ISSN 1679-4508

ALBERT EINSTEIN
INSTITUTO ISRAELITA DE
ENSINO E PESQUISA

einstein

volume 23, supplement 1, 2025

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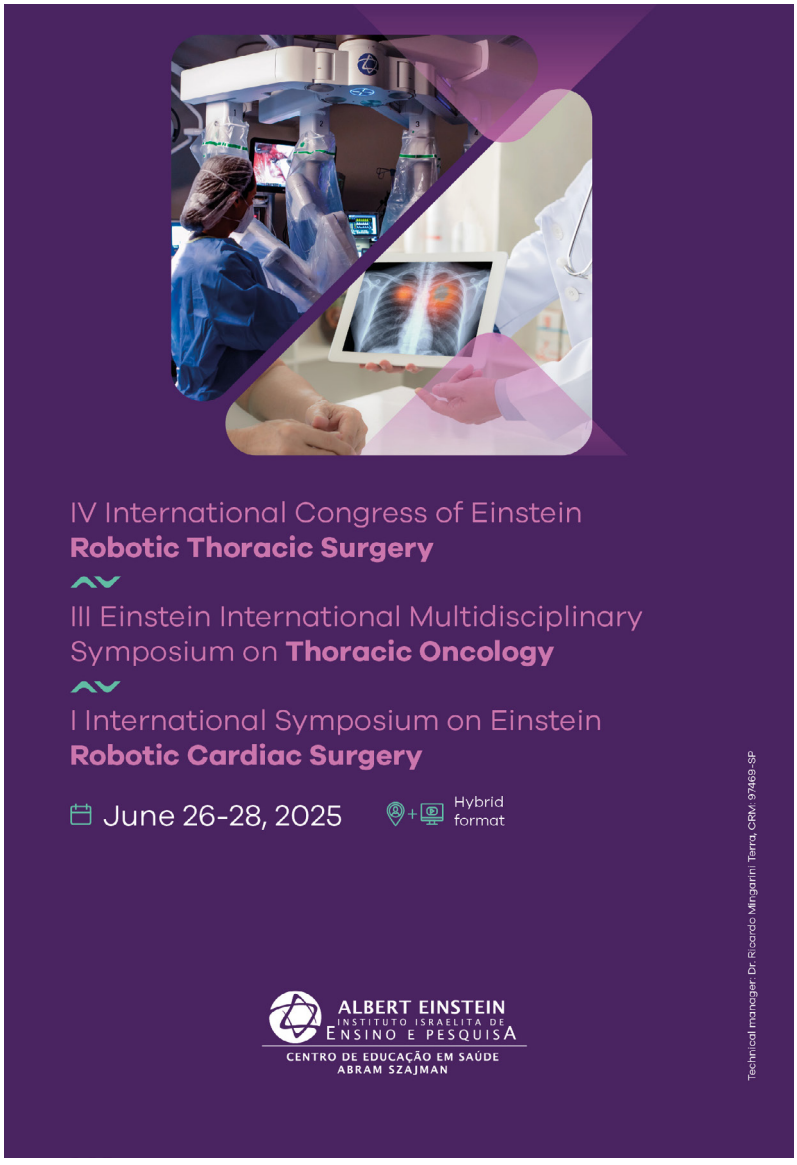

SUPPLEMENT 1

e-ISSN: 2317-6385

einstein

Official Publication of the Instituto Israelita de Ensino e Pesquisa Albert Einstein

Instituto Israelita de Ensino e Pesquisa Albert Einstein
Sociedade Beneficente Israelita Brasileira Albert Einstein
Avenida Albert Einstein, 627/701 - building A, 2nd sub-basement, einstein journal - Morumbi
Zip code: 05652-900 - São Paulo - SP - Brazil
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Phone: (55 11) 2151-1233 - ext.: 70904/70902

Indexed in SciELO
Indexed in LILACS
Indexed in Emerging Sources Citation Index (Web-of-Science)
Indexed in Embase
Indexed in MEDLINE

Periodicity: continuous publication

einstein (São Paulo), v. 23, supplement 1, pages S1-S25, 2025

einstein (São Paulo)
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einstein (São Paulo) - e-ISSN: 2317-6385 is a continuous publication journal published by the *Instituto Israelita de Ensino e Pesquisa Albert Einstein* - IIEP. Our journal publishes supplements. The statements and opinions contained in articles are solely responsability of the individual authors and not of the publisher or editors. Total or partial reproduction of manuscripts is allowed, once the source is cited. The electronic format, e-ISSN 2317-6385, is continuously published.

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Subscription rates
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Welcome Address

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4th International Congress on Robotic Thoracic Surgery III Einstein International Multidisciplinary Symposium on Thoracic Oncology and I International Symposium on Einstein Robotic Cardiac Surgery

It is with great honor and enthusiasm that we welcome all participants to this joint scientific meeting hosted by the *Hospital Israelita Albert Einstein*: the 4th International Congress on Robotic Thoracic Surgery, the III Einstein International Multidisciplinary Symposium on Thoracic Oncology, and the I International Symposium on Einstein Robotic Cardiac Surgery.

This combined event reflects our institutional mission to promote cutting-edge science, education, and collaboration across disciplines. It brings together surgeons, oncologists, pulmonologists, cardiologists, intensivists, radiologists, anesthesiologists, and researchers from around the world to share knowledge, debate challenges, and build the future of care for patients with thoracic and cardiovascular diseases.

In recent years, robotic surgery has emerged as a transformative tool across specialties–enhancing precision, improving recovery, and opening new frontiers in both thoracic and cardiac procedures. Equally, multidisciplinary cancer care has advanced through personalized strategies, molecular diagnostics, and integrated treatment planning. At the core of all this progress is the power of education, teamwork, and research.

At our institution, we are proud to lead several initiatives that embody these values. Our International Postgraduate Program in Robotic Thoracic Surgery has trained over 150 surgeons, grounded in a structured, simulation-based curriculum. Our Center of Excellence in Thoracic Precision Medicine brings together clinical and research teams in pursuit of personalized and minimally invasive therapies. And our growing robotic cardiac surgery program represents a new phase in our commitment to innovation with safety and outcomes at the forefront.

The abstracts presented in this supplement reflect the breadth and vitality of this unique gathering. They showcase original research, clinical experience, and future directions in robotic surgery, thoracic oncology, and multidisciplinary care. More than that, they highlight the strength of collaboration–across borders, specialties, and institutions.

On behalf of the organizing committees and the team at *Hospital Israelita Albert Einstein*, I express my deep gratitude to all faculty, participants, and contributors. May this symposium continue to foster knowledge, inspire innovation, and strengthen our collective mission to improve patient care through science, technology, and collaboration.

Ricardo Mingarini Terra, MD, PhD
Welcome

Editorial

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The future of robotic thoracic surgery education: experience, challenges, and opportunities

Ricardo Mingarini Terra[1]

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DOI: 10.31744/einstein_journal/2025EDS1

The global adoption of Robotic Thoracic Surgery (RTS) has grown exponentially in recent years, offering substantial advantages in precision, visualization, and patient outcomes. However, mastering this highly sophisticated technology demands the development of complex cognitive, psychomotor, and behavioral skills that exceed those required in traditional surgical techniques. As such, dedicated education and structured training frameworks are essential for safe and effective dissemination of robotic thoracic surgery worldwide.

At the *Hospital Israelita Albert Einstein* in São Paulo, Brazil, we have established a comprehensive International Postgraduate Program in Robotic Thoracic Surgery. This program, which has trained over 150 thoracic surgeons to date, combines simulation-based training, dry-lab and wet-lab practice, high-fidelity crisis simulation, crisis resource management, direct observation, and over 150 hours of interactive lectures. This modular and competency-based approach allows trainees to progress from basic console operation to complex intraoperative decision-making and non-technical crisis management.

Persistent challenges in robotic thoracic surgery training

Despite these advances, several challenges remain in the education of robotic thoracic surgery, which are particularly pronounced in emerging economies.

Lack of standardized curricula

Currently, robotic thoracic surgery lacks universally accepted training standards. Several models have been proposed, including the Fundamentals of Robotic Surgery (FRS), Global Evaluative Assessment of Robotic Skills (GEARS), and Robotic Objective Structured Assessment of Technical Skills (R-OSATS), all aiming to standardize the assessment of robotic surgical proficiency

How to cite this article:
Terra RM. The future of robotic thoracic surgery education: experience, challenges, and opportunities [editorial]. einstein (São Paulo). 2025;23(Suppl 1):eEDS1.

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through objective performance metrics. Modular stepwise approaches combining simulation, laboratory training, and mentored clinical practice have been widely advocated to promote safe and progressive skill acquisition.[1-3]

Extended learning curve

The robotic learning curve remains longer and steeper than that of conventional minimally invasive surgery. International series suggest that proficiency for robotic lobectomy may require at least 20-60 cases depending on prior surgical experience and training structure.[4-6] In our own experience, conducted in an emerging country, we observed that substantial proficiency may be reached after 15-20 cases, with full operative autonomy often requiring extended clinical exposure and continuous mentorship.[7]

Barriers in emerging countries

The high costs of robotic platforms, limited availability of experienced proctors, and insufficient case volumes pose particular obstacles to the widespread implementation of robotic thoracic surgery in low- and middle-income countries. Our own institutional experience demonstrated that these barriers can be overcome through carefully structured training programs, multidisciplinary team engagement, and institutional commitment.[8,9]

The essential role of non-technical skills

Beyond technical proficiency, non-technical skills (NTS) are increasingly recognized as critical for safe robotic surgery. These include situational awareness, decision-making under stress, communication, leadership, and teamwork–domains particularly relevant in complex robotic environments with limited tactile feedback and complex equipment interfaces.

Our postgraduate program incorporates NTS training through dedicated crisis resource management modules, high-fidelity simulation of intraoperative emergencies, and team-based debriefing sessions. This mirrors international experience, notably the work by Baste et al., who have highlighted the importance of cognitive training, standardized checklists, and team dynamics in robotic thoracic surgery education.[10-12] Their studies demonstrate that structured NTS training improves intraoperative safety, enhances team performance, and reduces cognitive overload for both junior and senior surgeons.

Despite their importance, NTS training remains underrepresented in many curricula. As robotic technology evolves toward more autonomous and complex platforms, human factors and behavioral skills will become even more central to surgical education and credentialing.

Scientific contributions from the Brazilian experience

Over the past decade, our group has actively contributed to the scientific literature on robotic thoracic surgery education, learning curves, and implementation. The BRAVO trial, a Brazilian randomized study comparing robotic-assisted versus video-assisted lobectomy, demonstrated equivalent perioperative outcomes after structured training, underscoring the safety of robotic adoption when training is properly standardized.[13]

We have also published guidelines on how to teach robotic lobectomy, emphasizing a modular, mentored approach to gradually build complexity while ensuring patient safety.[14] In addition, our institutional experience in building one of the largest robotic thoracic surgery programs in Latin America serves as a model for implementation in emerging countries, where resource limitations and training gaps are significant.[8,9]

Emerging technologies shaping the future of robotic education

Looking ahead, several emerging technologies are poised to further revolutionize robotic surgical education:

- Artificial intelligence and automated metrics: machine learning algorithms can analyze instrument kinematics, motion economy, and technical precision to provide

objective, real-time feedback for performance evaluation and credentialing.[15,16]

- Virtual and augmented reality: immersive simulation technologies offer the opportunity for patient-specific rehearsal, enhancing anatomical recognition, surgical planning, and decision-making skills in a safe environment.[17,18]
- Telementoring and remote proctoring: digital platforms facilitate expert supervision across geographic boundaries, addressing local shortages of experienced mentors in low-resource settings.[19]
- Crisis resource management simulation: highfidelity scenarios simulating catastrophic intraoperative events allow trainees to practice leadership, cognitive adaptability, and team coordination under stress.[10,11,20]

As we gather for the 4th International Congress on Robotic Thoracic Surgery at *Hospital Israelita Albert Einstein*, the abstracts presented here reflect both the scientific evolution and educational maturation of our field. Moving forward, a global commitment to structured education, validated assessment, and the integration of emerging technologies will be essential to ensure safe, equitable, and universal access to robotic thoracic surgery – not only for patients but also for the next generation of surgeons worldwide.

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Speakers

International Speakers

David Glineur

Cardiac Surgeon and Full Professor at Memorial University of Newfoundland and the University of Ottawa Heart Institute, currently serving as Chief of Cardiac Surgery at the Newfoundland Cardiovascular Institute since 2023. He holds an MD from Catholic University of Louvain (1998) and a PhD equivalent (2011), with extensive specialized training in minimally invasive cardiac surgery techniques. Dr. Glineur has established himself as a leading researcher in coronary artery bypass grafting, with over 140 peer-reviewed publications in top-tier journals and co-editorship of a major textbook on modern coronary surgery. His research has been supported by over $650,000 in funding as principal investigator, focusing on arterial grafting strategies and fractional flow reserve applications. He serves in prominent leadership roles including Program Co-Chair of the Society of Thoracic Surgery Coronary Conference and has been internationally recognized for his contributions to cardiovascular surgery education and innovation.

