthesia meetings, including Euroanaesthesia, Anesthesiology, ICISA.



## Prof. Joel Symons

*Melbourne, Australia*

A/Prof Joel Symons is a Specialist Anaesthetist and Board Member, serving as Chair of the Education and Assessment Committee for the Chapter of Perioperative Medicine at the Australian and New Zealand College of Anaesthetists (ANZCA). He also sits on the ISAACC18 Board. Joel co-founded the Monash Short Course and Master of Perioperative Medicine programmes, co-edited Perioperative Medicine for the Junior Clinician (Wiley), and is Editor of the Perioperative Medicine Journal (Springer Nature). He is a member of the ANZCA Perioperative Medicine Special Interest Executive and is widely recognised, both locally and internationally, for his contributions to perioperative medicine education.



## Prof. Andrea Székely

*Budapest, Hungary*

Dr. Székely is Professor of Anesthesia Department of Anesthesiology and Intensive Care at Semmelweis University Budapest, Hungary. Her main research interests include risk stratification and noncardiac factors influencing short and long term outcomes in the field of pediatric and adult cardiac surgery, mechanical cardiac support, transplantation and frailty. She is a team leader in the School of Doctoral Studies. Se has become Doctor of the Hungarian Academy of Sciences and Fellow of the European Society of Anesthesiology and Intensive Care (FESAIC). She is the Diversity-Equity-Inclusion Officer of the Board of the European Society of the Cardiothoracic Anesthesia and Intensive Care. She is oral examiner in EDAIC Part II examination and member, as clinical coordinator of the Committee of Basic and Clinical Sciences Anaesthetic Course (BCSAC) and of the Scientific Committee, Heart Forum,.Since 2022, she is the President of the European Workshop of Cardiovascular Intensivists. She has been actively involved in the Frailty Taskforce of the EACTS. She is an Editorial Board member of the Journal of Cardiothoracic and Vascular Anesthesia and the MDPI Biomedicines.



## Prof. Michael O'Connor

*Chicago, IL, USA*

Michael F. O'Connor is an anesthesiologist and intensivist and a Professor in the Department of Anesthesia & Critical Care and the Department of Medicine at the University of Chicago. He has been the Executive Medical Director of Critical Care Services for the University of Chicago since 2008.



## Prof. Marcelo Gama de Abreu

*Cleveland, OH, USA*

Marcelo Gama de Abreu, MD, MSc, PhD, DESAIC, graduated in Medicine and Biomedical Engineering. Currently, he is Professor of Anesthesiology at the Cleveland Clinic Lerner College of Medicine, Case Western Reserve University, Cleveland, Ohio, USA, and Professor of Translational Research in Anesthesiology and Intensive Care Medicine Dresden, Dresden University of Technology, Dresden, Germany. For approximately 10 years, he served as Director of Research and Deputy Head of the Department of Anesthesiology and Intensive Care Medicine Dresden of the University Hospital Carl Gustav Carus, Dresden, Germany, where he grounded and directed the ECMO/ARDS program for several years.

Presently, Dr. Gama de Abreu is Director of Research and Staff Physician of the Division of Intensive Care and Resuscitation, and Staff Physician of the Division of Cardiothoracic Anesthesiology, and of the Outcomes Research Consortium, Department of Anesthesiology, Integrated Hospital Care Institute, Cleveland Clinic, Cleveland, Ohio, USA. He served the European Society of Anesthesiology and Intensive Care for nearly 12 years as chair of the Subcommittee Respiration, member of the Research and Nomination Committees, Industry Liaison Officer, and member of the Board of Directors. With more than 1250 publications, including original articles, reviews, editorials, book chapters and patents, Dr. Gama de Abreu has contributed importantly to advance the knowledge and practice in anesthesiology and intensive care. Since 2000 he has been conducting and coordinating multiple studies in Europe and the USA, both in the laboratory and the clinical settings. His main focus of research is on therapies and monitoring in respiratory failure, mechanical ventilation and extracorporeal life support. His main clinical focus is on thoracic and vascular anesthesia, as well as postoperative intensive care and extracorporeal membrane oxygenation.



## Prof. Miles Berger

*Palo Alto, CA, USA*

Dr Miles Berger is a Professor (University Medical Line) and Neuroanesthesiology Section Chief at the Stanford Department of Anesthesiology, Pain and Perioperative Medicine, in Palo Alto CA (USA). Dr Berger is a neuroanesthesiologist and a translational neuroscientist whose NIH-funded research team studies the mechanisms of perioperative neurocognitive disorders among older surgical patients, and mechanisms by which the APOE4 allele damages the brain and leads to long term cognitive decline and increased Alzheimer's disease risk. His research team uses a variety of methods to study these topics, ranging from proteomics and flow cytometry, to EEG and functional MRI imaging, to cognitive testing and delirium screening. Dr Berger is a member of the American Society for Clinical Investigation (ASCI) and the Academy of Research Mentors of the Foundation for Anesthesia Education and Research; he has mentored over 50 research trainees, several of whom now lead their own independent NIH-funded research groups.



## Prof. Daniel Talmor

*Boston, MA, USA*

Daniel Talmor, M.D., M.P.H., is chair of the Department of Anesthesia, Critical Care, and Pain Medicine at Beth Israel Deaconess Medical Center (BIDMC) and the Edward Lowenstein Professor of Anaesthesia at Harvard Medical School.

Dr. Talmor's research interests are centered on the early identification and treatment of critically ill patients, with a particular focus on the optimal delivery of mechanical ventilation. Dr. Talmor has published over 250 peer reviewed papers as well as multiple chapters, editorials and abstracts. He has lectured extensively around the world



## Prof. Lorenzo Ball

*Genoa, Italy*

Lorenzo Ball is an Associate Professor of Anesthesia and Intensive Care at the University of Genoa and a practicing anesthesiologist and intensivist at San Martino Hospital, Genoa, Italy. He received his MD from the University of Genoa and a PhD from the University of Amsterdam.

His clinical work focuses on the management of acute hypoxemic respiratory failure, advanced respiratory monitoring, and lung imaging. His research addresses mechanical ventilation and the care of critically ill patients, as well as patients undergoing general anesthesia. His academic development has included international collaborations and research fellowships at institutions such as the Technical University of Dresden, the University of Amsterdam, and Uppsala University.

He is a Visiting Professor at the Federal University of Rio de Janeiro. He is active in scientific societies, serving as lead of the "Lung" sub-forum of ESAIC and as a member of the SIAARTI clinical research forum. He has authored or co-authored 241 peer-reviewed publications and regularly contributes to national and international scientific meetings.



## Prof. Philippe Richebé

*Bordeaux France*

Pr Philippe Richebé, MD, PhD, DESAR graduated in Anesthesia and Intensive Care Medicine in 2000 (University of Bordeaux). There, he was Assistant Professor (2000–2004) and Associate Professor (2004–2008).

He obtained his PhD degree in neuroscience and neuropharmacology in 2005 (« OIH and CPSP"). His postdoc. was spent at the Pr Brennan's laboratory in Iowa City, IA, USA.

Dr Richeb moved again to the USA, to UWMC Seattle, WA, USA, from 2008 to 2014 where he was laboratory Director and Associate Professor in Anesthesiology and Pain Medicine.

Then, he moved to Montreal, Canada, where he was Associate then Full Professor in the department of Anesthesiology and Pain Medicine at University of Montreal and a Chair of Research (2014–2024). He was also President of the Foundation of Anesthesia and Resuscitation of Quebec.

He has recently relocated to France to start a new role as physician and researcher at Polyclinique Bordeaux Nord Aquitaine (2025). He is still Professor affiliated to U. of Montreal.

His research interests revolve on the prevention of persistent postoperative pain, hyperalgesia induced by opioids, nociception monitoring, perioperative patient trajectories, ERAS, postoperative impact of anesthesia on outcomes and recovery, EEG monitoring and muscle relaxation monitoring.

He has more than 160 publications, 160 international lectures. He is Senior Editor for CJA and reviews for many others.



## Dr. Eleana Garini

*Athens, Greece*

Dr. Eleana Garini MD, MSc, EDAIC, EDRA is a Consultant Paediatric Anaesthesiologist at "Agia Sofia" Children's Hospital in Athens, Greece. Her main clinical and academic interests include paediatric regional anaesthesia, acute and chronic pain management, patient safety, and paediatric cardiac anaesthesia.

She is President of the Hellenic Society of Anaesthesiology, having been re-elected for a second term in 2026, and serves as Coordinator of the HSA Working Group on Paediatric Anaesthesiology. Dr Garini is an Examiner for the European Diploma of Regional Anaesthesia (ESRA-DRA) and an Instructor in the Greek Advanced Patient Safety Course, organised by the HSA in collaboration with the European Society of Anaesthesiology and Intensive Care.

She has served as a Council Member representing Greece in ESAIC and is actively involved in European educational, simulation, and patient safety initiatives, regularly participating as faculty and speaker in international congresses and training programmes.



## Prof. Robina Matyal

*Boston, MA, USA*

Robina Matyal, MD is Professor of Anesthesia, Vice Chair of Education, and Director of the Vascular Division at Beth Israel Deaconess Medical Center and Harvard Medical School. She is an internationally recognized leader in perioperative echocardiography, point-of-care ultrasound, and translational cardiovascular research. Her scientific work integrates bench-to-bedside and bedside-to-bench approaches to elucidate cellular pathways underlying cardiovascular disease, particularly in women and patients with diabetes and metabolic syndrome, with the goal of advancing targeted therapeutic strategies.

Dr. Matyal is also Program Director of the Master's in Medical Education Fellowship, Director of the Center for Education Research, Innovation, and Technology, and leads a journal Clinics in Medical Education focused on medical education. Her education research centers on simulation-based learning, competency-based assessment, and theory-informed evaluation frameworks that capture learner variability and longitudinal development, advancing rigor and innovation in anesthesia and perioperative education.



## Prof. Eva Rivas

*Barcelona, Spain*

Dr. Eva Rivas is a specialist in Anesthesiology and Critical Care (2005), trained at Hospital Clínic de Barcelona (HCB), where she currently works full-time. Since 2022, she has served as Clinical Head of the Digestive Diseases Section within the Department of Anesthesiology, and she is an accredited researcher (R3a) at the IDIBAPS.

Dr. Rivas completed her doctoral thesis on the impact of bariatric surgery on respiratory function in 2016. She performed her postdoctoral training for three years at the Outcomes Research Department of the Cleveland Clinic, under the supervision of Prof. Daniel Sessler and Dr. Turan. In 2020, she returned to Barcelona and resumed her clinical practice and research within the IDIBAPS group focused on a research line about "Postoperative complications after non-cardiac". Over the last four years, Dr Rivas has developed competitive research projects, supervised Doctoral projects, and publised aroung 50 articles.



## Prof. Carolina Haylock-Loor

*San Pedro Sula, Honduras*

Honduran physician and anaesthesiologist trained in Spain. Former President of the Honduran Anesthesia Society (SHARD), she helped zeroing the national pulse oximetry gap in 2012 in collaboration with the University of Florida and the WHO Surgical Safety Checklist initiative. Also collaborated with the Utstein2 Metrics project.

She practices as an anaesthesiologist, intensivist, and interventional pain specialist in San Pedro Sula, Honduras.

A long-standing leader within the WFSA, she has served as Council Member since 2012, former Chair of the DEI Committee, Director of Programs (2020), President-Elect (2024), and currently President of the WFSA (2026, WCA Marrakech).

Deeply committed to education, Adjunct Professor for Pain Medicine at UNAH for Anesthesiology, Neurology, and Internal Medicine Residency Programs. She promotes WFSA short courses globally including EPM, SAFE (Safer Anaesthesia from Education) Obstetric, SAFE Paediatric, Safe OR, PTC, VAST (Vital Anesthesia Simulation Training) and Wellbeing module. Member of the steering group for Perioperative Patient Blood Management p-PBM course and the Global Leadership in Anaesthesiology GLiA Course of the WFSA. She is an international speaker and published author in anaesthesia.



## Prof. Joshua Mincer

*New York, NY, USA*

Joshua Mincer, MD, PhD is Vice Chair for Research in the Department of Anesthesiology and Critical Care Medicine at Memorial Sloan Kettering Cancer Center. He is a clinical anesthesiologist and researcher developing precision approaches to perioperative and pain management interventions to optimize all outcomes (pain, function, aging, oncologic). His research integrates expertise in anesthesiology, pain, oncology, aging, and AI/digital health, and employs cutting-edge tech including AI/digital phenotyping, liquid biopsy, organoids, and computational biology.

He is a member of ISAAC18 and is grateful to the Israeli anesthesia community and to Rambam in particular for the opportunity to volunteer these past few years and moving forward.



## Dr. Yaakov Beilin

*New York, NY, USA*

Dr. Yaakov (Jake) Beilin is a Professor of Anesthesiology and OB/GYN and the Vice-Chair for Quality at the Icahn School of Medicine at Mount Sinai, New York, NY. He is also the Director of Obstetric Anesthesia and the Director of the Obstetric anesthesia fellowship at The Mount Sinai Hospital. Dr. Beilin's research interests include neuraxial anesthesia, coagulation, and patient safety. He has published more than 90 peer reviewed articles and 40 book chapters. He is also an editor of the 5th,6th, and 7th editions of the premier obstetric anesthesia textbook: Chestnut's Obstetric Anesthesia: Principles and Practice. He has delivered more than 300 lectures, both nationally and internationally, on various obstetric anesthesia and safety related topics.



## Prof. Rudin Domi

*Tirana, Albania*

Prof. Dr. Rudin Domi serves as a Consultant Anesthesiologist and Intensivist at the Department of Anesthesiology and Intensive Care Medicine, "Mother Teresa" University Hospital Center, Tirana. He also earned a Master's degree in Pharmacology, obtained a PhD, and Associate Professor before achieving full Professorship in 2019.

Prof. Domi is a full-time Professor of Anesthesiology and Intensive Care Medicine at the University of Medicine, Tirana. He has authored or co-authored 35 scientific publications and delivered 128 lectures and presentations nationally and internationally. He serves as an editorial board member and reviewer for several international journals. His professional appointments include Albanian Council Member of the European Society of Anaesthesiology and Intensive Care (ESAIC), Albanian NASC representative, and founding board member of the Balkan Anesthesia Platform (BAP). He is also a frequent invited speaker at regional and international scientific congresses.

Prof. Domi's clinical expertise includes organ protection during anesthesia, intensive care medicine, cardiac anesthesia, hemodynamic management, neurocritical care, and adult and pediatric neuroanesthesia. He is internationally recognized for his contributions to anesthesia and intensive care medicine, with extensive experience as a researcher, educator, and invited speaker.

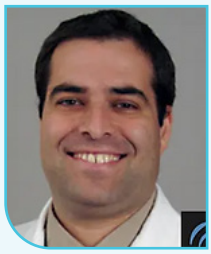


## Dr. Luis Alberto Rodriguez Linares

*São Paulo, Brazil*

Luis Alberto Rodriguez Linares is a clinical anesthesiologist and Doctor of Science (PhD) from the University of São Paulo (USP), with fellowship training in Regional Anesthesia & Pain at Hospital Sírio-Libanês and in Cardiovascular Anesthesia at Western University, Canada. He is currently pursuing an MBA in Digital Health at USP. He coordinates the POCUS Nucleus at SAESP and serves on international committees at ESRA, ASRA, and the POCUS Certification Academy.

He is a member of the IARS Grants & Awards Working Group and faculty at the Postgraduate Program in Regional Anesthesia & Pain at Faculdade Sírio-Libanês. His work spans clinical practice, ultrasound-guided procedures, and medical education across Latin American and global anesthesiology networks.



## Prof. Jacob Raphael

*Philadelphia, USA*

Prof. Raphael is an adult and pediatric Cardiac Anesthesiologist and Professor of Anesthesiology and Director of Clinical Research at the Department of Anesthesiology at Thomas Jefferson University Hospital.

His research focuses on improving outcomes after cardiac surgery, particularly in relation to optimizing patient blood management practices as well as preventing and mitigating AKI in patients undergoing cardiac procedures. He has published extensively in the fields of patient blood management and AKI including guidelines and clinical practice advisories on AKI that have been published leading journals such as Circulation, Anesthesia and Analgesia, Anesthesiology and Annals of Thoracic Surgery. He participated in numerous multinational clinical trials and is currently the lead investigator in a muti-national trial comparing the use of PCC to FFP in cardiac surgery patients as well as a co-PI on a multi-national study examining the role of IV iron in treating postoperative anemia in cardiac surgery patients.



## Prof. Jens Meier

*Linz, Austria*

Jens Meier, MD, Professor, Dr. med., is the Head of the Department of Anaesthesia and Intensive Care at the Kepler University Hospital and is the Chair professor of Anaesthesiology and Intensive Care at the Johannes Kepler University in Linz, Austria.

Prof. Meier has conducted several experimental projects in the field of circulation and oxygenation, and he has led several large clinical trials within anesthesiology and intensive care medicine. His current area of research includes bleeding, coagulation, Patient Blood Management, and artificial intelligence and data modeling for the improvement of patient care. His publications have appeared in prestigious peer-reviewed medical journals.

Prof. Meier was the chair of NATA and was a forum chair of the scientific committee of the ESAIC.

Prof. Meier lectures nationally and internationally on topics related to anesthesiology and Critical Care Medicine, including Patient Blood Management and transfusion in surgical and critically ill patients, and cardiovascular physiology and the use of artificial intelligence for the improvement of patient care within Anaesthesiology and Intensive Care.



## Prof. David Polaner

*Seattle, WA, USA*

David M. Polaner, MD, FAAP is Professor of Anesthesiology at the University of Washington School of Medicine and attending pediatric anesthesiologist at Seattle Children's Hospital. Dr. Polaner is a graduate of Yeshiva University and Mt. Sinai School of Medicine. He trained in pediatrics, anesthesiology, pediatric anesthesiology and critical care in Seattle, and was a research fellow in Warren Zapol's laboratory at the Massachusetts General Hospital.

Dr. Polaner's research and clinical interests include regional anesthetics in children, the pediatric airway, transplant anesthesia, and high-altitude medicine and physiology. He co-founded the Pediatric Regional Anesthesia Network (PRAN), was co-director of the 6th through 8th International Symposia on the Pediatric Airway and is an Editor of the journal Pediatric Anesthesia.



## Prof. Dr. Marcelo Gama de Abreu

*Austria*

Marcelo Gama de Abreu, MD, MSc, PhD, DESAIC, is Professor and Chair of the Department of Anesthesiology and Intensive Care Medicine at the Medical University of Graz, Austria, and Professor of Translational Research in Anesthesiology and Intensive Care Medicine at Dresden University of Technology, Germany. From 2021 to 2026, he served as Professor of Anesthesiology at Cleveland Clinic Lerner College of Medicine of Case Western Reserve University in Cleveland, Ohio, USA.

With more than 1,250 publications, including original research articles, reviews, editorials, book chapters, and patents, Dr. Gama de Abreu has made substantial contributions to advancing knowledge and clinical practice in anesthesiology and intensive care medicine. Since 2000, he has conducted and coordinated numerous experimental and clinical studies across Europe and the United States.

His research focuses on the pathophysiology, monitoring, and treatment of respiratory failure, with particular emphasis on mechanical ventilation and extracorporeal life support. His principal clinical interests include cardiac, thoracic, and vascular anesthesia, postoperative intensive care, and extracorporeal membrane oxygenation (ECMO).



## Prof. Kateryna Bielka

*Kyiv, Ukraine*

Kateryna Bielka, MD, PhD, DSc, Full Professor, is Head of the Postgraduate Department of Anaesthesiology and Intensive Care at Bogomolets National Medical University, Ukraine, and Consultant Anaesthesiologist at the Kyiv Perinatal Centre. She combines academic leadership with active clinical practice in obstetric anaesthesia and perioperative care.

Professor Bielka has extensive expertise in patient safety, quality improvement, critical incident management, simulation-based education, and implementation of safety standards in anaesthesia. Her research includes multicentre studies on safety checklists, perioperative outcomes, workforce preparedness, and healthcare resilience during wartime. She is a Board Member of the European Board of Anaesthesiology (UEMS) and actively contributes to international educational and scientific initiatives. Her current interests focus on obstetric anaesthesia, maternal outcomes, patient blood management, and building safer perioperative systems through evidence-based practice and professional training.



## Dr. Philipp Lirk

*Houston, Texas, USA*

Dr. Philipp Lirk currently serves as Director of the Acute Pain Management Service at Memorial Hermann Hospital / Texas Medical Center, and as Professor of Anesthesiology at UT McGovern Medical School in Houston, Texas, USA.

His clinical mainstay is the provision of Orthopedic and Trauma Anesthesia, and Regional Anesthesia. Dr. Lirk's research has revolved around the provision of regional anesthesia, ranging from cell culture and animal studies on the effects of local anesthetics, to clinical studies and guideline work with the PROSPECT group. He is Co-Editor-in-Chief for the journal Current Opinion in Anesthesiology, and an Associate Editor for the journal Anesthesiology. His scientific contributions include more than 170 peer-reviewed manuscripts, and multiple book chapters.

Philipp Lirk received his MD degree from the Leopold Franzens University Innsbruck, Austria (2002), his MSc from the University of Cardiff, UK (2005), his Advanced Degree (Habilitation) from Innsbruck Medical University, Austria (2010), his PhD from the University of Amsterdam (2014), and his MPH from the University of Nebraska Medical Center and Georgetown University (2026).



## Prof. Gabriella Iohom

*Cork, Ireland*

Gabriella Iohom is a Cork-based Anaesthesiologist and Senior Lecturer with special interest and training in Regional Anaesthesia. A native of Transylvania, she graduated from the 'Iuliu Hatieganu' University of Medicine and Pharmacy Cluj-Napoca, underwent anaesthesia specialist training in Hungary and Ireland, and regional anaesthesia fellowship training in France.

Gabriella fulfils the role of Lead Examiner Auditor within the Subcommittee Part II of the ESAIC Examinations Committee. She served on the Council of ESAIC, held responsibilities in the Mentorship and Trainee Exchange Programmes as well as the Regional Anaesthesia Subcommittee.

Her research interests are centred on perioperative outcomes, skill acquisition and retention, and embedding data-driven training models into real-world applications. She authored over 100 peer-reviewed publications and lectures extensively on key topics for regional anaesthesia and research-led education.



## Dr. Ronald George

*Toronto, Canada*

Dr. Ronald George is Professor & Director of Obstetric Anesthesia at Mount Sinai Hospital in the University of Toronto. He was a Canadian Anesthesiologists' Society Career Scientist Award recipient aimed at enhancing analgesia and anesthesia for women and high-risk pregnancies.

He is an Associate Editor for the Canadian Journal of Anesthesia and the International Journal of Obstetric Anesthesia. Dr. George is currently the Immediate Past-President of the Society for Obstetric Anesthesia and Perinatology and the Canadian Representative on the Council of the World Federation of Societies of Anaesthesiologists.



## Prof. Itay Bentov

*Seattle, Washington*

Itay Bentov, MD PhD, is an associate professor in the Department of Anesthesiology and Pain Medicine at the University of Washington School of Medicine and is a practicing anesthesiologist at Harborview Medical Center in Seattle, Washington. He has numerous publications in leading journals and textbooks. His clinical and academic work was supported by several agencies including the NIH, and focused on frailty, sarcopenia, trauma, and optimizing perioperative outcomes in vulnerable surgical. He currently serves as chair of the ASA's Geriatric Anesthesia Committee and is deeply committed to education, mentorship, and advancing evidencebased perioperative care for older adults.



