

15th MADRID
on **Lung** CONGRESS
CANCER
23&24
November 2023

#15CongressGECP

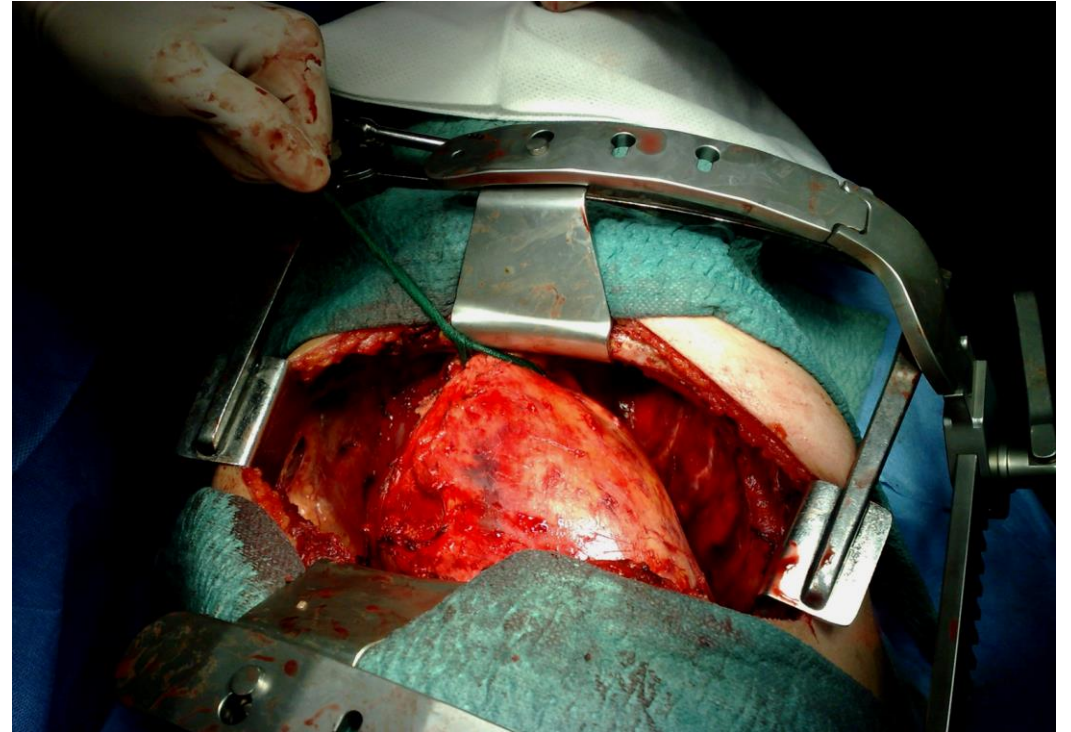
Thoracic Surgery

RATS resection: added value in lung cancer

Anna Ureñas Lluveras
Hospital Clínic de Barcelona

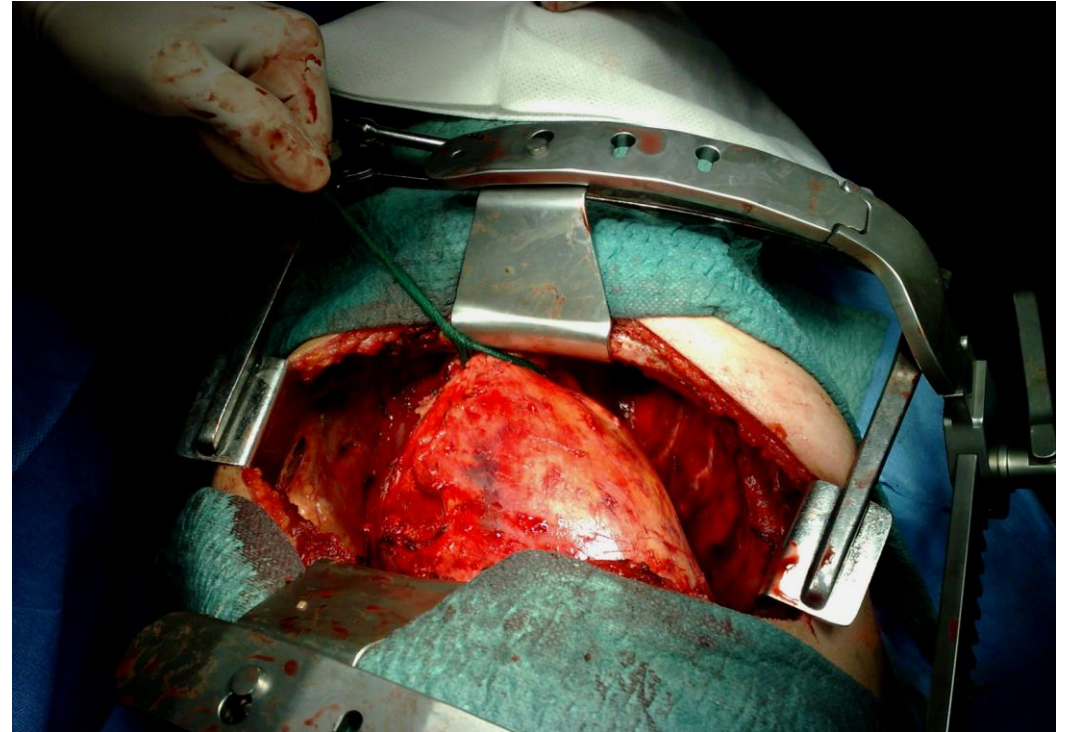


VS





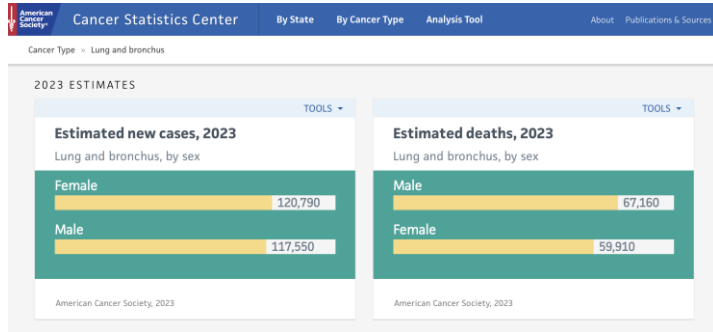
VS



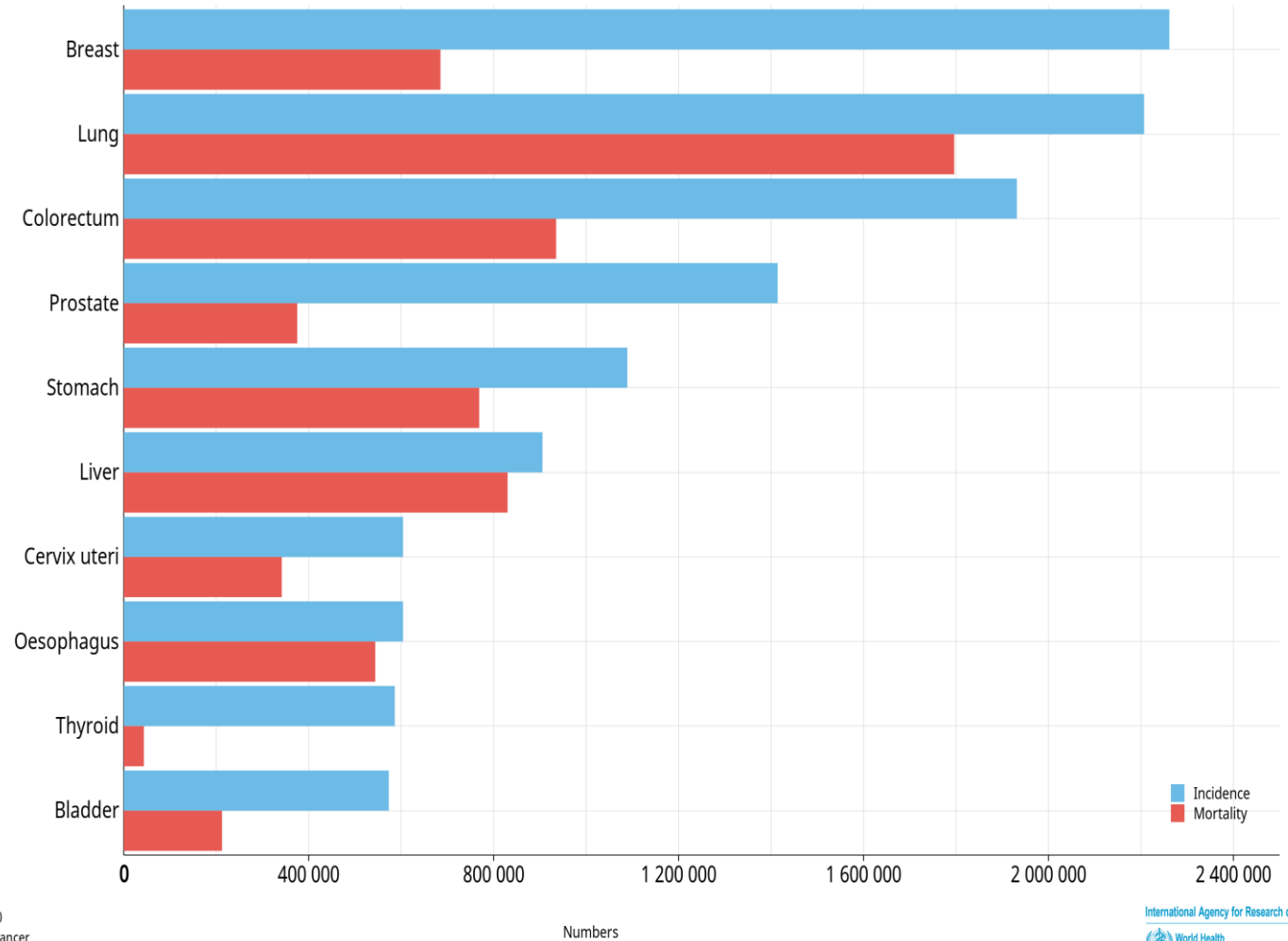


Lung cancer data

What situation are we in?