David Planchard

Thoracic Oncologist and head of Thoracic Group at Gustave Roussy, where he is responsible for coordinating the care of patients with lung cancer, pleural mesothelioma and thymic tumors. He is also Chairman of the Centre International des Cancers Thoraciques (CICT), a health cooperation consortium involving Gustave Roussy, Hôpital Marie-Lannelongue and Hôpital Paris Saint-Joseph.

Francisco Aecio Almeida

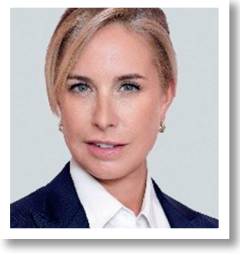
Associate Professor of Medicine, Cleveland Clinic Lerner College of Medicine.

Francina Bolaños

Surgeon with more than 20 years of experience, first woman to perform thoracic robotic surgery in Mexico; first woman to occupy the role of proctor (professor) in thoracic robotic surgery in Mexico and the second in all of Latin America. Deputy Director of Surgery at the Instituto Nacional de Enfermedades Respiratorias Ismael Cosío Villegas, where she directs the first public program of thoracic robotic surgery. Member of the National System of Researchers (SNI I) and Full Member of the National Academy of Surgery. Navigating or KRAS mutated patient.

Hugo Monteiro Neder Issa

Cardiac Surgeon at the University of Ottawa Heart Institute (UOHI) and at the Children's Hospital of Eastern Ontario. Dr. Issa is also an assistant professor in the Division of Cardiac Surgery in the Department of Surgery at the University of Ottawa.



Isabelle Opitz

Director of the Department of Thoracic Surgery and Chair of the Lung and Thoracic Oncology Center at University Hospital Zurich, Switzerland. She is Professor/Ordinaria for Thoracic Surgery at the University of Zurich. Her clinical areas of expertise are the surgical treatment of lung cancer, pleural mesothelioma, chronic thromboembolic pulmonary hypertension, and lung transplantation.

James Huang

Thoracic Surgeon on the faculty at Memorial Sloan Kettering Cancer Center and Professor of Cardiothoracic Surgery at Weill Cornell Medical College in New York. Following a general surgery residency at Brigham and Women's Hospital in Boston, completed his fellowship training in cardiothoracic surgery at Memorial Sloan Kettering and New York Presbyterian Hospital. He has served as Principal or co-Principal Investigator in a number of clinical trials involving oligometastatic lung cancer, multifocal ground glass opacities, multimodality therapy in thymic malignancies, and exercise in lung cancer survivors, among others. Dr Huang has served in several leadership roles in the Staging and Prognostic Factors Committee of the International Association for the Study of Lung Cancer, including Past Chair of the N-descriptors Subcommittee for Lung Cancer, Past Vice Chair of the Thymic Malignancies Staging Committee, and the current Chair of the Stage Groupings Subcommittee for Lung Cancer. He also has a strong interest in surgical education and serves as the Program Director for the Thoracic Surgery Fellowship program, and the Associate Vice Chair for Education in the Department of Surgery at Memorial Sloan Kettering.

Kelvin Lau

Clinical director and consultant thoracic surgeon at St Bartholomew's Hospital in London. He built the thoracic surgery unit with a full-time robotic surgery and navigation bronchoscopy programme. He performed the first endobronchial microwave ablation of lung tumour in February 2018.

Maria Eugenia Gillem Zeballos

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Narjust Florez

Thoracic Medical Oncologist and the Associate Director of The Cancer Care Equity Program at Dana-Farber Cancer Institute and an Assistant Professor of Medicine at Harvard Medical School. In 2022, Dr. Florez also became the first Latina to hold an Associate Editor position in Oncology as the new Associate Editor for Diversity, Equity, and Inclusion at JAMA Oncology.

Robert J. Cerfolio

Served as The Executive Vice President, Vice Dean of NYU Langone Medical School, Chief Operating Officer (COO) and is Professor of Surgery and Chief of the Division of Thoracic Surgery and System Quality Role at the New York University Langone Health.

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Doctor graduated from the *Faculdade de Medicina, Universidade de São Paulo* (FMUSP) in 1994. Medical residency in General Surgery at the *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (HC-FMUSP). Medical residency in Cardiovascular Surgery at the *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (InCor-HC-FMUSP). Preceptorship in Cardiovascular Surgery at the InCor-HC-FMUSP, in 2000 and 2001. PhD in Medical Sciences at FMUSP. Post-doctorate in the Cardiopneumology Department at FMUSP, completed in 2008. Assistant physician in the Cardiovascular Surgery Department at InCor-HC-FMUSP.

Fabio Biscegli Jatene

Full Professor of Cardiovascular Surgery at the *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (HC-FMUSP); Director of the Cardiovascular Surgery Division of the *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (InCor-HC-FMUSP); Full Member of the National Academy of Medicine; Director of the Innovation Center of the *Instituto do Coração* – (InovaInCor.)

Fábio Eiti Nishibe Minamoto

Thoracic Surgeon with a focus on thoracic oncology and robotic and minimally invasive surgery. PhD student in thoracic surgery at the *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (InCor-HC-FMUSP).

Fabio May Da Silva

Adjunct Professor at the *Universidade Federal de Santa Catarina* (UFSC).

Federico Garcia Cipriano

Thoracic Surgeon and Full Member of the *Sociedade Brasileira de Cirurgia Torácica* (SBCT); PhD in Surgery of the *Faculdade de Medicina de Ribeirão Preto* (FMRP-USP); Coordinator of the Pulmonary Thoracic Surgery Service - *Hospital das Clínicas da Faculdade de Medicina de Ribeirão Preto* (HC-FMRP-USP); Division of Thoracic and Cardiovascular Surgery Department of Surgery and Anatomy of the FMRP-USP.

Felipe Nominando Diniz Oliveira

Pulmonologist and Respiratory Endoscopist; Director of the Respiratory Endoscopy Service at *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (InCor-HC-FMUSP); Assistant physician at the *Hospital Israelita Albert Einstein* and the *Hospital São Luiz.*

Fernando Moura

Graduated in Medicine from the *Pontifícia Universidade Católica de Campinas* (PUC-Campinas). Specialist in Clinical Oncology from the *Instituto Brasileiro de Controle do Câncer* (IBCC). (2004). Has experience in Medicine, Clinical Oncology and Clinical Research. PhD in Sciences from the *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (InCor-HC-FMUSP). Area of concentration: Pulmonary Neoplasms. Clinical Oncologist at the Dayan-Daycoval Family Hematology and Oncology Center, *Hospital Israelita Albert Einstein*.

Flavia Alves Correa de Queiroz

Thoracic Surgeon at *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (HC-FMUSP); Fellow in Robotic Thoracic Surgery at *Hospital Israelita Albert Einstein.*

Giovani Waltrick Mezzalira

Master's Degree in Thoracic Surgery from the *Pontifícia Universidade Católica do Paraná* (PUCPR); Latu Sensu Postgraduate Degree in Robotic Surgery at the *Hospital Albert Einstein*; Specialized in Thoracic Surgery at the *Hospital Universitário Evangélico Mackenzie* from 1999 to 2000; Graduated from the *Universidade Federal do Rio Grande do Sul* (UFRGS). He completed his residency in General Surgery at the *Hospital Universidade Dr. Miguel Riet Corrêa Jr., Universidade Federal do Rio Grande* (HU-FURG); Single-Port Minimally Invasive Surgery Course at the Shanghai Pulmonary Hospital; Robotic Thoracic Surgeon, Head of the Jaraguá do Sul Thoracic Surgery Service, Director and Founder of *Clínica Toracopulmonar*; He currently works as a thoracic surgeon in the city of Jaraguá do Sul and with Robotic Thoracic Surgery in the city of Curitiba at the Pilar and *Hospital São Marcelino Champagnat*, in Blumenau at the *Hospital Santa Isabel* and in São Paulo at the *Hospital Israelita Albert Einstein*.

Guilherme Malandrin Andriatte

He has a degree in Medicine and Clinical Medicine from the *Escola Paulista de Medicina, Universidade Federal de São Paulo* (EPM-UNIFESP), with a specialization in Oncology from the *Faculdade de Medicina, Universidade de São Paulo* (FMUSP) at *Instituto do Câncer do Estado de São Paulo* (ICESP). He currently works as an Oncologist at the Oncology and Hematology Center of the *Hospital Israelita Albert Einstein*, where he also acts as a Preceptor for the Medical Residency, sharing his vast experience and knowledge with doctors in training. At the *Hospital Israelita Albert Einstein*, he also coordinates the oncology emergency department.

Guilherme Zappelini

MD from the *Universidade do Vale do Itajaí* (Univali) Thoracic; Surgeon from the Pereira Filho Pavilion; MSc in Medical Sciences from the *Universidade Federal de Santa Catarina* (UFSC); Full Professor and Head of Thoracic Surgery at the *Faculdade de Medicina da Universidade do Vale do Itajaí* and President of the Santa Catarina Society of Thoracic Surgery.

Gustavo Schvartsman

Medical Oncologist at *Hospital Israelita Albert Einstein*, Fellowship in Clinical Oncology at MD Anderson Cancer Center, PhD at *Hospital Israelita Albert Einstein*.

Helano Carioca Freitas

Clinical Oncologist with a master's degree *Universidade Federal do Ceará* (UFC) and doctorate *A.C. Camargo Cancer Center*. Vice-Leader of the Reference Center for Lung and Thorax Tumors at the *A.C. Camargo Cancer Center*. Collaborates on research projects in tumor genomics, cancer epidemiology and immunology.

Humberto Alves de Oliveira

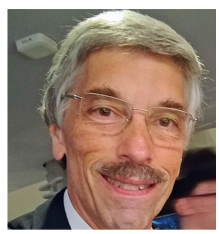
MSc in Thoracic Surgery from the *Universidade de Brasília* (UnB); PhD in Thoracic Surgery from *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (InCor-HC-FMUSP); Full member of *Sociedade Brasileira de Cirurgia Torácica* (SBCT), *European Respiratory Society* (ERS) and *European Society of Thoracic Surgeons* (ESTS); Thoracic surgeon at *Hospital Sírio-Libanês* (HSL); Thoracic surgeon at *Hospital de Base do Distrito Federal* (HBDF).

Ismar Gobira Chagas

Thoracic Surgeon from *Santa Casa de Porto Alegre*. Fellow in Robotic Surgery and Minimally Invasive Techniques at *Hospital Israelita Albert Einstein*.

Junis Suzuki

Specialization in Bronchoscopy at the National Cancer Center in Tokyo - Japan; PhD in Pulmonology; Previous positions: physician at the Bronchoscopy Service of the *Escola Paulista de Medicina, Universidade Federal de São Paulo* (EPM-UNIFESP) until 2015 and at the Bronchoscopy Service of the *A.C. Camargo Cancer Center* until 2022; currently physician at the Bronchoscopy Service of the *Hospital Israelita Albert Einstein*.



João Alessio Perfeito

Associate Professor of Thoracic Surgery, Department of Surgery, *Escola Paulista de Medicina, Universidade Federal de São Paulo* (EPM-UNIFESP).

José Fernando do Prado Moura

Clinical Oncology and Master's Degree in Oncology from *A.C. Camargo Cancer Center*, PhD in Translational Medicine from *Universidade Federal de São Paulo* (UNIFESP), works as principal investigator and coordinates clinical research in Oncology at *Real Hospital Português de Beneficência em Pernambuco*. Clinical Oncologist involved in the treatment of breast and lung tumors and precision oncology.

José Ribas Milanez de Campos

Full Professor of Thoracic Surgery at the *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (HC-FMUSP) and attending physician of the backup team of speciaalists in thoracic surgery at the *Hospital Israelita Albert Einstein*.

Juliana Brandão Folador Morellato

Thoracic Surgeon graduated from *Escola Paulista de Medicina, Universidade Federal de São Paulo* (EPM-UNIFESP) and Trained in Thoracic Oncology Surgery at *A.C. Camargo Cancer Center*; Master's Degree in Oncology Sciences at *A.C. Camargo Cancer Center* and PhD student at the same institution; Currently a thoracic surgeon and head of the bronchoscopy service and responsible for interventional bronchoscopy at *A.C. Camargo Cancer Center*.

Juliana Vieira de Oliveira Salerno

Thoracic Surgeon from the *Universidade de São Paulo* (USP), specializing in Robotic and Minimally Invasive Thoracic Surgery at *Hospital Israelita Albert Einstein*.

Larissa Aparecida de Melo

Medical doctor from the *Universidade Federal de Juiz de Fora* (UFJF) in 2014, resident in General Surgery at the *Universidade Federal de Uberlândia* (UFU) and in Thoracic Surgery at *Santa Casa de Porto Alegre* in 2019. Completed specialization in Robotic Surgery at *Hospital Israelita Albert Einstein* in 2024, currently practicing robotic surgery at *Uberlândia Medical Center* (UMC).

Leonardo Brand Rodrigues

Thoracic Surgeon and coordinator of the Robotic Thoracic Surgery program at *Hospital Madre Teresa*. Coordinator of clinical research in thoracic oncology at *Hospital Madre Teresa*.