## Prof. Șerban Bubenek

*Bucharest, Romania*

Prof. Habil. Dr. Șerban-Ion Bubenek-Turconi, MD, FESAIC (graduated in Bucharest) was appointed Assistant Etranger de l'Universite P. & M. Curie Paris in 1993, Chief 1-st Dept. of Cardiovasc. Anesth and Intensive Care at the Emergency Institute of Cardiovascular Diseases "Prof.C.C.Iliescu" Bucharest, Romania in1996 but also Medical Director & General Manager (2005-2019) and member of Board of Trutees (2019-) of the same hospital.

Currently, he is Professor and Chair of the"1-st Clinc Dept. of Anesthesia and Intensive Care" of the "Carol Davila" University of Medicine and Pharmacy Bucharest and President - Committee for Anesthesia & Intensive Care - Romanian College of Physicians.

Between 2018-2026 Prof. Bubenek was the President of the Romanian Society of Anaesth. & Intensive Care (SRATI).

Prof. Bubenek is a Former Member of the Board of Directors and Former NASC Chairman of the European Society of Anaesthesiology and Intensive Care (ESAIC) (2018-2021).

In 2023, he became Honorary Member Ad-Vitam and Fellow of the ESAIC.

He is also Honorary Member of the Israeli Society of Anesthesiologists, Visiting Professor of University of Tel Aviv - Faculty of Medicine and Associate Professor of "N.Testemițeanu" University of Medicine of Chișinău - Republic of Moldova.

In 2025 he was honored with the title of Doctor Honoris Causa of "The Lower Danube" University Galați-Romania.

Decorated in 2009 by the President of Romania with the: "National Order of Merit in the rank of Chevalier".

Decorated in 2010 by the Patriarch of the Romanian Orthodox Church with the "The Patriarchal Grand Cross".



## Prof. Mahmood Feroze

*Boston, USA*

Dr. Feroze Mahmood MD currently serves as the Network Chief of Cardiac Anesthesia at the Beth Israel Lahey Health Network and is also the Mark E Comunale Endowed Chair in Cardiac Anesthesia. He is also Professor of Anaesthesia at the Harvard Medical School. His research interests include role of transesophageal echocardiography in cardiac surgery valve repair surgery, three-dimensional imaging, three-dimensional printing and role of artificial inte

lligence in medical education. He has more than 350 original research articles, has authored multiple text-books and recipient of national awards from the Society of Cardiovascular Anesthesiologists and American Society of Echocardiography.

# ABSTRACTS

## Abstracts Presentation Session

## 18/11 | 10:00-11:00

**Moderator: Aeyal Raz**

# Refractory Cardiac Arrest Following Sugammadex in a Heart Transplant Recipient

**Anastasya Rogozina, Jonathan Frogel, Haim Berkenstadt, Israel Leonid Sternik, Alexander Kogan**

*Sheba Medical Center at Tel HaShomer, Ramat Gan, Israel*

## Objectives:

To our knowledge, this is a first-of-its-kind case report describing refractory cardiac arrest following sugammadex administration in a heart transplant recipient who underwent non-cardiac surgery, and successful ECMO-assisted resuscitation.

## Methods:

A 64-year-old heart transplant recipient underwent elective robotic retroperitoneal excision of the left seminal vesicle. Preoperative assessment showed preserved graft function. Anesthesia was induced with fentanyl and propofol. Rocuronium was given to facilitate endotracheal intubation. Anesthesia was maintained with isoflurane and fentanyl. Monitoring included ECG, capnometry, invasive arterial blood pressure, oxygen saturation, and esophageal temperature. Surgery and anesthesia were uneventful, with minimal blood loss. Patient receive 2000 ml of crystalloids.

After the end of surgery, the patient received sugammadex 200 mg to reverse the neuromuscular blockade. The patient remained stable and was extubated awake with adequate spontaneous ventilation. Eight minutes after sugammadex administration and two minutes after extubation, the arterial pressure waveform abruptly disappeared, followed by loss of pulse oximetry signal and measurable blood pressure. ECG confirmed asystole.

We initiated CPR immediately with re-intubation. CPR was maintained for 50 min. Profound hemodynamic instability persisted, prompting activation of extracorporeal life support. Peripheral VA-ECMO was established.

TEE demonstrated severe biventricular dysfunction, with marked intravascular volume depletion. We restored preload with colloids, crystalloids, and blood products. The patient was then transferred to the ICU.

## Result:

Over the next 12 hours, hemodynamics rapidly improved, allowing discontinuation of all vasoactive support; VA-ECMO was discontinued on postoperative day 1, with complete cardiac and neurological recovery. Conclusions: The abrupt asystole shortly after sugammadex suggests a possible drug-associated event. The occurrence of refractory asystole in a predominantly denervated transplanted heart challenges an exclusively vagal mechanism of sugammadex-associated cardiovascular collapse and suggests additional mechanisms. Prompt CPR, TEE-guided assessment, correction of reversible factors, and timely VA-ECMO resulted in complete recovery.

# Management of Acute Bronchial Rupture Following DLT Placement in Emergency Thoracic Surgery

**yoav levy MD, vasili recca MD**

*Rambam Hospital, haifa, ISRAEL*

Double-lumen tube (DLT) placement enables single-lung ventilation during thoracic surgery but carries a rare, life-threatening risk of tracheobronchial injury (TBI). Anesthesia providers must rapidly recognize and manage this critical complication.

## Case Presentation:

A 77-year-old female presented for urgent repair of an esophageal perforation following emergent intubation for respiratory failure secondary to a pneumothorax. She entered the operating room hemodynamically stable, intubated and sedated. The single-lumen tube was exchanged for a 35 Fr left-sided Ambu VivaSight video DLT.

Insertion was smooth, but thick secretions obscured the video monitor. Shortly after ventilation began, peak airway pressures surged, end-tidal CO2 (ETCO2) dropped to 10 mmHg, and SpO2 fell to 80%. Re-intubation with a single-lumen tube yielded worsening collapse (SpO2 50%, blood pressure 70 mmHg). Suspecting tension pneumothorax, a right chest tube was placed, yielding immediate transient improvement. Flexible bronchoscopy confirmed a bronchus intermedius tear.

A second left-sided DLT was placed, but persistent air leak prevented isolation, requiring a left chest tube. With veno-venous ECMO delayed by 20-30 minutes, the surgical team executed an immediate right thoracotomy. Direct digital occlusion of the bronchial tear immediately stabilized the patient, allowing primary repair of the airway followed by the surgery on the perforated esopagus.

## Discussion:

This case highlights the vital role of early recognition, swift decision-making, and aggressive response in acute airway trauma. Sudden loss of ETCO2, high peak pressures, and desaturation must immediately trigger suspicion of TBI and tension physiology—especially when secretion-induced obscuration limits video DLT visualization. Fast execution of bilateral chest tube decompression provided critical stabilization during decompensation. When single-lung ventilation failed and ECMO faced logistical delays, rapid surgical rescue via direct digital occlusion of the defect served as a life-saving bridge to primary repair. Close, real-time multidisciplinary communication between anesthesiology and thoracic surgery is indispensable for rapid, decisive management.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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## Figure Attachment (PDF):

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# Prehospital Intraosseous Access in Combat Trauma: A Retrospective Registry Analysis

**Ofer Almog[1,2], Cole D. Bendor[1,2], Shaul Gelikas[1,3], Roy Nadler[1,2], Irina Radomislensky[1,4], Zivan Aviad Beer[1,2], Avi Benov[1,5], Elon Glassberg[1,5,6]**

1. *Israel Defense Forces Medical Corps, Surgeon General's Headquarters, Israel Defense Forces, Ramat Gan 5262000, Israel*
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3. *Division of Internal Medicine, Sheba Medical Center, Tel HaShomer, Israel*
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5. *The Azrieli Faculty of Medicine, Bar-Ilan University, Safed, Israel*
6. *The Uniformed Services University of the Health Sciences, Bethesda, Maryland, USA*

## Introduction:

Intraosseous (IO) devices have become a vital tool in trauma care for establishing rapid circulatory access, particularly in emergency and prehospital environments where peripheral vascular access may be delayed or unsuccessful. In modern combat settings, detailed data on prehospital IO use, indications and outcomes remain limited. We aimed to describe the indications and success rates of prehospital IO access in combat trauma casualties treated by military advanced life support providers during the 2023–2024 Israel–Gaza conflict, and to report any acute complications documented in the prehospital and early hospital phases.

## Study Objective:

To evaluate the use and success rate of IO access in trauma casualties treated by military advanced life support providers during the 2023–2024 Israel–Gaza conflict.

## Methods:

This retrospective study analysed data from the Israel Defense Forces Trauma Registry and the Israeli National Trauma Registry. All cases involving prehospital IO access from 27 October, 2023 to 27 November 2024 were included. Variables included demographic characteristics, injury patterns, IO device type, insertion sites, success rates, indications, and outcomes.

## Results:

Eighty-three casualties were included. Most had severe penetrating injuries (94%) and presented with signs of hypovolemic shock (82%). IO access was predominantly used for volume resuscitation with blood products (84%), including low titer group O whole blood transfusion (67%). The proximal tibia was the most common insertion site (77%). NIO™ devices were used in most cases with high first attempt success; overall IO insertion success was 85%. No major acute complications related to IO access were documented.

## Conclusion:

In this cohort of modern combat casualties, intraosseous access was frequently used to enable blood product resuscitation in severely injured, profoundly shocked casualties, with high first attempt and overall insertion success and no major acute complications documented. These findings support IO as a feasible and reliable option for circulatory access in austere environments.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# Anesthesia for TMJ Ankylosis Utilizing Patient-Specific 3D-Printed Airway Models: A Case Series

**Shamir Dan, Fawarseh Adham, Emodi Omri, Frenkel Boaz, Capucha Tal, Krasovsky Andrei, Recea Vasile**

*Rambam Healthcare Campus, Haifa, Israel*

## Background:

Temporomandibular joint (TMJ) ankylosis severely impairs jaw mobility, presenting an anticipated difficult airway where direct glottic visualization is unachievable. Although fiber-optic nasal intubation under preserved spontaneous ventilation remains the standard primary technique, risk of major epistaxis causing video equipment obscuring, airway compensation and emergent intubation plan change - persists. Patient-specific 3D-printed anatomical models of the nasal passage provide essential preoperative visualization to evaluate luminal patency, optimize nostril selection, and determine precise endotracheal tube dimensions.

## Methods:

Between March and December 2025, six patients with TMJ ankylosis (four pediatric, two adult) were managed by a multidisciplinary clinical team of anesthesiologists and OMF surgeons. Preoperative CT-derived 3D nasal airway models were fabricated based on bony anatomy to guide airway strategy. Spontaneous ventilation with light sedation and topical mucosal anesthesia was maintained throughout induction.

## Results:

Case No. Age and Sex Etiology for TMJ ankylosis Initial maximal measured gap between incisors Chosen A.W management
1 3 F Rt. otitis media -> Mastoiditis and emergent mastoidectomy 4 mm. Oral
2 2 M Lt. otitis media -> Mastoiditis 9 mm. Nasal
3 3 F Lt. otitis media -> Mastoiditis 10 mm. Nasal
4 46 F Past Lt. face trauma 10 mm. Nasal
5 27 F Bilateral autoimmune ankylosis 11 mm. Nasal
6 7 M Past Lt. mandibular condyle fracture 10 mm. Oral

Nasal fiber-optic intubation was implemented in four cases. In two pediatric cases, 3D models identified severe nasal cavity narrowing, prompting planned oral fiber-optic intubation.
First-attempt intubation was accomplished in all cases without adverse events, including desaturation, epistaxis, or dental trauma.

## Conclusion:

Patient-specific 3D-printed airway models serve as a highly effective preoperative adjunct, optimizing airway decision-making, tube sizing, and procedural safety.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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## Figure Attachment (PDF):

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# Unanticipated difficult laryngoscopy from a presumed laryngeal mass during retrograde intrarenal surgery: rescue with video laryngoscopy and a bougie, and a normal same-day ENT examination

**Dr. David Simon Rubin, Dr. Philip Perlov**

*Kaplan medical center, Israel*

## Objectives:

To report an unanticipated difficult laryngoscopy caused by an apparent laryngeal mass in a patient whose pre-operative airway assessment was entirely reassuring, and to show how the intra-operative impression was resolved by flexible nasolaryngoscopy on the same day.

## Method:

Single case report. Data were taken from the anaesthetic and surgical records, the video-laryngoscope image and the ENT examination. The patient consented to publication; no identifying information is reported.

## Result:

A 63-year-old man (81 kg, ASA I) presented for elective right retrograde intrarenal surgery with laser lithotripsy. He had no airway symptoms, a modified Mallampati class II airway, and normal thyromental distance, mouth opening, neck circumference and neck movement. After pre-oxygenation, induction used lidocaine 1 mg/kg, fentanyl 100 µg, propofol 2 mg/kg and rocuronium 50 mg. A single direct laryngoscopy gave a Cormack-Lehane grade 3/4 view, the glottis obscured by a right-sided mass-like lesion. Help was called immediately and mask ventilation remained excellent. Video laryngoscopy (GlideScope Go) exposed the cords and a bougie guided a 7.5 mm cuffed tracheal tube. Surgery was uneventful. After the on-call ENT physician reviewed the video-laryngoscope image, the trachea was extubated fully awake following sugammadex. Flexible fibreoptic nasolaryngoscopy performed by ENT in the recovery room the same day was normal: anatomy slightly atypical but within normal limits, with no lesion suspicious for tumour. He was discharged on postoperative day 1.

## Conclusions:

A reassuring bedside assessment does not exclude difficult laryngoscopy, and an intra-operative "mass" may not survive awake endoscopy. Early help with a video-laryngoscope-and-introducer strategy resolved the event. Unexpected findings should be described rather than labelled, imaged when possible, and closed out with prompt ENT review, so that the patient is neither wrongly labelled with a laryngeal tumour nor left without follow-up.

## Figure Attachment (PDF):

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# From Obstetric Hemorrhage to Complex Spine Surgery: Implementing Quantitative Blood Loss Measurement to Improve Intraoperative Situational Awareness and Patient Outcomes

**Lax Jerome[1], Hammad A. Khan[2], Dennett Haleigh[3], Sheerin Kathleen[3], Lau Darryl[2]**

1. *Department of Anesthesiology, Perioperative Care, and Pain Medicine, NYU Grossman School of Medicine / NYU Langone Health, USA*
2. *Department of Neurosurgery, NYU Grossman School of Medicine / NYU Langone Health, USA*
3. *Perioperative Nursing, NYU Langone Health, USA*

## Objectives:

Major blood loss is common in complex spine surgery, yet intraoperative assessment often relies on visual estimation, which may delay recognition of hemorrhage severity and limit timely response. Recognizing both this gap in practice and the success of quantified blood loss (QBL) protocols in obstetrics, we sought to adapt that model to the spine operating room through a multidisciplinary workflow centered on measurement, communication, and situational awareness.

## Methods:

This quality-improvement initiative was developed at NYU Langone Health to address the limitations of estimated blood loss during high-blood-loss spine procedures. Drawing on established obstetric hemorrhage workflows, anesthesiologists collaborated with operating room nurses and spine surgeons to design a spine-specific QBL process. Implementation was facilitated by perioperative nurses familiar with obstetric QBL. Core elements included staff education, standardized real-time volume-based blood loss measurement, interval communication of cumulative blood loss to the operative team, and incorporation of QBL into intraoperative resuscitation planning. Prospectively captured QBL data subsequently enabled retrospective clinical outcome analysis.

## Results:

The QBL workflow was successfully integrated into complex spine procedures and established a standardized method for assessing blood loss during dynamic hemorrhage. Implementation improved communication among nursing, anesthesia, and surgical teams and enhanced shared situational awareness regarding ongoing blood loss. In downstream analyses enabled by this workflow, improved blood loss quantification was associated with lower postoperative transfusion rates (38% vs 83%), fewer postoperative red blood cell units transfused (0.5 vs 1.6 units), and shorter hospital length of stay (7.2 vs 8.9 days).

## Conclusions:

QBL implementation in the spine operating room is a feasible and potentially transformative quality and safety intervention. Adapting an obstetric hemorrhage model to complex spine surgery improved intraoperative awareness, standardized communication, and created a foundation for data-driven blood management associated with improved perioperative efficiency and recovery.

## Figure Attachment (PDF):

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# Anesthetic Management of a Patient with Previous Reversible Cerebral Vasoconstriction Syndrome (RCVS) Complicated by Ischemic Stroke Undergoing Bilateral Breast Reconstruction

**Yosef Sisay, Stéphane Ledot, Joel Shapiro**

*Hadassah Ein Kerem Hospital*

## Objectives:

Reversible cerebral vasoconstriction syndrome (RCVS) is a rare but significant disorder of cerebral vascular tone that can cause ischemic stroke, hemorrhage, and seizures in young adults. Managing a patient with history of RCVS complicated by ischemic stroke for major non-neurosurgical surgery requires physiological understanding of factors which could affect cerebral vasculature, influencing tone and thereby cerebral oxygenation in the perioperative period.

## Methods:

A 55-year-old woman with breast cancer with previous RCVS, complicated by seizure and subsequent ischemic stroke with residual right-sided proprioceptive and coordination deficits underwent bilateral skin-sparing mastectomy with direct-to-implant and bilateral nerve graft reconstruction under general anesthesia with a 7.0-mm ETT. Prior to anesthesia induction, a radial arterial catheter was placed and bilateral ultrasound-guided T1-T4 thoracic paravertebral block was performed using 15 ml, 0.25% bupivacaine. The patient was monitored with standard ASA monitors and bilateral cerebral near-infrared spectroscopy. General anesthesia was maintained with sevoflurane and remifentanil at 0.01-0.02 µg/kg/min.

## Results:

Intraoperatively, there were no excessive hypertensive episodes. Intermittently low MAP readings occurred, with a nadir of 60 mmHg. Bilateral cerebral regional oxygen saturation remained within 66-76%, without a sustained decline from baseline. Following conversion to controlled ventilation, ETCO□ was in the range of 34-40 mmHg. For 8 hours of PACU monitoring, blood pressure remained 111/67-136/89 mmHg without vasoactive therapy. She was discharged after a 2-day ward stay without new neurological deficits, thunderclap headaches, or seizures, and with no change in pre-existing deficits.

## Conclusions:

In patients with previous RCVS, perioperative management should prioritize avoidance of significant physiological changes that compromise cerebral perfusion or provoke vascular tone instability. In such patients, continuous monitoring of arterial pressure, normocapnia, multimodal analgesia, and cerebral oximetry is helpful for individualized management. Although NIRS shows trends of cerebral oxygenation, it is not an indicator of cerebral perfusion.

## Figure Attachment (PDF):

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# Anesthetic management of a patient with a kinked endotracheal tube

**Nathalie Abitbol MD MBA, George Zhou MD MS**

*University Of Miami, USA*

## Objectives:

Identify the clinical signs of endotracheal tube (ETT) obstruction.
Recognize the environmental factors that cause standard PVC tubes to soften and kink.
Formulate a management plan to safely exchange exchange the ETT to a reinforced tube.

We describe the case of 58-year-old woman in a craniotomy for tumor resection. After standard induction and easy intubation with a standard PVC ETT, patient was positioned supine and the operating room table turned 180°, with head pinned by neurosurgery. Three hours into the procedure, increased peak pressures and upsloping of capnography were noted, suggesting airway obstruction. Albuterol was given and anesthetic deepened. On auscultation, no wheezing, but coarse breath sounds were heard. Examination of the ETT and circuit revealed the tube to still be taped at 21 cm at the lips, with no apparent kinking of the circuit or ETT up until the mouth.

Fiberoptic examination however revealed a severe kink proximal to the glottis and the ETT was successfully exchanged, over an Aintree intubation catheter to a reinforced ETT without complication or hemodynamic instability. Remainder of the procedure was uneventful; patient was successfully extubated at the end of the procedure.

ETT kinking under anesthesia is a rare but critical and life-threatening airway obstruction. It may result from positioning (extreme head/neck flexion), weight of the circuit or from tube softening due to temperature. Standards ETT are made of PVC which makes them malleable; they tend to bend under warmer and moist conditions, such as that of the buccal cavity, especially in procedures where the surgical drapes cover the head, trapping in heat. Though a reinforced ETT may not be used in all cases due to cost considerations, it may be worthwhile considering it in long cases in which the airway is remote and temperature is expected to rise due to heat trapping.

# Abstracts Presentation Session

## 18/11 | 10:00-11:00

**Moderator: Dana Baron Shahaf**

## Cardiothoracic and Airway Anesthesia Neuroanesthesia and Perioperative Care

# Is It Just A Headache? Or Something More Sinister? Disseminated Cryptococcus in a Newly Diagnosed HIV/AIDS Patient

**Jordan Miller, Kara Eberhardt**

*Advent Health*

Disseminated cryptococcal meningitis is a severe, life-threatening opportunistic infection that affects patients with advanced Acquired Immunodeficiency Syndrome (AIDS). It's caused by Cryptococcus neoformans, which is an encapsulated yeast widely that is found in the environment such as soil. In individuals with normal immune systems, infection is asymptomatic but in patients with immunosuppression, typically with CD4+ T-cell counts below 100 cells/μL, it can disseminate, even to the CNS. Anesthetic management can include treating elevated intracranial pressures.

A 21year old male presented to the emergency department on three separate occasions with flu-like symptoms and headache. During his third ER visit, a screening HIV test was found to be positive and he was noted to have a fever. The patient endorsed unintentional weight loss of 10 pounds and worsening facial lesions. He was subsequently admitted to the hospital service and infectious disease was consulted. The patient underwent lumbar puncture on hospital day 2 revealing an elevated opening pressure of 41 cm H2O and a positive serum and CSF Cryptococcus Antigen.

Due to elevated ICP's and a change in mental status the patient was subsequently admitted to the ICU where he was later intubated for airway protection. The patient had a lumbar drain placed for CSF drainage and management of elevated ICP's while in the ICU. CSF findings showed positive Crypto Antigen titer . MRI showed evidence for lesions in the caudate nucleus, likely secondary to his cryptococcal meningitis. He was extubated on hospital day 9 and subsequently reintubated and transferred back to the ICU, where he continued to fail weaning from the ventilator and the decision was made to ultimately place a tracheostomy and PEG tube. After about three weeks of hospitalization the patient received an Ommaya reservoir.

The unique aspects of this case include that the patient presented with vague, nonspecific symptoms and had rapid progression of symptoms leading to a devastating neurological examination. It is notably helpful that the Advent Health ER is now doing screening HIV tests as there is a high incidence of HIV/AIDS in this population. Anesthetic management of elevated intracranial pressures in the operating room, as well as in the ICU, can include treating patients with diuretics such as mannitol or Lasix. Hyperventilation is another technique to temporize the effects of elevated intracranial pressures. Avoiding albumin and hypotonic fluids in the setting of high ICPs and using normal saline is another important management tip. Hypertonic saline can be helpful acutely to help decrease brain edema.