Estimated number of incident cases and deaths worldwide, both sexes, all ages

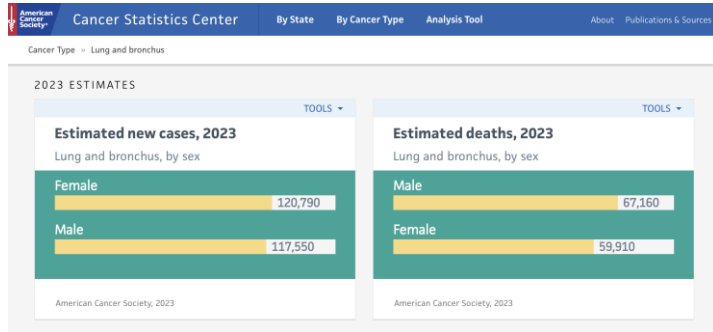


Data source: Globocan 2020
Graph production: Global Cancer Observatory (<http://gco.iarc.fr>)

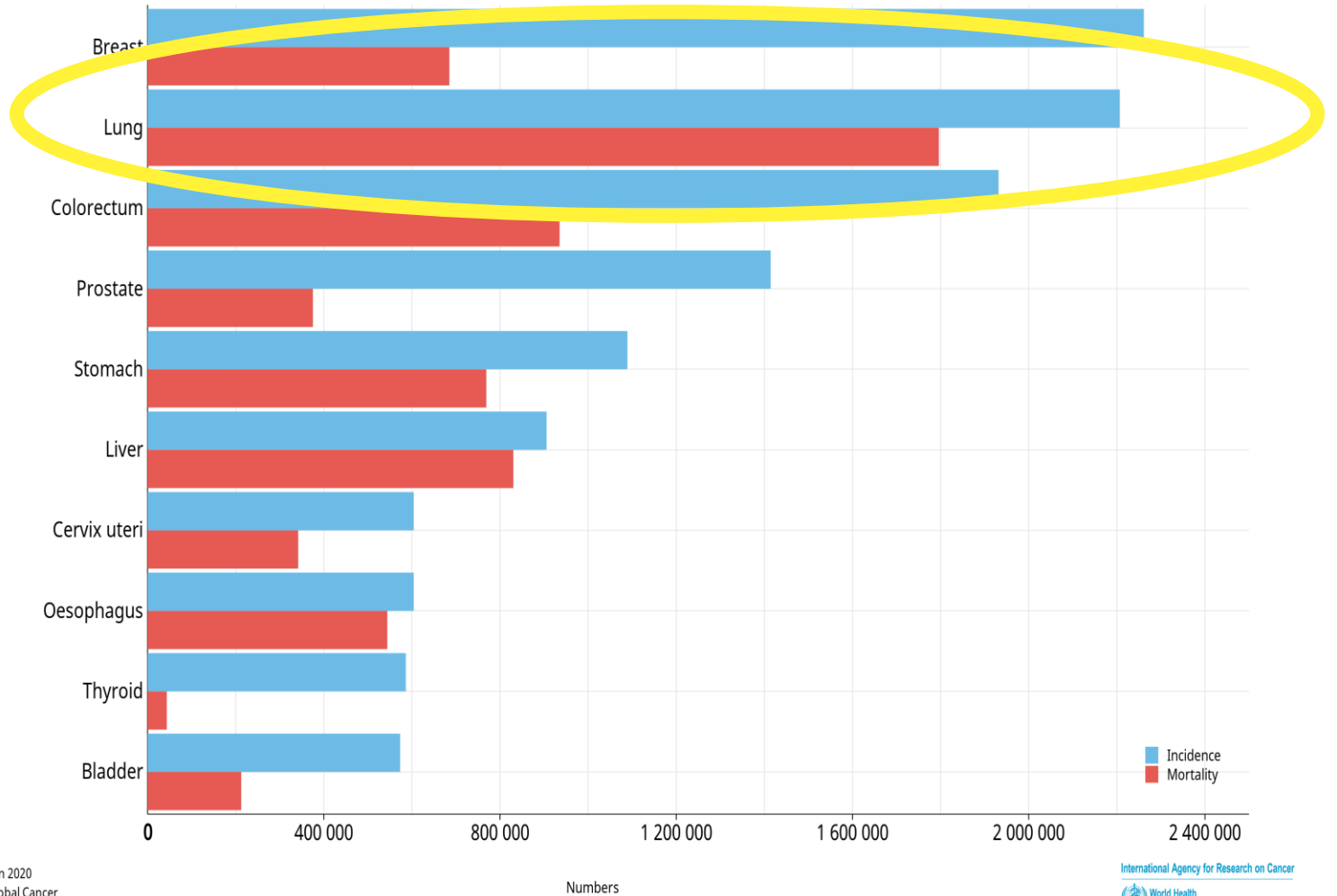


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VS



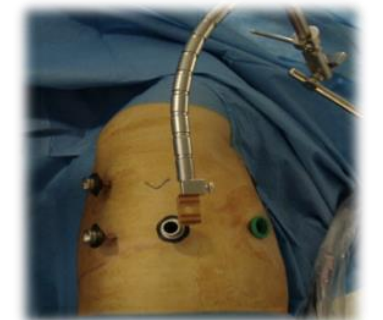
Gonzalez-Rivas D et al.
Interact Cardiovasc Thorac Surg. 2011;13(5):539-41