Leonardo Palermo Bruno

Pulmonologist at the *Universidade do Estado do Rio de Janeiro* (UERJ); Coordinator of the Pulmonology service at *Hospital Quinta D'Or*, Rio de Janeiro, Brazil.

Leonardo Pontual Lima

Thoracic Surgeon from the *Hospital das Clínicas, Universidade de São Paulo* (HC-FMUSP); Specialist in Oncological and Minimally Invasive Thoracic Surgery from the *Instituto do Câncer do Estado de São Paulo* (ICESP); Fellowship in Robotic Thoracic Surgery from *Instituto D'Or de Pesquisa e Ensino* (IDOR); Thoracic Surgeon at *Pronto Socorro Cardiológico Universitário de Pernambuco Prof. Luiz Tavares* (PROCAPE) and *Real Hospital Português.*

Leticia Leone Lauricella

Thoracic Surgeon; Collaborating professor of thoracic surgery at *the Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo*; *Instituto do Câncer do Estado de São Paulo* (HC-FMUSP/ICESP); PhD in thoracic surgery from the *Faculdade de Medicina, Universidade de São Paulo* (FMUSP).

Liu Estradioto

Thoracic Surgeon at the São Marcelino Champagnat Hospital in Curitiba; Postgraduate in Robotic Thoracic Surgery at the *Hospital Israelita Albert Einstein*; Head of the Thoracic Surgery Service at the *Hospital Santa Casa de Curitiba*; Focuses on Robotic Thoracic Surgery and Thoracic Oncology.

Lucas Figueiredo Cardoso

Cardiovascular Surgeon graduated from the Heart Institute of the *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (HC-FM-USP), specialist member of *Sociedade Brasileira de Cirurgia Cardiovascular/ Associação Médica Brasileira* (SBCCV/AMB), post-graduate in Robotic Thoracic Surgery from *Hospital Israelita Albert Einstein*, with international certification in Robotic Cardiac Surgery by Minimally Invasive Solutions (AdventHealth Nicholson Center, USA).

Ludmila de Oliveira Muniz Koch

He is a member of the clinical staff of the Oncology department of the Dayan Daycoval Family Oncology and Hematology Center - *Hospital Israelita Albert Einstein*. Currently a trainee in the chest department of the European Institute of Oncology.

Luís Felipe de Araujo Campos

Graduated from *Universidade de São Paulo* (USP); Assistant Physician at the Pediatric Surgery Service of *Santa Casa de São Paulo*; Coordinator of the Pediatric Surgery Service of *Hospital Samaritano Higienópolis*; Member of the *Associação Brasileira de Cirurgia Pediátrica* (ABCP), Adjunct Member of the *Sociedade Brasileira de Cirurgia Torácica* (SBCT); Qualified in Pediatric Robotic Surgery by *Associação Brasileira de Cirurgia Pediátrica* (CIPE) and postgraduate in Thoracic Robotic Surgery by *Hospital Israelita Albert Einstein*.

Marcelo Gervilla Gregorio

Pulmonologist with a specialty in sleep; Respiratory endoscopist; Doctorate in Health Sciences.

Márcia Jacomelli

Pulmonologist and PhD in Sciences from the *Universidade de São Paulo* (USP). Coordinator of the Respiratory Endoscopy Center at *Hospital Israelita Albert Einstein* and Medical Supervisor of the Respiratory Endoscopy Service at the *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (InCor-HC-FMUSP).

Maria Alzira Alemeida Rocha

Medical Oncologist at *Hospital Israelita Albert Einstein*, focusing on thoracic oncology, head and neck tumors and genito-urinary tumors.

Maria Teresa Tsukazan Schwarz

Professor at *Pontifícia Universidade Católica do Rio Grande do Sul* (PUC-RS) School of Medicine; Head of Thoracic Surgery at *Hospital São Lucas da Pontifícia Universidade Católica do Rio Grande do Sul* (HSL-PUCRS) and Thoracic Surgeon at *Hospital Moinhos de Vento.*

Mariana Canevari de Oliveira

Master's Degree in Surgical Sciences from the *Universidade Estadual de Campinas* (UNICAMP). Postgraduate degree in Robotic Thoracic Surgery from the *Instituto Israelita de Ensino e Pesquisa* (IIEP). Thoracic Surgery and General Surgery from Unicamp.

Mariana Rodrigues Cremonese

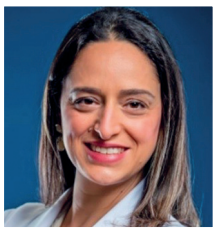
Graduated from the *Universidade do Vale do Itajaí* (Univali). Residency in General Surgery - *Instituto Israelita de Ensino e Pesquisa* (IIEP). Specialization in Airway Surgery and Respiratory Endoscopy – *Universidade de São Paulo* (USP). Member of the Thoracic Surgery Specialists/Backup team at the main hospitals in São Paulo, such as *Hospital Israelita Albert Einstein*, *Hospital São Luiz* - Morumbi, among others.

Nam Jin Kim

Medical Director of *Hospital Israelita Albert Einstein* Oncology and Hematology, responsible for the medical team, care and operations, as well as the partnerships of the *Hospital Israelita Albert Einstein* Oncology Network and the Global Park project. General Coordinator of the Einstein International Robotic Surgery Postgraduate Program and the Healthcare Leadership and Management Program - International Module at Johns Hopkins University. Surgeon graduated from the *Faculdade de Ciências Médicas da Santa Casa de São Paulo* (FCMSCSP), Fellow of the American College of Surgeons, Specialization in Coloproctology from the *Faculdade Israelita de Ciências da Saúde Albert Einstein* (FICSAE), Postgraduate in Surgical Leadership Program from Harvard Medical School, Digital Marketing Certificate Program from the Wharton School, Specialist in Preventive and Social Medicine from the *Associação Brasileira de Medicina Preventiva e Administração em Saúde* (ABRAMPAS)/ *Associação Médica Brasileira* (AMB), Specialist/MBA in Hospital Administration from the *Escola de Administração de Empresas de São Paulo, Fundação Getulio Vargas* (FGV-EAESP) and *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (HC-FMUSP).

Oren Smaletz

He graduated in Medicine from the *Faculdade de Medicina, Universidade de São Paulo* (FMUSP) (1995), with a residency in Clinical Medicine from the Hospital das Clínicas, *Faculdade de Medicina, Universidade de São Paulo* (HC-FMUSP) (1996-1998) and specialization in Clinical Oncology from the Memorial Sloan Kettering Cancer Center in New York (1999-2002). He is currently a clinical oncologist at *Hospital Israelita Albert Einstein.*

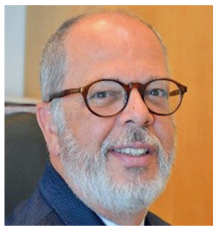


Patrícia Taranto

Medical Oncologist at *Hospital Israelita Albert Einstein* and *Hospital Municipal da Vila Santa Catarina Dr. Gilson Cássia Marques de Carvalho; Hospital Israelita Albert Einstein*. Member of the precision medicine program at *Hospital Israelita Albert Einstein*.

Paula Duarte D'Ambrosio

Specialist in Thoracic Oncology Surgery at the *Instituto do Câncer do Estado de São Paulo* (ICESP) and the *Faculdade de Medicina, Universidade de São Paulo* (FMUSP). Fellow in robotic thoracic surgery at the *Hospital Israelita Albert Einstein*.



Paulo Manuel Pêgo Fernandes

Vice-Director of the *Faculdade de Medicina, Universidade de São Paulo* (FMUSP); Director of the Thoracic Surgery Division of the *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (InCor-HC-FMUSP); Full Professor of the Cardiopneumology Department of the FMUSP; Member of the Advisory Board of *Associação Brasileira de Transplante de Órgãos* (ABTO); First Treasurer of *Academia de Medicina de São Paulo* (AMSP); Scientific Director of *Associação Paulista de Medicina* (APM).

Paulo Rogério Scordamaglio

Physician in the *Hospital Israelita Albert Einstein* respiratory endoscopy team; *Associação de Medicina Intensiva Brasileira* (AMIB)/ *Associação Médica Brasileira* (AMB) adult intensive care specialist; Respiratory Endoscopy specialist by *Sociedade Brasileira de Cirurgia Torácica* (SBCT)/AMB; Professor of Medicine at *Universidade Santo Amaro* (UNISA); PhD in Health Sciences (Concentration in Thoracic Surgery) from the *Faculdade de Medicina, Universidade de São Paulo* (FMUSP).

Pedro Henrique Cunha Leite

Thoracic Surgeon at *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (HC-FMUSP); Fellowship in Oncological and Minimally Invasive Thoracic Surgery at the *Instituto do Câncer do Estado de São Paulo* (ICESP)/HC-FMUSP; Fellowship in Robotic Thoracic Surgery at *Instituto D'Or de Pesquisa e Ensino* (IDOR); Director of the Thoracic Surgery Center of the *Instituto Baiano de Cirurgia Robótica* (IBCR).

Pedro Henrique Xavier Nabuco de Araujo

Collaborating Professor of Thoracic Surgery at *Faculdade de Medicina, Universidade de São Paulo* (FMUSP); Thoracic Surgeon at *Instituto do Câncer do Estado de São Paulo* (ICESP)/ *Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (HC-FMUSP); Thoracic Surgeon at *Hospital Sírio-Libanês.*

Pedro Nazareth Aguiar Jr.

Oncologist from *Universidade Federal de São Paulo* (UNIFESP), PhD in Sciences from *Centro Universitário FMABC,* MBA in Health from *Centro Universitário São Camilo*.

Ricardo Lopes Moraes de Oliveira

Head of the Thoracic Surgery Service at *Hospital Santa Isabel* – Salvador, BA, Brazil Head of the Thoracic Surgery Service at *Hospital Santa Isabel* - Salvador, BA, Brazil.

Ricardo Mingarini Terra

Full Professor of Thoracic Surgery at the *Universidade de São Paulo* (USP); Head of the Thoracic Surgery Service at the *Instituto do Câncer do Estado de São Paulo* (ICESP); Coordinator of the Thorax Center of Excellence at *Hospital Israelita Albert Einstein.* Vice-Director of the Thoracic Surgery Department of the Asociación Latinoamericana de Tórax (ALAT).

Rodrigo Saddi

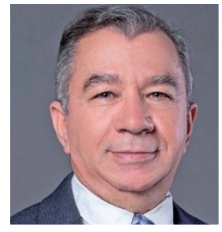
Clinical Oncologist *Hospital Israelita Albert Einstein*; Focus on lung and head and neck tumors; Medical Residency in Clinical Oncology at *A.C. Camargo Cancer Center.*

Samuel Padovani Steffen

Graduated in Medicine (2009), medical residency in General Surgery (2010 to 2012) and medical residency in Cardiovascular Surgery (2012 to 2016) at the *Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo* (InCor-HC-FMUSP). He completed specialized training in Heart Transplantation and Mechanical Circulatory Assistance. He is a doctor in the surgery division of the Heart Institute, working in the Emergency Unit and the Transplant Center. He holds a specialist title from the *Sociedade Brasileira Cirurgia Cardiovascular* (SBCCV) and the *Associação Médica Brasileira* (AMB) and is currently enrolled in the Postgraduate Program (PhD) in Thoracic and Cardiovascular Surgery - *Faculdade de Medicina, Universidade de São Paulo* (FMUSP).

Samuel Roque Alves

Thoracic Surgeon from the *Universidade de São Paulo* (USP); Fellow of the robotic thoracic surgery program at *Hospital Israelita Albert Einstein*.

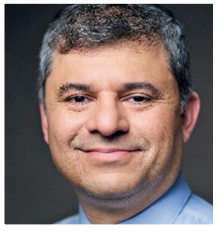


Sérgio Tadeu Lima Fortunato Pereira

President of the *Sociedade Brasileira de Cirurgia Torácica* (SBCT) 2017/2021; Coordinator of Thoracic Surgery – Salvador, Ba, Brazil.

Sidney Klajner

Sidney Klajner is a Digestive System Surgeon. He holds a medical degree and a master's degree from the *Faculdade de Medicina, Universidade de São Paulo* (FMUSP), a medical residency from the Hospital das Clínicas, *Faculdade de Medicina, Universidade de São Paulo* (HC-FMUSP), a fellow of the American College of Surgeons. President of the *Sociedade Beneficente Israelita Brasileira Albert Einstein* (SBIBAE).



Vladmir Cláudio Cordeiro de Lima

Clinical Oncologist - Thoracic and Breast Tumors - Department of Clinical Oncology - *A.C. Camargo Cancer Center*. Associate Researcher - *A.C. Camargo Cancer Center*. PhD in Oncology - *Fundação Antônio Prudente*. Director of the *Grupo Brasileiro de Oncologia Torácica* (GBOT); Technical-Scientific Advisor - Oncology - *Grupo Pardini*.