### Figure Attachment (PDF):

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# Intracranial Hemorrhage as a Complication of Elective Spinal Surgery

**Jordan Miller**

*Advent Health*

Intracranial hemorrhage (ICH) is a rare but devastating complication following spinal surgery. It most commonly is associated with intracranial hypotension due to excessive cerebrospinal fluid (CSF) loss resulting in tearing of bridging veins. Subdural bleeding is the most common pattern followed by intra-cerebral and cerebellar hemorrhage. Presentation of symptoms may occur hours to days following surgery with severe headache, altered mental status, nausea, vomiting, cerebellar dysfunction, cranial nerve deficits or seizure. Differentiating from delayed emergence from anesthesia requires prompt recognition of neurological deficits. Diagnosis of ICH is done via CT imaging of the brain. Elevated Intracranial pressure requires medical management and surgical intervention (e.g., cranial decompression, hematoma evacuation) may be required.

A 66-year-old male with a history of hypertension underwent T10-pelvis posterior spinal fusion. The intra-operative course was notable for 45 min of intractable post-induction hypertension. Postoperatively, the patient was admitted to the surgical/neurological ICU for delayed emergence from anesthesia. Shortly after arrival, seizure-like activity prompted emergent CT imaging of the brain significant for a large left frontotemporal intraparenchymal hemorrhage with extension into the brainstem and cerebellum. The patient underwent emergent hemi-craniectomy.

Postoperative imaging showed pneumocephalus, increasing intracranial blood products with mass effect and effacement of the left lateral ventricle. Overnight, the patient had no response to painful stimulation and developed fixed and dilated pupils consistent with severe neurologic injury. Following discussion with family, care was withdrawn and the patient passed away.

This case describes ICH following spinal surgery. Post-operative neurologic decline, unusual headaches or cranial nerve deficits should raise suspicion for intracranial hemorrhage.
Peri-operative risk factors for intracranial hemorrhage

- Suspected CSF leak or excessive drainage
- Severe peri-operative hypertension
- Rapid intracranial pressure changes
- Coagulopathy or anticoagulation
- Venous congestion.

Initial management focuses on stabilization then prevention of secondary brain injury:

- Airway protection if GCS < 8
- Maintain normocapnia (PaCO2 35-40 mmHg)
- Elevate head of bed to 30° with midline neck positioning
- Correction of any coagulopathy or anticoagulation
- Controlling blood pressure to assure adequate cerebral perfusion pressure
- Management of elevated intracranial pressure with hypertonic saline or mannitol.

Ongoing ICU management may focus on preventing further neurologic injury through temperature control, glucose monitoring and seizure prophylaxis. In this case, prolonged severe intraoperative hypertension may have contributed to hemorrhage risk in the setting of potential CSF-related intracranial pressure shifts.

### Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# Paradoxical Air Embolism Following Arterial Line Air Entry in a Patient With a Patent Foramen Ovale: A Case Report of Emergent Hyperbaric Oxygen Therapy

**Jordan Miller**

*Advent Health*

Air embolism is a rare but potentially devastating complication of invasive vascular procedures. Although venous air embolism is typically filtered by the pulmonary circulation, the presence of a patent foramen ovale (PFO) can allow paradoxical passage of air into the circulation. Prompt recognition and hyperbaric oxygen therapy may be critical for improving outcomes.

A 59-year-old man with a past medical history of chronic obstructive pulmonary disease, hypertension, end-stage renal disease, heart failure, and anemia underwent small bowel resection after developing a small bowel volvulus. After removal of arterial line in the intensive care unit, the patient had an acute episode of unresponsiveness and required reintubation. Computed tomography demonstrated multiple foci of intravascular air concerning for systemic air embolism. Echocardiography showed a patent foramen ovale, showing a potential route for paradoxical embolization. The patient was transferred for hyperbaric oxygen therapy. The patient demonstrated significant neurologic improvement and ultimately experienced a full clinical recovery.

This case shows the potential for catastrophic air embolism following arterial line removal. It is important to consider paradoxical embolization in patients with a PFO who develop sudden neurologic changes. Rapid recognition, diagnostic imaging, identification of an intracardiac shunt, and transferring for hyperbaric oxygen can improve patient outcomes. Careful attention to removal of catheters and prompt evaluation of unexplained neurologic deterioration are essential to minimizing morbidity from this rare complication.

### Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# Postoperative delirium among older adults undergoing neck of femur fracture surgery: a prospective observational study

**Jessica Theodorie[1], Tamara Dvalashvili[1], Etan Gozal[1], Shiri Zarour[1], Stephan Ledot[1], Fatma Shalabi[2]**

1. *Division of Anesthesia, Intensive Care, and Pain Management, Hadassah Medical center, Jerusalem, Israel*
2. *Division of Neurology Department, Hadassah medical Center, Jerusalem, Israel*

## Background:

Postoperative delirium (POD) is a common complication following hip fracture surgery and is associated with adverse postoperative outcomes. Early identification of high-risk patients may facilitate targeted preventive strategies and perioperative optimisation. We aimed to determine POD incidence following hip fracture surgery and explore perioperative factors associated with its occurrence.

## Methods:

This prospective observational study included consenting patients aged ≥70 years who underwent hip fracture surgery at a tertiary academic centre between January and June 2026. Delirium was assessed daily using the Confusion Assessment Method (CAM), with POD defined as at least one positive postoperative assessment throughout their hospital admission.

Baseline and perioperative characteristics were compared according to POD status using appropriate statistical tests.

## Results:

Overall, 34 patients were included in the analysis (mean age 81.8 ± 7.7 years; 52.9% ASA physical status III–IV; 7.6% were frail; and 47.1% had a Mini-Cog score ≤2). The incidence of POD was 8.8% (3/34). Compared with patients who did not develop POD, those with POD had higher preoperative creatinine (1.9 [1.5–2.0] vs 1.0 [0.8–1.1], p=0.036) and BUN (25.5 [25.2–37.5] vs 16.5 [12.9–23.3], p=0.045). They also had lower preoperative Mini-Cog scores (1.0 [0.5–1.5] vs 3.0 [2.0–4.0], p=0.015), including lower Serial 7 scores (0.0 [0.0–0.0] vs 4.0 [1.8–5.0], p=0.039).

## Conclusions:

POD occurred in 8.8% of patients, relatively low incidence compared with that commonly reported following hip fracture surgery. This may reflect potential selection bias associated with the informed-consent requirement, which may have resulted in a cohort with relatively preserved baseline cognitive function. Although these findings are preliminary given the small number of delirium events, patients who developed POD demonstrated poorer preoperative cognitive performance and greater renal dysfunction. Larger prospective studies including patients across the full spectrum of baseline cognitive function are needed to better characterize POD incidence and associated risk factors in this population.

# Preoperative geriatric vulnerability and in-hospital length of stay following hip fracture surgery in older adults: a prospective observational study

**Tamara Dvalashvili, S Ledot, S Zarour, F Shalabi, J Theodorie, E Gozal**

*Hadassah Ein Kerem Hospital*

## Background:

Hip fracture surgery in older adults is frequently followed by prolonged hospitalization and delayed recovery. Conventional perioperative risk assessment may not fully capture multidimensional geriatric susceptibility. We aimed to assess in-hospital length of stay (LOS) following hip fracture surgery and explore its association with preoperative markers of geriatric vulnerability.

## Methods:

This prospective observational study included patients aged ≥70years undergoing neck of femur fracture surgery at a tertiary academic center between 01/26 and 06/26. Preoperative assessment included age, ASA physical status, modified frailty index, Mini-Cog, Barthel Index (BI), and Lawton-Brody Instrumental Activities of Daily Living (IADL) Scale. Associations with LOS were explored using parametric or non-parametric tests as appropriate.

## Results:

Overall, 34 patients were included in the analysis. Median hospital LOS was 6.5 [4.0-8.75] days. Longer LOS was associated with older age ($\rho$=0.368, p=0.032), higher ASA physical status ($\rho$=0.400, p=0.019), lower baseline BI scores ($\rho$=−0.389, p=0.023), and greater IADL dependency ($\rho$=0.396, p=0.020). Patients with Mini-Cog ≤2 had a longer median LOS than those with Mini-Cog >2 (7.5 [5.0-12.5] vs 5.0 [4.0-7.0] days, p=0.022). Median LOS increased across frailty categories, from 4.0 [4.0-5.5] days in non-frail patients to 7.0 [5.0-9.0] days in pre-frail patients and 11.5 [7.5-14.0] days in frail patients (p=0.020). Similarly, patients with moderate-to-severe baseline ADL impairment had a longer median LOS than those without (8.0 [6.0-14.0] vs 5.0 [4.0-7.0] days, p=0.006).

## Conclusions:

Prolonged LOS was associated with multiple domains of preoperative vulnerability, including older age, greater comorbidity burden, frailty, cognitive impairment, and functional dependency. Despite the small sample size and exploratory nature of the analysis, the consistency of associations across several geriatric domains suggests that multidimensional preoperative assessment may provide clinically relevant information beyond conventional perioperative risk assessment. Larger prospective cohorts and investigations may facilitate targeted perioperative interventions and improve postoperative recovery.

# Functional decline among older adults after neck of femur fracture surgery – a prospective observational study

**Eytan Gozal, Stephan Ledot, Shiri Zarour, Fatma Shalabi**

*Hadassah medical center, Jerusalem*

## Background:

Functional status is a major outcome following hip fracture surgery and is highly prioritised by older adults. Identifying factors associated with poor functional recovery may reveal opportunities for perioperative intervention and optimisation. We aimed to assess functional decline and associated factors 90 days after hip fracture surgery.

## Methods:

We conducted a prospective observational study of patients aged ≥70 years undergoing hip fracture surgery between January and June 2026, after receiving their consent. Functional status was assessed at baseline, and at 90 days postoperatively using the Barthel Index (BI) and the Lawton–Brody (IADL) Scale. The primary outcome was change in BI score. The secondary outcome was change in IADL scale.

## Results:

The cohort included 34 patients. Baseline BI was 90 [71.8–100], and baseline IADL was 3 [1–5]. 90-day functional outcome data were available for 18 patients. BI decreased from 90 to 77, corresponding to a median decline of 10 points (p=0.046). Greater BI decline was associated with older age (p=0.025), lower baseline Serial 7 scores (p=0.003), and longer duration of intraoperative hypotension (p=0.041). For the secondary outcome, IADL decreased from 6 [3.3–8] to 3 [1–5], corresponding to a median deterioration of 1.5 points (p=0.015). In sensitivity analyses, 50% deteriorated by ≥1 BI dependency class, 39% deteriorated by ≥1 IADL dependency class, and 33% experienced a ≥20-point decline in BI.

## Conclusions:

Older adults undergoing hip fracture surgery experienced significant functional decline, affecting both ADL and IADL. Half of patients deteriorated by at least one Barthel dependency class, while nearly 40% deteriorated by at least one IADL dependency class. Given the small sample size, these findings should be considered preliminary; however, the significant functional decline detected within this small cohort warrants further investigation of functional decline and its associated risk factors among older adults undergoing hip fracture surgery in larger prospective studies.

# Emergent Fasciotomy Before Coronary Artery Bypass Grafting: Anesthetic Management. A Case Report

**Yonat Letzter, MD; Ruth Edry, MD**

*Rambam Health Care Campus, Haifa, Israel*

## Introduction:

Emergent non-cardiac surgery in patients with active ischemic heart disease awaiting CABG poses a major anesthetic challenge. We report the perioperative management of such a case using a continuous nerve block.

## Case Presentation:

A 77-year-old man with chronic kidney disease and unstable angina underwent transradial coronary angiography, which revealed severe triple-vessel coronary artery disease requiring coronary artery bypass grafting (CABG). Shortly after catheterization, acute forearm compartment syndrome was diagnosed, requiring emergent fasciotomy.

Given the patient's active ischemic heart disease, a continuous infraclavicular brachial plexus block with sedation was selected to minimize sympathetic stimulation and maintain hemodynamic stability. The procedure was completed uneventfully.

Postoperatively, the patient underwent recurrent painful wound treatments, for which analgesia was maintained via a perineural infraclavicular catheter for 22 days, followed by simple analgesics after catheter removal.
Fourteen days after admission, the patient underwent further wound debridement and split-thickness skin grafting under general and regional anesthesia. Thirty-three days after fasciotomy, the patient underwent an uneventful CABG. He recovered without major complications and was discharged home on postoperative day 5 after CABG.

## Discussion:

This case highlights the anesthetic challenge of urgent limb-salvage surgery in a patient at extremely high risk of major adverse cardiovascular events while awaiting CABG. Perioperative cardiovascular guidelines emphasize minimizing myocardial oxygen supply-demand imbalance through optimal perioperative management. Continuous peripheral nerve block may facilitate these goals by providing sustained postoperative analgesia, maintaining hemodynamic stability, and reducing exposure to systemic anesthetic and opioid agents. The role of regional anesthesia in reducing perioperative cardiovascular complications continues to evolve. This case illustrates its potential value as part of a perioperative cardiac risk-reduction strategy in carefully selected high-risk patients undergoing non-cardiac surgery.

## Reference:

Möllhoff T, et al. Regional anaesthesia in patients at coronary risk for noncardiac and cardiac surgery. Best Pract Res Clin Anaesthesiol. 2005;19:77-98.

# A slow-release liposomal-bupivacaine formulation for prolonged analgesia: reduced toxicity and increased efficacy in animal models

**Yael Shilo-Benjamini[1], Dima Shamrakov[2], Wiessam Abu Ahmad[3], Keith Nelson[4], Alina Nemirovski[5], Keren Turjeman[1], Yechezkel Barenholz[1]**

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## Objectives:

Acute postoperative pain is a major problem in human and veterinary medicine, with significant impact on suffering and welfare. Local anesthetics, such as bupivacaine HCl (BupHCl), provide excellent analgesia by blocking nerve conduction; however, pain relief lasts only several hours. Encapsulation of BupHCl in liposomal delivery systems can provide prolonged postoperative analgesia while decreasing BupHCl potential toxicity. Research goal was evaluation of liposomal-bupivacaine (L-BUP) formulation in animal models, focusing on safety, pharmacokinetics and analgesic efficacy.

## Methods:

Toxicity was tested in rats using escalating doses of L-BUP versus BupHCl. Pharmacokinetics and analgesic efficacy were evaluated in rats using the plantar-incision pain model comparing L-BUP, BupHCl, Exparel (a commercial bupivacaine liposome injectable suspension), empty liposomes and saline in a blinded manner. Pharmacokinetics and safety of high-dose L-BUP were evaluated in domestic pigs.

## Results:

L-BUP was 4-6-fold less toxic than BupHCl. Bupivacaine plasma concentrations were detected up to 8-hours, 72-hours and 120-hours following BupHCl, Exparel and L-BUP, respectively. Empty liposomes and saline did not provide any analgesia, while L-BUP provided postoperative analgesia for 5-8 days, and was superior to BupHCl (8-hours) or Exparel (<48-hours). In pigs, no adverse events were observed. A single L-BUP dose resulted in detectable bupivacaine plasma concentrations and sustained tissue retention for 1-week, and minimal histologic changes at the injection site.

## Conclusion:

L-BUP provided a sustained-release pharmacokinetic profile, decreased toxicity and prolonged effective postoperative analgesia in preclinical animal models. Treatment with L-BUP offers a promising non-opioid analgesic approach that can mitigate the gap in pain management, supporting its clinical development.

# Paired Cytokine Profiles in Amniotic Fluid Embolism With and Without Early Anti-Inflammatory Therapy

**Barbara Orlando, Irene Stafford, Devangi Mahtani, Miranda Klassen**

*UT Health Houston*

## Objective:

Amniotic fluid embolism (AFE) remains an unpredictable, unpreventable cause of maternal mortality. Although historically attributed to embolization of amniotic fluid into the maternal pulmonary circulation, emerging evidence supports a systemic inflammatory or anaphylactoid mechanism. Cytokine dysregulation may precede or accompany AFE, with levels exceeding those reported in other obstetric critical illnesses. We evaluated inflammatory responses before and during AFE in two patients, one of whom received the investigational 50/50/500 regimen.

## Study Design:

The AFE Registry and Biorepository prospectively collects clinical data and biospecimens from patients with AFE. Two patients with clinically confirmed AFE and available pre-event and event blood samples were identified between 2019 and 2022. Both presented with acute dyspnea and cardiovascular collapse during labor and experienced AFE. Pre-event samples were obtained 32 and 28 hours before AFE onset and event samples were collected 35 and 42 minutes after onset. Both patients underwent emergent cesarean delivery complicated by disseminated intravascular coagulation and massive transfusion. Patient B received diphenhydramine 50 mg, famotidine 50 mg, and hydrocortisone 500 mg during the AFE code. Cytokines were analyzed in blinded fashion.

## Results:

Pre-event IL-6 and TNF-α levels were low in both patients, while IL-8 was elevated compared to control patients presenting for labor. During AFE, IL-8 increased to approximately 2,800–3,000 pg/mL in untreated Patient A versus 48–55 pg/mL in treated Patient B, representing approximately 150–200-fold versus 2–3-fold increases from baseline, respectively (Table 1). Patient A required 29 units of packed red blood cells (PRBC) and six hospital days; Patient B required 4 units PRBC, and four hospital days.

## Conclusion:

These rare paired pre-event and event samples demonstrate marked inflammatory activation during AFE and suggest that IL-8 elevation may precede clinical collapse. The attenuated cytokine response observed after early 50/50/500 administration is hypothesis-generating and warrants further study; anti-inflammatory therapy for AFE remains investigational.

## Figure Attachment (PDF):

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# Anesthetic Management of Pregnant Patients with Preeclampsia Undergoing Cesarean Delivery: An International Multicenter Retrospective Study

**Ilia Kholod, Alexander Ronenson, Emilia Guasch, Daniel Shatalin, Susana Manrique Muñoz, Veronica Alonso Mendoza, Isabel Valbuena Gómez, Nicolas Brogly, Alexander Ioscovich**

*Shaare Zedek Medical Center*

## Objectives:

To compare contemporary anesthetic management, perioperative care, and maternal and neonatal outcomes in women with preeclampsia undergoing cesarean delivery across two healthcare systems, and to identify differences in clinical practice between obstetric centers in Spain and Israel.

## Methods:

This multicenter retrospective observational study included women with preeclampsia who underwent cesarean delivery between January 2022 and December 2023 at two tertiary obstetric centers in Spain and one tertiary center in Israel. Maternal demographics, disease severity, laboratory findings, anesthetic techniques, intraoperative management, postoperative complications, and neonatal outcomes were extracted from electronic medical records. Statistical comparisons were performed using Student's t-test, Mann-Whitney U test, chi-square test, or Fisher's exact test, as appropriate.

## Results:

A total of 239 patients were included (Spain, n=137; Israel, n=102). Severe preeclampsia was more common in Spain (83.2% vs 65.7%, P=0.002), and early-onset disease occurred more frequently (50.4% vs 25.5%, P<0.001). Neuraxial anesthesia was the predominant technique in both groups. Spinal anesthesia was performed more frequently in Israel (67.6% vs 25.5%), whereas combined spinal-epidural anesthesia was more common in Spain (32.8% vs 2.9%; P<0.001). General anesthesia rates were comparable (8.8% vs 9.8%). Intraoperative antihypertensive therapy was administered more often in Israel (20.6% vs 2.7%, P=0.011), while magnesium sulfate was used more frequently in Spain (23.3% vs 11.8%, P=0.034). Postpartum hemorrhage and major anesthetic complications were similar between groups. However, postoperative ICU/PACU stay was significantly longer in Spain (median 24 vs 5 hours, P<0.001). Neonates in Spain had lower birthweight, lower 1-minute Apgar scores, and higher rates of neonatal complications and NICU admission (P<0.05 for all).

## Conclusions:

Although neuraxial anesthesia was the preferred anesthetic technique in both countries, substantial differences were observed in anesthetic practice, perioperative management, and postoperative resource utilization. These findings demonstrate persistent international variation in the management of preeclampsia despite current guideline recommendations and highlight opportunities for harmonizing evidence-based anesthetic care.

## Figure Attachment

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# Abstracts Presentation Session

## 18/11 | 11:15-12:30

**Moderator: Shiri Zarour**

# A Single Integrated Platform for Anesthesia Residency Documentation: A Ten-Week Implementation Study

**Dr. Yehonatan Solomonov, Aeyal Raz, Daniel Braunold**

*Rambam Health Care Campus, Israel*

## Objective:

Competency documentation in our anesthesia residency was fragmented across spreadsheets, web-forms, and an internal exam platform. Workplace-based assessments (DOPS/CEX) were infrequent and completed long after the observed case; case logs were unstructured and could not be mapped to syllabus requirements; rotation allocation, rotation evaluation, and simulation attainment were unmonitored. We aimed to evaluate feasibility and adoption of a single integrated platform.

## Methods:

We developed a web-based residency management platform (single clinician-developer, AI-assisted coding) covering DOPS/CEX assessment, structured syllabus-aligned case logging, rotation allocation and evaluation, MCQ examinations, and simulation records. It was deployed department-wide in a tertiary academic anesthesia residency in July 2026, replacing spreadsheet and form-based workflows. We retrospectively analysed platform records over the first ten weeks to assess uptake, documentation volume, and timeliness.

## Results:

72 users registered (37 residents, 35 attendings, including 5 administrators); 54 (75%) generated recorded activity. Residents logged 2,254 structured cases (33/37 residents, 89%; median 56, IQR 30–108), entered a median of 0.6 days after the case. 119 DOPS/CEX requests yielded 109 completed assessments (60 DOPS, 49 CEX) in 25 residents by 19 attendings, at a median of 29 hours from request to completion (46% within 24 hours). Rotation allocation was centralised (375 allocations), and 25 rotation evaluations were recorded, previously undocumented. 5 MCQ examinations were completed by 22/23 eligible residents (92/111 attempts). 77 historical simulation evaluations (27 residents, February 2025–June 2026) were consolidated into a single auditable record; 13 were completed prospectively.

## Conclusions:

A single integrated platform for anesthesia residency documentation was feasible to develop and was adopted department-wide within ten weeks, producing simultaneous case and assessment records where previously none were systematically retrievable. Attending participation and simulation logging remain uneven. This single-centre descriptive analysis cannot demonstrate improved competence; comparison with pre-implementation documentation and syllabus-coverage reporting are planned.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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## Figure Attachment (PDF):

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# Bridging Anaesthesia Care Gaps in LMICs: Myths, Dogmas and Practical Routes to Safe Equitable Care

**Gobti Beltus Abongha, Stephane Frederic Pierre Ledot**

*Hadassah Ein Kerem Hospital*

## Objectives:

To examine common assumptions that may misdirect efforts to strengthen anaesthesia services in low- and middle-income countries (LMICs), using Cameroon as an illustrative country case.

## Methods:

Narrative review of evidence on anaesthesia capacity, workforce, oxygen, equipment, medicines, monitoring, recovery care, referral systems, financing, governance, and health-system strengthening in LMICs and Cameroon.

## Results:

Safe anaesthesia is essential for surgical, obstetric, trauma, and emergency care, yet access remains markedly unequal. Limited availability reflects interconnected deficits in personnel, oxygen and electricity, medicines, monitoring, equipment maintenance, postoperative recovery, referral pathways, financing, and governance. Technology, task-sharing, equipment donations, and international guidance can support service delivery; however, each depends on functioning local systems. Evidence from Cameroon illustrates both persistent capacity constraints and the value of locally governed, data-informed responses.