Jiao W, et al.
J Cardiothorac Surg. 2013;17, 8:99



Hansen HJ, et al.
Surg Endosc. 2011 Apr;25(4):1263-9



Ramos R, et al.
Surg Endosc. 2012; 26(2):431-7



VS



Gonzalez-Rivas D
Interact Cardiovas

Hansen HJ, et al.
Surg Endosc. 2011



Robotic

Robotic





Robotic



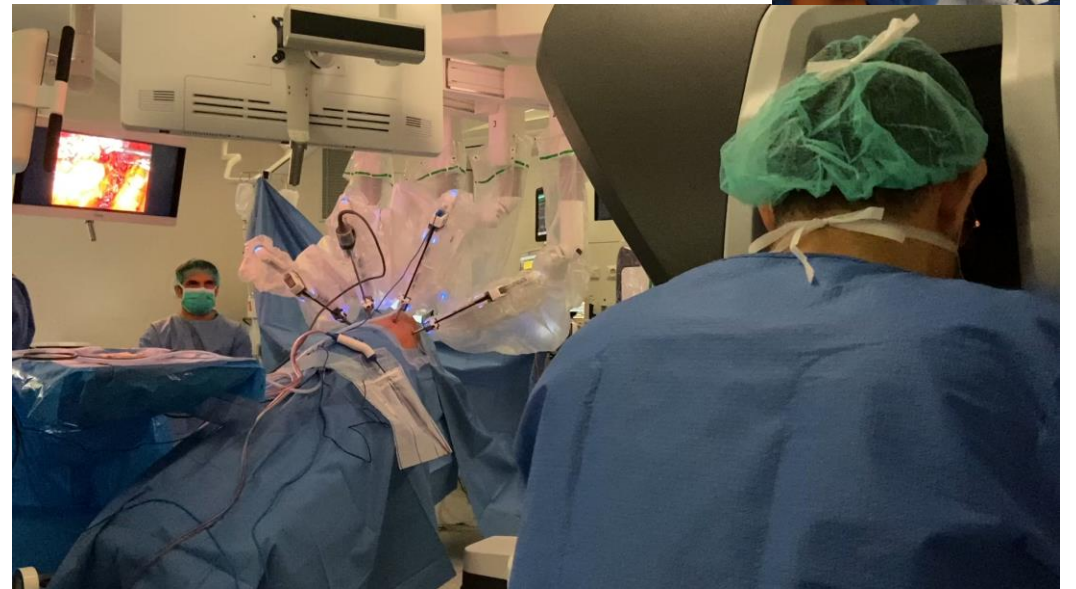


Robotic



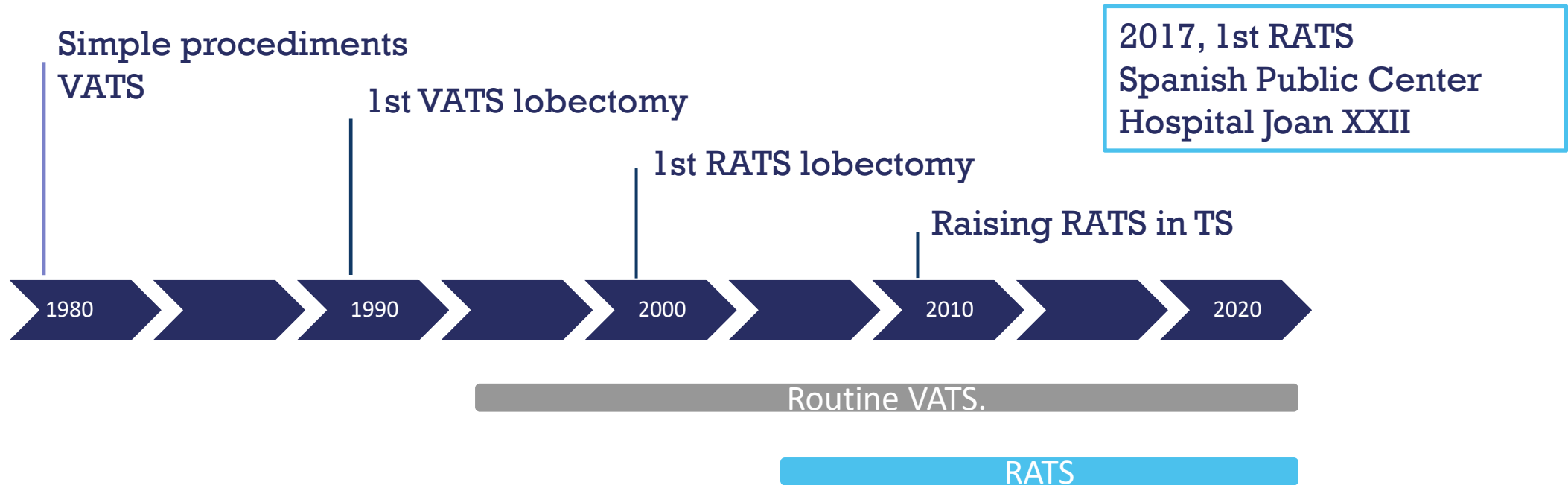


Robotic





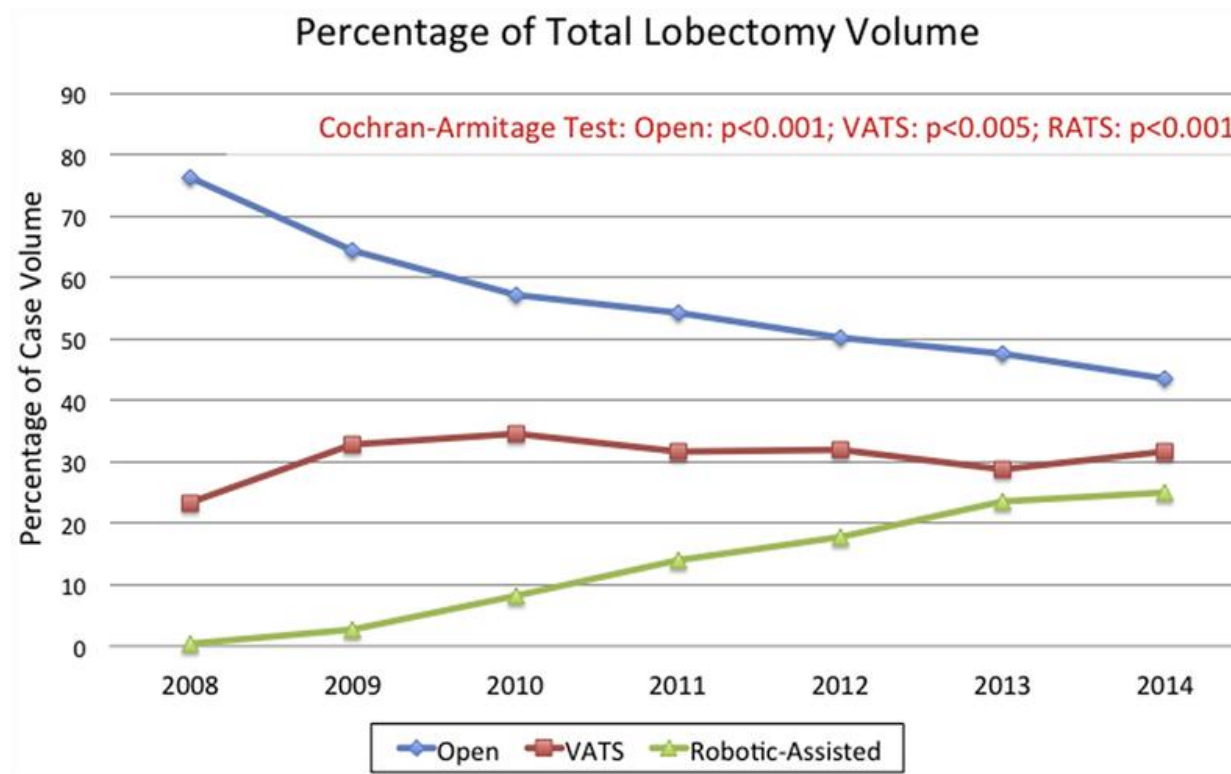
Historical perspective of minimally invasive surgery



1, Khaitan PG, D'Amico TA. Milestones in thoracic surgery. *J Thorac Cardiovasc Surg.* 2018 Jun;155(6):2779-2789. doi: 10.1016/j.jtcvs.2017.12.149. Epub 2018 Feb 13. PMID: 29501230. 2, Möller T, Egberts JH, Eichhorn M, et al. Current status and evolution of robotic-assisted thoracic surgery in Germany-results from a nationwide survey. *J Thorac Dis.* 2019;11(11):4807-4815. doi:10.21037/jtd.2019.10.48



The trend of approaches in TS



Subramanian MP, Liu J, Chapman WC Jr, Olsen MA, Yan Y, Liu Y, Semenkovich TR, Meyers BF, Puri V, Kozower BD. Utilization Trends, Outcomes, and Cost in Minimally Invasive Lobectomy. Ann Thorac Surg. 2019 Dec;108(6):1648-1655. doi: 10.1016/j.athoracsur.2019.06.049. Epub 2019 Aug 7. PMID: 31400324; PMCID: PMC6878158.