Scientific Program

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IV International Congress of Robotic Thoracic Surgery June 26, 2025 Camilla Bueno Auditorium						
June 26, 2025 | Thursday						
Start time	**Finish time**	**Duration time**	**Activity**	**Presenter/ Moderator**	**Speaker/ Moderator's name**	**Institution**
07:50	08:00	00:10	Opening Session	Speaker	Sidney Klajner	Hospital Israelita Albert Einstein
				Speaker	Ricardo Mingarini Terra	Hospital Israelita Albert Einstein
				Speaker	José Ribas Milanez de Campos	Hospital Israelita Albert Einstein
				Speaker	Bruno Figueiredo Muller	Hospital Israelita Albert Einstein
08:00	10:00	02:00	Live 3D Surgery			
08:00	10:00	02:00	Live 3D Surgery: Pulmonary Segmentectomy	Surgeons	Ricardo Mingarini Terra	Hospital Israelita Albert Einstein
					Fabio Eiti Nishibe Minamoto	Hospital Israelita Albert Einstein
				Facilitators	Eserval Rocha Júnior	Instituto do Câncer do Estado de São Paulo
					José Ribas Milanez de Campos	Hospital Israelita Albert Einstein
				Discussion	Maria Teresa Tsukazan Schwarz	Hospital Moinhos de Vento and Hospital São Lucas at PUC-RS
					Pedro Henrique Cunha Leite	Hospital MaterDei - Salvador
					Federico Enrique Garcia Cipriano	Hospital das Clínicas, Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo
					Fabio May da Silva	Hospital Care - Florianópolis
10:00	10:30	00:30	Break			
10:30	12:30	02:00	Panel: Update on Robotic Pulmonary Surgery	Moderator	Eduardo de Campos Werebe	Hospital Israelita Albert Einstein
				Moderator	Leonardo Brand Rodrigues	Hospital Madre Teresa
10:30	10:45	00:15	What is an ideal lymphandenectomy?	International Speaker	James Huang	Memorial Sloan Kettering Cancer Center
10:45	11:00	00:15	Robotic Lung Resection for Pulmonary Suppurations	Speaker		
11:00	11:15	00:15	Alternatives for Incomplete Fissures	Speaker	Letícia Leone Lauricella	Instituto do Câncer do Estado de São Paulo
11:15	11:30	00:15	Robotic sleeves: technical aspects	International Speaker	Robert J. Cerfolio	NYU Langone Hospital
11:30	11:45	00:15	Intraoperative Pulmonary Nodule Identification: New Strategies	Speaker	Eserval Rocha Júnior	Instituto do Câncer do Estado de São Paulo
11:45	12:00	00:15	Combined Segmentectomies and Subsegmentectomies: Technical Considerations	Speaker	Ricardo Mingarini Terra	Hospital Israelita Albert Einstein
12:00	12:30	00:30	Discussion	All Module Speakers		
12:30	13:00	00:30	Break			
13:00	13:30	00:30	Fujifilm Satellite Symposium - Endoscopic Navigation	Moderator Speaker	Viviani Ferrarezi Fabio Eiti Minamoto	Fujifilm Brasil Hospital Israelita Albert Einstein
13:30	14:00	00:30	MSD Satellite Symposium - Multimodal Approach in Early-Stage Lung Cancer Management: Innovations in Care and Impact on Overall Survival RESTRICTED	Speaker	Ricardo Mingarini Terra	Hospital Israelita Albert Einstein
14:00	16:00	02:00	Panel: Advances in Robotic Surgery	Moderator	Paulo Manuel Pêgo Fernandes	Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo
					Francisco Martins Neto	Hospital de Messejana

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...Continuation

June 26, 2025 | Thursday						
Start time	**Finish time**	**Duration time**	**Activity**	**Presenter/ Moderator**	**Speaker/ Moderator's name**	**Institution**
14:00	14:15	00:15	Augmented Reality–Assisted Robotic Segmentectomy Using Open-Source Tools: A Practical and Low-Cost Solution	Speaker	Juliana Vieira de Oliveira Salerno	Hospital Israelita Albert Einstein
14:15	14:30	00:15	Ten Years of Robotic Thoracic Surgery by a Single Surgeon: Comparative Analysis of 883 Consecutive Cases from a Prospective Database	Speaker	Flavia Alves Corrêa de Queiroz	Hospital Israelita Albert Einstein
14:30	14:50	00:20	Leadership and achieving excellence in thoracic surgery	Remote International Speaker	Robert J. Cerfolio	NYU Langone Hospital
14:50	15:10	00:20	Training in Robotic Surgery and Emerging Technologies	Speaker	Ricardo Mingarini Terra	Hospital Israelita Albert Einstein
15:10	15:30	00:20	Why should a surgeon also be a scientist?	International Speaker	Isabelle Opitz	University Hospital Zurich
15:30	16:00	00:30	Discussion	All Module Speakers		
16:00	16:30	00:30	Break			
16:30	18:00	01:30	Alumni Video Session	Moderator	José Ribas Milanez de Campos	Hospital Israelita Albert Einstein
				International Moderator	Isabelle Opitz	University Hospital Zurich
				International Moderator	James Huang	Memorial Sloan Kettering Cancer Center
				Moderator	João Aléssio Juliano Perfeito	Escola Paulista de Medicina, Universidade Federal de São Paulo
16:30	16:37	00:07	Pediatric Robotic Surgery	Speaker	Luís Felipe de Araujo Campos	Hospital Samaritano Higienopolis
16:37	16:45	00:08	Discussion			
16:45	16:52	00:07	Pulmonary Recovery. Left Bronchial Bronchoplasty	Remote International Speaker	Francina Valezka Bolaños Morales	Instituto Nacional de Enfermedades Respiratorias Ismael Cosío Villegas
16:52	17:00	00:08	Discussion			
17:00	17:07	00:07	Thymectomy	Speaker	Larissa Aparecida de Melo	Universidade Federal de Uberlândia
17:07	17:15	00:08	Discussion			
17:15	17:22	00:07	Segmentectomy S1 and mediastinal teratoma by robotic thoracic surgery at the National Institute of Neoplastic Diseases of Peru	International Speaker	María Eugenia Guillen Zeballos	Instituto Nacionla de Efermedades Neoplasicas
17:22	17:30	00:08	Discussion			
17:30	17:37	00:07	Cytoreduction and HITHOC	Speaker	Mariana Canevari de Oliveira	Unimed Campinas
17:37	17:45	00:08	Discussion			
17:45	17:52	00:07	Challenges of the first robotic right upper lobectomy	Speaker	Antero Gomes Neto	Hospital de Messejana
17:52	18:00	00:08	Discussion			
18:00	18:30	00:30	Keynote Lecture	Moderators	José Ribas Milanez de Campos	Hospital Israelita Albert Einstein
					Sérgio Tadeu Lima Fortunato Pereira	Hospital Santa Izabel
18:00	18:20	00:20	The Quest for Innovation: Why and How?	Speaker	Fabio Biscegli Jatene	Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo
18:20	18:30	00:10	Discussion	All Module Speakers		
18:30	19:30	01:00	Graduation Ceremony - Einstein International Postgraduate Program in Robotic Thoracic Surgery			
19:30	20:30	01:00	Closing Cocktail Reception			
	20:30		Closing Session			

MSD Workshop - Personalized Treatment of NSCLC - Insights and Discussions						
June 26, 2025 Classroom 101						
June 26, 2025 | Thursday						
Start time	**Finish time**	**Duration time**	**Activity**	**Presenter/ Moderator**	**Speaker/ Moderator's name**	**Institution**
14:00	14:10	00:10	Opening Session	Speaker	Gustavo Schvartsman	Hospital Israelita Albert Einstein
14:10	16:00	01:50	Module 1: Locally Advanced Disease	International Panelist	Narjust Florez	Dana-Farber Cancer Institute/Harvard Medical School
				Panelist	Paula Duarte D'Ambrosio	Hospital Israelita Albert Einstein
14:10	14:40	00:30	Clinical Case 1: NSCLC Stage II, PD-L1+, EGFR-	Speaker	Patricia Taranto	Hospital Israelita Albert Einstein
14:40	15:10	00:30	Clinical Case 2: NSCLC Stage II/III with irAEs	Speaker	Paula Duarte D'Ambrosio	Hospital Israelita Albert Einstein
15:10	15:40	00:30	Clinical Case 3: NSCLC Stage IIIB, EGFR-, with pCR	International Speaker	Narjust Florez	Dana-Farber Cancer Institute/Harvard Medical School
15:40	16:00	00:20	Discussion	All Module Speakers		
16:00	16:30	00:30	Break			
16:30	18:00	01:30	Module 2: Advanced Disease	Panelist	Gustavo Schvartsman	Hospital Israelita Albert Einstein
				Panelist	Maria Alzira Almeida Rocha	Hospital Israelita Albert Einstein
				Panelist	Guilherme Malandrin Andriatte	Hospital Israelita Albert Einstein
				Panelist	Helano Carioca Freitas	Hospital Israelita Albert Einstein
16:30	17:00	00:30	Clinical Case 4: NSCLC Stage IV, PD-L1 >50%	Speaker	Guilherme Malandrin Andriatte	Hospital Israelita Albert Einstein
17:00	17:30	00:30	Clinical Case 5: NSCLC Stage IV, PD-L1 1-49%	Speaker	Helano Carioca Freitas	Hospital Israelita Albert Einstein
17:30	18:00	00:30	Clinical Case 6: NSCLC Stage IV, PD-L1 Negative, STK11 Mutation	Speaker	Gustavo Schvartsman	Hospital Israelita Albert Einstein
	18:00		Closing Session			

IV International Congress of Robotic Thoracic Surgery						
June 27, 2025 Camilla Bueno Auditorium						
June 27, 2025 | Friday						
Start time	**Finish time**	**Duration time**	**Activity**	**Presenter/ Moderator**	**Speaker/ Moderator's name**	**Institution**
08:00	10:00	02:00	Panel: Non-Pulmonary Robotic Thoracic Surgery	Moderator	Leonardo Pontual Lima	Real Hospital Português
				Moderator	Liu Estradioto	Hospital São Marcelino Champagnat
08:00	08:15	00:15	Uniportal Robotic Surgery	Speaker	Humberto Alves de Oliveira	Hospital Sírio-Libanês
08:15	08:30	00:15	New Platforms: Versius System	Speaker	Guilherme Zappelini	Hospital Unimed Litoral
08:30	08:45	00:15	Strategies to deal robotically with invasive mediastinal tumors	International Speaker	Isabelle Opitz	University Hospital Zurich
08:45	09:00	00:15	Subxiphoid Access	Speaker	Fábio Eiti Nishibe Minamoto	Hospital Israelita Albert Einstein
09:00	09:15	00:15	Should we address lymphnodes during tymoma resection?	International Speaker	James Huang	Memorial Sloan Kettering Cancer Center
09:15	09:30	00:15	Minimally Invasive Treatment of Thoracic Outlet Syndrome	Speaker	Davi Wen Wei Kang	Hospital Israelita Albert Einstein
09:30	10:00	00:30	Discussion	All Module Speakers		
10:00	10:30	00:30	Break			
10:30	12:30	02:00	Video Session: Challenges in Robotic Thoracic Surgery	Moderator	Ricardo Mingarini Terra	Hospital Israelita Albert Einstein
				International Moderator	Isabelle Opitz	University Hospital Zurich
				International Moderator	James Huang	Memorial Sloan Kettering Cancer Center
10:30	10:45	00:15	Resection of the right brachiocephalic vein	Speaker	Samuel Roque Alves	Hospital Israelita Albert Einstein
10:45	11:00	00:15	Segmentectomy in bronchiectasis	Speaker	Juliana Vieira de Oliveira Salerno	Hospital Israelita Albert Einstein
11:00	11:15	00:15	Middle lobectomy after chronic torsion of the middle lobe	Speaker	Casimira Edeneia Lourenço Pedro	Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo
11:15	11:30	00:15	Resection of invasive mediastinal tumor via subxiphoid approach	Speaker	Flavia Alves Corrêa de Queiroz	Hospital Israelita Albert Einstein
11:30	11:45	00:15	Segmentectomy of S4	Speaker	Paula Duarte D'Ambrosio	Hospital Israelita Albert Einstein
11:45	12:00	00:15	Complex Segmentectomy	Speaker	Ismar Gobira Chagas	Hospital Israelita Albert Einstein
12:00	12:30	00:30	Break			