## Conclusion:

Safe anaesthesia should be treated as a core component of universal health coverage and resilient emergency, critical, and operative care. Sustainable improvement requires locally led strengthening of the full anaesthesia system rather than isolated investments in technology, training, or donated equipment.

## Keywords:

anaesthesia; global surgery; low- and middle-income countries; health systems; workforce; oxygen; perioperative safety; universal health coverage

# From Clinical Exposure to Personalized Learning: A Digital Platform for Anesthesiology Residency Education

**Dr Shira Pelleh Libman, Dr Lilach Hazan Van-Duyn**

*Kplan Medical Center Israel*

## Background:

Anesthesiology residency requires acquiring complex knowledge and procedural skills. Traditional logbooks document clinical activity but fail to assess knowledge acquisition. Consequently, residents lack insight into personal knowledge gaps, and training programs lack real-time visibility into educational progress and curriculum coverage.

## Objective:

To implement and evaluate a digital platform integrating clinical exposure tracking, curriculum monitoring, formative knowledge assessment, and real-time educational dashboards for anesthesiology residents.

## Methods:

A mobile-optimized digital educational platform was implemented in our anesthesiology department. Residents rapidly document clinical encounters at the point of care. The system links these exposures to relevant curriculum topics and generates customized multiple-choice assessments. This provides formative feedback to highlight areas requiring further study and supports preparation for the Israeli board examinations. Additionally, dedicated dashboards give training supervisors real-time data on individual and departmental clinical exposure, syllabus coverage, and learning progress.

## Results:

The platform is in active use by residents, successfully integrating frictionless clinical documentation with immediate knowledge assessment. It enables the individualized identification of learning gaps and displays transparent visual syllabus progression. At the program level, cohort-matrix dashboards provide a real-time overview of educational progress, allowing supervisors to identify areas of underexposure and tailor future teaching and clinical opportunities accordingly.

## Conclusions:

This platform transforms the traditional logbook into an integrated, case-based learning and assessment system. By connecting clinical exposure with curriculum mapping and real-time monitoring, it facilitates personalized learning and provides actionable data on educational progress. Prospective evaluation will determine its impact on knowledge acquisition, clinical preparedness, and board examination performance.

## Figure Attachment (PDF):

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# From Fragmented Local Resources to Streamlined National Engagement: Rapid Uptake of a Textbook-Grounded LLM Question Platform for Anesthesia Board Examination Preparation

**Yonatan Khalatnik, Daniel Iluz-Freundlich**

*Rabin Medical Center, Israel*

## Objectives:

Anesthesiology residents in Israel have traditionally relied on informal, department-level question banks of variable quality and reach, limiting both access to shared resources and the ability to benchmark knowledge nationally. We developed PERL, a free national platform pairing board-style questions with textbook-grounded feedback and nationwide performance data, and examined its adoption across one exam cycle.

## Methods:

PERL opened to registration on May 22, 2026, without institutional mandate or promotion. It included 2,047 items from past board examinations and departmental quizzes. Feedback was generated through an LLM retrieval pipeline based on Miller's Anesthesia, 10th edition, with source extract shown to users. Each question also displayed nationwide aggregate performance data. Anonymized usage logs through August 19, 2026, were analyzed.

## Results:

219 residents registered from 21 of 28 accredited departments, 79% in training years 1-3; 148 (67.6%) attempted at least one question, logging 33,616 attempts. Median correct-response rate was 64%. Activity peaked in June 2026 (28,188 attempts, 84%) and fell 94% from the 14 June peak on examination day.

## Conclusions:

Rapid voluntary uptake across three-quarters of Israeli Anesthesiology departments demonstrates the feasibility of transforming fragmented local question banks into a shared national learning resource. By providing access to a common question bank and national performance benchmarks, the platform offers a framework that may broaden access to educational resources. The concentration of use among junior residents and around the exam period, alongside the third of registrants who never attempted a question, suggests both strong demand and challenges for sustained engagement. Further work should assess validity and outcomes across training environments.

The authors would like to thank Dr. Shai Kropveld from Soroka Medical Center for initiating the national collaborative collection of departmental question banks, an effort that laid the foundation for the development of PERL.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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## Figure Attachment (PDF):

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# Perioperative Disclosure of GLP-1/GIP Receptor Agonist Therapy and Its Association with Pulmonary Aspiration and Anesthetic Complications: A Retrospective Cohort Study

**Omar Abu Ras, Feras Somri, Atila Faris, Mostafa Ramadan, Mostafa Somri**

*Bnai Zion Medical Center Israel*

## Background:

The increasing use of glucagon-like peptide-1 receptor agonists (GLP-1 RAs) and GLP-1/GIP co-agonists has raised concerns regarding delayed gastric emptying and perioperative pulmonary aspiration. We evaluated the association between preoperative disclosure of GLP-1 therapy and aspiration-related complications during anesthesia.

## Methods:

A retrospective cohort study was conducted at Bnai Zion Medical Center, Haifa, Israel. Adult patients undergoing elective surgical procedures between April 2025 and April 2026 were included. Emergency procedures were excluded. Electronic medical records, anesthesia charts, and preoperative assessment documentation were reviewed to identify patients receiving GLP-1 receptor agonist therapy. The primary outcome was peri-induction pulmonary aspiration or aspiration pneumonia.

## Results:

Among 9,091 surgical procedures performed during the study period, 2,240 emergency procedures were excluded, leaving 6,851 elective procedures for analysis. GLP-1 receptor agonist therapy was identified in 137 patients (2.0%). Preoperative disclosure of GLP-1 therapy occurred in 126 patients (91.9%), while 11 patients (8.1%) did not disclose treatment.

Among patients who disclosed treatment and discontinued therapy more than 7 days before surgery (n=81), no aspiration events occurred following standard induction. Among patients who discontinued therapy less than 7 days before surgery (n=50), rapid-sequence induction was utilized and one aspiration pneumonia event was documented. In contrast, all eleven patients who did not disclose GLP-1 therapy underwent standard induction and experienced clinically and radiographically confirmed peri-induction pulmonary aspiration.

## Conclusions:

Undisclosed GLP-1 receptor agonist therapy was strongly associated with perioperative pulmonary aspiration. Thorough preoperative medication screening, patient education regarding medication disclosure, and risk-adapted anesthetic management may reduce aspiration-related complications. As GLP-1-based therapies become increasingly prevalent, routine screening for their use should be incorporated into standard preoperative assessment protocols.

# Perioperative GLP-1 Receptor Agonist Use and Survival After Major Cancer Surgery: A Propensity-Matched Cohort Study

**Shir Bulis, Stephane Ledot, Barak Cohen, Alexander Avidan, Idit Matot, Itay Nitzan Tomer Talmy**

*Ichilov Medical Center (Sourasky)*

## Objectives:

GLP-1 receptor agonists (GLP-1 RAs) are increasingly prescribed for type 2 diabetes and obesity and have demonstrated potential antitumor effects in preclinical studies, as well as a reduction in obesity-related cancer incidence in epidemiological studies. However, clinical data on their association with long-term oncologic outcomes following cancer surgery remain limited.

## Methods:

Retrospective cohort study using the TriNetX U.S. Collaborative Network, including adults (≥18 years) undergoing major solid-tumor cancer surgery between January 1, 2014, and September 1, 2023. The primary exposure was GLP-1 RA use in the perioperative period. Propensity score matching (1:1) was performed on demographics, comorbidities including diabetes and obesity, oncologic diagnosis, and surgery type. The primary outcome was 3-year all-cause mortality. Sensitivity analyses compared GLP-1 RA users to patients prescribed alternative antidiabetic agents and subgroups stratified by sex, obesity status and chronic kidney disease.

## Results:

1,861 patients were included in each matched cohort. Perioperative GLP-1 RA use was not associated with a lower risk of 3-year mortality (13.7% vs. 13.9%; hazard ratio [HR], 1.00; 95% confidence interval [CI], 0.84-1.18; p = 0.962). No mortality benefit was observed in sensitivity analyses comparing GLP-1 RA users to matched patients prescribed sodium-glucose cotransporter-2 inhibitors (SGLT-2i) or dipeptidyl peptidase-4 inhibitors (DPP-4i) (HR, 1.15; 95% CI, 0.92-1.42) or in analyses stratified by sex, obesity and kidney disease.

## Conclusions:

In this large research network study, perioperative GLP-1 RA use was not associated with reduced mortality after major cancer surgery. As GLP-1 RAs become increasingly prevalent in the surgical population, prospective studies with granular data on drug timing, duration, and dose are warranted to determine whether these agents confer benefits in oncologic surgical patients.

## Figure Attachment (PDF):

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# Portable Vaporizers and Anesthesia Machines

**Alexander Berlin[1], Evgene Berlin[2]**

1. *Israel, Master of Technical Sciences*
2. *Germany, Master in Industrial Designe*

## Objectives:

Development of portable vaporizers and Anesthesia Machines for inhalation anesthesia in emergency situations (military field conditions, man-made disasters, emergency medical services), in district hospitals, remote regions, and on public transport (even in the absence of compressed oxygen sources) during surgical procedures (including pediatric dentistry, veterinary medicine, and gynecology).

## Methods:

The new MINIVAP vaporizer consist of 18 types of components and assemblies (excluding hardware), 70% of which were 3D-printed (stainless steel and titanium parts by JMP, Jerusalem; plastic parts on home Bambu Lab printer); the precision concentration regulator parts were made on CNC machines (by AL-MAGOR, Holon). 2 new MINIVAP Vaporizers assembled and tested in a home laboratory using certified measuring instruments (Anesthetic Gas Monitor RIKEN, accuracy ±3%, Flowmeters and Differential Pressure Gages Dwyer, accuracy ±3-5%).

## Results:

Distinctive features of the devices:

- Universal – work with compressed gas or ambient air
- Miniature and anesthetic economical – the vaporizer less of face mask
- Compatible with any Automatic Ventilator and O2 Concentrators
- Safe – works at vertical and overturned positions
- Stable when changing the gas flow rate (from 0.1 L/min)

«MINIVAP» Vaporizers from Titan are intended for tomography.

The stated characteristics have been confirmed by numerous surgical operations involving inhalation anesthesia of adults, children, and animals.

The 6 different models have been prepared for demonstration.

## Conclusions:

The new MINIVAP vaporizer combine the precision of a plenum vaporizer with simplicity of draw-over one and are intended for a wide range of patients weighing from 0,1 to 500 kg.

## References:

Dozens of patents (the latest is RU Patent 2,832,042 – 18/12/2024) and 7 books (the latest is "My Hobby: Anesthetic Vaporizers". Israel, 2026 / ISBN 978-965-596-406-6).

## Figure Attachment (PDF):

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# Hemodynamic Stability of Surgical Peripheral Nerve Block in Below-Knee Orthopedic Surgery

**Nimrod Shani[1], Andres Freundlich[2], Nahum Grinberg[3], Yaakov Gozal, Chair[2], Alexander Ioscovich[2], Ariel Grass[2]**

1. *Faculty of Medicine, Hebrew University of Jerusalem, Israel*
2. *Department of Anesthesia, Shaare Zedek Medical Center, Jerusalem, Israel*
3. *Foot and Ankle Unit, Department of Orthopedic Surgery, Shaare Zedek Medical Center, Jerusalem, Israel*

## Objectives:

Spinal anesthesia (SA) may induce sympathetic blockade and intraoperative hypotension, whereas general anesthesia (GA) carries systemic risks including cardiovascular, respiratory risks and more. The benefits of surgical peripheral nerve block (PNB) with sedation as a primary, sole anesthetic technique for below-knee surgery remain under-studied compared to SA. The study objective is evaluating whether surgical PNB reduces the incidence of intraoperative hypotensive events compared to SA in patients undergoing unilateral below-knee orthopedic surgery. We hypothesized that PNB would decrease the rate of intraoperative hypotension.

## Methods:

A retrospective single-center cohort study evaluated 112 adult patients undergoing unilateral below-knee orthopedic procedures (2022-2026). Patients were classified by anesthetic technique into a PNB group (n=34) and a SA group (n=78) selected using systematic random sampling. The primary outcome was at least one intraoperative hypotension event, defined as mean arterial pressure (MAP)<65mmHg. Secondary outcomes included any intraoperative vasopressor use, post-anesthesia-care unit (PACU) stay, anesthesia-to-incision time, postoperative pain numeric rating scale (NRS) and opioid consumption in oral morphine equivalents (OME). Groups were compared with chi-square or Fisher exact and t or Mann-Whitney tests; the primary outcome was adjusted for sex (logistic regression; two-tailed P<0.05).

## Results:

Intraoperative hypotension occurred in 44% of the PNB group vs 67% of the spinal group (P=0.025; adjusted OR for spinal 2.6, 95% CI:1.1-6.0). Vasopressor use (21% vs 33%, P=0.17) and PACU stay (98 vs 111 min, P=0.14) were non-significantly lower with PNB; GA-conversion was similar (3% vs 5%, P=1.0). Anesthesia-to-incision time was longer with PNB (57 vs 38 min; P<0.001). Postoperatively, PNB patients had lower pain (mean NRS 1.4 vs 2.3; P<0.001) and lower postoperative opioid consumption (median OME 30 vs 56; P=0.01).

## Conclusions:

In this retrospective cohort, surgical PNB for below-knee surgery was associated with less intraoperative hypotension and better postoperative analgesia than spinal anesthesia. Prospective studies are warranted.

# Best Abstracts
# 18/11 | 14:15

**Moderator: Dana Shahaf-Baron**

# Reconsidering Chest Decompression in Prehospital Trauma: From Registry Evidence to Guideline Change

**Ofer Almog MD, MHA[1,2,3], Tomer Talmy MD, MBA[1,2,3,4], Dean Lichter MD, MBA[2], Cole D. Bendor MD[1,2], Irina Radomislensky BSc[1,4], Avishai M. Tsur MD, MHA[1,2,5,6], Elon Glassberg MD, MHA, MBA[1,7,8]**

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3. *Division of Anesthesia, Intensive Care & Pain Management, Tel-Aviv Sourasky Medical Center, Tel-Aviv, Israel*
4. *The National Center for Trauma and Emergency Medicine Research, The Gertner Institute for Epidemiology and Health Policy Research, Sheba Medical Center, Tel-HaShomer, Israel*
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6. *Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel*
7. *The Azrieli Faculty of Medicine, Bar-Ilan University, Safed, Israel*
8. *The Uniformed Services University of the Health Sciences, Bethesda, Maryland, USA*

## Background:

Tension pneumothorax is traditionally regarded as a rapidly reversible cause of traumatic respiratory and circulatory collapse. In prehospital military trauma, however, the diagnosis is challenging, especially in severely injured patients with concurrent hemorrhagic shock, altered mental status, and limited diagnostic tools. Chest decompression may be lifesaving when true tension physiology is present, but unnecessary intervention carries procedural risks and may distract from hemostatic resuscitation. This issue is particularly relevant to anesthesiologists and critical care physicians involved in airway management, positive-pressure ventilation, trauma resuscitation, and peri-evacuation decision-making.

## Objective:

To evaluate whether prehospital chest decompression by military advanced life support providers was associated with objective resolution of clinical signs suggestive of tension pneumothorax, and to describe how these findings informed a revision of chest injury management guidelines at the beginning of the Swords of Iron War.

## Methods:

We performed a retrospective analysis of the Israel Defense Forces Trauma Registry between January 2010 and August 2023. Trauma patients who underwent prehospital needle chest decompression, chest tube insertion, or both by military medical teams were included. Data included demographics, injury mechanism, vital signs, ventilation status, additional resuscitative interventions, and prehospital outcomes. Manual chart review assessed the indication for intervention and whether post-procedural changes in systolic blood pressure, heart rate, or oxygen saturation demonstrated resolution of the initial clinical indication for decompression. The primary outcome was objective improvement in severe respiratory or hemodynamic compromise after chest decompression.

## Results:

Among 15,449 trauma patients documented in the registry, 317 underwent chest decompression, of whom 224 met inclusion criteria. Median age was 22 years, 89.7% were male, and the most common mechanisms were gunshot wounds and motor vehicle accidents. Needle decompression was performed in 58.5% of cases, chest tube insertion in 12.5%, and both procedures in 29.0%. Positive-pressure ventilation was documented in 68.3% of patients, and volume resuscitation in 62.9%. The leading indications for decompression were traumatic cardiac arrest, profound shock after chest injury, and severe hypoxemia. In 15.2% of cases, the intervention did not meet Israel Defense Forces Medical Corps guideline criteria. Objective resolution of the intervention criteria was observed in only three patients, representing 1.3% of all cases and 2.9% after excluding traumatic cardiac arrest. In five traumatic cardiac arrest cases, vital signs transiently returned after intervention, but none survived to hospital admission.

## Discussion:

These findings suggest that, in a real-world military prehospital trauma system, objective improvement after chest decompression for suspected tension pneumothorax is uncommon. The low observed rate of physiologic response should be interpreted in the context of severe multisystem trauma, concurrent hemorrhagic shock, and the difficulty of diagnosing tension physiology after intervention has already been performed. Importantly, the data support a more selective and physiology-based approach to chest decompression, particularly when hemorrhage control and blood product resuscitation may be the more urgent priorities. The findings are also consistent with emerging conceptual distinctions between spontaneously breathing patients and those receiving positive-pressure ventilation, in whom tension pneumothorax may evolve more rapidly and present predominantly as circulatory collapse.

## Implementation:

At the beginning of the Swords of Iron War, the Israel Defense Forces Medical Corps revised its chest injury management approach. The updated algorithm emphasized objective physiologic criteria, reassessment after needle decompression and blood product administration, escalation to chest tube insertion when shock persisted, and special attention to the increased risk of tension physiology during positive-pressure ventilation. This evidence-informed change reflected the need to balance the potential benefit of immediate decompression against the risks of overuse and procedural harm.

## Conclusions:

In this military trauma registry analysis, prehospital chest decompression was rarely followed by objective resolution of severe respiratory or hemodynamic compromise. For anesthesiologists and trauma resuscitation teams, these findings underscore the need to integrate ventilatory status, shock physiology, and response to resuscitation when deciding whether suspected tension pneumothorax is the dominant reversible pathology. A more selective, reassessment-driven approach may reduce unnecessary decompression while preserving rapid intervention for patients most likely to benefit.

## Risk Factors for Postoperative Stroke and TIA After LVAD Implantation: A Single-Center Retrospective Cohort Study

**Yael Becher, Maksim Katsin, Haim Berkenstadt, Yael Peled, Alexander Kogan**

*Sheba Medical Center (Tel HaShomer)*

### Objectives:
To identify factors associated with postoperative stroke or transient ischemic attack (TIA) after durable left ventricular assist device (LVAD) implantation and explore the association between stroke/TIA and survival.

### Methods:
We retrospectively analyzed institutional records of consecutive LVAD recipients at a single center. Of 237 database entries, 235 had valid binary postoperative stroke/TIA coding and were included in predictor analysis; two entries with indeterminate outcomes were excluded. Baseline and perioperative factors were assessed using univariable logistic regression and a parsimonious multivariable model. Exploratory Kaplan–Meier analysis included 230 unique patients after duplicate procedure rows were collapsed.

### Results:
Among 235 evaluable procedures, 24 (10.2%) had recorded postoperative stroke/TIA. Diabetes mellitus, coronary artery disease, and preoperative extracorporeal membrane oxygenation (ECMO) were associated with stroke/TIA in univariable analysis. In the multivariable model (n=219), diabetes (adjusted OR 4.42, 95% CI 1.39–14.02; p=0.012) and preoperative ECMO (adjusted OR 3.05, 95% CI 1.20–7.73; p=0.019) remained independently associated with stroke/TIA. The estimate for coronary artery disease was elevated but imprecise (adjusted OR 6.40, 95% CI 0.82–50.26; p=0.077). Model AUROC was 0.78. In exploratory survival analysis, deaths occurred in 15/23 patients with recorded stroke/TIA and 76/207 without; overall survival was lower in the stroke/TIA group (log-rank p<0.001).

### Conclusions:
Diabetes and preoperative ECMO were independently associated with recorded postoperative stroke/TIA after LVAD implantation. Stroke/TIA was also associated with poorer survival in exploratory analysis. Given limited event numbers and reliance on database coding, these findings warrant validation with adjudicated neurologic outcomes and documented event timing.

### Figure captions:
### Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):
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### Figure Attachment (PDF):
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## Monitoring attention across the perioperative period using Single – Channel

# EEG -based Marker

**Olga Reznik, Baron-Shahaf Dana, Shahaf Goded**

*Rambam Health Care Campus*

## Background:

Postoperative cognitive dysfunction (POCD) affects up to 30% of elderly surgery patients, yet no consensus preoperative test identifies patients at risk, no consensus intraoperative monitor flags evolving cognitive injury in time for intervention, and no treatment exists once injury has occurred. In a cohort of 100 patients monitored throughout the perioperative period, we evaluated whether easy-to-use, single-channel EEG indices could help address this gap by associating with perioperative change in Montreal Cognitive Assessment (MoCA) scores.

## Methods:

We studied a cohort of 100 patients undergoing elective cardiac surgery at Rambam Medical Center between October 2020 and February 2022. Cognitive assessment was performed before surgery, at hospital discharge, and 6 weeks postoperatively; single-channel EEG was recorded during the assessments and continuously throughout surgery. Three indices were analyzed [1,2]: Brain Reactivity Index (BRI); Cognitive Effort Index (CEI); and Tension Index (TensI).

## Results and Discussion:

In older patients (≥65 years) with intermediate preoperative MoCA scores (21–25) and postoperative decline, intraoperative BRI was low within the first 30 minutes after induction and remained low. In this subgroup, higher CEI during preoperative cognitive testing – reflecting sustained attentional effort, was independently associated with subsequent MoCA decrease, suggesting that patients who must invest disproportionate effort to reach an intermediate score carry hidden vulnerability. Elevated postoperative TensI, reflecting heightened stress, was likewise associated with a sustained MoCA decrease through the 6-week follow-up, identifying the patients at greatest risk.

## Conclusions:

Single-channel EEG-based markers of attention, spanning the perioperative period, could enable earlier risk identification, inform intraoperative anesthetic management, and support targeted follow-up, with the goal of preventing further cognitive deterioration. Larger prospective studies are needed to confirm these associations and establish their clinical utility.

## Keywords:

EEG, cardiac surgery, postoperative cognitive dysfunction, MoCA, brain reactivity, cognitive effort

## Figure Attachment (PDF):

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# Abstracts Presentation Session

## 18/11 | 14:15-15:45

**Moderator: Vered Dvir**

# Mistaken for Anaphylaxis: A Diagnostic Mystery During Caesarean Section Under Spinal Anaesthesia

**Olga Fadeeva**

*Rambam Health Care Campus*

## Objectives:

Acute cardiorespiratory collapse during caesarean section has a broad differential – perioperative anaphylaxis, amniotic fluid embolism, venous air embolism (VAE), and high neuraxial block – with overlapping clinical features that make bedside differentiation difficult. We describe a case in which VAE closely mimicked anaphylaxis, and outline the diagnostic reasoning used to distinguish between them.