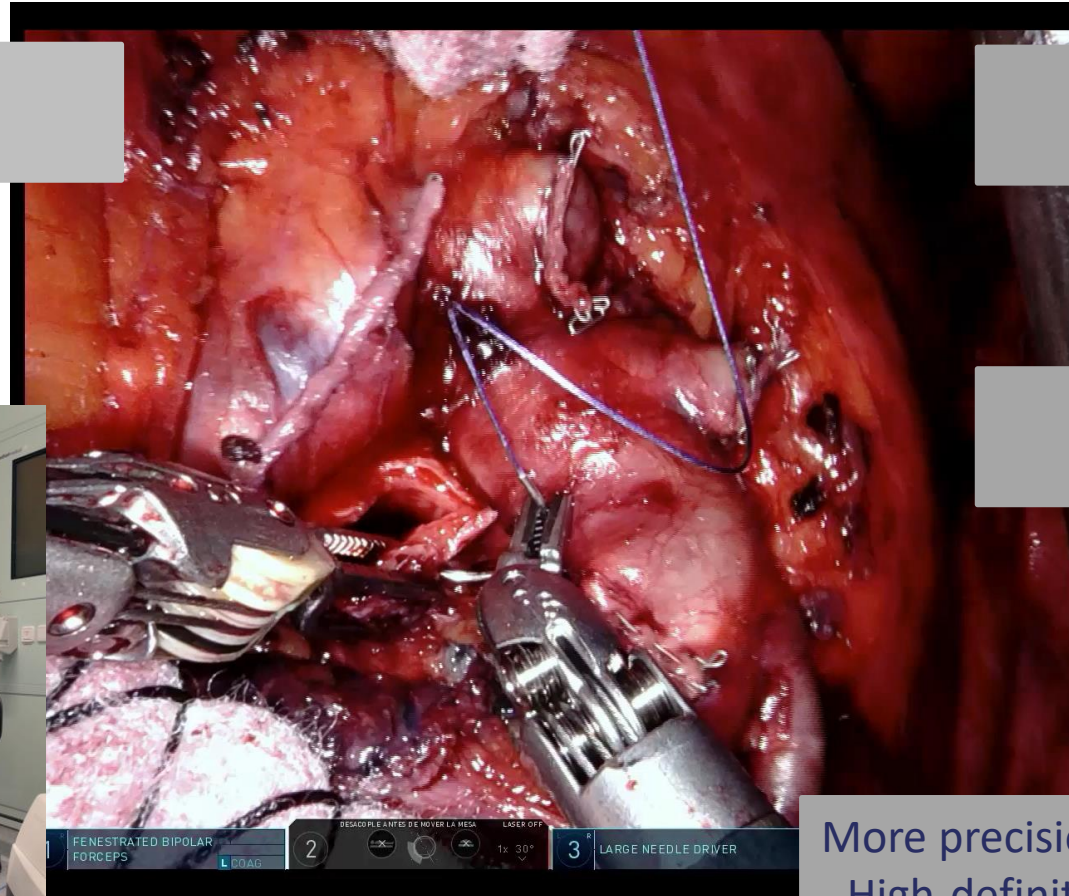
"What additional contribution does robotics offer us in the treatment of lung cancer?"

Advantages of robotic surgery

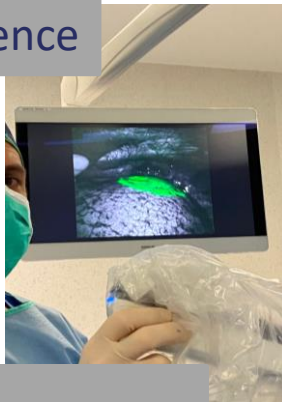
Articulated Endowrist instrumentation

Sense of immersion in the surgical field

Ergonomics
Surgeon comfort



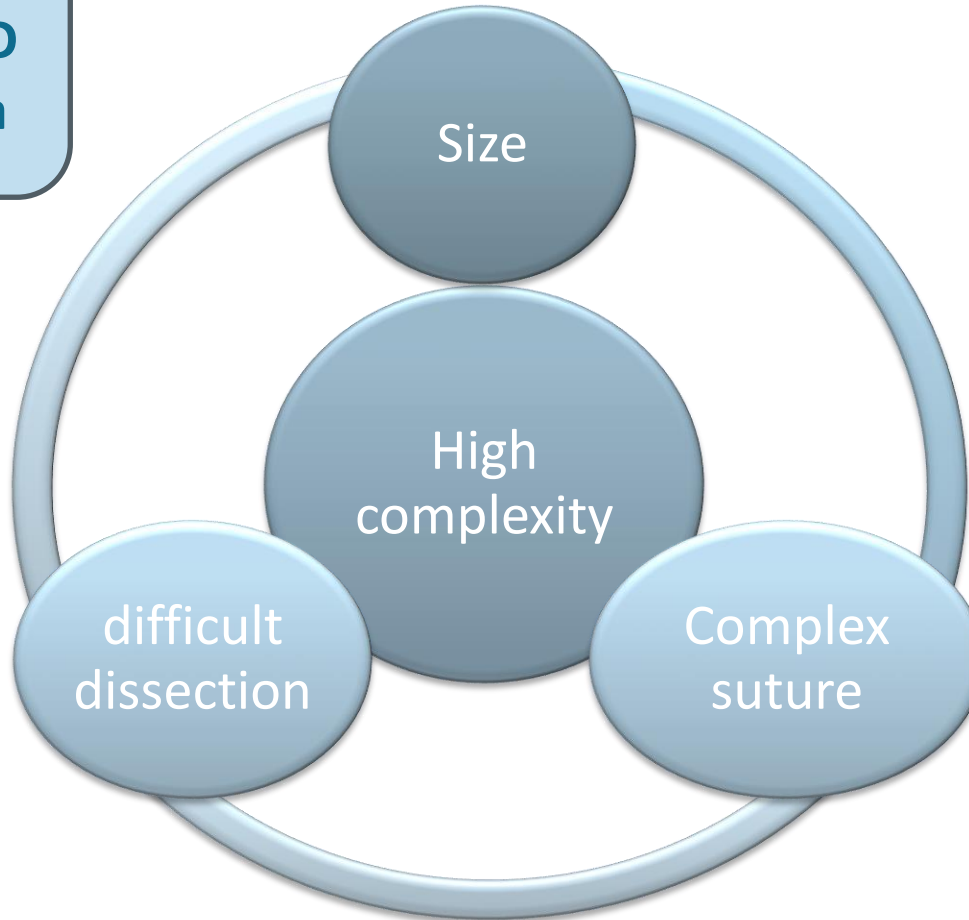
Possibility of the use of fluorescence



More precision:

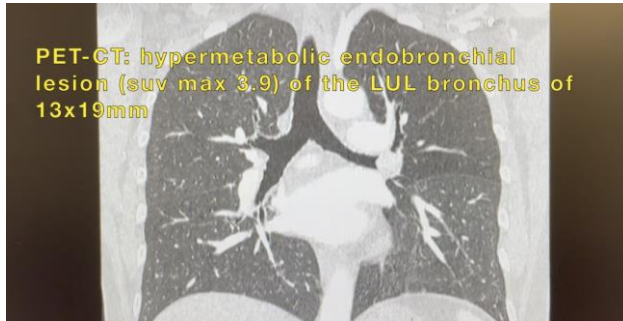
- High-definition 3D viewer with zoom
- Automatic focus