IV International Congress of Robotic Thoracic Surgery						
June 27, 2025 Camilla Bueno Auditorium						
June 27, 2025 | Friday						
Start time	**Finish time**	**Duration time**	**Activity**	**Presenter/ Moderator**	**Speaker/ Moderator's name**	**Institution**
12:30	13:10	00:40	Takeda Satellite Symposium - Redefining the Profile of the 1L ALK+ NSCLC Patient RESTRICTIVE	Speaker	Pedro Nazareth Aguiar Jr	Centro Universitário FMABC
13:10	13:50	00:40	AstraZeneca Satellite Symposium - Clinical Case Discussion: NSCLC EGFRm Stage III Borderline RESTRICTIVE	Speaker	Ricardo Mingarini Terra	Hospital Israelita Albert Einstein
				Speaker	Narjust Florez	Dana-Farber Cancer Institute/Harvard Medical School
13:50	14:00	00:10	Break			
14:00	16:00	02:00	Panel: Thoracic Oncology of the Future	Moderator	Ricardo Mingarini Terra	Hospital Israelita Albert Einstein
					Gustavo Schvartsman	Hospital Israelita Albert Einstein
					Fernando Moura	Hospital Israelita Albert Einstein
14:00	14:15	00:15	Lung cancer surgery after neoadjuvant immunotherapy: should we have any concern?	International Speaker	Isabelle Opitz	University Hospital Zurich
14:15	14:30	00:15	Performance, staging and biomarkers: Selecting patients for neoadjuvant and adjuvant immunotherapy	International Speaker	Narjust Florez	Dana-Farber Cancer Institute/Harvard Medical School
14:30	14:45	00:15	Lymphnodes and Staging: IASLC perspective	International Speaker	James Huang	Memorial Sloan Kettering Cancer Center
14:45	15:00	00:15	Targeted therapies for driver mutations in locally advanced NSCLC: do we need phase 3 trials for all?	International Speaker	David Planchard	Gustave Roussy
15:00	15:15	00:15	New technologies for the endoscopic treatment of lung cancer	Remote International Speaker	Kelvin Lau	St Bartholomew's Hospital
15:15	15:30	00:15	Minimal Residual Disease in Early-Stage NSCLC	International Speaker	Mihaela Aldea	Gustave Roussy and Dana Farber Cancer Institute
15:30	16:00	00:30	Discussion	All Module Speakers		
16:00	16:30	00:30	Break			
16:30	17:00	00:30	Amgem Satellite Symposium – Therapeutic Innovations in Small Cell Lung Cancer: What's New?	Speaker	Gustavo Schvartsman	Hospital Israelita Albert Einstein
17:00	18:00	01:00	Interactive Tumor Board			
17:00	18:00	01:00	Case Presentation	Panelists	Ricardo Mingarini Terra	Hospital Israelita Albert Einstein
					Gustavo Schvartsman	Hospital Israelita Albert Einstein
					Fernando Moura	Hospital Israelita Albert Einstein
				International Speaker	James Huang	Memorial Sloan Kettering Cancer Center
				Speaker	Paula Duarte D'Ambrosio	Hospital Israelita Albert Einstein
	18:00		Closing Session			

III International Symposium on Thoracic Oncology							
June 27, 2025 Classroom							
June 27, 2025 | Friday							
Start time	**Finish time**	**Duration time**	**Activity**		**Presenter/ Moderator**	**Speaker/ Moderator's name**	**Institution**
08:00	12:30	04:30	Clinical Oncology Program		Moderator	Gustavo Schvartsman	Hospital Israelita Albert Einstein
08:00	08:10	00:10	Openins Session		Speaker	Nam Jin Kim	Hospital Israelita Albert Einstein
08:10	08:25	00:15	EGFR-mutated lung cancer: how to select first-line treatment?		Speaker	Vladmir Cláudio Cordeiro de Lima	A. C. Camargo Cancer Center
08:25	08:40	00:15	EGFR-mutated lung cancer: treatment after 3rd-generation TKI		Speaker	Mihaela Aldea	Gustave Roussy and Dana Farber Cancer Institute
08:40	09:05	00:25	Clinical Case Discussion	Case 1	Presenter	Diogo Raphael Garcia de Oliveira Pereira	Hospital Israelita Albert Einstein
				Case 2	Presenter	Carlos Henrique Andrade Teixeira	Hospital Alemão Oswaldo Cruz
					Debator	Vladmir Cláudio Cordeiro de Lima	A. C. Camargo Cancer Center
					Debator International	David Planchard	Gustave Roussy
					Debator	Mihaela Aldea	Gustave Roussy and Dana Farber Cancer Institute
09:05	09:35	00:30	Pfizer Satellite Symposium - New paradigms for prolonged clinical benefits in first-line treatment of ALK+ NSCLC		Speaker	Gustavo Schvartsman	Hospital Israelita Albert Einstein
09:35	10:00	00:25	Clinical Case Discussion	Case 1	Presenter	Ludmila de Oliveira Muniz Koch	Hospital Israelita Albert Einstein
					Debator	Gustavo Schvartsman	Hospital Israelita Albert Einstein
					Debator International	Mihaela Aldea	Gustave Roussy and Dana Farber Cancer Institute
10:00	10:30	00:30	Break				
10:30	10:45	00:15	Use of liquid biopsy in lung cancer		Speaker	Fernando Moura	Hospital Israelita Albert Einstein
10:45	11:00	00:15	First-line immunotherapy: who needs anti-CTLA4?		International Speaker	Narjust Florez	Dana-Farber Cancer Institute/Harvard Medical School
11:00	11:15	00:15	Is There a Role for Continuing Immunotherapy After Disease Progression?		Speaker	Guilherme Malandrin Andriatte	Hospital Israelita Albert Einstein
11:15	11:40	00:25	Clinical Case Discussion	Case 1	Presenter	José Fernando Prado de Moura	Real Hospital Português
				Case 2	Presenter	Patricia Taranto	Hospital Israelita Albert Einstein
					Debator	Fernando Moura	Hospital Israelita Albert Einstein
					Debator International	Narjust Florez	Dana-Farber Cancer Institute/Harvard Medical School
					Debator	Guilherme Malandrin Andriatte	Hospital Israelita Albert Einstein
11:40	11:55	00:15	ADCs in Lung Cancer - How to Place Them and How to Identify Biomarkers?		International Speaker	David Planchard	Gustave Roussy
11:55	12:10	00:15	Navigating the mutated KRAS patient		Speaker	Oren Smaletz	Hospital Israelita Albert Einstein
12:10	12:30	00:20	Clinical Case Discussion	Case 1	Presenter	Rodrigo Saddi	Hospital Israelita Albert Einstein
				Case 2	Presenter	Diogo de Brito Sales	Hospital Israelita Albert Einstein - Goiânia
					Debator International	David Planchard	Gustave Roussy
					Debator	Oren Smaletz	Hospital Israelita Albert Einstein
12:30	14:00	01:30	Satellite Symposia in the Camilla Bueno Auditorium - Joint Events				

Course 1: Advanced endoscopic techniques in thoracic oncology						
June 28, 2025 Classroom						
June 28, 2025 | Saturday						
Start time	**Finish time**	**Duration time**	**Activity**	**Presenter/ Moderator**	**Speaker/ Moderator's name**	**Institution**
08:00	10:00	02:00	Module 1: Endobronchial Ultrasound (EBUS)	Moderators	Mariana Rodrigues Cremonese	Hospital Municipal Gilson de Cássia Marques de Carvalho; Hospital Israelita Albert Einstein
					Eserval Rocha Júnior	Instituto do Câncer do Estado de São Paulo
08:00	09:00	01:00	Live EBUS	Speaker	Ricardo Mingarini Terra	Hospital Israelita Albert Einstein
				Speaker	Márcia Jacomelli	Hospital Israelita Albert Einstein
09:00	09:15	00:15	EUS/EBUS: Relevance and Technique	Speaker	Ricardo Lopes Moraes de Oliveira	Hospital Santa Izabel
09:15	09:30	00:15	EBUS-Guided Cryobiopsy	Speaker	Leonardo Palermo Bruno	Universidade do Estado do Rio de Janeiro
09:30	09:45	00:15	How to maximize tissue sampling in difficult lymph nodes: small and/or deep	Speaker	Fábio Eiti Nishibe Minamoto	Hospital Israelita Albert Einstein
09:45	10:00	00:15	Discussion	All Module Speakers		
10:00	10:30	00:30	Coffee Break			
10:30	12:30	02:00	Module 2: Endobronchial Navigation Methods	Moderators	Fábio Eiti Nishibe Minamoto	Hospital Israelita Albert Einstein
					Altair da Silva Costa Jr	Hospital Israelita Albert Einstein
10:30	10:45	00:15	Radial EBUS: Technique and Results	Speaker	Márcia Jacomelli	Hospital Israelita Albert Einstein
10:45	11:00	00:15	One Stop-Shop: Diagnosis and Staging	Speaker	Ricardo Mingarini Terra	Hospital Israelita Albert Einstein
11:00	11:15	00:15	Can 3D reconstruction replace other navigation methods?	Speaker	Eserval Rocha Júnior	Instituto do Câncer do Estado de São Paulo
11:15	11:30	00:15	And when we don't have much technology? How to navigate the airway?	Speaker	Iunis Suzuki	Hospital Israelita Albert Einstein
11:30	11:45	00:15	Robotic Bronchoscopy: Technologies and Outcomes	Remote International Speaker	Francisco Aecio Almeida	Cleveland Clinic Lerner College of Medicine
11:45	12:00	00:15	How do I approach the peripheral pulmonary nodule endoscopically?	Speaker	Juliana Brandão Folador Morellato	A. C. Camargo Cancer Center
12:00	12:30	00:30	Discussion	All Module Speakers		
12:30	13:30	01:00	Break			
13:30	15:00	01:30	Module 3: Advances and New Technologies	Moderator	Felipe Nominando Diniz Oliveira	Hospital Israelita Albert Einstein
				Moderator	Bianca Fidelix Espindula	Hospital Israelita Albert Einstein
13:30	13:45	00:15	Education Models	Speaker	Paulo Rogério Scordamaglio	Hospital Israelita Albert Einstein
13:45	14:15	00:30	New Frontiers in Advanced Endoscopy	Remote International Speaker	Francisco Aecio Almeida	Cleveland Clinic Lerner College of Medicine
14:15	14:30	00:15	Pulmonary Cryobiopsy: Technical Pearls	Speaker	Marcelo Gervilla Gregorio	Hospital Israelita Albert Einstein
14:30	14:45	00:15	Tracheobronchial Stents: State of the Art	Speaker	Benoit Jacques Bibas	Hospital Israelita Albert Einstein
14:45	15:00	00:15	Discussion	All Module Speakers		

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...Continuation

June 28, 2025 | Saturday						
Start time	**Finish time**	**Duration time**	**Activity**	**Presenter/ Moderator**	**Speaker/ Moderator's name**	**Institution**
15:00	15:30	00:30	Coffee Break			
15:30	17:00	01:30	New Technologies Showroom - Practical Activities			
15:30	17:00	01:30	Sectoral EBUS			
15:30	17:00	01:30	Radial EBUS			
15:30	17:00	01:30	Radiofrequency			
15:30	17:00	01:30	Microwaves			
15:30	17:00	01:30	Cryoablation			
	17:00		Closing Session			

Course 2: Basics of Robotic Surgery						
June 28, 2025 Classroom						
June 28, 2025 | Saturday						
Start time	**Finish time**	**Duration time**	**Activity**	**Presenter/ Moderator**	**Speaker/ Moderator's name**	**Institution**
08:00	10:00	02:00	The Robotic Platform	Moderators	José Ribas Milanez de Campos	Hospital Israelita Albert Einstein
					Paula Duarte D'Ambrosio	Hospital Israelita Albert Einstein
08:00	08:20	00:20	Why robotic surgery	Speaker	Eduardo de Campos Werebe	Hospital Israelita Albert Einstein
08:20	08:40	00:20	Training and Credentialing	Speaker	Bruna Brandão de Rezende	Hospital Israelita Albert Einstein
08:40	09:00	00:20	Robotic Platforms	Speaker	Eduardo de Campos Werebe	Hospital Israelita Albert Einstein
09:00	09:20	00:20	How to Start My Robotic Program	Speaker	Giovani Waltrick Menzzalira	Instituto do Câncer do Estado de São Paulo
09:20	09:40	00:20	How to Implement an ERAS Program	Speaker	Fabiano Cataldi Engel	Hospital Israelita Albert Einstein
09:40	10:00	00:20	Discussion	All Module Speakers		
10:00	10:30	00:30	Coffee Break			
10:30	12:30	02:00	Robotic Procedures	Moderators	Fabiano Cataldi Engel	Hospital Israelita Albert Einstein
					Mariana Rodrigues Cremonese	Hospital Municipal Gilson de Cássia Marques de Carvalho; Hospital Israelita Albert Einstein
10:30	10:50	00:20	Positioning and Docking	Speaker	José Ribas Milanez de Campos	Hospital Israelita Albert Einstein
10:50	11:10	00:20	Lobectomies	Speaker	Davi Wen Wei Kang	Hospital Israelita Albert Einstein
11:10	11:30	00:20	Segmentectomies	Speaker	Letícia Leone Lauricella	Instituto do Câncer do Estado de São Paulo
11:30	11:50	00:20	Resection of Mediastinal Tumor	Speaker	Alberto Jorge Monteiro Dela Vega	Instituto do Câncer do Estado de São Paulo
11:50	12:10	00:20	Other Applications	Speaker	Pedro Henrique Xavier Nabuco de Araujo	Instituto do Câncer do Estado de São Paulo
12:10	12:30	00:20	Discussion	All Module Speakers		
12:30	13:30	01:00	Break			
13:30	15:30	02:00	Hands-on			
13:30	15:30	02:00	Hands-On Virtual Simulation/In Service (Groups A, B, C - 40 minutes)	Instructors	Bruna Brandão de Rezende	Hospital Israelita Albert Einstein
					Eduardo de Campos Werebe	Hospital Israelita Albert Einstein
					Juliana Vieira de Oliveira Salerno	Hospital Israelita Albert Einstein
					Davi Wen Wei Kang	Hospital Israelita Albert Einstein
15:30	16:00	00:30	Coffee Break			
16:00	18:00	02:00	Hands-On Virtual Simulation/In Service (Groups A, B, C - 40 minutes)	Instructors	Bruna Brandão de Rezende	Hospital Israelita Albert Einstein
					Eduardo de Campos Werebe	Hospital Israelita Albert Einstein
					Juliana Vieira de Oliveira Salerno	Hospital Israelita Albert Einstein
					Davi Wen Wei Kang	Hospital Israelita Albert Einstein
	18:00		Closing Session			