## Methods:

Case report with retrospective diagnostic analysis. A 30-year-old woman (G3P2, 38+0 weeks) underwent category 3 caesarean section under spinal anaesthesia (hyperbaric bupivacaine, morphine, fentanyl). Approximately 45 minutes after spinal injection and 20 minutes after carbetocin, she developed sudden cough, dyspnoea, diffuse erythema, bilateral inspiratory crackles, desaturation (97%→92%), and hypotension refractory to escalating phenylephrine, requiring intravenous adrenaline and hydrocortisone due to presumed anaphylaxis. Competing diagnoses were evaluated against the clinical timeline, examination findings, and acute serum tryptase.

## Results:

Symptoms resolved within two minutes of adrenaline administration. Acute tryptase was 2 μg/L (low-normal range), arguing against significant mast cell degranulation. High neuraxial block was inconsistent with the abrupt onset and pulmonary findings; amniotic fluid embolism was disfavoured by the absence of coagulopathy or haemorrhage. The clinical picture – sudden cough, transient hypoxaemia, bilateral crackles, and hypotension occurring during uterine manipulation – was most consistent with VAE, a recognised and likely underdiagnosed complication of caesarean section. VAE could not be confirmed directly, as Doppler, capnography changes, or echocardiography were not employed at the time.

## Conclusions:

VAE can closely mimic perioperative anaphylaxis and should remain an active differential when cardiorespiratory collapse occurs during or shortly after uterine manipulation, even when the presentation appears classically allergic. A low acute tryptase, while not exclusionary, should prompt reconsideration of alternative diagnoses. Postpartum allergy work-up remains essential regardless of provisional aetiology.

# Association between opiate use disorder and physician provided epidural boluses for labor analgesia

**Amnon A. Berger, MD, PhD; Yunping Li, MD; Philip E. Hess, MD**

*Department of Anesthesiology, Vanderbilt University Medical Center, Nashville, Tennessee*

## Background:

Opioid use disorder (OUD) may affect labor analgesia, due to differential experience of pain, tolerance and hyperalgesia, or decreased endogenous opioid peptides.1,2 Limited evidence suggests that parturients with OUD are more likely to use epidural analgesia and require higher concentration of local anesthetics or more frequent dosing;1,3 the largest study included only 91 opioid-using patients, half receiving replacement therapy.4

## Objective:

To determine whether OUD is associated with increased labor analgesic requirements, by increased number of physician-provided epidural boluses.

## Methods:

A retrospective cohort study at a tertiary academic center or deliveries from 01/2017 to 06/2024. Laboring patients were categorized as opioid-naïve vs. OUD by ICD10 codes or medication replacement therapy. Optimal 3:1 propensity-score matching was used for comparison. All patients received patient-controlled epidural analgesia using a low-concentration bupivacaine with fentanyl. The primary outcome was the requirement for two or more physician-provided epidural boluses during labor. A secondary outcome was the absolute number of boluses. Univariable and multivariable analyses were performed. P<0.05 was considered significant.

## Results:

Of 29,075 laboring women, 132 met criteria for OUD. There was no significant difference in use of epidural analgesia (84% vs 83%, P=0.79) or failure/replacement rates (5.3% vs 3.5%, P=0.20). In multivariable analyses, adjusted odds ratio (aOR) for 2 or more epidural boluses by OUD patients was 2.30 (95%CI 1.31-3.91, P=0.003); patients with OUD required 36% more boluses (95%CI 11%-66%, P=0.003). In a matched cohort, univariable analyses resulted with significant association with two or more boluses (P=0.010) and mean number of boluses (P=0.011). Multivariable analyses of matched cohorts retained the association between OUD and 2 or more boluses (aOR 2.64, 95%CI 1.10-6.10, P=0.025), but not with the mean number of boluses administered (P=0.29). Conclusion: Neuraxial analgesia appears effective in OUD patients, measured by epidural use and failure rates. More physician-provided epidural boluses may be needed.

## Figure Attachment (PDF):

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# Improving postpartum hemorrhage risk prediction: integration of anesthesia factors

**Amnon A. Berger, Kelly Li, Yunping Li, Philip E. Hess**

*Vanderbilt University Medical Center*

## Introduction:

Postpartum hemorrhage (PPH) remains a leading cause of maternal morbidity and mortality. Early identification of at-risk patients improves outcomes. Dysfunctional labor—associated with prolonged labor, intra-amniotic infection, and uterine overdistension—may be signaled by increased labor analgesia requirements or failed neuraxial anesthesia. We hypothesized that anesthetic factors could enhance PPH risk stratification in laboring women.

## Methods:

This retrospective cohort study analyzed obstetric hemorrhage outcomes at a high-volume tertiary center (January 2017–May 2024) using combined obstetric and anesthesia records. Patients who did not labor or had placenta abnormalities, uterine rupture, or coagulopathies were excluded from the primary analysis. PPH was defined as estimated blood loss ≥1,000 mL. Candidate anesthetic factors included epidural bolus requirements, number of boluses, and epidural failure. Variables with $P<0.2$ in univariate analyses were included in multivariate logistic regression analysis, with collinearity assessed by variance inflation factors. In a secondary analysis, a validated PPH risk prediction model developed at Vanderbilt University Medical Center (VUMC) was applied to the full cohort and evaluated with and without anesthetic variables.

## Results:

Among 26,953 labor and delivery encounters in the primary analysis, the number of epidural boluses was independently associated with PPH (aOR 1.08 per bolus, 95% CI 1.04–1.13, $p<0.001$), alongside established predictors such as cesarean delivery and newborn weight. In the secondary analysis of 37,285 encounters, adding ≥3 physician-administered boluses improved the VUMC model's discrimination (AUC 0.903→0.928).

## Conclusion:

Epidural bolus requirements are a novel, significant predictor of PPH, likely reflecting dysfunctional labor. Incorporating this factor improves risk stratification with minimal added complexity and warrants validation in external datasets.

# Prophylactic Carbetocin Versus Prophylactic Oxytocin Among Women at Risk for Postpartum Hemorrhage Undergoing Cesarean Delivery

**Daniel Hikry[1], Daniel Ioscovich[2], Guy Avital[1], Boris Aptekman[1], Emanuel Attali[1], Carolyn Weiniger[1]**

1. *Tel Aviv Sourasky University Medical Center*
2. *The Gray Faculty of Medicine and Health Sciences*

## Background:
Postpartum hemorrhage (PPH) is a major global cause of maternal morbidity and mortality, particularly in cesarean delivery (CD) among women with high-risk factors such as placenta previa/accreta, multiple gestation, macrosomia, multiple prior CDs, or prior PPH. Although oxytocin is standard prophylaxis, carbetocin, a costly long-acting oxytocin analogue may reduce additional uterotonic use, although evidence is mixed. No prior study specifically evaluated carbetocin in high-risk women.

## Objective:
To compare need for additional, therapeutic uterotonic administration after carbetocin versus oxytocin for PPH prophylaxis in high-risk women undergoing CD.

## Methods:
Retrospective cohort of women aged 18-60 undergoing CD (2016-2024). Carbetocin was introduced for high-risk prophylaxis in 2022. Excluded: Women with unclear documentation of prophylactic uterotonics. High-risk factors: placenta previa, placenta accreta, multiple gestation, fetal weight ≥4 kg, ≥2 prior CDs, or prior PPH. Immediately after fetal delivery, women received intravenous oxytocin (10-20 U) or carbetocin (50-100 mcg). Maternal, obstetric, intraoperative, and postoperative data were extracted from electronic medical records.

## Outcomes:
Primary outcome: need for additional uterotonics. Secondary outcomes: tranexamic acid administration, blood transfusion, re-laparotomy, PACU duration, ICU admission, and rehospitalisation. Associations were analysed using multivariable logistic regression. Missing data not imputed.

## Results:
Among 23,654 CDs, 711 were excluded; 6,730 women met high-risk criteria. Of these, 6,138 (91.2%) received oxytocin and 592 (8.8%) received carbetocin. Additional uterotonic administration occurred in 18.2% of the oxytocin group versus 11.7% of the carbetocin group. Among secondary outcomes, only tranexamic acid use differed significantly (11.2% versus 31.4% versus, respectively).

## Conclusion:
Carbetocin prophylaxis was associated with reduced need for additional uterotonics in high-risk women undergoing CD. These findings support consideration of carbetocin in high-risk PPH prophylaxis and may inform guideline and cost-effectiveness decisions.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):
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# Neuraxial Anesthesia for Cesarean Delivery in Patient With Severe Pulmonary Arterial Hypertension with Right Ventricular Dysfunction and Right-to-Left Shunting: A Case Report

**Yahya Aljuba, Alexander Ioscovich, Daniel Shatalin, Amiram Nir, Tehila Avitan, Elad Asher**

*Shaare Zedek Medical Center*

## Objectives:

To describe the anesthetic management of cesarean delivery in a parturient with severe pulmonary arterial hypertension (PAH), Eisenmenger syndrome, right ventricular dysfunction, severe tricuspid regurgitation, and hypoxemia.

## Methods:

A 30-year-old G3P2 with PAH and Eisenmenger syndrome after repaired ventricular septal defect was admitted at 25 weeks' gestation with clinical deterioration and NYHA III symptoms. Cardiac catheterization immediately before pregnancy showed pulmonary artery pressure of 62 mmHg, with deterioration during pregnancy. Echocardiography later showed a TR-derived RV-RA pressure gradient of 222 mmHg, with severe right ventricular dilatation and dysfunction and severe tricuspid regurgitation. Epoprostenol was initiated and titrated, while sildenafil was continued. At 31 weeks, due to worsening pulmonary hypertension and decompensation, semi-elective cesarean delivery was performed under combined spinal-epidural (CSE) anesthesia.

## Results:

Baseline oxygen saturation was 85%. A radial arterial line was inserted. Low-dose CSE used hyperbaric bupivacaine 3 mg, fentanyl 20 µg, and morphine 200 µg, followed by epidural extension with 2% lidocaine (240 mg total). Epoprostenol was continued at 16 ng/kg/min. High-flow oxygen was started at 30 L/min, $FiO_2$ 50%, and increased to 40 L/min, $FiO_2$ 70%; oxygen saturation remained 92-96%. Hemodynamic stability was maintained with phenylephrine. Hartmann's solution totaled 900 mL. During the 75-minute procedure, spontaneous ventilation was maintained without intubation or positive-pressure ventilation, with no major events. ECMO and inhaled nitric oxide were available as rescue therapies. The patient was transferred awake to the CCU. Postoperatively, epoprostenol was increased to 19 ng/kg/min, with norepinephrine and vasopressin requirements. Persistent hypoxemia and right-sided heart failure required intensive management.

## Conclusions:

Carefully titrated CSE, preserved spontaneous ventilation, high-flow oxygen, uninterrupted pulmonary vasodilator therapy, invasive monitoring, and careful fluid and vasopressor management facilitated cesarean delivery in this high-risk patient. The postpartum period remained high risk, requiring intensive cardiovascular and respiratory support.

# Effect of Low Dose Epidural Morphine on Post-Cesarean Acute Pain and Adverse effects in non-elective surgery: A Comparison of 0, 1.5 and 2.5 mg Epidural Morphine

**Jawad Matanis, Ruth Edri, Henry Azzam, Bahaa Rafoul, Philippe Abecassis**

*Rambam Medical Center, Israel*

## Objectives:

To evaluate whether adding low-dose epidural morphine to multimodal analgesia improves acute postoperative pain after non-elective cesarean section (CS) under epidural anesthesia, and to compare 0, 1.5 mg and 2.5 mg doses regarding analgesic efficacy, rescue medication use, adverse effects, lactation, and patient satisfaction.

## Methods:

This prospective, open-label study included adult women undergoing CS under epidural anesthesia. Patients received 1.5 mg epidural morphine (n=32; December 2023–September 2024), 2.5 mg (n=32; September 2024–May 2025), or no epidural morphine (n=118) as a contemporary control group. All patients were managed with a standardized multimodal analgesic protocol. Pain was assessed on postoperative day 1 using the PAIN OUT questionnaire. The primary outcome was the Composite Pain Score (CPS). Secondary outcomes included rescue analgesic requirements, Composite Adverse Effects Score (CAES), urinary effects, lactation, and satisfaction.

## Results:

Among 182 patients, 95.6% underwent urgent or emergency CS. CPS was significantly lower with both 1.5 mg and 2.5 mg epidural morphine compared with no morphine: median 4.06, 4.25, and 5.81, respectively ($p<0.001$ overall). Pooled epidural morphine reduced CPS by 1.38 points (95% CI −2.12 to −0.75; $p<0.001$). Rescue analgesic use was substantially reduced: ward metamizole was required in 77.1%, 59.4%, and 34.4% of patients, respectively, while ward oral morphine was used in 12.7%, 3.1%, and 0%. CAES increased modestly with epidural morphine, mainly due to pruritus, while nausea, dizziness, and drowsiness remained low. Lactation rates did not differ significantly.

Patient satisfaction was highest with 2.5 mg.

## Conclusions:

Low-dose epidural morphine added to multimodal analgesia was associated with clinically meaningful reductions in pain and rescue analgesic requirements after predominantly emergency CS under epidural anesthesia, with a low burden of adverse effects. The 2.5 mg dose provided the highest satisfaction and lowest need for additional analgesia, supporting its potential role in this challenging non-elective population.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# Comparison of Manual Placenta Removal Completed in the Delivery Room Versus Unplanned Transfer to the Operating Room: Identification of Risk Factors

**Dr. Guy Avital, Orie Sella, Victor Ravkin, Reut Gal, Noa Bar On-Berzan, Carolyn Fiona Weiniger**

*Tel-Aviv Sourasky Medical Center, Anesthesia, Critical Care and Pain, Tel Aviv, Israel*
*Tel-Aviv University, Gray's Faculty of Medical and Health Sciences, Tel Aviv, Israel*

## Objectives:
Manual removal of the placenta (MROP) is required in 0.5-3% of deliveries and may be performed in the Labor & Delivery Room (L&D) or in the operating room (OR). When MROP initiated in L&D fails or is complicated, unplanned transfer to the OR is required. We compared MROP cases completed in L&D with those requiring unplanned OR transfer, aiming to identify independent predictors of transfer.

## Methods:
Retrospective, single-center cohort study at a high-volume tertiary obstetric center, including all MROP cases between 2011 and 2024. Hemodynamically stable women with epidural analgesia underwent MROP in L&D; women without analgesia or at high risk of postpartum hemorrhage (PPH) underwent MROP in the OR. Demographic, obstetric and intrapartum data were extracted from medical records, and OR cases were manually reviewed to identify those initiated in L&D. Univariate analyses compared cases completed in L&D with those requiring unplanned transfer, and binary logistic regression identified independent predictors.

## Results:
Of 2,715 MROP cases, 698 (25.7%) were managed entirely in the OR. Of 2,017 cases started in L&D, 71 (3.5%) required unplanned OR transfer. The leading reasons were excessive bleeding (46.5%) and inadequate anesthesia (28.2%), followed by failed MROP (14.1%) and lacerations requiring surgical repair (11.3%) (Figure 1). On multivariable analysis, history of PPH was the strongest independent predictor of transfer (OR 5.15; 95% CI 2.38-11.1), followed by fetal macrosomia, vacuum-assisted delivery, assisted reproductive technology and maternal weight (Table 1). Nulliparity was not independently associated with transfer.

## Conclusions:
Unplanned OR transfer occurred in 3.5% of MROP attempts in L&D, most often due to bleeding or inadequate anesthesia. History of PPH, fetal macrosomia, vacuum delivery, assisted reproduction and higher maternal weight independently predicted transfer. Identifying these factors before MROP may support anesthesia planning, allowing high-risk women to undergo MROP primarily in the OR.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):
https://icisa2026abstracts.forms-wizard.biz/download/rGJpwFXYHyC7loXs5fE-yESddPfl7U_q4N8R5Ks7

## Figure Attachment (PDF):
https://icisa2026abstracts.forms-wizard.biz/download/jwrbBx7cfTLmL_GuYBtWwVxncdlpmmw_2C9wUx4c

# Abstracts Presentation Session

## 18/11 | 16:15-17:15

**Moderator: Haim Birkenstadt**

# Post-Discharge Geographic Mortality Inequities After Emergency Surgery in Nonagenarians Within a Universal Health System: An ICU Cohort from Australia and New Zealand

**Jacob Zand[1], Je Min Suh[1], Carl Reyneke[1], Nattaya Raykateeraroj[2], David Pilcher[3], Dong-Kyu Lee[4], Laurence Weinberg[5]**

1. *Austin Health, Australia*
2. *Faculty of Medicine Siriraj Hospital, Thailand*
3. *The Alfred Intensive Care Academic Centre; ANZICS Centre for Outcome and Resource Evaluation; Monash University, Australia*
4. *Dongguk University Ilsan Hospital, South Korea*
5. *Austin Health; The University of Melbourne, Australia*

## Objectives:

This study aimed to determine whether geographical disparities in outcomes among nonagenarian and centenarian patients admitted to ICU following emergency surgery relate to the index admission or emerge after hospital discharge, within a universal health system.

## Methods:

We conducted a national, population-based retrospective cohort study using linked data from the Australian and New Zealand Intensive Care Society Adult Patient Database and the Australian National Death Index. All nonagenarian and centenarian patients admitted to Australian ICUs after emergency surgery between 1 January 2018 and 31 December 2024 were included. Geographic residence on ICU admission was classified by the Modified Monash Model as metropolitan or regional/remote. Outcomes comprised ICU mortality, in-hospital mortality, and all-cause post-discharge mortality at five years among patients discharged alive. Cox proportional hazards regression examined associations between residence and post-discharge mortality, adjusting for age, sex, Acute Physiology and Chronic Health Evaluation III score, Sequential Organ Failure Assessment score, major comorbidities, and hospital type.

## Results:

Among 4,887 patients admitted to Australian and New Zealand ICUs after emergency surgery, ICU and hospital mortality rates did not differ meaningfully by geographic residence. However, among those discharged alive, regional or remote residence was independently associated with higher post-discharge mortality at five years (adjusted HR 1.133, 95% CI 1.027–1.250, p = 0.013) compared with metropolitan residence. Survival curves diverged after hospital discharge and remained separated throughout follow-up. In a secondary cohort of 7,896 patients undergoing elective surgery, geographical residence was not associated with mortality at any stage.

## Conclusion:

Geographic outcome disparities in the oldest emergency surgical patients arise after hospital discharge, not during it. The acute care system achieves equity; the post-acute system does not. In an Australian and New Zealand context, these findings suggest that inequities in post-acute and community care, opposed to ICU care, drive long-term outcome differences.

# Levothyroxine administration in ICU patients with low T4 levels: a retrospective comparison study

**Aviv Benedick, MD, Avraham Meyer, MD, Elad Dana, MD, Sara Dichtwald, MD**

*Meir Medical Center*

## Background and aims:

Nonthyroidal illness syndrome (NTIS) is a common condition among Intensive Care Unit (ICU) patients. Previous studies showed conflicting findings regarding association with poor clinical outcomes. Studies examining whether Levothyroxine administration improves clinical outcomes in critical patients with NTIS and low free T4 (FT4) levels are lacking. We aimed to examine whether Levothyroxine administration in ICU patients with NTIS and low T4 (<0.8 ng/dL) resulted in differences in 28-day mortality and in-hospital morbidity.

## Methods:

A retrospective study using electronic data retrieval for patients admitted to a general intensive care unit who presented with low free thyroxine levels and nonthyroidal illness syndrome.

## Results:

The study included 123 patients. 53 received Levothyroxine. No significant differences were found between groups regarding demographics, comorbidities or reasons for ICU admission. Hospital length of stay (LOS) was significantly longer in the treatment group (39 ± 24 days) compared to the non-treatment group (30 ± 19 days) ($p<0.05$). Duration of mechanical ventilation was significantly longer in the treatment group (21 ± 21 days) vs. non-treatment group (14 ± 14 days) ($p<0.05$). ICU LOS showed a trend toward being longer in the treatment group (22 ± 20 days) compared to the non-treatment group (16 ± 13 days) ($p=0.058$). Higher FT4 levels were associated with better clinical outcomes, including reduced need for vasopressors and dialysis, and lower 28-day mortality.

## Conclusions:

Low FT4 levels in ICU patients with NTIS are associated with higher morbidity. Levothyroxine administration did not improve clinical outcomes in this population.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

https://icisa2026abstracts.forms-wizard.biz/download/0mmHH-na7pJdY_asZmlIGs3dQ9I4ZvVu0SWNyOo0

# The influence of Chest CT vs. chest x-ray on the management of critically ill patients: A retrospective study

**Stanislav Levintas, Avraham Meyer, Elad Dana, Sara Dichtwald**

*Meir Medical Center*

## Objective:

Critically ill patients admitted to the intensive care unit (ICU) often require computed tomography (CT) imaging. Previous studies have demonstrated the role of CT in this population in terms of changes in diagnosis and/or management, particularly among subgroups such as septic patients. In this study, we included ICU patients who underwent chest CT due to acute respiratory failure, and examined specifically whether chest X-ray (CXR) identified all findings later seen on CT, whether CT revealed additional diagnostic findings, and, importantly, whether these new findings led to changes in clinical management.

## Methods:

Retrospective data collection from computerized medical systems regarding patients who underwent chest CT during ICU hospitalization with an indication of acute respiratory failure, from January 2020 to January 2023. The cohort included 45 patients who underwent 55 CT scans, which were compared to 55 corresponding chest X-rays. Demographic and in-hospital data were collected, as well as findings from both CT and CXR.

## Results:

A total of 45 patients undergoing 55 chest CT scans were included. The mean age was 55.24 years (SD = 19.6), and 60% were male. The main reasons for ICU admission were infection/sepsis (48.8%), primary respiratory failure (31.1%), and trauma (13.3%). Chest CT was performed after a median of 5 days [IQR 1–14] from ICU admission. Intravenous contrast was used in 52 cases (94.5%). CT identified new findings contributing to diagnosis in 31 scans (56.4%, 95% CI 43.3–68.6%). These new findings led to changes in clinical management in 17 cases (30.9%, 95% CI 20.3–44.0%), most commonly involving an invasive intervention.

## Conclusion:

Among critically ill ICU patients undergoing evaluation for acute respiratory failure, chest CT contributed to diagnosis in over half of cases and changed patient management in one-third of cases compared with chest X-ray. Further studies are needed to confirm these findings.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# Does the Systematic Use of the Rapid Ultrasound in Shock Protocol Alter Patient Management in the Intensive Care Unit? A Retrospective Study

**Dr. Avraham Meyer, Michael Zinman, Sara Dichtwald, Elad Dana**

*Meir Medical Center*

## Aims:

Rapid Ultrasound in Shock (RUSH) protocol is traditionally used for acute assessment of patients in shock. Key components include ultrasound of the heart, lungs, and screening for intra-abdominal free fluid and deep vein thrombosis. In the intensive care unit (ICU), its utility as a routine screening tool remains less defined.

## Methods:

A retrospective observational study including 50 patients admitted to a general ICU between August 2024 and August 2025 who underwent daily RUSH assessments. Data were collected on demographics, clinical variables, RUSH findings, and subsequent management changes.

## Results:

Mean age was 65.3 years (±17.5), 66% male. 28% required mechanical ventilation and 30% received vasopressors. New ultrasound findings were identified in 44% of patients. These findings led to therapeutic changes in 28%. The most frequent interventions included adjustments to vasopressor therapy (8%), blood transfusions (8%), fluid administration (6%), and modifications to physiotherapy plans (6%). ICU mortality was 10%, with a mean length of stay of 6.64 days.