Precisión
Visualización 3D
Menos invasiva



- Size: 8 cm
- Suture:
 - Bronchoplasty
 - Angioplasty
 - Double sleeve
- Difficult dissection
 - Lymph nodes
 - Hilum mass
 - Neoadjuvant:
Chemo/RT/immuno

Challenging cases



Bronchoplasty

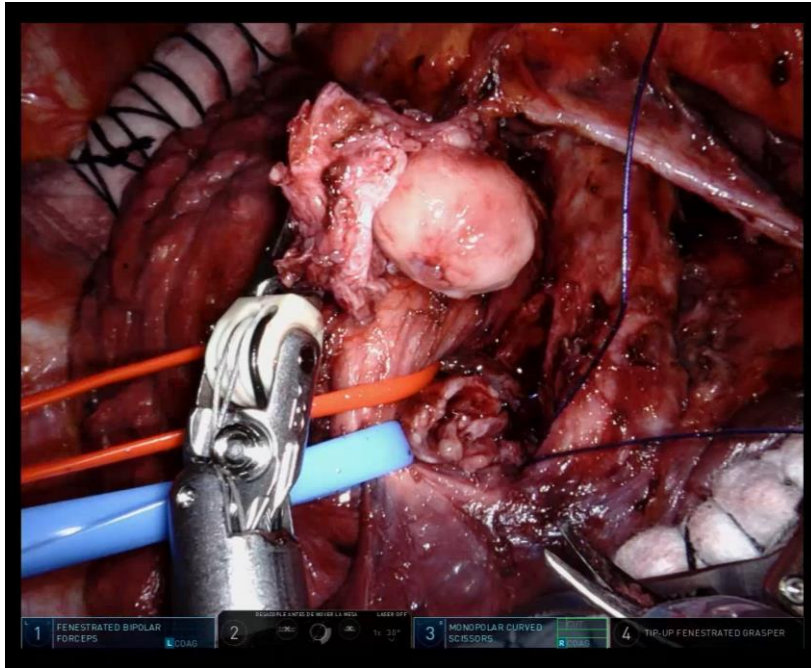
Thymoma

Challenging cases



Bronchoplasty

Thymoma



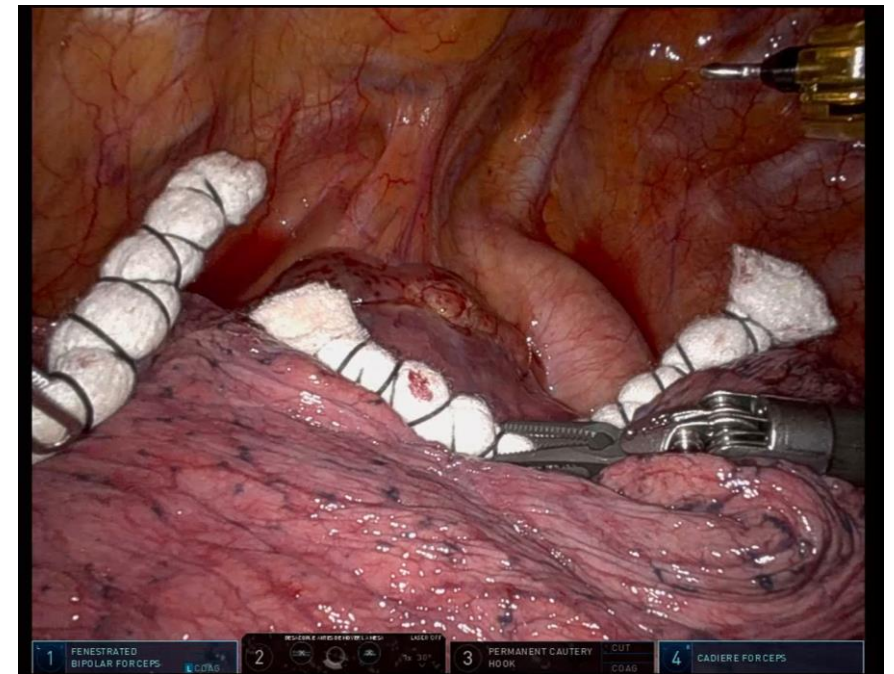
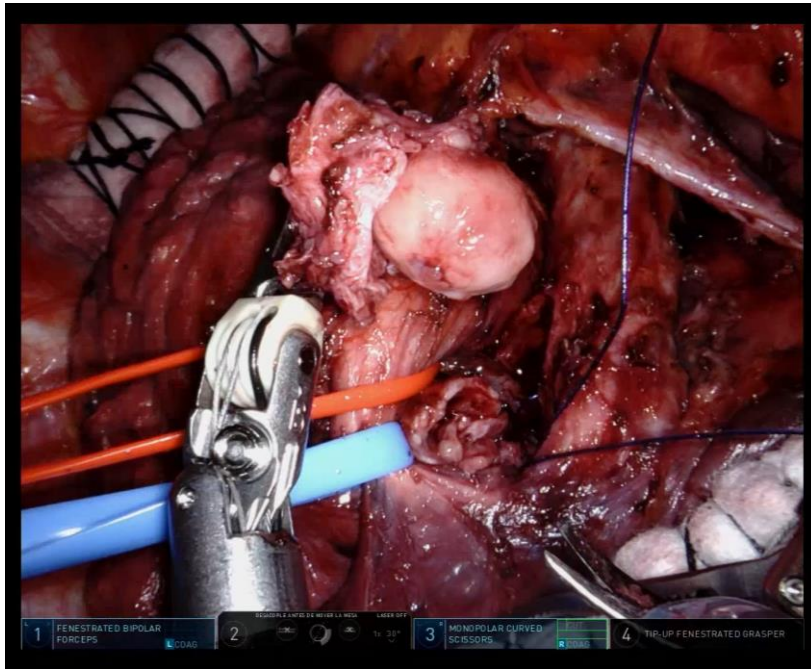
Challenging cases



Bronchoplasty



Thymoma





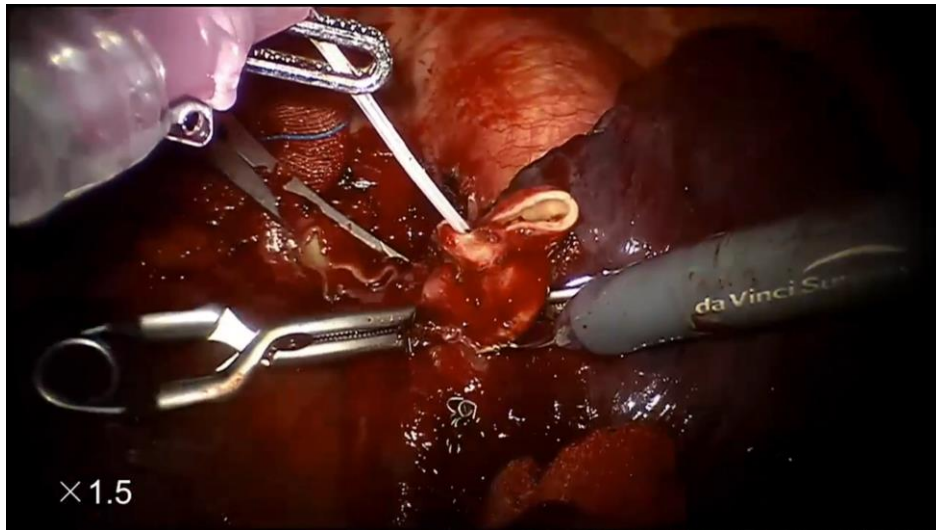
Challenging cases

Angioplasty

Robotic-assisted double-sleeve lobectomy Tong Qiu,
Yandong Zhao, Yunpeng Xuan, Wenjie Jiao
Journal of Thoracic Disease