Course 3: Robotic Heart Surgery June 28, 2025 Classroom						
June 28, 2025 | Saturday						
Start time	**Finish time**	**Duration time**	**Activity**	**Presenter/ Moderator**	**Speaker/ Moderator's name**	**Institution**
08:00	08:30	00:30	Why robotic cardiac surgery? What is the evidence?	Speaker	Lucas Figueiredo Cardoso	Hospital Israelita Albert Einstein
08:30	08:50	00:20	How to master robotic coronary artery bypass surgery	Remote International Speaker	Hugo Issa	University of Ottawa Heart Institute
08:50	09:10	00:20	How to master robotic mitral repair surgery	Remote International Speaker	David Glineur	Mayo Clinic
09:10	09:40	00:30	Robotic mitral valve repair - is it the best approach for complex cases?	Speaker	Fabio Antonio Gaiotto	Hospital Israelita Albert Einstein
09:40	10:00	00:20	Training in robotic cardiac surgery in Brazil - Our experience	Speaker	Samuel Padovani Steffen	Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo
10:00	10:30	00:30	Coffee Break			
10:30	11:10	00:40	Simulation in robotic simulators	Speaker	Samuel Padovani Steffen	Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo
11:10	12:10	01:00	In-service robotic platform X and Xi	Speaker	Lucas Figueiredo Cardoso	Hospital Israelita Albert Einstein
12:10	13:00	00:50	Room layout and valve suturing	Speaker	Cristiano Mählmann Muniz Dantas	Hospital Israelita Albert Einstein
13:10	14:00	00:50	Break			
14:00	14:30	00:30	CPB in robotic surgery - from cannulation to myocardial protection	Speaker	Cristiano Mählmann Muniz Dantas	Hospital Israelita Albert Einstein
14:30	15:00	00:30	Video session: ASD repair, myxoma resection, mitral repair	Speaker	Samuel Padovani Steffen	Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo
				Speaker	Lucas Figueiredo Cardoso	Hospital Israelita Albert Einstein
15:00	18:00	03:00	Live surgery	Surgeons	Samuel Padovani Steffen	Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo
					Lucas Figueiredo Cardoso	Hospital Israelita Albert Einstein

Presentation Abstracts

CONTENTS

001

Use of CryoEBUS in the investigation of mediastinal lymphadenopathy: a case report

Anna Luíza Soares de Oliveira Rodrigues[1], Priscilla Tomi Morikoshi Hiran[2], Jefferson Luiz Gross[2], Iunis Suzuki[3], Adriana Passos Bueno[2], Beatriz Fuga Rossi Teixeira[2], Juliana Brandão Folador Morellato[2]

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Category: Respiratory Endoscopy

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ABSTRACT

Case presentation: Female patient, 53 years old, previously healthy, with a history of recurrent flu episodes. The most recent episode had a more prolonged course, accompanied by asthenia, dyspnea, and sputum production. She denied any history of pulmonary diseases, smoking, weight loss, comorbidities, or chronic use of medications, except for duloxetine. Family history revealed two cousins diagnosed with leukemia at ages 17 and 18, and a maternal aunt with brain cancer at age 36. During clinical investigation, a chest computed tomography (CT) scan revealed a pulmonary nodule measuring 18x10mm in the right lower lobe and mediastinal lymph nodes measuring 12 and 15mm in the short axis. A PET-CT scan showed hypermetabolism in the pulmonary nodule (SUV max 6.8) and in the mediastinal lymph nodes, including the upper and lower paratracheal, subcarinal, and interlobar chains, with a maximum SUV of 14.9. Given these findings, an endobronchial ultrasound-guided fine needle aspiration (EBUS-TBNA) and CryoEBUS-guided biopsy of the mediastinal lymph nodes were performed. The FNA cytology showed no evidence of malignancy, consistent with a chronic granulomatous inflammatory process. The CryoEBUS biopsy, on the other hand, revealed a necrotizing granulomatous inflammatory process of infectious nature, with positive staining in the Grocott histochemical test.

Discussion: EBUS-TBNA is the standard approach for the differential diagnosis of lymph node lesions, being a widely used minimally invasive technique. However, its diagnostic value may be limited by the type of sample collected, which often yields cytopathological specimens that can hinder definitive diagnosis. In this context, CryoEBUS emerges as a promising alternative in cases where the sample obtained by EBUS-TBNA is insufficient. Unlike cytological aspiration, CryoEBUS enables the collection of larger and better-preserved histological samples, allowing for a more detailed evaluation of tissue architecture and improving diagnostic accuracy, particularly in neoplasms and benign mediastinal diseases.

Final remarks: This case highlights the importance of combining advanced imaging modalities with minimally invasive endoscopic techniques in the evaluation of pulmonary nodules and mediastinal lymphadenopathy.

Keywords: Lymphadenopathy; Endoscopy; Meditinal diseases; Differential diagnosis

SGPP number: Not applicable.

CAAE: Not applicable.

Research funding: Not applicable.

002

Gastrobronchial fistula treated through the unconventional use of a one-way bronchial valve by bronchoscopy

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ABSTRACT

Introduction: The gastrobronchial fistula is a rare event, usually related to complication of abdominal surgery, especially bariatric surgery.[1,2] Due to its rare condition there is not a well established treatment. In the past, surgery used to be the main way to manage this complication.[2] Recently the advance in endoscopic technology allowed minimally invasive treatment, reducing morbidity and mortality of this condition.[3] Some of the endoscopic approaches include fibrin glue, clips and stents.[2,4,5] However, treatment of gastrobronchial fistula through the airway by bronchoscopy is uncommon.

Objective: To report the case of a gastrobronchial fistula treated through the unconventional use of a one-way bronchial valve by bronchoscopy.

Case report: A 41-year-old female patient with the history of appendiceal mucinous neoplasm with peritoneal dissemination. Initially, an abdominal surgery was performed for cytoreduction, which included right colectomy, rectosigmoidectomy, total hysterectomy, right oophorectomy, splenectomy, cholecystectomy, and peritoneectomy, including bilateral diaphragmatic peritoneectomy, in addition to hyperthermic intraperitoneal chemotherapy (HIPEC). Six months later the patient developed pulmonary and pleural recurrence. The patient underwent thoracic surgical approach with metastasectomy of pulmonary lesions, pleurectomy, and frenectomy on the left side. At the same time, she also underwent distal pancreatectomy and gastrorrhaphy. Over the next four months, the patient developed multiple complications, including pancreatic fistula and upper gastrointestinal bleeding. Dehiscence of the gastric fundus suture (25-mm orifice) was identified by upper gastrointestinal endoscopy (UGE), and attempted closure using endoscopic vacuum, without success. The following month, the patient developed persistent coughing, and the tomography showed a fistulous tract between the gastric fundus and the left lung base. The patient underwent bronchoscopy and UGE at the same time, confirming the fistula by air exteriorization through the gastric chamber and by the injection of indigo blue dye through the gastric fundus with exteriorization through the posterior basal segment of the left lower lobe. The first attempt to close the fistula was by therapeutic bronchoscopy, with the application of histoacryl glue, but control examinations revealed the remaining fistula and no further residue of the glue. Due to the fistula persistence despite all endoscopic procedures, it was decided to apply a unidirectional endobronchial valve, used for the treatment of chronic obstructive pulmonary disease, as an unconventional attempt. The valve was placed in an inverted way in the subsegmental bronchus, allowing the airflow to the subsegment, but preventing the return of gastric contents to the airway. In association with the valve

location, suturing and application of endoscopic clips were also performed in the gastric fundus. In follow-up bronchoscopies, the valve remained well placed in the subsegmental bronchus, without reflux of gastric secretions into the airway. The patient had successful resolution of the fistula and healed the symptoms.

Conclusion: This case shows an unconventional approach to successfully treat gastrobronchial fistula using a one-way bronchial valve that has not been reported in the literature so far.

Keywords: Bronchial fistula; Gastric fistula; Bronchoscopy; Bronchoscopic surgical procedure

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SGPP number: Not applicable.

CAAE: Not applicable.

Research funding: Not applicable.

Presentation Abstracts

CONTENTS

003

Challenges of the first robotic right upper lobectomy: Are there lessons to be learned?

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ABSTRACT

Objective: Robotic surgery, by offering three-dimensional visualization, multiple degrees of freedom, and high precision in the use of surgical instruments, allows better dissection of the lymph nodes and bronchovascular elements of the lung than video- assisted thoracic surgery (VATS), with less surgical trauma.[1,2] This case presentation was designed to demonstrate that robotic lobectomy, although a challenging procedure for beginners, is safe and feasible, even at the beginning of the robotic surgery learning curve.

Methods: Clinical Case: Female patient, 66 years old, heavy smoker (104 pack-years). She presented with chronic cough and dyspnea on exertion (MRCm=1) due to Chronic Obstructive Pulmonary Disease. During a routine medical appointment with the cardiologist, a chest tomography was requested, which showed a solid, spiculated pulmonary nodule in the right upper lobe, in addition to signs of pulmonary emphysema. As comorbidities, she presented arterial hypertension using losartan 25 mg/day and pulmonary emphysema using umeclidinium/vilanterol 62.5/25mcg/day. On physical examination, BMI=18.5kg/m2; ASA=2; PS=1. Preoperative workup: Plethysmography showed Moderate Obstructive Ventilatory Function, FVC: 1.54 L (61%); FEV1: 1.13L (55%); DLCO=8.8L (56%), echocardiogram normal, cranial MRI normal and PET SCAN with two pulmonary nodules, one in the posterior segment of the right upper lobe, measuring 1.8 x 1.2cm (SUVmax: 3.0), and another in the apical segment, measuring 1.3 x 1.1cm (SUVmax: 2.3). A percutaneous CT-guided biopsy confirmed the diagnosis of invasive adenocarcinoma.

Surgical Procedure: The surgery was performed with the Da Vinci X robot, using the four-arm technique, with the first (for Cardiere forceps), the second (for camera) and the third (for Maryland Bipolar forceps), all in the eighth intercostal space, and the fourth arm in the seventh intercostal space (for Tip Up forceps), as described by Terra et al.[3] The assistant's arm was positioned in the tenth intercostal space. The surgery demonstrates step by step the robotic mediastinal lymphadenectomy and the right upper lobectomy. The first step was the dissection of the lymph nodes, in sequence, of the stations 8, 7, 11, 10, 4 and 2, followed by mechanical suturing of the bronchus, vein and pulmonary artery, with posterior approach to the lobar bronchus and pulmonary artery. In the last step, the oblique and horizontal fissures were sutured and divided with a stapler using the fissure less technique (see Video).

Results: In the postoperative period, the patient developed atrial fibrillation on the 3rd POD, which was

reversed with amiodarone, and she was discharged from hospital on the 5th POD. The anatomopathological examination confirmed the diagnosis of invasive adenocarcinoma predominantly acinar in two distinct lesions with similar morphology, measuring 2.2 and 1.5 cm in the largest axes (pT2). There was no tumor dissemination through the air spaces (STAS) or visceral pleural invasion, and the parenchymal margins were free of neoplasia. All lymph nodes were free of neoplasia (pNO), configuring pathological staging (TNM 8th edition) IIb. There was no mutation in the EGFR gene and the expression of PDL1 was positive, with a TPS of 10%. The case was discussed with the multidisciplinary team and it was decided to perform adjuvant chemotherapy and immunotherapy. The treatment was well tolerated by the patient and she continues to be followed up oncologically, without showing signs of recurrence of the neoplasia.

Conclusion: The outcome of this case was encouraging, as there were no intraoperative complications, which demonstrates that robotic lobectomy for lung cancer is a safe and feasible method for thoracic surgeons at the beginning of the robotic surgery learning curve, who have undergone an adequate training process.

Keywords: Robotic surgery; Robotic surgical procedures; Thoracic surgery, video-assisted

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SGPP number: Not applicable.

CAAE: Not applicable.

Research funding: Not applicable.

Video QR-code

Presentation Abstracts

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004

The implementation of a roving robotic surgery program and the impact on ideal surgical treatment outcome

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Introduction: Robotic surgery has been noted to offer shorter recovery and a reduction in postoperative complications. However, the uneven distribution of robotic platforms limits access for patients in remote regions. This study investigates the impact of patient travel to specialized centers on the safety and efficacy of robotic thoracic procedures, helping to decrease regional disparities and improve overall treatment outcomes.