## Conclusion:

Integrating the RUSH protocol into ICU rounds is an effective strategy that leads to management changes in over a quarter of patients. The detection of new findings despite continuous monitoring highlights the necessity of bedside ultrasound for the management of complex patients.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# Patients Refused Admission to the Intensive Care Unit: Clinical Characteristics and Outcomes. A Retrospective Study

**Dr. Sara Dichtwald, Yuval Miller, Elad Dana, Avraham Meyer, Nisim Ifrach**

*Meir Medical Center*

## Background:

Admission to the intensive care unit (ICU) is associated with improved outcomes in critically ill patients. Data characterizing patients who are refused ICU admission and their outcomes remain limited.

## Objective:

To compare clinical features, reasons for refusal, and outcomes of patients not admitted to the ICU, compared to a cohort of admitted patients.

## Methods:

A retrospective study including a total of 631 patients: 309 who were not admitted, and 322 who were admitted during the same period. Background and in-hospital data were collected.

## Results:

Admitted patients had longer hospital stays (22.7 ± 24.7 vs. 10.0 ± 9.9 days; $p<0.001$), more ventilator days (10.9 ± 16.9 vs. 2.4 ± 6.0 days; $p<0.001$), and higher rates of vasopressor use (58.1% vs. 24.3%; $p<0.001$). The most common reasons for non-admission were absence of clinical indication ("too well"; 45.6%) followed by poor prognosis (48.5%).

28-day mortality was significantly higher among non-admitted patients (40.8% vs. 17.7%; $\chi^2=40.77$, $p<0.001$). In the subgroup analysis, "too well" patients had substantially lower disease severity (APACHE II 14.1 vs. 23.4; $p<0.001$) and lactate (1.9 vs. 3.6 mmol/L; $p<0.001$) than those refused for poor prognosis, and their 28-day mortality was correspondingly lower (19.1% vs. 60.7%; $p<0.001$). Within the "too well" subgroup, vasopressors (OR 11.88, 95% CI 2.81–50.20) and congestive heart failure (OR 10.89, 95% CI 3.63–32.65) were the only independent predictors of 28-day mortality.

## Conclusions:

Non-admission to the ICU is associated with substantially higher 28-day mortality. Triage decisions appear to correctly distinguish disease severity between refusal categories.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# Prognostic factors in patients admitted for severe exacerbations of chronic obstructive pulmonary disease

**Bar Lahmi, Natalya Bilenko, Anna breslavsky, Ori Wand**

*Barzilai Medical Center*

## Objective:

To assess the association between CHA2DS2-VA and R2CHA2DS2-VA categories and outcomes of patients admitted for AECOPD.

## Methods:

Individuals admitted for AECOPD between 1.1.2021 and 31.12.2023 were categorized according to CHA2DS2-VA and R2CHA2DS2-VA categories. The outcomes were all-cause mortality in 30 days, 90 days, and 1 year, and re-hospitalizations for AECOPD.

## Results:

The study included 200 patients, 63.5% males, mean age 70.4 years, average FEV1 48.7%pred. Overall, 1-year mortality was 18.5%, while 72.5% were hospitalized for AECOPD in the year following the index admission. Both high CHA2DS2-VA and high R2CHA2DS2-VA categories were associated with all-cause mortality, while only the high R2CHA2DS2-VA category was associated with future severe AECOPD.
There were no associations between FEV1 values or maintenance COPD therapy and outcomes.

## Conclusions:

Simple scores that incorporate common cardiovascular comorbidities can aid in predicting additional hospitalizations and mortality among subjects admitted for severe AECOPD.

## Figure Attachment (PDF):

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# Empiric antibiotic therapy for patients with sepsis in the intensive care unit: appropriateness and clinical outcomes

**Dr. Maha Salama, Avraham Meyer, Sara Dichtwald**

*Meir Medical Center*

## Introduction:

Administration of inappropriate antibiotics in the first 24 hours in septic, critically ill patients, has been associated with increased morbidity and mortality.

## Objectives:

To examine the appropriateness of empirical antibiotic therapy in ICU septic patients based on subsequent culture growths and clinical outcomes of patients with inappropriate therapy.

## Materials and Methods:

A retrospective study based on data retrieval regarding patients admitted to the ICU with a diagnosis of sepsis from January 1, 2020 to December 31, 2020. Demographic and in-hospital data were collected, including source of sepsis, empirical antibiotic treatment given on ICU admission, growths in relevant cultures and change in antibiotic treatment according to culture growths.

## Results:

The study included 154 patients, of whom 126 had positive cultures. 27.8% of them received antibiotic therapy that was too narrow relative to the pathogens that grew in the relevant culture. No association was found between too narrow therapy and age, sex, underlying diseases, length of hospital stay until admission to ICU and 28-day mortality.

An association was found between narrow therapy and vasopressor dependence, polymicrobial growth, growth of Candida and gram-negative bacteria with AMP C resistance in relevant cultures, monotherapy compared to drug combination, number of ventilator days, need for tracheostomy and increased ICU and hospital length of stay.

## Conclusions:

Approximately 27% of patients with sepsis in the ICU received inadequate empirical antibiotic therapy. Inappropriate empirical antibiotics was not associated with increased mortality but was associated with severe in-hospital morbidity. Further studies are required to confirm these findings.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# Sugammadex Eliminates Need for Brain CT Scan in Case of Pupillary Dilation – A Case Report

**Yaara Giladi, M Frist, PD Levin**

*Shaare Zedek, Israel*

## Introduction:

We present a case of bilateral pupillary dilation with absent pupillary light reflex during continuous infusion of Rocuronium, which completely normalized after Sugammadex administration. Dilated nonreactive pupils, in sedated ventilated patients under muscle relaxant, are highly suspicious for acute brain damage, requiring immediate brain CT to rule out intracranial bleeding or severe edema. Transferring critical patient to CT is complex and with a high risk for the patient.

## Case Presentation:

53 y/o patient with severe cardiac disease and multi-organ failure, ventilated and sedated, with continuous Rocuronium for severe respiratory distress and high-dose Heparin due to an Impella support system. Bilateral fixed dilated pupils were noted, raising the possibility of an intracerebral bleeding. For performing a neurological assessment, 400 mg of Sugammadex was administered. The patient's pupillary dilation abated within seconds of the administration, and normal light reflex returned. On subsequent cessation of sedation there were no abnormal neurological signs. CT was not performed.

## Discussion:

Cases of patients with fixed pupillary dilation during paralytic agents' treatment have infrequently been reported in the medical literature. All had normal brain imaging and had complete resolution of the pupils several hours after drug discontinuation. There are no reported cases of Sugammadex use in this situation. The mechanism underlying this, although not completely understood, may be damage to the blood-brain barrier (BBB) in intensive care patients, allowing for high concentration neuromuscular blocking agents to cross the BBB and affect key neural mechanisms via central autonomic receptors.

## Conclusion:

Awareness that Rocuronium or other non-depolarizing muscle relaxants may cause pupil dilation and that this can be reversed immediately with Sugammadex is clearly beneficial to ICU physicians and might save unnecessary CT exams.

# Abstracts Presentation Session

## 18/11 | 16:15-17:15

**Moderator: Haim Birkenstadt**

## Intensive care

# A novel treatment approach for cold agglutinin induced acute hemolytic anemia: a case report

**Dr. Sara Dichtwald, Avraham Meyer, Ilana Hellmann, Nisim Ifrach, Martin H. Ellis**

*Meir Medical Center*

### Background:

Cold autoimmune hemolytic anemia (AIHA) is caused by cold-reactive IgM autoantibodies, also known as cold agglutinins, which bind to red blood cells at cold temperatures. It may be either primary or secondary to infection, drugs or lymphoproliferative disease. While hemolysis may be extravascular, severe intravascular complement-mediated hemolysis may occur. Goals of therapy include maintaining a stable hemoglobin level and treating the underlying etiology. Complement inhibitors may be used in severe or refractory cases.

### Case Presentation:

We describe a case of fulminant cold AIHA in which complement inhibition and extracorporeal warming of the patient's blood with Prismaflex® continuous veno-venous extracorporeal circulation was used as an emergency measure with rapid control of hemolysis, as was evidenced by resolution of acrocyanosis and improvement in hemodynamic parameters and stabilization of hemoglobin without need for further blood transfusions.

### Conclusion:

To our knowledge this is the first report of combined extracorporeal blood warming and complement inhibition as a rescue measure to treat massive cold AIHA. We suggest that this strategy may represent a rescue option in selected life-threatening cases when routine warming of the patient is insufficient to abrogate the acute hemolytic process and until definitive therapy becomes effective and the autoimmune process resolves.

### Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# Rate of Venous Thrombosis After Central Venous Catheter Removal: A Retrospective Study

**Dr. Anat Bar-Lavie, Elad Dana, Avraham Meyer, Bar Carmel Azar, Sara Dichtwald**

*Meir Medical Center*

## Background:

Data are scarce regarding the incidence of asymptomatic central venous catheter (CVC) site thrombosis following CVC removal. We aim to examine the rate of CVC site thrombosis and to assess possible risk factors.

## Methods:

A retrospective study based on data retrieval from December 2023 -December 2024 of patients with a CVC. Data included demographic and in-hospital data, CVC-associated data and ultrasound evidence of venous thrombosis at the catheter site after its removal. Descriptive statistics were used for quantitative and categorical variables. Univariate associations were tested with chi-square analysis, and for group comparisons the Mann-Whitney-Wilcoxon test was used. For multivariable analyses binary logistic regression was employed.

## Results:

The study included 50 patients with a mean age of 59.6 (17.9) years, 56% male. Partial CVC-related thrombosis developed in 48% of patients. Patients who developed thrombosis had a significantly higher mean (SD) platelet count at the time of catheter removal compared to those who did not [324.6 ± 186.2 k/ml vs. 215.9 ± 88.9 k/ml, p=0.014]. No significant correlation was identified between thrombosis and coagulation parameters (INR, anticoagulation, or antiplatelet therapy) or catheter characteristics (site, type, length, and number of lumens).

## Conclusion:

Nearly half of ICU patients in this cohort developed partial, asymptomatic CVC-related thrombosis at the site of insertion. Increased platelet count was the only consistent risk factor for developing thrombosis. Long-term clinical significance of these thrombi should be the focus of future studies in order to provide guidelines for diagnosis and management of this common finding.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# Impact of computed tomography scans on intensive care unit patients: A retrospective study

**Dr. Elad Gross, Avraham Meyer, Elad Dana, Sara Dichtwald**

*Meir Medical Center*

## Purpose:

Patients in the intensive care unit (ICU) often require computed tomography (CT), which carries risks associated with transport and procedure. We aimed to evaluate the complication rate, analyze differences between daytime and on-call hours, and determine the proportion of CT scans that significantly advanced diagnosis or altered patient management.

## Methods:

A retrospective study based on electronic data retrieval.

## Results:

321 patients were included. Mechanical ventilation was required in 63%, and vasopressor support in 58%. Abdominal and pelvic CT was most frequently performed. 26% of scans led to a change in treatment, with the highest proportion (33%) among patients with sepsis. In trauma patients, new CT findings were common, but only half prompted management changes. The complication rate was low (0.2%), with no difference between daytime and on-call scans.

## Conclusion:

CT scanning resulted in treatment changes in a relatively small proportion of patients, except among those with sepsis. Complications were rare.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# Gastroparesis as an Early Marker for Sepsis Development: A Retrospective Study

**Dr. Avraham Meyer, Elad Avira, Elad Dana, Nisim Ifrach, Sara Dichtwald**

*Meir Medical Center*

## Background:

Gastroparesis is common in critically ill patients. Symptoms include nausea, vomiting, and abdominal pain. Some studies have associated gastroparesis with increased morbidity and mortality in critically ill patients. Aims:

We hypothesize that gastroparesis, as evident by increased gastric residual volume (GRV), may serve as an early marker of sepsis onset.

## Methods:

Retrospective study is based on data collected from electronic medical records of patients admitted to the general intensive care unit at XXX Medical Center between January 2015 and April 2021, who were diagnosed with acquired bacteremia. Collected data included demographic characteristics, medical history, severity of illness during ICU admission, blood culture results, GRV, and 28-day mortality. The primary endpoint was the GRV, compared between 72 hours prior to bacteremia and at time of bacteremia.

## Results:

The study included 107 patients with a mean age of 60.59 years (standard deviation [SD] 14.71 years), of whom 73% were male. The mean time from ICU admission to the onset of bacteremia was 16 days (SD 14). A statistically significant increase in gastric residual volume (GRV) was observed at the onset of bacteremia (time zero) compared to 72 hours prior. The mean GRV was 125 mL (SD 261 mL) at 72 hours before bacteremia and increased to 204 mL (SD 405 mL) at time zero ($p = 0.05$).

## Conclusion:

GRV increases prior to the onset of acquired bacteremia in critically ill patients. Further studies are needed to validate these findings.

# Gastric Ultrasound versus Aspiration for Gastric Residual Volume Monitoring: Effect on Time to Caloric Goal in Mechanically Ventilated ICU Patients – A Retrospective Cohort Study

**Dr. Sasha Rothschild, Cohen Shimon, Abu-Wasel Hussam, Abadi Alaa, Dichtwald Sara, Dana Elad**

*Meir Medical Center*

## Background:

Gastric residual volume (GRV) assessment by syringe aspiration is the standard method for guiding enteral feeding decisions in critically ill patients. Point-of-care gastric ultrasound (GUS) offers a non-invasive alternative, but its impact on feeding tolerance and goal attainment has not been established.

## Aim:

To compare the time required to reach the prescribed daily caloric goal between mechanically ventilated ICU patients monitored by GUS versus conventional gastric aspiration for GRV assessment.

## Methods:

This retrospective cohort study included 50 adult ICU patients receiving enteral nutrition via nasogastric tube at Meir Medical Center (25 in the GUS group; 25 historical controls assessed by aspiration). GRV in the GUS group was estimated using the Perlas antral cross-sectional area method. The primary outcome was time to caloric goal (hours); secondary outcomes included feeding interruptions due to elevated GRV and vomiting events. Normality was assessed with the Shapiro–Wilk test; continuous variables were compared using the Mann–Whitney U test or independent t-test as appropriate, and categorical variables using the chi-square or Fisher's exact test.

## Results:

Groups were comparable in age, sex, BMI, and nutritional targets (all $p > .36$). Time to caloric goal was significantly shorter in the GUS group (median 67 h, IQR 46–69, vs. 95 h, IQR 76–116; $p < .001$). Feeding interruptions due to elevated GRV were less frequent in the GUS group (8 vs. 27 total events; $p = .037$). Vomiting events were uncommon and did not differ significantly between groups (12.0% vs. 0.0%; $p = .081$).

## Conclusions:

Gastric ultrasound–guided GRV assessment was associated with significantly faster attainment of caloric goals and fewer feeding interruptions compared with conventional aspiration. These findings support gastric ultrasound as a feasible, non-invasive alternative for assessing feeding tolerance in critically ill patients, with potential to reduce both infectious risk and resource waste associated with aspirate disposal.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# The physiologic effect of the flow generated by high flow nasal cannula in mild respiratory failure, a prospective study

**Dr. Sara Sermoneta, dr. Akiva Nachshon, Prof. Vernon Van Herdaan**

*Hadassa Ein Kerem hospital*

## Purpose:

To evaluate the physiologic effects of high-flow delivered by High Flow Nasal Cannula (HFNC) on oxygenation, ventilation and cardiovascular vital signs (VS) in patients with mild hypoxemic respiratory failure.

## Methods:

This prospective interventional study conducted at an ICU in a level 1 academic medical center enrolled adults with mild hypoxemia, defined as the need for conventional oxygen therapy (COT) using nasal cannula at 4-5 liters per minute (LPM) to maintain O2 Saturation >90%.

After recording VS on baseline COT, patients were initiated on HFNC therapy. Changes to oxygenation and ventilation were recorded as the gas flow rate was increased every 5 minutes in 10 LPM increments, up to 60 LPM. The fractional inspired oxygen concentration (FiO2) was maintained at 0.4 and the temperature of the inspired gas was constant at 37±1o Celsius.

## Results:

Sixty patients, ages 27-84, were recruited. VS were continuously monitored and recorded every 5 minutes. Arterial blood gases were recorded at baseline COT, at the end of the intervention on HFNC and an hour post -intervention. At study start, median oxygen saturation (SpO2) levels were 97% and median partial arterial pressure of oxygen (PaO2) was 111.6mmHg. After 30 minutes of gradual increase of the flow rate up to 60LPM on HFNC a significant increase in the median SpO2 and PaO2 was observed (99% and 139.6mmHg, respectively, $p<0.0001$). The median partial pressure of carbon dioxide (PCO2) decreased from 40.05 to 37.45mmHg ($p=0.0066$) and the median respiratory rate decreased from 16 to 12 ($p=0.0005$). The most marked improvement in oxygenation and ventilation was noted at 30-40 LPM of inspired gas flow ($p<0.0001$).

## Conclusion:

Flow rates (with constant FiO2) generated by HFNC have a dose-dependent positive effect on oxygenation, ventilation and VS, producing an optimal effect at 30-40 LPM. HFNC therapy is superior to COT in mild respiratory failure.

## Figure Attachment (PDF):

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# Patients ventilated for airway protection in the intensive care unit and timing of tracheostomy: a retrospective study

**Dr. Eli Yohanan, Sara Dichtwald, Avraham Meyer**

*Meir Medical Center*

## Background:
Patients admitted to the intensive care unit (ICU) for mechanical ventilation to protect a compromised airway represent a distinct population in whom the need for, and optimal timing of, tracheostomy remain incompletely characterized.

## Objective:
To identify factors associated with the need for, and timing of, tracheostomy.

## Methods:
A retrospective cohort study of 103 ICU patients who were intubated for airway protection. Baseline characteristics, airway management, and clinical outcomes were compared between patients who underwent tracheostomy and those who did not, using univariable and multivariable logistic regression. A sub-analysis compared early (≤5 days) with late (≥6 days) tracheostomy.

## Results:
Tracheostomy was performed in 33 patients (32.0%), at a median of 5 days (IQR, 3–7) after ICU admission. On univariable analysis, tracheostomy was associated with higher APACHE-2 scores, difficult intubation, vasopressor requirement, and longer mechanical ventilation, ICU, and hospital stay (all $p < .05$). On multivariable analysis, difficult intubation was the only independent predictor of tracheostomy (adjusted OR, 2.99; 95% CI, 1.12–7.95; $p = .028$; AUC, 0.730). Late tracheostomy (≥6 days) was associated with significantly longer mechanical ventilation and ICU and hospital stay than early tracheostomy (≤5 days), despite comparable baseline severity of illness.

## Conclusions:
One in three patients ventilated for airway protection required tracheostomy, most within the first week of admission. Difficult intubation, rather than age or comorbidity burden, was the strongest independent predictor of tracheostomy need, suggesting that airway assessment at the time of intubation may help identify patients likely to benefit from earlier multidisciplinary discussion of tracheostomy.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):
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# Secondary Sclerosing Cholangitis in a Critically Ill Patient vs Ketamine-Induced Liver Injury: A Diagnostic Challenge

**Donna Ron MD, Renana Ben shushan Amor MD, Sara Dichtwald MD**

*Meir Medical Center, Israel*

## Objectives:

Continuous ketamine infusion is utilized as a rescue bronchodilator in severe status asthmaticus; however, high-dose prolonged infusions carry significant risks of hepatotoxicity and drug-induced cholestasis. Secondary sclerosing cholangitis in critically ill patients (SSC-CIP) is a severe, progressive cholangiopathy caused primarily by ischemic injury to intrahepatic bile ducts during intensive care treatment in individuals without prior hepatobiliary illness. In critically ill patients, distinguishing drug-induced liver injury (DILI) from SSC-CIP can present a diagnostic dilemma.

## Methods:

A retrospective clinical analysis was conducted on a 53-year-old female with Eosinophilic Granulomatosis with Polyangiitis (EGPA) who presented with severe status asthmaticus requiring mechanical ventilation, high-dose vasopressors, and continuous ketamine analgosedation. Evaluation of her severe acute cholestasis included serial laboratory profiling, viral/autoimmune screening, abdominal CT, ultrasonography, MRCP, liver biopsy, and subsequent invasive biliary interventions.

## Results:

Ketamine administration coincided with a severe cholestatic surge: GGT peaked at 6,000 U/L, ALKP at 2,000 U/L, and ALT at ~900 U/L, alongside hyperpyrexia (41.0°C). Initial MRCP showed intrahepatic biliary wall thickening without classic intraductal casts or strictures. Liver biopsy revealed extensive focal parenchymal necrosis, bile plugs, and acute neutrophilic cholangitis without periductal fibrosis. Following ketamine discontinuation, the patient initially showed clinical improvement, decannulation, and partial enzyme regression. However, six months after her initial presentation, she developed progressive jaundice and MRCP revealed an edematous liver, multiple hepatic abscesses, dilated intrahepatic bile ducts, and splenomegaly. She is currently awaiting orthotopic liver transplantation.

## Conclusions:

This case presented overlapping features of both Ketamine DILI and SSC-CIP, yet failed to classically match either entity. The delayed enzyme peak after drug cessation argued against pure DILI, while the absence of early intraductal casts on MRCP and periductal fibrosis on biopsy was uncharacteristic of classic SSC-CIP. Ultimately, her subsequent clinical deterioration with intractable cholangiopathy made the diagnosis of SSC-CIP most likely despite the non-classic initial course.

# Abstracts Presentation Session

## 19/11 | 15:00-16:30

**Moderator: Erez Dvir**

# "Do Pain Perception and Sociocultural Factors Influence Patients' Choice of Local Anesthesia Versus Moderate Sedation in Interventional Radiology?"

**Ninel Lugasi, Mahmod Hamdan, Katya Shleonsky**

*Hillel Yaffe MC, Israel*

## Aim & Objectives:

This study examined factors shaping patients' choice between local anesthesia alone and local anesthesia combined with moderate sedation during interventional radiology procedures. We focused on sociodemographic characteristics (age, gender, education, socioeconomic status), cultural factors (ethnicity, primary language, religion), and psychological factors, particularly pain catastrophizing.

## The Objectives:

were to explore how these factors, along with previous experiences with anesthesia, influence patients' sedation preference.

## Methods:

A prospective survey was conducted among 150 adult patients scheduled for interventional radiology procedures, including drain insertions, biopsies, endovascular interventions, and central venous catheter placements. Participants completed a digital questionnaire assessing sociodemographic and cultural characteristics, prior anesthesia experiences, and pain catastrophizing (Pain Catastrophizing Scale, PCS). After standardized explanation of sedation options, patients indicated their preference. Data were analyzed using descriptive statistics, chi-square tests, t-tests or non-parametric equivalents, and multivariable logistic regression to identify predictors of sedation choice.

## Findings/Outcomes:

Of the 150 participants, 40% (n=60) chose local anesthesia and 60% (n=90) preferred moderate sedation. Results indicated no significant associations between sociodemographic factors (age, gender, education, and socioeconomic status) and sedation preference ($p > .05$). However, patients electing for moderate sedation exhibited significantly higher Pain Catastrophizing Scale (PCS) scores ($p < .001$) and were more likely to report that prior anesthesia experiences significantly influenced their current choice ($p = .004$). Additionally, identifying as Muslim was associated with a higher preference for sedation ($p = .024$). Multivariable logistic regression confirmed that pain catastrophizing and influential prior experiences were the strongest independent predictors of sedation preference in this population.