Challenging cases

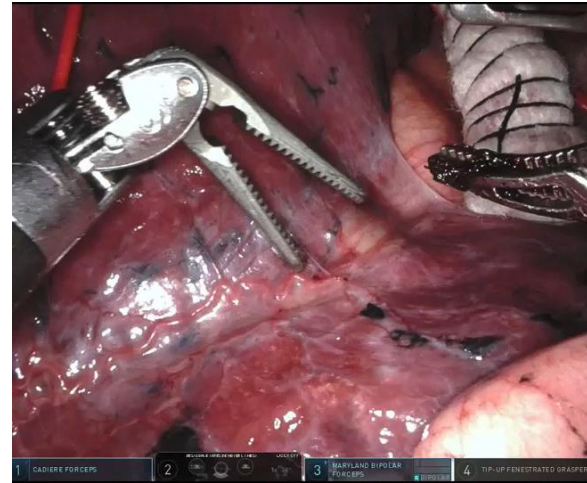
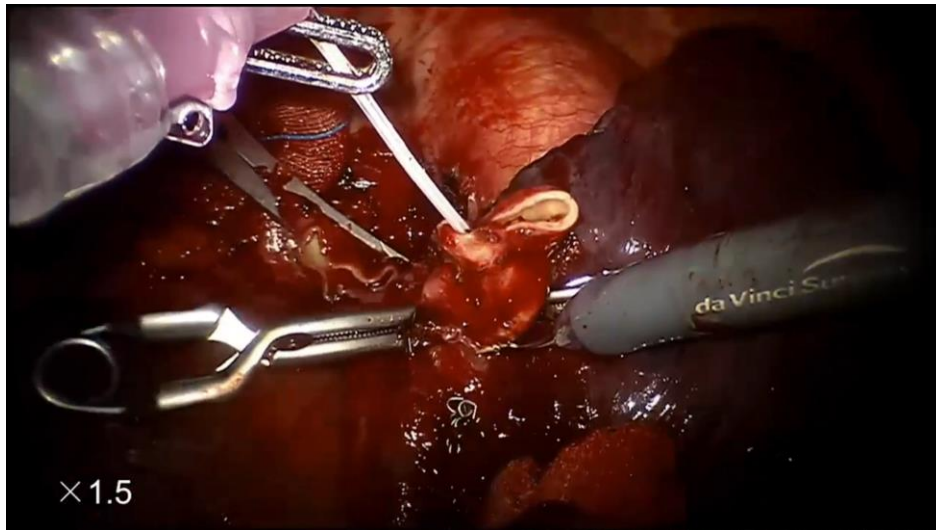
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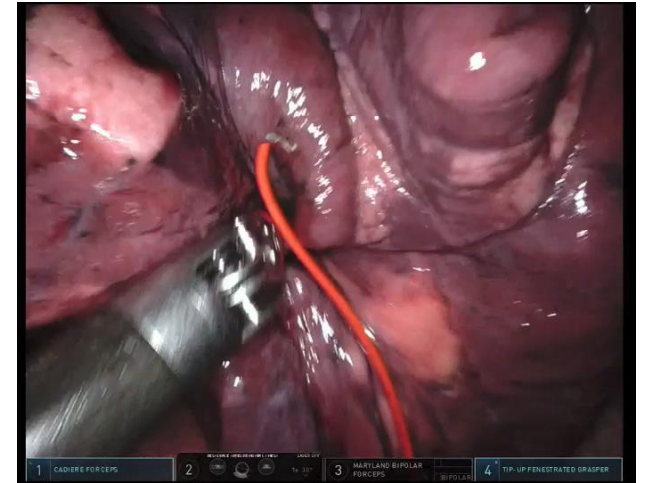
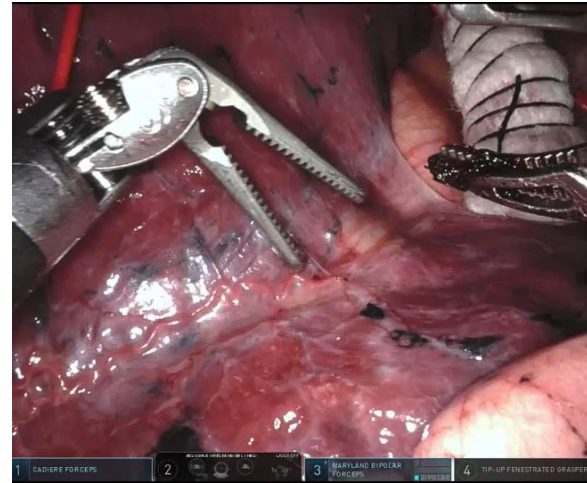
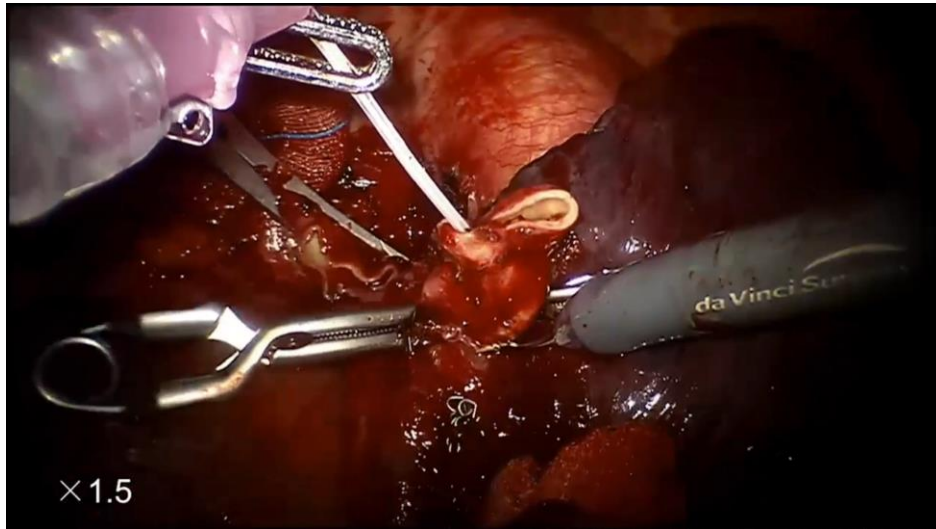
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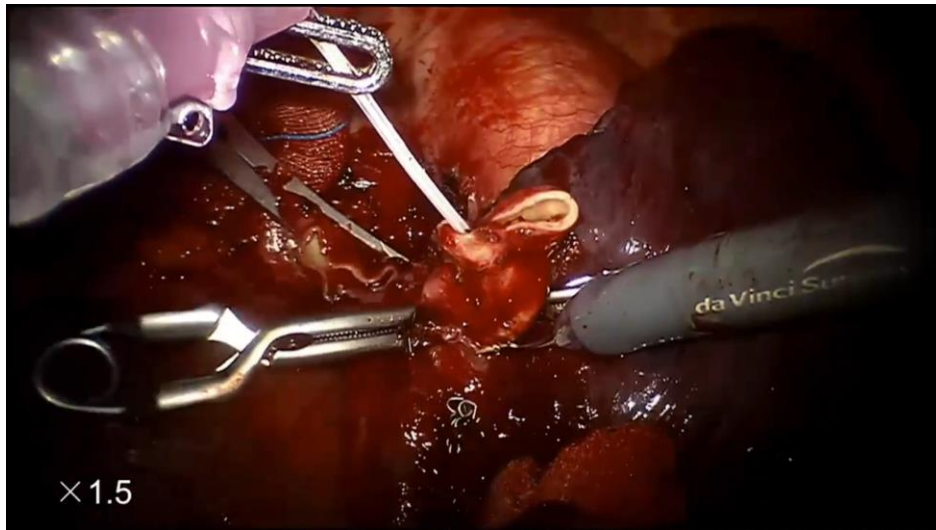
Angioplasty