Methods: A multicenter, observational, descriptive and retrospective study was conducted, analyzing 40 patients who underwent robotic thoracic procedures performed between 2021 and 2025, using the Da Vinci Si, X and Xi platforms. The interventions were performed in three hospitals - *Hospital Israelita Albert Einstein* (São Paulo/SP), *Hospital Santa Isabel* (Blumenau/SC) and *Hospital Marcelino Champagnat* (Curitiba/PR) - by a single thoracic surgeon. Data collection was performed from hospital electronic records and information obtained in postoperative follow-up consultations. Demographic information, surgical indication, anesthetic and cardiologic risks, pulmonary function parameters (FEV1), comorbidities, intervals between diagnosis and surgery, dates of procedure and discharge, duration of hospitalization, need for conversion to open surgery, time in ICU and ward, duration of drainage and postoperative complications (assessed by the Clavien-Dindo scale, considering complications of grade II or higher) were extracted. Patients were divided into two groups according to the distance traveled to the hospital ($\leq$100km and $>$100km) and were classified according to the type of surgery performed (lobectomy, segmentectomy or others). Statistical analysis was performed with R software (version 4.0.2), applying the Wilcoxon test for continuous data without normal distribution, Pearson's χ^2 test and Fisher's exact test for categorical variables, adopting a significance level of 5% ($p<0.05$).

Results: The descriptive data showed a preponderance of female patients (61.5%) and a majority use of land transport (97.4%). Regarding distance, 64.1% of the patients traveled less than 100km, while 35.9% traveled 100 km or more. Regarding pathology, 53.8% of the cases were malignant and, in terms of procedure, 53.8% underwent lobectomy and 28.2% underwent segmentectomy. The mean age of the patients was 56.23 years (DP=16.37), the mean hospitalization time was 3.41 days and the duration of drainage was 2.25 days. Complications were detected in 9.4% of cases, and 12.9% required reoperation. The information obtained in the postoperative follow-up consultations indicated that approximately half of the patients were already familiar with robotic surgery and the majority evaluated the technique positively, rating it as "optimal" in 85.7% of the cases. Although the distance traveled did not significantly influence surgical outcomes (complications and hospital readmissions), patients who traveled more than 100 km reported greater discomfort during postoperative transport, demonstrating the need for specific support protocols.

Conclusion: The findings of this study reinforce the feasibility and safety of itinerant robotic surgery,

demonstrating that centralization of procedures in specialized centers does not compromise clinical outcomes, even for patients in remote regions. This approach represents an effective alternative to reduce regional inequalities, expand access to advanced technology, and improve preoperative and postoperative protocols.

Keywords: Robotic surgery; Robotic surgical procedures; Patients safety; Treatment outcome

SGPP number: Not applicable.

CAAE: Not applicable.

Research funding: Not applicable.

Presentation Abstracts

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005

Factors associated with delayed hospital discharge after robotic thoracic surgery: a retrospective analysis

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ABSTRACT

Introduction: Enhanced Recovery After Surgery (ERAS) protocols have transformed postoperative management in thoracic surgery, aiming to reduce complications and hospital stay. However, even with minimally invasive techniques such as robotic surgery, a significant proportion of patients experience prolonged hospitalization. Identifying factors associated with delayed discharge is essential for optimizing perioperative care in the Brazilian context.

Objective: To identify the factors associated with hospital discharge beyond the second postoperative day in patients undergoing robotic thoracic surgery.

Methods: This single-center, retrospective observational study included adult patients undergoing elective intrathoracic robotic procedures with pleural drainage between May 2023 and December 2024. Data was extracted from electronic medical records and analyzed using descriptive and inferential statistics. Variables included age, ASA score, type of surgery, presence of postoperative complications, and length of stay. Statistical associations between patient characteristics and delayed discharge (>2 postoperative days) were tested using Student's t-test, Fisher's exact test, and X^2 test. A significance level of $p<0.05$ was adopted.

Results: A total of 90 patients were included, with a mean age of 58.7±11.8 years. Half of the patients (50%) were discharged on postoperative day 2, while 42.2% stayed beyond two days. Delayed discharge was significantly associated with the presence of complications (100% of patients with complications remained hospitalized >2 days; $p<0.001$). The type of surgery also showed significant association: patients undergoing lobectomy or wedge resection had longer hospital stays ($p=0.006$). Other variables such as ASA score and age did not show statistically significant associations with delayed discharge.

Conclusion: Postoperative complications and the type of surgery are the main factors associated with prolonged hospital stay after robotic thoracic surgery. These findings may help identify high-risk patients and support the development of individualized discharge strategies in ERAS protocols.

Keywords: Thoracic surgery; Robotic surgical procedures; Hospital discharge; Postoperative complications; Enhanced recovery after surgery

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SGPP number: Not applicable.

CAAE: Not applicable.

Research funding: Not applicable.

Presentation Abstracts

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006

How to generate high-quality data in lung cancer in Brazil: the story of the Brazilian Lung Cancer Registry (RBCP)

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ABSTRACT

Introduction: Obtaining reliable data on lung cancer in Brazil remains a challenge. Sources such as the *Registro Hospitalar de Câncer* (RHC), the *Fundação Oncocentro de São Paulo* (FOSP), and estimates from the *Instituto Nacional de Câncer* (INCA) provide essential epidemiological information but are insufficient to assess the quality of surgical treatment. The *Registro Brasileiro de Câncer de Pulmão* (RBCP) was established in 2014, initially as a state-level registry in São Paulo, and has since evolved into a nationwide multicenter database, enabling the monitoring of surgical practices and the implementation of quality improvement measures.

Methods: The RBCP includes patients who underwent surgical treatment for lung cancer. For this analysis, data collected up to 2023 were included, considering the total number of recorded surgeries, the evolution of surgical techniques, the clinical profile of patients, and the quality of the data entered into the registry.

Results: Since its inception, the RBCP has expanded from a state-level initiative to a national multicenter database, comprising 2,554 surgically treated cases across 17 institutions in seven Brazilian states by 2023. The number of surgeries registered has shown steady growth, with a 14% increase between 2022 and 2023, reflecting increasing institutional engagement. Patient demographics revealed a predominance of women (56.5%), with 43.5% men. Regarding smoking status, 40.9% were former smokers, 39.8% never smoked, and 19.3% were current smokers. The most common comorbidities included hypertension (47-49.7%), coronary artery disease (7.3-9.3%), and chronic obstructive pulmonary disease (33%). Surgical treatment access was split between public and private systems: 43% through the Brazilian Public Health System (SUS - *Sistema Único de Saúde*) and 54% through private insurance. Over time, there has been a significant shift in the surgical approach. In 2013, 80% of procedures were open thoracotomies, with only 20% performed by video-assisted thoracoscopic surgery (VATS). By 2018, thoracotomy rates had dropped to 50%, with VATS accounting for 40% and robotic-assisted thoracic surgery (RATS) for 10%. In 2023, robotic surgery rose to 21% of cases, while thoracotomy and VATS represented 48% and 31%, respectively–marking a new

paradigm in oncologic thoracic surgery in Brazil. That year, 64% of all procedures were minimally invasive. Lobectomy was the most common resection (78.6%), followed by anatomic segmentectomy (10.4%) and pneumonectomy (6.4%). Pathological staging showed that most patients were diagnosed at early stages. The most frequent stages were IA1 (10.8%), IA2 (21.4%), IA3 (13.1%), and IB (15.6%). Advanced stages were less prevalent (IIIA: 13.3%, IIB: 14.5%), and only 5% of patients were stage IVA–emphasizing the relevance of early detection and screening. Data quality was assessed using completeness and consistency indicators. The average completeness rate was 83%. Detected inconsistencies were corrected to ensure data reliability, including mismatches between in-hospital mortality and follow-up status, inconsistent surgical dates, and missing complication reports in fatal cases. Ongoing data auditing and standardization of variables have contributed to the continuous improvement of registry quality.

Conclusion: The RBCP has been established as the leading national source of data on oncologic thoracic surgery. It enables in-depth analyses of patient profiles, surgical technique trends, and postoperative outcomes. The RBCP serves as a model of how a structured database can positively impact the quality of lung cancer care in Brazil, fostering continuous improvements in clinical practice and evidence-based national guidelines.

Keywords: Lung neoplasms; Thoracic surgery; Thoracid surgery, video-assisted

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SGPP number: Not applicable.

CAAE: Not applicable.

Research funding: Not applicable.

Presentation Abstracts

CONTENTS

007

Enhancing prognostic accuracy in lung cancer: impact of the 9th edition of the TNM Staging System on Survival Stratification in the Brazilian Lung Cancer Registry

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ABSTRACT

Introduction: The transition from the 8th to the 9th edition of the TNM staging system introduced significant changes aimed at improving prognostic accuracy for patients with lung cancer. This study evaluates the impact of these revisions on survival stratification, with a focus on clinical and pathological stage migration and their prognostic implications.

Objective: To analyze the impact of the 9th edition of the TNM staging system on survival stratification in surgically treated lung cancer patients by quantifying stage shifts and assessing the effects on survival curves across different stages.

Methods: We analyzed a retrospective cohort from a national Brazilian database, including 2,219 patients who underwent surgery for lung cancer with complete pathological TNM staging. Stage shifts between the 8th and 9th editions were quantified, and survival rates were assessed using Kaplan-Meier curves for each stage. Cases of upstaging and downstaging were identified, and survival differences between the editions were compared.

Results: The 9th edition improved survival stratification, particularly in intermediate and advanced stages. Key stage migrations included 51 patients from stage IIB to IIA, 37 from IIIA to IIB, 39 from IIIA to IIIB, and 24 from IIIB to IIIA. The Kaplan-Meier curve for stage IIB, which overlapped with IIIA in the 8th edition, showed clearer separation in the 9th edition, with a median survival of 7.03 years for IIB and 4.43 years for IIIA. Reclassification also refined advanced stages by reducing the overlap between IIIA and IIIB. Median survival for stage IIIA improved to 4.43 years, while IIIB declined to 2.26 years. Survival patterns remained consistent between editions for early stages (IA1-IA3). Overall, stage reclassification resulted in improved separation of survival curves, enhancing prognostic accuracy.

Conclusion: The revisions introduced in the 9th edition of the TNM staging system addressed limitations of the 8th edition, particularly by improving prognostic precision in intermediate and advanced stages. These changes enhance the clinical utility of the TNM staging system, allowing for more personalized therapeutic strategies and better alignment between survival outcomes and clinical expectations.

Keywords: Lung neoplasms; Thoracic surgery; Neoplasm staging

SGPP number: Not applicable.

CAAE: Not applicable.

Research funding: Not applicable.

008

Barriers and delays in surgical treatment for lung cancer in the Brazilian Public Health System

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ABSTRACT

Introduction: Lung cancer is one of the leading causes of global morbidity and mortality. Early diagnosis and timely treatment are essential to improve clinical outcomes and increase survival. Barriers to diagnostic and therapeutic access–especially within the Brazilian Unified Health System (SUS - *Sistema Único de Saúde*)–negatively impact prognosis and quality of life.

Objective: To analyze the factors associated with delays in surgical treatment for lung cancer in the SUS, identifying barriers along the care pathway.

Methods: A retrospective cohort study was conducted with 1,108 patients who underwent surgery for lung cancer in two oncology centers within the SUS between 2014 and 2024. Time intervals from the first medical consultation to diagnosis and initiation of definitive treatment were analyzed.

Results: The median time from symptom onset to first evaluation by a thoracic surgeon was 135.5 days (IQR: 62.75-279.5 days), while the interval to surgery was 241 days (IQR: 154.0-405.25 days). The median time from specialist consultation to biopsy was 39 days, and from diagnosis to surgery, 89 days. Surgical delay was largely attributed to difficulties in scheduling preoperative tests and assessments, reflecting systemic challenges in care coordination. Postoperative staging revealed that most patients were diagnosed at early stages (IA1-IB: 715 cases, 63.2%), followed by intermediate stages (IIA-IIB: 254 cases, 22.5%) and advanced stages (IIIA-IVB: 183 cases, 14.3%). Patients with advanced-stage disease had longer symptom-to-surgery intervals (median: 279.5 days vs. 154 days for early stages), though without statistical significance ($p=0.094$). Similarly, the intervals from symptoms to specialist evaluation ($p=0.213$) and from evaluation to surgery ($p=0.586$) showed no significant differences across TNM stages. Logistic regression identified age as the only significant predictor of surgical delay ($p=0.039$), indicating that older patients waited longer for surgery. Stratified analysis showed a progressive increase in the median evaluation-to-surgery interval with age, ranging from 64 days in patients ≤50 years to 90 days in those over 80. Conversely, sex, race, detection method, and clinical stage were not significant predictors, suggesting that treatment delays are widespread and may be more related to systemic barriers than case complexity.