## Discussion/Conclusion:

Patients' cognitive-emotional responses to pain and prior anesthesia experiences play a more prominent role in sedation choice than sociodemographic factors. Cultural context may influence expectations and comfort, but does not fully determine decisions. Sedation preference emerges as a multifactorial, person-centered decision shaped by individual perceptions of pain, prior experiences, and cultural background.

## Implication(s) for Practice:

Screening for pain catastrophizing and discussing previous anesthesia experiences during pre-procedural assessment may help identify patients likely to request sedation. Culturally sensitive communication that respects language, religious background, and pain beliefs can enhance shared decision-making, improve patient comfort and satisfaction, and support appropriate sedation use.

## Figure Attachment (PDF):

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# Making the Impossible Epidural Possible : CT-Based 3D Planning for Complex Thoracic Epidural

**Itay Omer, Nitzan Zohar, Valentin Nevkrytyy, Yaakov Abramov, Michael Peer, Ruth Shaylor**

*Tel-Aviv Medical Center, Division of Anesthesia, Intensive Care, and Pain Management, Tel Aviv-Yafo, Israel, Tel-Aviv Medical Center, Department of Thoracic Surgery, Tel Aviv-Yafo, Israel*

## Background:

Thoracic epidural anesthesia (TEA) is a cornerstone of postoperative analgesia in thoracic surgery, but technical difficulty and higher failure rates limit its use, particularly in patients with abnormal spinal anatomy. CT based 3D planning has recently been shown to improve first-pass success in patients with normal anatomy. Its application in complex cases has not yet been reported.

## Case Report:

A 26-year-old patient with cerebral palsy and prominent lumbar scoliosis, complicated by posterior rib cage rotation, presented for a modified Ravitch procedure to correct pectus carinatum. The patient had undergone scoliosis repair at age 16. Preoperative CT imaging revealed a non-instrumented fusion extending from T2 to L4.

Using SurgicalTheater software (Ohio, USA), a 3D reconstruction of the patient's spine was generated. A customized epidural tract was planned to traverse the skin into the epidural space without contacting bone. Intraoperatively, following induction of general anesthesia, the patient was positioned laterally.

Landmarks for epidural catheter placement were measured and marked according to the CT-based plan.

An anesthesia resident performed the procedure using the planned trajectory. Loss of resistance was achieved on the first attempt, and the epidural catheter was successfully inserted. The planned tract was unconventional, involving a lateral entry point with a cephalad-to-caudal direction.

Postoperatively, the patient received continuous epidural analgesia and remained pain-free immediately after surgery and on postoperative day 1.

## Discussion:

This case demonstrates the feasibility of CT-based 3D planning for TEA in patients with abnormal spinal anatomy, enabling effective catheter placement where conventional approaches would have been impossible. CT-guided planning may broaden the applicability of TEA to complex patient populations previously excluded from this technique.

Learning points: CT-based 3D planning can enable safe and effective thoracic epidural anesthesia even in patients with complex or abnormal spinal anatomy, where conventional approaches would otherwise be impossible.

## Figure Attachment (PDF):

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# The Effects of Postoperative Pain on Postoperative Infectious Complications

**Yoav Charpak-Amikam[1,2], Tomer Talmy[3,4,5,6], Itay Nitzan7, Alexander Avidan[1], Alexander M Binshtok[2,8], Elyad M Davidson[1], Stephane Ledot[1]**

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8. *The Edmond and Lily Safra Center for Brain Sciences, The Hebrew University of Jerusalem, Jerusalem, Israel*

## Objectives:

Pain is common in the postoperative period. Experimental evidence has demonstrated pain-induced immune dysregulation via several mechanisms which may render patients more vulnerable to postoperative infections. However, the clinical relevance of this link has not been well established. The goal of this study was to evaluate whether severe postoperative pain is associated with increased rates of postoperative infectious complications.

## Methods:

We conducted a retrospective multicenter cohort study using the TriNetX research network, an electronic health record database. Adult patients who underwent surgery and for whom pain severity in the first 3 postoperative days was measured were categorized according to their pain severity (mild vs. severe). Propensity score matching was performed based on relevant demographic and medical characteristics. The primary outcome was a composite of several healthcare-associated infections.Secondary outcomes included specific infections such as surgical site infections, urinary tract infections, lower respiratory tract infections, and sepsis.

## Results:

Among 933,174 eligible patients, we included 338,479 propensity-matched patient pairs. Severe pain was associated with significantly increased risk of healthcare-associated infections (HR=1.75 [95% CI=1.72-1.79, p<0.001]). This association was consistent across all secondary outcomes, including surgical site infections (HR=3.27 [95% CI=2.9-3.69, p<0.001]), lower respiratory tract infections (HR=1.45 [95% CI=1.39-1.5, p<0.001]), urinary tract infections (HR=1.81 [95% CI=1.75-1.87, p<0.001]), and sepsis (HR=2.21 [95% CI=2.12-2.31, p<0.001]).

## Conclusions:

Increased postoperative pain is associated with an elevated risk of healthcare-associated infections. These findings highlight the need for prospective interventional studies examining whether improved postoperative pain control reduces infection risk, alongside mechanistic studies investigating possible neuro-immune interactions.

# Intrathecal morphine in combined spinal–general anesthesia for laparoscopic hysterectomy: a retrospective cohort study

**Yair Binyamin, Sharon Orbach-Zinger, Maxim Pugachov, Karam Azem, Igor Gruzman**

*Soroka University Medical Center*

## Background:

Laparoscopic hysterectomy causes complex postoperative pain that is often inadequately controlled by standard multimodal protocols. We evaluated whether adding low-dose intrathecal morphine to a standardized enhanced-recovery protocol was associated with lower postoperative pain than general anesthesia alone.

## Methods:

In this single-center retrospective cohort study, 358 women undergoing elective or semi-elective laparoscopic hysterectomy between April 2021 and April 2025 received either general anesthesia alone (n = 172) or combined spinal-general anesthesia with intrathecal morphine 0.1 mg plus bupivacaine and fentanyl (n = 186). Multivariable regression and inverse probability of treatment weighting addressed confounding, including temporal confounding from staged protocol adoption. The primary outcome was peak pain (0–10 scale) in the recovery room.

## Results:

Peak recovery-room pain was lower with the combined technique (2.10 ± 1.86 vs 3.57 ± 2.14). After adjustment, the combined technique was associated with a 1.24-point lower peak pain (95% confidence interval −1.93 to −0.56), an estimate that persisted after inverse probability weighting (−1.16; −1.79 to −0.53). More patients were free of parenteral opioid rescue (78.5% vs 33.1%; absolute difference 45.4 percentage points; odds ratio 5.36, 95% confidence interval 3.30–8.71). Safety outcomes did not differ significantly.

## Conclusion:

Combined spinal-general anesthesia with low-dose intrathecal morphine was associated with lower postoperative pain and reduced parenteral opioid requirements after laparoscopic hysterectomy. These findings reflect the comparison of two complete analgesic strategies rather than the isolated effect of intrathecal morphine; randomized trials are needed to confirm causality.

# Targeting Peripheral Sodium Channel for Acute Postoperative Pain: Suzetrigine as a Novel Non-Opioid Analgesic.

**Ahmed Tougan, Prof. Elyad Davidson**

*Hadassah Ein Kerem Hospital*

## Objectives:

Acute postoperative pain remains a major challenge in perioperative medicine, while opioids are a great option for pain control yet they're limited by adverse effects and risks associated with their central mechanism of action, such as: apnea and the risk of addiction. Suzetrigine is a first-in-class, non-opioid analgesic designed to selectively inhibit NaV1.8 voltage-gated sodium channels involved in peripheral nociceptive signaling. This presentation reviews its mechanism of action and evaluates the clinical evidence supporting its role in acute postoperative pain.

## Methods:

The pharmacological aspects and clinical evidence for suzetrigine were reviewed, with emphasis on two randomized clinical trials involving adults with moderate-to-severe acute pain following abdominoplasty and bunionectomy. Analgesic efficacy was assessed primarily using the time-weighted sum of pain-intensity difference over 48 hours (SPID48), with placebo and hydrocodone/acetaminophen comparator groups.

## Results:

The abdominoplasty trial included 1,118 patients and demonstrated significantly greater pain reduction with suzetrigine compared with placebo (SPID48 least-squares mean difference 48.4; 95% CI 33.6–63.1; P<0.0001). The bunionectomy trial included 1,073 patients and similarly demonstrated superiority over placebo (difference 29.3; 95% CI 14.0–44.6; P=0.0002). Suzetrigine acts peripherally, providing analgesia without directly engaging opioid receptors or central opioid pathways.

## Conclusions:

Selective NaV1.8 inhibition represents a novel approach to acute pain management. Suzetrigine provides clinically demonstrated analgesia after surgery and introduces a new non-opioid mechanism that may broaden multimodal perioperative analgesic strategies. Further clinical experience will define its optimal role relative to established analgesic regimens.

## Figure Attachment (PDF):

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# Music-Based Self-Relaxation Web-application (MUSIC-CARE) Versus Patient-Selected Music from playlist During Forearm Orthopedic Surgery Under Regional Anesthesia

**Boccara Gilles, Mazeraud Aurélien, Guenoun Thierry, Romano Stéphane**

*American Hospital of Paris, Neuilly S/Seine*

## Objectives:

Perioperative anxiety may increase sedative requirements during orthopedic surgery under regional anesthesia (RA). Music-based interventions may help reduce anxiety and improve patient comfort. This study aimed to compare a standardized music-based self-relaxation web-application (MUSIC-CARE) with patient-selected music from a playlist regarding sedative consumption, pain, and anxiety during a forearm orthopedic surgery under RA.

## Methods:

In this prospective controlled study, 72 patients undergoing forearm orthopedic surgery under ultrasound-guided RA with 2% mepivacaine were randomly assigned to patient-selected music (control group) or MUSIC-CARE. Midazolam was titrated intravenously in 1-mg increments according to patient request and anxiety levels. A 20-mg propofol bolus was administered if more than 3 mg of midazolam was required. Primary endpoints were midazolam and propofol consumption. Secondary endpoints included pain and anxiety scores assessed using the Numeric Rating Scale (NRS) and Amsterdam Preoperative Anxiety and Information Scale (APAIS), respectively, physiological parameters, sedation scores, and patient satisfaction.

## Results:

36 patients were included in each group. Baseline characteristics and surgical data were comparable. All patients received midazolam, but mean consumption was significantly lower with MUSIC-CARE than in control group ($1.18 \pm 0.59$ vs. $2.37 \pm 0.53$ mg, respectively; $P < 0.05$). Propofol was required in fewer patients in the MUSIC-CARE group (13.8% vs. 33.3%). Among patients receiving propofol, doses did not differ significantly between groups ($42.0 \pm 18.7$ vs. $34.2 \pm 14.4$ mg, respectively; NS). Patient satisfaction was similar, and all participants expressed willingness to use music-based interventions again.

## Conclusion:

Compared with patient-selected music from a playlist, MUSIC-CARE was associated with lower midazolam consumption and a lower proportion of patients requiring propofol during forearm orthopedic surgery under RA. This standardized music-based relaxation program may help reduce perioperative sedative requirements.

References: Guetin S. Clin J Pain. 2012;28:329-37.
Graff V. Reg Anesth Pain Med. 2019;18:2018-100251.
Guerrier G. JAMA Ophthalmol 2021;139:1007-1013

# Which block, for which operation? Three promises of regional anaesthesia for oncological breast surgery, and what the evidence supports

**Dr. David Simon Rubin**

*Kaplan Medical center, Israel*

## Objectives:

Regional anaesthesia for breast cancer surgery is offered on three promises: better acute recovery, less persistent pain, and less cancer recurrence. We tested each against the current evidence and translated the result into a practical rule for block choice.

## Methods:

Narrative review. Guidelines, meta-analyses and randomised trials were identified through PubMed and Europe PMC, and every figure was checked against its source. Evidence was grouped by outcome, and operation-specific block selection was taken from the 2026 Anaesthesia narrative review of regional anaesthesia for breast surgery.

## Results:

Acute recovery is supported: in 16 randomised trials (1,026 patients) pectoral and serratus blocks reduced rest pain at two hours by 1.5/10 and nausea and vomiting from 31% to 19%; in 62 mastectomy trials (4,074 patients, 9 techniques) every technique reduced opioid use and none was clearly superior; the 2026 ASA guideline gives a strong recommendation for fascial plane or paravertebral blocks; and across 885 randomised trials regional anaesthesia was the key determinant of postoperative pain. Persistent pain is uncertain: the best-powered trial (n=2,108) found incisional pain in 52% versus 52% at six months (OR 1.00). Reduced recurrence is not demonstrated (HR 0.97; and n=526 with a block placed in the operative field), with no signal of harm. Infiltration matched a block for partial mastectomy (n=57) but not for mastectomy.

## Conclusions:

Choose the block for analgesia, not for oncology. For a small lumpectomy, infiltration with a multimodal base is reasonable; for mastectomy or axillary clearance every block beats infiltration. Match the nerve territory to the incision: anterolateral blocks for the lateral breast, parasternal for the medial breast, paravertebral for dense hemithoracic cover, and interpectoral when the pectoral muscles or axilla are involved. Because differences between blocks rarely exceed the minimal clinically important difference, the block you perform well is the block that works.

## Figure Attachment (PDF):

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# Anesthesia Management for Combined Gastroscopy and Bronchoscopy in a Child with Gillespie Syndrome: A Case Report

**Adham Fawarseh, Slava Sher, Dan Shamir, Vasile Recea**

*Rambam Health Care Campus*

Gillespie syndrome is a rare genetic disorder characterized by partial aniridia, cerebellar ataxia, intellectual disability, and generalized hypotonia. Anesthetic experience in affected children is extremely limited. We describe the perioperative management of an 18-month-old, 7.5-kg girl undergoing combined bronchoscopy and gastroscopy.

At 12 months of age, a previous outpatient gastroscopy was abandoned after 5 mg of propofol caused prolonged apnea and severe desaturation to 33%, requiring assisted mask ventilation. The child also had frequent vomiting, raising concern for aspiration. For the subsequent procedure, anesthesia was therefore planned in the operating room with advanced pediatric airway equipment available. No premedication was given. Inhalational induction with sevoflurane was performed while preserving spontaneous ventilation.

Nasal fiberoptic intubation with a 4.0-mm endotracheal tube was initially attempted but was abandoned after apnea developed. Oral intubation by direct laryngoscopy was then performed. During airway manipulation, brief laryngospasm occurred with desaturation to 40%, rapidly resolving with mask ventilation. After tracheal intubation, both bronchoscopy and gastroscopy were completed successfully. Spontaneous ventilation returned only at 0.2 MAC despite the absence of opioids or neuromuscular blocking agents. While still intubated, the patient vomited despite six hours of fasting and gastric suctioning, supporting the decision to secure the airway. Bronchoscopy demonstrated mild tracheomalacia and moderate left lower lobe bronchomalacia. Gastroscopy revealed esophagitis with esophageal dilatation and inflammation consistent with reflux.

This case highlights potential perioperative respiratory vulnerability in Gillespie syndrome, possibly related to generalized hypotonia and neurologic involvement. Patients with previous apnea or marked hypotonia may be particularly sensitive to respiratory depressant anesthetics and may have delayed recovery of spontaneous breathing. Procedures should be performed in a controlled environment with experienced pediatric anesthesia personnel, advanced airway equipment, and careful assessment of aspiration risk.

# Behavioral Changes in Children Aged 2–12 Years After Elective Surgery Under General Anesthesia: Interim Report of a Prospective Observational Study

**Daniel Vyuk, Dana Hoffman, Lilach Hazan van Duijn, Andrew Lee, Stanislav Shulman**

*Kaplan Medical Center*

## Objectives:

Negative behavioral changes are reported in 15–60% of children after surgery under general anesthesia, yet data from the Israeli pediatric population are limited. This study aims to determine the incidence of postoperative behavioral change in children aged 2–12 years and to identify clinical and emotional factors associated with its occurrence.

## Methods:

Children aged 2–12 years, ASA 1–2, undergoing elective surgery under general anesthesia at Kaplan Medical Center are prospectively enrolled with one parent (target n=100). Preoperative child (m-YPAS) and parental (VAS 0–10) anxiety, perioperative variables and PACU pain are recorded. Parents complete an 11-item PHBQ-AS-based telephone questionnaire on postoperative days 7 and 14, scored as the mean item score (1–5; 3 = unchanged), with a mean >3 taken as a descriptive indicator of behavioral worsening. This interim report is descriptive; no significance testing was performed.

## Results:

Between December 2025 and September 2026, 21 children were enrolled (median age 7.1 years, range 2.7–11.6; 16 girls): 12 general surgery, 8 orthopedic, 1 other. Median surgery duration was 40 minutes (range 14–94). All received inhalational induction; midazolam premedication was given to 1/21. Median parental anxiety VAS was 6/10 (IQR 4–8); 9/20 scored ≥7. PHBQ-AS data were available for 15 children at day 7 and 14 at day 14, with mean scores of 3.15 and 3.12, respectively. Scores >3 were observed in 8/15 (53%) at day 7 versus 4/14 (29%) at day 14. Parental anxiety showed no clear correlation with PHBQ-AS (r=+0.20 day 7; r=−0.04 day 14).

## Conclusions:

Preliminary data suggest a small, early postoperative behavioral disturbance that diminishes by two weeks, with mean scores remaining close to baseline. No association with parental anxiety is evident. Continued recruitment toward 100 children will determine whether these trends persist and whether the change is clinically meaningful.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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## Figure Attachment (PDF):

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# Anesthetic management in pregnant women with Fontan circulation: a single-center retrospective study (2011-2026)

**Yahya Aljuba, Daniel Shatalin, Alexander Ronenson, Amiram Nir, Yaacov Gozal, Tehila Avitan, Alexander Ioscovich**

*Shaare Zedek Medical Center*

## Objective:

To evaluate anesthetic management and maternal-neonatal outcomes in women with Fontan circulation. Methods: This retrospective single-center cohort study (2011-2026) included all pregnancies in women with Fontan circulation managed at a tertiary referral center. The primary outcome was anesthetic technique and the incidence of anesthesiarelated hemodynamic instability during delivery. Maternal characteristics, anesthetic management, and maternal and neonatal outcomes were reviewed.

## Results:

Twelve women experienced 32 pregnancies, including 17 deliveries. Cesarean delivery accounted for 76% (13/17). Among 12 cesarean with full anesthetic details, neuraxial anesthesia was used in 83% (10/12), predominantly low-dose combined spinal-epidural anesthesia with prophylactic phenylephrine infusion. Invasive arterial pressure monitoring was used in 75% (9/12). Anesthesia-related complications were limited to one transient hypotensive episode and two transient desaturation events. Two patients experiances thromboembolic events post-cesarean delivery; one patient developed postpartum pulmonary embolism, and another patient experianced transient ischemic attack. No maternal deaths occurred. Prematurity occurred in 65% (11/17) of deliveries, and 56% (10/18) of neonates required neonatal intensive care admission.

## Conclusions:

In women with Fontan circulation managed within a structured multidisciplinary program, a standardized anesthetic approach incorporating low-dose combined spinal-epidural anesthesia and prophylactic phenylephrine infusion was associated with favorable maternal outcomes. These findings should be interpreted in the context of comprehensive multidisciplinary care, careful patient selection, and institutional expertise rather than attributed to the anesthetic technique alone. Neonatal morbidity related to prematurity remained substantial, highlighting the need for continued optimization of obstetric timing and coordinated peripartum management in this high-risk population.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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## Figure Attachment (PDF):

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# Silent megaesophagus following adjustable gastric banding: an occult aspiration risk

**Reut Schvartz**

*Assuta Medical Center, Israel*

## Objectives:

To highlight clinically silent megaesophagus as a late complication of laparoscopic adjustable gastric banding (LAGB) and an underrecognized perioperative aspiration hazard. Chronic outflow resistance following LAGB may cause progressive dysmotility, pseudoachalasia and esophageal dilatation. True megaesophagus has been reported in approximately 2% of patients following LAGB, while lesser degrees of esophageal dilatation are more frequent (18%).

## Methods:

We describe a 70-year-old woman presenting for elective shoulder arthroplasty, 24 years after LAGB. The band had been completely deflated for several years. She denied dysphagia, regurgitation, reflux, nausea or vomiting and complied with standard fasting guidelines. Rapid-sequence induction and tracheal intubation were uneventful.

## Results:

During surgery, review of the preoperative shoulder CT revealed massive esophageal dilatation approaching 10 cm, with extensive retained intraluminal contents. The anesthetic plan was modified to mitigate aspiration during emergence. Approximately 1 L of retained esophageal and upper gastrointestinal contents was suctioned. Following complete neuromuscular reversal with sugammadex, the patient was extubated fully awake in the seated position without clinical evidence of aspiration.

## Conclusion:

Severe esophageal dysfunction following LAGB may persist despite band deflation and remain clinically silent for decades. In advanced megaesophagus, the esophagus may function as a reservoir, allowing substantial retention despite standard fasting whilst the stomach appears empty. Thus, absence of gastrointestinal symptoms, prolonged fasting and band deflation should not provide false reassurance regarding aspiration risk. Previous LAGB should prompt targeted questioning for esophageal dysfunction and consideration of available chest or upper-body imaging for esophageal dilatation. Recognition of suspected megaesophagus should trigger individualized aspiration-risk mitigation during both induction and emergence. This case emphasizes the importance of maintaining vigilance for late complications of historical bariatric procedures during preoperative assessment.

# Abstracts Presentation Session

## 19/11 | 15:00-16:30

**Moderator: Erez Dvir**

# Reduction of Anaesthesiologists' Sevoflurane Exposure during Paediatric Mask Induction with an Additional Scavenger: A Randomized Study

**Artul Salim, Feras Somri, Jalaa Hussein, Husein Khalaily, Mostafa Somri**

*Bnai Zion Medical Center Israel*

## Background:

Paediatric inhalational induction with a face mask is a well-recognized source of occupational exposure to waste anaesthetic gases. Conventional anaesthesia machine scavenging systems are ineffective in capturing extra-circuit leaks occurring at the patient-mask interface. Urinary hexafluoroisopropanol (HFIP), a metabolite of sevoflurane, is a sensitive biomarker of systemic exposure.

## Methods:

In this prospective randomized parallel-group study, twenty anaesthesiologists performing paediatric mask inductions with sevoflurane in an induction anaesthesia room were allocated to work either with or without an additional external active gas scavenger positioned near the patient's face. Urine samples were collected before exposure and the following morning. HFIP concentrations were quantified by chromatography and normalized to creatinine. Between-group comparisons were performed using Welch's t-test, with a Mann-Whitney U test used as a sensitivity analysis.

## Results:

Urinary HFIP concentrations were significantly higher in anaesthesiologists working without the additional scavenger compared with those using the scavenging system (mean ± SD: 0.63 ± 0.30 vs 0.02 ± 0.04 µg/mL; $p = 0.002$; Cohen's $d = 3.19$). HFIP was undetectable or near the analytical detection limit in most samples obtained with scavenging. The observed difference corresponded to a very large effect size, indicating a marked reduction in systemic sevoflurane exposure when the additional scavenger was used.