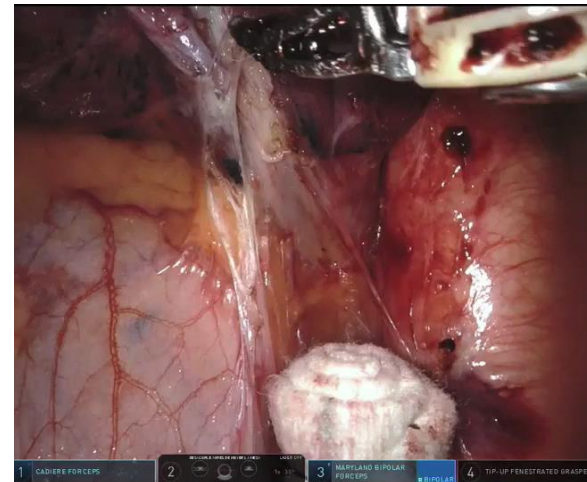
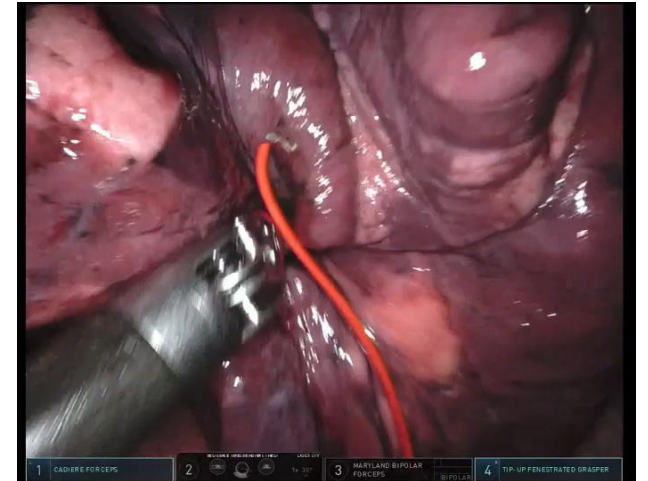
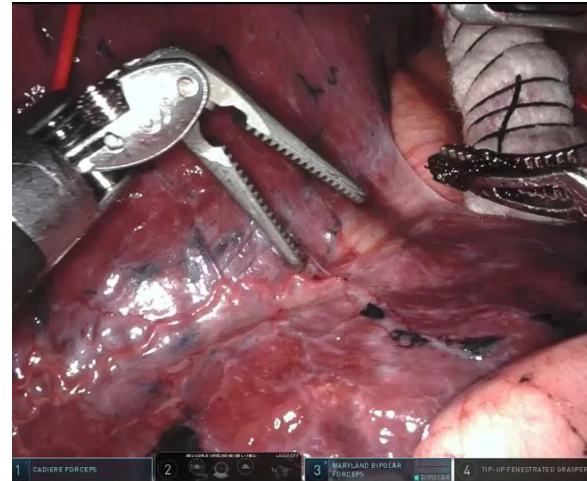
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Challenging cases

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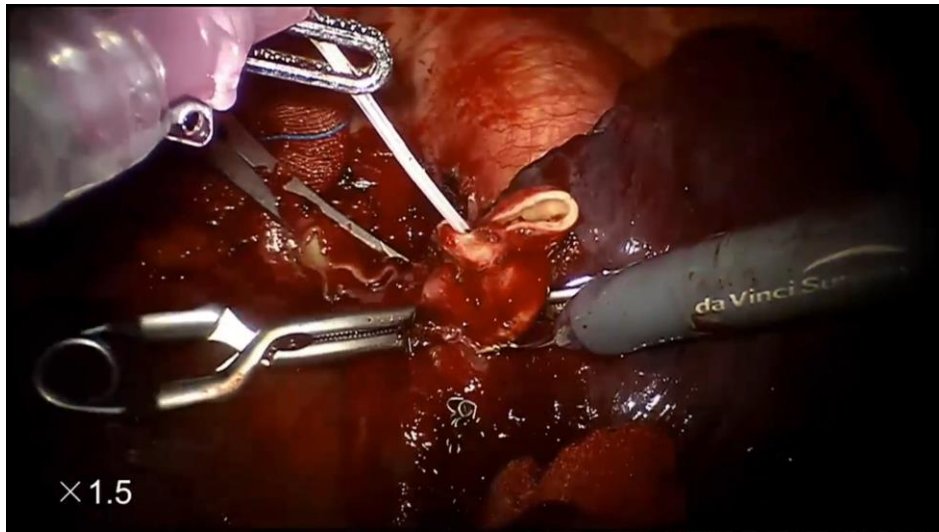


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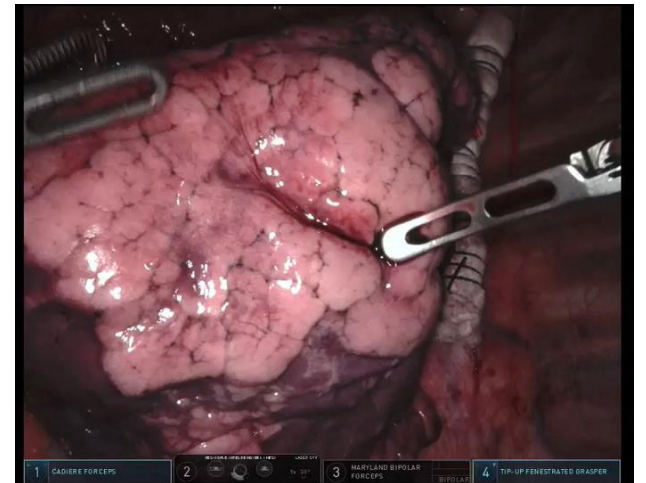
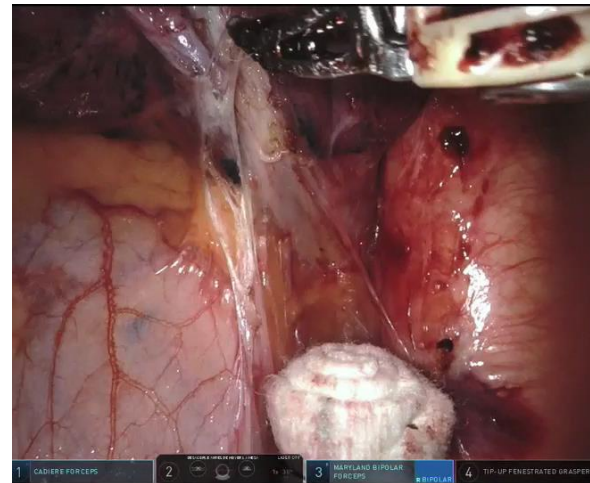
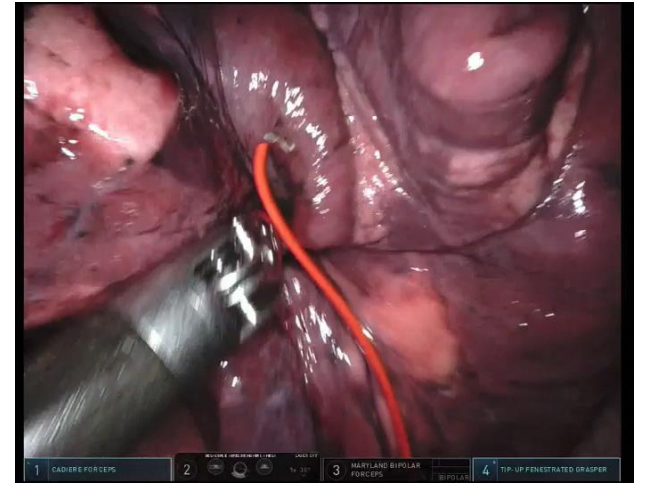
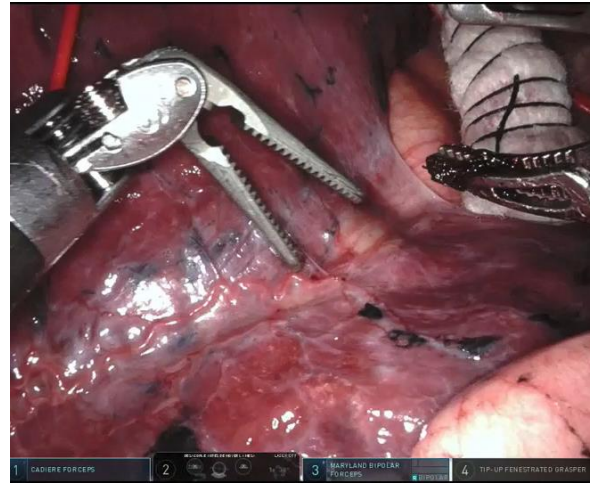