Conclusion: These findings highlight the need for strategies to reduce time to diagnosis and definitive treatment, ensuring faster access to specialist evaluation and preoperative testing. The model's limited explanatory power suggests that additional, unmeasured factors contribute to surgical delays, underscoring the need for further investigation to optimize care pathways and reduce inequalities in cancer treatment.

Keywords: Lung neoplasms; Treatment delay; Public Health System

SGPP number: Not applicable.

CAAE: Not applicable.

Research funding: Not applicable.

009

Augmented reality-assisted robotic segmentectomy using open-source tools: a practical and low-cost solution

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ABSTRACT

Introduction: Robotic surgery is a well-established minimally invasive approach for pulmonary resections. Integrating augmented reality (AR) into the robotic platform can enhance intraoperative precision by improving anatomical identification and facilitating sub-lobar resections.

Objective: We present a low-cost method for implementing augmented reality (AR) in robotic segmentectomy using open-source software and affordable hardware. As a model case, we used a robotic approach to left S2 segmentectomy.

Case Report: The patient is a 69-year-old woman, a former smoker, with bilateral subsolid pulmonary lesions smaller than 2cm and impaired pulmonary function (FEV1 68%, FVC 70%, DLCO 65%). Due to early-stage bilateral disease and limited respiratory reserve, sequential segmentectomies were planned: left S2 followed by right S10. This case study focuses on the first procedure, a left S2 segmentectomy performed with the da Vinci Xi system. The AR process began with a preoperative computed tomography (CT) scan to construct a 3D anatomical model via 3D-Slicer®, an open-source software. Segmentation was performed semi-automatically by the surgeon, with manual delineation of vessels and bronchopulmonary segments. Intraoperatively, AR visualization was achieved by overlaying the 3D model onto the surgical field. This was accomplished using a standard USB video capture card (approximate cost: USD 10), an HDMI-DVI cable for image capture, and the open-source OBS Studio® software for image overlay. The composite image was displayed on the surgeon's console through the Tile Pro® function, using a second HDMI-DVI cable. Following standard lymphadenectomy, arterial dissection was performed, with AR-assisted navigation facilitating the identification of arteries A2 and B2. The intersegmental plane was defined using indocyanine green and divided with a surgical stapler. After resection, satisfactory re-expansion of the remaining lung segments was confirmed, and the final shape of the lung was compared to the preoperative 3D model using AR.

Final Remarks: The robotic platform enhances surgical precision through the integration of advanced technologies. Augmented reality (AR) and 3D reconstructions are emerging as powerful tools to refine intraoperative navigation. Our video demonstrates a practical and cost-effective protocol for incorporating these innovations into clinical practice.

Keywords: Robotic surgical procedures; Mastectomy, segmental; Augmented reality; Lung neoplasms

SGPP number: Not applicable.

CAAE: Not applicable.

Research funding: Not applicable.

Presentation Abstracts

CONTENTS

010

Multiple Endocrine Neoplasia type II associated with carcinoid tumor in the carina: a case report

Antônio Matheus Guimarães Rangel Batista[1], Bruna Soares Dantas[1], José Luis Braga de Aquino[1], Marcelo Manzano Said[1], Eduardo Macário Duarte[1], Leticia Silva Prytulak[1,2]

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ABSTRACT

Introduction: Multiple Endocrine Neoplasia (MEN) is a term used to describe a group of autosomal dominant diseases in which there is the development of malignant or benign neoplasms in at least two endocrine glands. These include: MEN-1, MEN-2, MEN-3, and MEN-4. MEN-2, in particular, is marked by an incidence of 1 in every 35,000 individuals in the general population, classifying it as a rare disease. The classic clinical presentation is characterized by neuroendocrine cell neoplasms in the thyroid, adrenal, and parathyroid glands (usually the association of medullary thyroid carcinoma–MTC–with other endocrine tumors). The pathogenesis of MEN type 1 and MEN type 2 differ due to the type of genetic mutation. While MEN-1 involves inactivating mutations that result in the loss of genes involved in tumor suppression, MEN-2 is characterized by activating mutations involving the RET proto-oncogene on chromosome 10. Therefore, neoplasms develop in organs derived from the neural crest where the RET proto-oncogene is expressed–thyroid cells, parathyroid cells, chromaffin cells of the adrenal medulla, and the enteric autonomic plexus.

Case Report: Female patient, 71 years old, diagnosed with MEN-2. The patient has a history of gastrointestinal stromal tumor (GIST), a rare soft tissue sarcoma treated surgically, and melanoma in the right lower limb. During investigations conducted for melanoma treatment, the patient reported persistent cough associated with abnormalities on chest X-ray. This justified the request for a CT scan, which revealed a mass in the carinal region. Bronchoscopic biopsy was performed, revealing a carcinoid tumor of the carina.

Results: The relationship between these tumors and MEN 2 lies in the genetic predisposition to neoplasia development due to the RET gene mutation. For treatment, tumor resection surgery was performed with the aid of Extracorporeal Membrane Oxygenation (ECMO). Pulmonary carcinoid tumors that invade vital structures such as the heart, great vessels, and, as in this case, the carina, may be considered unresectable due to the difficulty of intraoperative management of the airways and intrathoracic vessels. The use of ECMO can optimize these outcomes by ensuring blood oxygenation and protective mechanical ventilation. The surgery was curative (see Video).

Conclusion: The association of carcinoid tumors with MEN-2 is not a routine occurrence, especially when the tumor is located in the carina. Tracheal cancer accounts for 0.2% of malignant cancers in the respiratory tract and only 0.02 to 0.04% of all malignant tumors. Involvement of the carina is rare, and the most common histological type is squamous cell carcinoma (SCC), not carcinoid

tumors. Therefore, even in sites of atypical neoplasia, the need for continuous surveillance in patients with MEN-2 is emphasized due to the genetic predisposition resulting from the RET gene mutation.

Keywords: Multiple Endocrine Neoplasia; Carina; Resection

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SGPP number: Not applicable.

CAAE: Not applicable.

Research funding: Not applicable.

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Presentation Abstracts

CONTENTS

011

3D reconstruction-guided complex robotic segmentectomy: perioperative and oncological aspects

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ABSTRACT

Introduction: Complex segmentectomies have emerged as a viable alternative to lobectomy for selected patients with early-stage lung cancer, offering equivalent oncological outcomes.

Objective: To evaluate perioperative and oncological outcomes of complex robotic segmentectomy guided by 3D reconstruction.

Methods: This retrospective cross-sectional study included 43 patients who underwent complex robotic segmentectomies at three hospitals between 2018 and 2024. Complex segmentectomies were defined as those involving more than one intersegmental plane1,2. Preoperative planning included three-dimensional (3D) CT reconstruction for surgical mapping. Demographic data, surgical time, length of hospital stay, early outcomes, and oncological aspects were analyzed.

Results: The cohort had a mean age of 67.8±9.1 years (range 44-88), with 65% female patients. A history of smoking was present in 58%. Upper lobe segment resections accounted for 74% of cases, with S1 segmentectomy being the most frequent (23%). Adenocarcinoma was the most common histology (84%), with a median lesion size of 1.5cm (range 0.6-6.5cm). The most common postoperative staging was T1 (65%) and N0 (91%). Median surgical margins were 1.5 cm (1.6 cm for upper lobe resections and 1.4 cm for lower lobe resections, p=0.295). Intraoperative frozen section analysis was used in 72% of cases, and margin extension was required in only 4 cases (9%). The median surgical time was 175 minutes (range 120-310), varying according to the type of resection. Upper lobe segmentectomies (e.g., S3, S2) had shorter median operative times (170 minutes) compared to lower lobe segmentectomies (204 minutes, p=0.028), while multisegmental resections (*e.g.*, S8+S9) required longer times (225 minutes, p=0.011). The average hospital stay was 3±1.4 days, with 72% of patients discharged within three days. Median length of stay for lower lobe resections was shorter (2 days) compared to upper lobe resections (3 days, p=0.039). Prolonged air leak occurred in 23% of patients, resolving in a median of 2 days. Single-segment resections were associated with longer chest tube duration (2 *versus* 1 day for combined segmentectomies, p=0.088). Complete lung expansion was observed in 91% of cases, with no major postoperative complications.

Conclusion: Complex robotic segmentectomies are safe and feasible, with low complication rates and short hospital stays. Preoperative 3D planning and intraoperative frozen section analysis are essential to optimizing surgical and oncological outcomes.

Keywords: Complex segmentectomy; Sublobar resection; Lung cancer; Robotic surgery

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SGPP number: 7.376.203.

CAAE: 83236424.0.1001.0071.

Research funding: Not applicable.

Presentation Abstracts

CONTENTS

012

Ten years of robotic thoracic surgery by a single surgeon: comparative analysis of 883 consecutive cases from a prospective database

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ABSTRACT

Background: Robotic-assisted thoracic surgery (RATS) is increasingly adopted for complex thoracic procedures due to its superior precision and ergonomic advantages.[1,2] While institutional and multi-surgeon series are growing, few studies present long term data from a single high-volume surgeon. This study evaluates the evolution of procedural complexity, clinical outcomes, and patient characteristics across 12 years of RATS experience.

Methods: A retrospective review of 883 consecutive robotic thoracic surgeries performed by a single surgeon between 2012 and 2023 was conducted. Data were collected prospectively using the REDCap electronic data capture platform and analyzed with IBM SPSS Statistics (v26). Variables included age, sex, comorbidities (COPD, hypertension, cardiopathy, diabetes), lesion size, surgical category, console time, chest drain duration, length of stay, and complications. Surgical procedures were categorized into lobectomy, anatomic segmentectomy, non-anatomic segmentectomy/wedge resection (including metastasectomy), mediastinal tumor resection/timectomy, bilobectomy, pneumonectomy, and lobectomy with bronchoplasty. All participants signed informed consent forms, and anonymized data were handled with no exposure risk.

Results: The mean age was 60.5 years (median 61), with 55.3% female. Hypertension (49.2%), diabetes (39.1%), and cardiopathy (38.9%) were the most common comorbidities. Mean lesion size was 26.9mm (median 20mm). Lobectomy accounted for the majority of resections, followed by anatomic segmentectomy (14.9%), mediastinal tumor resection/timectomy (14.5%), and wedge resections (6.3%). Bronchoplasty was performed in 1.1% of lobectomies. Patients undergoing wedge resections were younger, had smaller lesions, and experienced shorter hospital stays (mean 2.7 days) and fewer complications (22.8%) compared to lobectomy patients (mean 4.6 days). Anatomic segmentectomy showed intermediate values in age (mean 58.4 years), recovery time (3.6 days), and lesion size. Bilobectomy and pneumonectomy were associated with the longest hospitalizations and highest procedural risk. Over the 12-year period, case complexity increased while surgical efficiency improved. The median console time declined from 161 minutes in early years to 113 minutes in the final quartile, despite the rising proportion of complex resections such as segmentectomies and bronchoplastic lobectomies.[3,4] Mean console time was 142.3 minutes for lobectomy and 86.7 minutes for wedge resections. Complications were reported in 42.5% of defined cases, mostly related to advanced resections. No intraoperative mortality occurred. Conversion to thoracotomy was rare and stable across the series. The

progressive refinement in technique and procedural selection reflects growing expertise and expanding indications for RATS.[5,6]

Conclusion: This 12-year single-surgeon series of 883 robotic thoracic surgeries demonstrates the sustained safety, adaptability, and procedural evolution of RATS. Subgroup analysis revealed distinct clinical profiles, confirming the efficiency and lower morbidity of sublobar resections. The marked reduction in console time alongside increasing procedural complexity underscores the importance of cumulative experience and surgical learning curves. These results support the broad integration of RATS into modern thoracic oncology.

Keywords: Robotics; Robotic thoracic surgery; Robotic surgical procedures

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SGPP number: Not applicable.

CAAE: Not applicable.

Research funding: Not applicable.

einstein
Official Publication of the Instituto Israelita de Ensino e Pesquisa Albert Einstein

e-ISSN: 2317-6385

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Pinheiro LL. Avaliação da aorta torácica de brasileiros tabagistas por tomografia de tórax de baixa dose: diâmetros e prevalência de aneurismas [tese]. São Paulo: Faculdade Israelita de Ciências da Saúde Albert Einstein; 2021.

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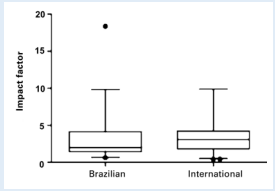
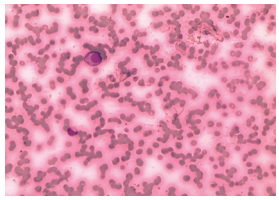
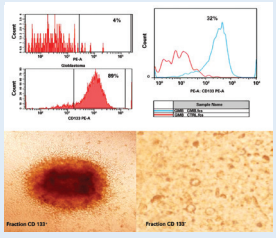
Line art	An image composed of lines and text, which contains no tonal or shaded areas		tif or eps	Monochrome 1 bit or RGB	900 to 1,200 dpi
Halftone	A continuous tone photograph containing no text		tif	RGB or Grayscale	300 dpi
Combo	Image contains halftone plus text or line art elements		tif or eps	RGB or Grayscale	500 to 900 dpi

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