## Conclusions:

Use of an additional external scavenging system during paediatric mask induction was associated with a substantial reduction in anaesthesiologists' biological exposure to sevoflurane, as assessed by urinary HFIP.

These findings provide biological evidence supporting exposure reduction strategies during paediatric inhalational anaesthesia, although the clinical significance of the observed differences remains to be established.

# Determinants of Postoperative Outcomes Following Non-Traumatic Emergency Laparotomy: A Two-Year Retrospective Cohort Study

**Dr. Maher Imad Skakia, Prof Miklosh Bala, Dr. Ledot Stephane**

*Hadassah Ein Kerem Hospital*

## Background:

Emergency laparotomy carries high morbidity and mortality, influenced by patient comorbidities, severity of surgical pathology, and perioperative management. Identifying predictors of ICU admission and in-hospital mortality is crucial to guide risk stratification and optimize perioperative care.

## Methods:

We conducted a two-year retrospective cohort study of adults following non-traumatic, non-gynecologic emergency laparotomy at a tertiary university hospital. Data on demographics, comorbidities, intraoperative variables, and postoperative complications were collected. Multivariate logistic regression models were used to identify independent predictors of ICU admission and in-hospital mortality.

## Results:

High-risk surgical pathology strongly predicted ICU admission, with ischemia or perforation increasing risk more than sevenfold (OR 7.71, 95% CI 2.07–28.70). Pre-existing pulmonary disease (COPD) independently increased ICU admission risk over fivefold (OR 5.47, 95% CI 1.12–26.69).

In-hospital mortality was primarily driven by high-risk indications – ischemia (OR 12.6, 95% CI 2.7–59.1) and complex pathology (OR 17.4, 95% CI 2.6–116.8)– , postoperative complications (OR 6.0, 95% CI 1.3–28.8)– especially acute kidney injury (OR 4.78, 95% CI 1.26–18.10) – and initial presentation outside emergency department or surgical ward (OR 9.9, 95% CI 2.1–47.5). Delay to surgery (more than 12 hours) and other demographic variables were not independently predictive after adjustment.

## Conclusion:

Severity of surgical pathology at presentation, pre-existing comorbidities, and postoperative organ dysfunction are key determinants of ICU admission and in-hospital mortality following emergency laparotomy.

# Intraoperative changes in the airway opening pressure and pulmonary complications

**Zoriana Melnychuk, Olga Kapilov, Uriel Trahtemberg, Arthur S. Slutsky, Laurent Brochard**

*Emek Medical Center*

## Background:

Setting optimal positive end-expiratory pressure (PEEP) during anesthesia remains a challenge. While airway opening pressure (AOP) is crucial for determining minimal PEEP in mechanical ventilation, data regarding its prevalence and clinical relevance during surgery are scarce.

## Aims:

To determine the incidence of non-zero AOP (AOP > 0) during anesthesia and evaluate its association with intraoperative respiratory deteriorations and postoperative pulmonary complications (POPC) up to postoperative day 2 (POD-2).

## Methods:

This retrospective observational study analyzed 100 patients undergoing surgery lasting ≥ 2 hours under general anesthesia with neuromuscular blockade. Clinical, demographic, and hourly ventilatory data were collected at baseline, intraoperatively, in the PACU, and at POD-2.

## Results:

At surgery initiation, 51% of patients had a non-zero AOP (range 1-10 cm $H_2O$), with 8% more by the end of surgery. Higher BMI and baseline risk factors significantly correlated with an elevated initial AOP (p=0.023). Patients with an initial non-zero AOP experienced more intraoperative complications and a lower POD-2 saturation-to-$FiO_2$ (S/F) ratio (367 vs. 414, p=0.03). An increasing intraoperative AOP trend (observed in 1/3 of patients) linearly correlated with higher POPC rates in the PACU and at POD-2 in a dose-dependent manner. Ventilating patients with a set PEEP below AOP by > 1 cm $H_2O$ (n=30) significantly predisposed them to intraoperative respiratory deteriorations (53% vs. 17%, p=0.0003) and a subsequent increase in AOP.

## Conclusions:

Non-zero AOP is highly prevalent during major surgery and correlates with adverse perioperative respiratory outcomes. Ventilating patients at PEEP < AOP worsens intraoperative performance and severely distorts actual driving pressure measurements, representing a major unmeasured source of bias in protective ventilation strategies.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

https://icisa2026abstracts.forms-wizard.biz/download/JCze-SB_awdzaoxFFaFr2dg-In7mBihS8mgmyGMy

# Modeling Optimal Laboratory Testing in the Perioperative Setting

**Amy S Fox[1], Martin Griffel[2], Lucia R Wolgast[1], D.Y. Goldstein[1]**

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## Objectives:

Maintaining hemodynamic stability in the OR requires rapid results. The median turnaround time for central laboratory coagulation testing is approximately 90 minutes, compared to just over 2 minutes for equivalent point of care testing (POCT). While POCT closes this critical gap, it introduces questions around program governance and regulatory responsibility. The activated clotting time (ACT) illustrates this point. ACT classifies as non-waived, moderate complexity testing under international laboratory regulations (CLIA, ISO, etc.). This requires documented competency, user proficiency, and compliance documentation under a laboratory director's license. We present a decision framework outlining the key question(s) each institution must address to determine the location for these tests.

## Methods:

We evaluated three delivery models: central laboratory, anesthesiology-run in-OR POCT, and satellite laboratory proximate to the OR. Considerations included capital construction, instrument costs, OR opportunity costs, reagent costs, TAT, transport time, and staffing.

## Results:

Anesthesiology ownership of POCT devices in the operating room is efficient but exposes institutions to regulatory risk.

Conversely, while pathology holds the regulatory expertise, central lab testing is too slow for the operating room as timely results are essential to patient management. A shared governance model using a satellite laboratory proximate to the OR bridges this divide. Satellite labs can approximate turn-around-time of in-OR POCT.

Anesthesiology owns clinical workflows. Pathology owns the regulatory program, from device selection through operator training, quality control, proficiency testing, and post-analytic data integration. Additional geographically adjacent units may also utilize this satellite lab.

## Conclusions:

Jointly governed programs are optimal for anesthesiology, pathology, and regulatory compliance. Satellite lab ROI improves when additional assays such as blood gases and PTH are added to the menu, with the added benefit of keeping all testing under laboratory staff rather than requiring lab oversight of clinical personnel. This model has proven both clinically effective and regulatorily defensible.

# Artificial Intelligence Smartphone Airway Assessment: Prospective Agreement with Conventional Anesthesiologist Evaluation. A Pilot Study

**Yehoshua Wexler[1], Andrew Lee[1], Avner Rouach[2], Lilach Hazan Van Duijn[1]**

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## Background:

Preoperative airway assessment is essential for anticipating difficult airway management, yet conventional face-to-face evaluation remains inherently subjective. Advances in Artificial Intelligence and computer vision may enable standardized digital airway assessment. The CatAI platform has previously supported >1,000 remote patient smartphone submissions, with images successfully included in 87%, demonstrating the feasibility of patient-generated imaging and providing an operational basis for digital airway assessment.

## Objectives:

To evaluate agreement between an AI-based smartphone airway assessment and conventional anesthesiologist evaluation in predicting anticipated difficult airway management.

## Materials and Methods:

Fifty healthy adult volunteers were prospectively enrolled. Each participant completed a standardized, self-administered CatAI smartphone assessment including facial images, mouth-opening and Mallampati views, neck-movement recordings, and predefined airway-related tasks. AI analysis generated a binary prediction of anticipated airway difficulty. Participants then underwent conventional face-to-face airway assessment by anesthesiologist blinded to the application output. The primary outcome was agreement between methods.

## Results:

Participants included 23 males (46%), 27 females (54%), with mean age 44 ± 15 years (range 18–76), mean body weight 78 ± 16 kg, and mean BMI 27.1 ± 4.5 kg/m². Overall agreement between the AI-based application and anesthesiologist assessment was 92% (46/50), with substantial agreement (Cohen's $\kappa = 0.83$). Four discordant assessments were observed, most associated with suboptimal image quality or incomplete video recordings.

## Conclusions:

AI-based smartphone airway assessment demonstrated high agreement with blinded conventional anesthesiologist evaluation. These findings support the feasibility of digital airway assessment but do not establish diagnostic accuracy for difficult airway events.

Prospective validation against intraoperative outcomes – Cormack-Lehane grade, difficult mask ventilation, intubation difficulty and peri-intubation desaturation – is required before broader clinical implementation, followed by multicenter validation.

## Figure Attachment (PDF):

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# Postoperative pain management after the new bariatric technique using endoscopic sleeve gastroplasty: An observational study of 100 cases

**Gilles Boccara[1], Thierry Guenoun, MD[1], Gabriel Rahmi, MD, PhD[2], Luc Karsenty, MD[1]**

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Endoscopic sleeve gastroplasty (ESG) is a new mini-invasive technique proposed to treat obesity. Compared to videolaparoscopy, it is supposed less painful but informations are rare. In this observational pilot study, we prospectively assessed the postoperative analgesia concerns.

The first 100 consecutive adult patients to undergo ESG according to a standardized technique, were included (Apollo Endosurgery, UK, Ltd). Patients were informed and gave their consent.

After oral hydroxyzine premedication, anesthesia was standardized (intravenous IV sufentanil, propofol, dexamethasone) and succinylcholine to facilitate tracheal intubation using videolaryngoscopy (MacGrath). After checking empty and intact stomach, IV atracurium was used to help mechanical ventilation during stomach CO2 insufflation under EtCO2 monitoring. Anesthesia is maintained using sevoflurane, adjusted to get a 40-60 on the BIS monitoring. The postoperative analgesia included IV paracetamol 1 g, parecoxib 40 mg and tramadol 100 mg, before tracheal extubation. IV morphine was titrated in the recovery room. A standardized multimodal analgesia protocol was implemented starting ( IV paracetamol, IV phloroglucinol) and PCA IV morphine (bolus 1 mg, lockout 5 min). If additional anxiolytic was required, IV hydroxyzine and sublingual amitriptyline (8-14 mg) were administered.

Mean BMI was 33.0 ± 4.6, mean age was 46.4 ± 12.4 years and 60% female. Duration was 77.5 ± 3.5 min. The main types pain were stomach muscle contractures and spasms (90%), and a projected pain in shoulder (20%). The maximal pain was 4.0 ± 2.8 and 28 % expressed severe pain (> 6/10) but faster controlled by sublingual amitryptilline, and IV hydroxyzine. Only 5 from the first 25 patients used PCA (mean total dose 3.5 ± 2.1 mg). So, we replaced PCA by subcutaneous morphine and sublingual amitriptyline and IV hydroxyzine were systematically used. Vomiting occurred in 22 %, and no bleeding or infectious complication were reported. All the patients were discharged on day 1.

# Management and Prevention of an Intraoperative Fall off a Hana Table While Under General Anesthesia

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Falls are frequently reported safety incidents in hospitals but rare in the operating room. All healthcare team members in the operating room, including anesthesiologists share the common responsibility for ensuring patient safety to avoid falls, which may result in increased morbidity and mortality.

We describe the case of 61-year-old female, BMI 38.4, who fell off the operating room (OR) Hana table at the end of a closed hip reduction, while still intubated and under general anesthesia with a MAC of 2.1. Patient slid off the table, into a sitting position on the floor, with the ETT still in place.

Standard ASA monitors were reattached, and ETT confirmed to still be secure. Patient was easily ventilated and hemodynamically stable. Patient, with no apparent injury, was put back on a backboard, with a precaution neck collar and lifted back to a bed for extubation. Patient was AAO, but sent to get a CT head/neck and hip Xray.

Imaging results were negative and patient doing well postoperatively. Upon review, patient was still under full anesthesia, paralyzed (not reversed yet) making patient movement unlikely to be the reason for the fall. Reviews of OR cameras revealed that the safety perineal post of the Hana table had been removed by the circulating nurse so as to place the wedge at the end of the procedure; it was not reinserted, leading to the patient sliding off the table.

Though rare, literature review evidences OR falls resulting in morbidity and mortality. Risk factors include patient body habitus, light anesthesia, unlocked OR tables, unattached patient safety straps, lack of familiarity of the personal with OR table functioning, and absence/lack of support personnel. All OR team members need to be vigilant to prevent these events and anesthesia providers should never be left alone to ensure patient safety.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# Norepinephrine–Midazolam Medication Errors in Anesthesia: A Six-Case Analysis of System Vulnerabilities and Opportunities for Prevention

**Dr. Nitzan Shmueli, Dr. Recea Vasile, Dr. Bar-On Dana**

*Rambam Health Care Campus*

## Background:

Medication errors involving high-alert medications can cause patient harm and are multifactorial. Anesthesiologists administer up to half a million medications throughout their careers, creating opportunities for error. We identified a recurrent pattern of medication errors involving confusion between norepinephrine and midazolam.

## Methods:

We retrospectively reviewed six reported cases of confirmed or suspected inadvertent administration of norepinephrine instead of midazolam during anesthesia care at Rambam Health Care Campus, including operating rooms (OR), a percutaneous coronary intervention (PCI) laboratory, and internal medicine wards. Cases were analyzed using a systems-based approach according to five levels of contributing factors (5M).

## Case Series:

Two young women undergoing elective laparoscopic surgery received 1 mg norepinephrine instead of 1 mg midazolam during induction. Both developed Takotsubo syndrome and required intensive cardiac care unit admissions. The ampoules were similar (LASA) and stored in close proximity within the same anesthesia medication drawer. The cases were reported to the Ministry of Health, and LASA warning labels were subsequently applied.

Two additional suspected errors occurred in the cardiac OR during preparation for weaning from cardiopulmonary bypass. Sudden hypertension on bypass was immediately recognized and managed. A stock of norepinephrine was identified in the anesthesia medication drawer and subsequently removed. Two further cases occurred outside the OR and prompted a multidisciplinary, hospital-wide approach to medication safety.

## Results:

Multiple contributing factors were identified: absence of double-checking, inappropriate medication storage, limited availability of non-LASA alternatives, lack of universal medication-handling protocols, limited regulatory guidance regarding anesthesia medication safety, and insufficient communication between pharmaceutical manufacturers and healthcare providers.

## Conclusions:

This case series demonstrates that medication errors during anaesthesia represent a multilevel systems problem rather than isolated individual mistakes. Prevention requires coordinated interventions involving manufacturers, regulators, hospitals, clinical departments, and healthcare professionals, including improved medication differentiation, standardized labeling, safer storage, universal handling protocols, and strengthened communication.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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# Neutrophil Gelatinase-Associated Lipocalin (NGAL) Levels in Patients Undergoing Surgery with Pneumoperitoneum in Trendelenburg Position

**Adir Ben Nachum, Pizov Reuven, Plotkin Yevgeni, Hinden Liad, Jaber Daniel**

*Hadassah Ein Kerem Hospital*

## Background:

Procedures involving pneumoperitoneum and Trendelenburg position often result in decreased renal perfusion pressure (RPP). Acute kidney injury (AKI) due to hypoperfusion is characterized by early tubular damage. NGAL have been shown as an early biomarker for tubular damage and may indicate early AKI.

## Study Objective:

To assess NGAL changes in patients undergoing surgery with pneumoperitoneum and Trendelenburg position. Materials and Methods:

This study included 28 patients undergoing surgeries involving pneumoperitoneum and Trendelenburg position. Evaluated parameters included:

1. RPP during surgery at 5-minute intervals.
2. Intraoperative urine output and early postoperative urine output.
3. Serum creatinine levels pre-surgery, 2 hours post-surgery, and on postoperative days 1 and 3.
4. Serum and urine levels of NGAL before and 2 hours after surgery.

Statistical Analysis
Wilcoxon test was employed for analysis.

## Results:

Periods with RPP of less than 60 mmHg were observed in the majority of patients. Three patients presented with increased serum creatinine in the postoperative period. Urine NGAL levels were significantly increased 2 hours post-surgery compared to baseline measurements.

## Discussion and Conclusions:

The study demonstrates a significant decrease of RPP in studied patients undergoing procedures with pneumoperitoneum and Trendelenburg position. The NGAL urine levels were significantly increased two hours after surgery. While this small sample study does not allow us to establish correlation between NGAL and RPP or an increase in serum creatinine levels, the findings can serve as a basis for further investigation.

## Figure Attachment (PDF):

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# Endocannabinoids as Early Predictors of Acute Kidney Injury in Patients Undergoing Laparoscopic/Robotic Surgery in Trendelenburg Position

**Daniel Jaber, M.D., Adir M.D., Gozal M.D., Davidov M.D., Tam, Ph.D., Plotkin M.D.M.D., Reuven Pizov, M.D.M.D., Liad Hinden, Ph.D.**

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## Objective:

The combination of steep Trendelenburg positioning (TP30-45°) with pneumoperitoneum (PnP, 10-20 mmHg) during laparoscopic or robotic surgery is known to have a significant effect on kidney function. Current clinical criteria for kidney injury, serum creatinine levels, and urine output are not sensitive enough to detect early subclinical acute kidney injury (AKI). The aim of our study is to evaluate endocannabinoids (eCBs) as markers of early AKI.

## Methods:

This is an analysis of 26 recruited patients from a prospective observational trial (ASA I-IV) undergoing robotic or laparoscopic surgery in the TP position. Renal perfusion pressure (RPP) was estimated using a geometrical model based on mean arterial pressure measurement using an arterial line zeroed at the aortic root, with PnP maintained at pressure 10-20 mmHg. eCBs and serum creatinine (sCr) were measured at baseline and two hours after surgery. eCBs and related lipid mediators—anandamide (AEA), 2-arachidonoylglycerol (2-AG), arachidonic acid (AA), palmitoylethanolamine (PEA), and oleoylethanolamine (OEA)—were quantified using LC-MS/MS in a blinded laboratory analysis. Comparisons between baseline and two hours postoperatively were performed using the Wilcoxon signed-rank test, and correlations between RPP and eCB changes using the Spearman non-parametric test.

## Results:

Overall, 65% of patients (n=17/26) experienced sustained low RPP (<60 mmHg for >30 minutes). Postoperative sCr increased by >30% in 3 patients within 7 postoperative days. Urinary 2-AG levels consistently increased postoperatively across the cohort, accompanied by substantial elevations in urinary AA, PEA, and OEA. Conversely, plasma eCB concentrations demonstrated patient-specific shifts without correlation to RPP reduction.

## Conclusions:

Surgeries combining PnP and TP frequently expose patients to prolonged low RPP. Postoperative accumulation of urinary eCB metabolites highlights subclinical renal tubular stress and establishes the endocannabinoid system as a promising biomarker pathway for AKI. In this small group of patients, we did not observe a correlation between RPP and changes in eCBs

## Figure Attachment (PDF):

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# Delayed Anesthesia Emergence due to Contrast-Induced Encephalopathy from Iohexol: A Case Report

**Maya Shina, Yoav Levi, Vasile Recea**

*Rambam Health Care Campus*

## Introduction:

Contrast-induced encephalopathy is a rare, typically reversible neurotoxic reaction following iodinated contrast administration during endovascular procedures. Its presentation frequently mimics acute ischemic stroke, intracranial hemorrhage, or global anoxia, posing a critical diagnostic challenge for the anesthesia team when assessing delayed awakening.

## Case Presentation:

A 73-year-old woman with extensive cardiovascular comorbidities underwent elective thoracic endovascular aortic repair for a descending aortic aneurysm under general anesthesia. The four-hour procedure was complicated by technical difficulties with the automated contrast injector, resulting in the excessive iohexol (Kopaq 350) administration.

The patient was successfully extubated but failed to regain consciousness, exhibiting decerebrate posturing, rightward gaze deviation, asymmetric arm tone, and recurrent generalized seizures requiring antiepileptics and reintubation. Non-contrast head CT showed prominent bilateral subarachnoid hyperattenuation mimicking subarachnoid hemorrhage, with diffuse hypodensities suggestive of cerebral edema; CT angiography excluded large-vessel occlusion. Follow-up CT demonstrated partial resorption of contrast and hypodensities. Brain MRI revealed symmetric cortical diffusion restriction along the high convexities. Neuroradiology attributed these changes to seizure activity rather than infarction, fat embolism, or hypoxic-ischemic injury. She achieved substantial neurological improvement, was extubated after prolonged intensive care, and at four-month follow-up had complete neurological recovery (NIHSS 0) and was off antiepileptics.

The clinical picture fulfilled diagnostic criteria for CIE: acute neurological deterioration within 24 hours after contrast exposure, neuroimaging evidence of contrast extravasation, and exclusion of stroke, hemorrhage, and metabolic causes.

## Discussion:

This case illustrates CIE presenting as delayed emergence with acute focal deficits and seizures. Prompt recognition is paramount: differentiating neurotoxic contrast extravasation from thromboembolism prevents hazardous empiric interventions like thrombolysis. From a patient safety perspective, this event underscores the need for interdisciplinary contrast stewardship, vigilant monitoring of automated injectors, and closed-loop communication between interventional and anesthesia teams during equipment malfunctions. Most patients recover substantially with supportive care, as demonstrated here.

# Toward Bedside Sedation Monitoring in ICU: Concordance Between Readily Available EEG Parameters and RASS – A Pilot Study

**Shadi Khateeb, Neta Gery Golomb, Aeyal Raz**

*Poriya Medical Center (North Medical Center)*

## Background:

Sedation depth in ICU is still assessed mainly by subjective scales such as the Richmond Agitation–Sedation Scale (RASS). Objective indices such as the Bispectral Index (BIS) target deep sedation and perform poorly in the lighter ranges recommended in critical care. Bedside EEG monitors display simple 1 Hz parameters requiring no offline processing, but their clinical utility for sedation assessment is unknown.

## Objective:

To determine the association between simple bedside EEG parameters and RASS score, and whether these parameters can distinguish light from deep sedation.

## Methods:

In this retrospective pilot study, 20 mechanically ventilated ICU patients underwent routine 4-channel bedside EEG monitoring (Mindray). For each RASS assessment, we averaged preceding one-minute window of 92 monitor-derived parameters (40 raw, 52 band-power/spectral-edge ratios). Within-patient association with RASS was assessed by repeated-measures correlation (rmcorr), confirmed by cluster-robust regression and mixed-effects modeling, with FDR correction and leave-one-patient-out stability testing. RASS was also collapsed into binary light/deep sedation categories under two thresholds and compared with mixed-effects models.

## Results:

The theta/alpha ratio in channel 2 (Fp2-A2) showed the strongest, most consistent association with RASS, significant by all three methods and the only parameter surviving FDR correction. Despite this significance, values overlapped across RASS scores within patients, so a single bedside reading could not reliably discriminate sedation depth per patient, given the risk of false-positive readings of adequate sedation. In the binary analysis, the theta/alpha ratio was significant under an alternative light-sedation threshold but did not survive FDR correction.

## Conclusions:

Clinically relevant information can be extracted from a single, readily available EEG channel, supporting its feasibility for bedside use. However, statistical significance did not translate into reliable individual-patient discrimination. Distinguishing light from deep sedation likely requires more complex, multidimensional analysis, such as machine learning applied to these 1 Hz parameters, rather than any simple parameter or ratio.

## Figure Attachment (JPEG, JPG, GIF, PNG, BMP and TIFF files):

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