Challenging cases

Angioplasty



Robotic-assisted double-sleeve lobectomy Tong Qiu,
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Journal of Thoracic Disease





Challenging cases

CASE A

Squamous cell carcinoma
middle lobe,
T1b, N2 (4R+), M0.
Stage IIIA

CASE B

ADK
middle lobe,
T1bN2 (presence of 4R+ and 7+,
Stage IIIA

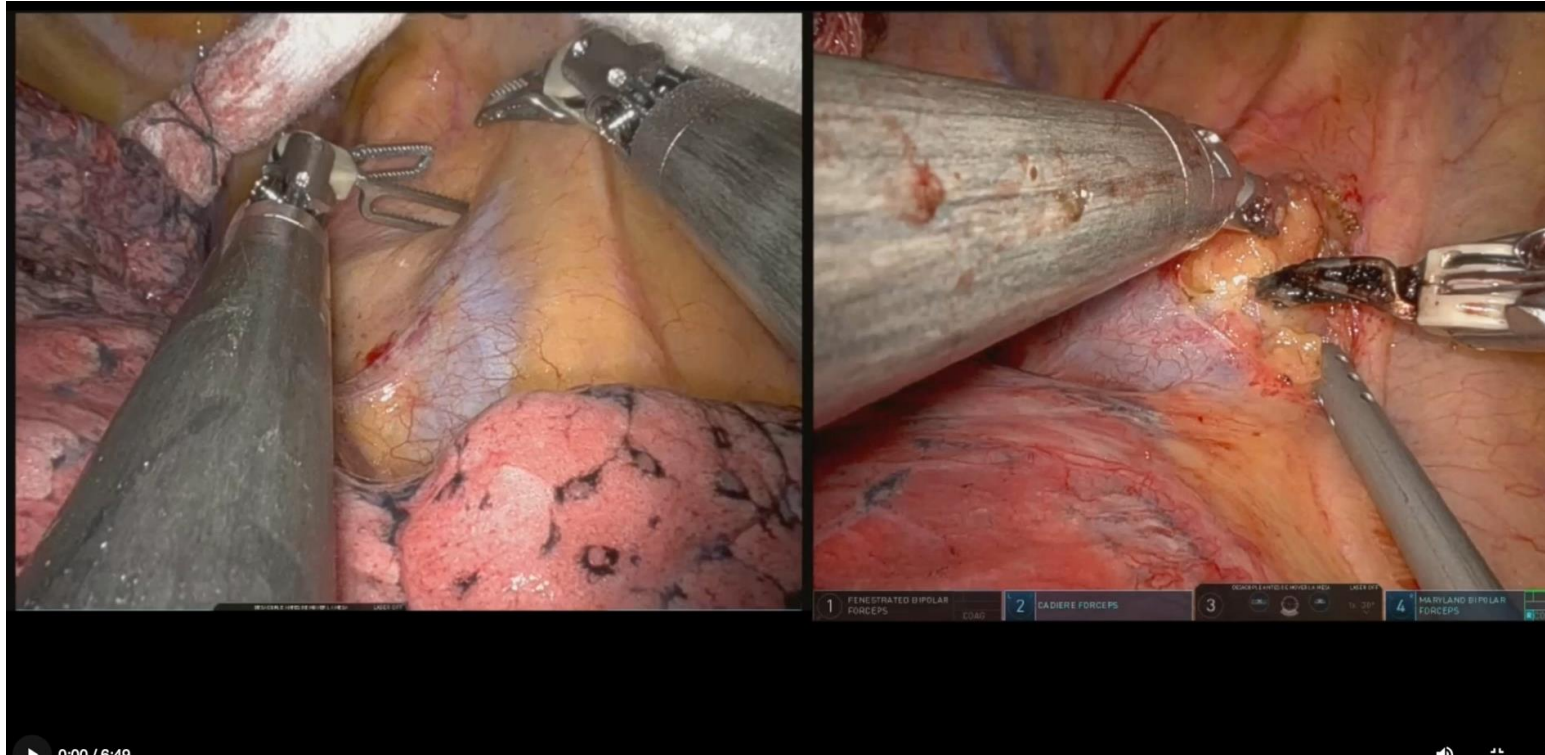
Challenging cases

CASE A

Squamous cell carcinoma
middle lobe,
T1b, N2 (4R+), M0.
Stage IIIA

CASE B

ADK
middle lobe,
T1bN2 (presence of 4R+ and 7+,
Stage IIIA





But what are these technological improvements for? Will they allow us to be better surgeons?



- ✓ Security in achieving negative oncological margins
- ✓ Possibility of more extensive and precise lymphadenectomies
- ✓ Ease in the manipulation of instruments for anastomosis

Bibliography

Video-Assisted Thoracoscopic Versus Robotic-Assisted Thoracoscopic Thymectomy *Systematic Review and Meta-analysis*

Matthew Fok, MSc, Mohamad Bashir, MD, PhD,† Amer Harky, MRCS,† David Sladden, MD,†
Mariano DiMartino, MBBS,† Hazim Elsyed, BSc,* Callum Howard, BSc,*
Maxwell Knipe, BSc,* and Michael J. Shackcloth, FRCS‡*

No differences between RATS VATS



Article

A Comparison of Total Thoracoscopic and Robotic Surgery for Lung Cancer Lymphadenectomy

Better lymphadenectomy than VATS

**Anna Ureña ^{1,4}, Camilo Moreno ^{1,5}, Ivan Macia ^{1,2}, Francisco Rivas ¹, Carlos Déniz ¹, Anna Muñoz ¹, Ines Serratos ¹,
Marta García ¹, Cristina Masuet-Aumatell ³, Ignacio Escobar ¹ and Ricard Ramos ^{1,2,4,*}**



Bibliography



Health-Related Quality of Life Following Robotic-Assisted or Video-Assisted Lobectomy in Patients With Non-Small Cell Lung Cancer

Results From the RVlob Randomized Clinical Trial

[Runsen Jin, MD, PhD](#) • [Zhengyuan Zhang, MD](#) • [Yuyan Zheng, MD](#) • ... [Toni Lerut, MD, PhD, MPH](#) • [Jules Lin, MD, FCCP](#) • [Hecheng Li, MD, PhD](#)   • [Show all authors](#)

Published: January 05, 2023 • DOI: <https://doi.org/10.1016/j.chest.2022.12.037> •  Check for updates

Long-Term Oncologic Outcomes After Robotic Lobectomy for Early-stage Non-Small-cell Lung Cancer Versus Video-assisted Thoracoscopic and Open Thoracotomy Approach

[Peter J. Kneuertz](#)   • [Desmond M. D'Souza](#) • [Morgan Richardson](#) • [Mahmoud Abdel-Rasoul](#) • [Susan D. Moffatt-Bruce](#) • [Robert E. Merritt](#)

Published: October 13, 2019 • DOI: <https://doi.org/10.1016/j.clcc.2019.10.004> •  Check for updates

Best QoL in robotics

Oncologic outcomes



Objectives

RANDOMIZED CONTROLLED TRIAL

Robotic Lobectomy Is Cost-effective and Provides Comparable Health Utility Scores to Video-assisted Lobectomy

Early Results of the RAVAL Trial

Yogita S. Patel, BSc, Jean-Marc Baste, MD, PhD,† Yaron Shargall, MD,*
Thomas K. Waddell, MD,‡ Kazuhiro Yasufuku, MD,‡ Tiago N. Machuca, MD, PhD,§
Feng Xie, PhD,|| Lehana Thabane, PhD,|| and Waël C. Hanna, MDCM, MBA*✉*

Cost equalization



What would be your choice of technique as
a patient?

Objectives

Having a robot in each operating room so that the surgeon can choose whether to use it or not, to perform their work in the best and most comfortable way.

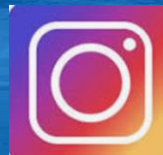
Minimally invasive- less pain / best QoL



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Muchas Gracias



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