



Sixth International
Joint Meeting on
**THORACIC
SURGERY**
Barcelona - 20th, 21st and 22nd November 2024
Auditorio Foment del Treball Nacional, Barcelona (Spain)

11th International Meeting on General Thoracic Surgery
Clínica Barcelona | UNIVERSITAT DE BARCELONA | Hospital Universitari Sagrat Cor

5th Meeting of the Thoracic Oncology, Thoracic Surgery, Techniques & Transplant, Respiratory Nursing and Respiratory Physiotherapy Areas of the Spanish Society of Pneumology and Thoracic Surgery (SEPAR)



10th International Workshop on Surgical Exploration of the Mediastinum and Systematic Nodal Dissection



10th International Workshop on Surgical Exploration of the Mediastinum and Systematic Nodal Dissection



3rd Joint Meeting of the Spanish Society of Thoracic Surgery (SECT)



30th Congress of the "Asociación Iberoamericana de Cirugía Torácica" AIACT



INTRODUCTORY LECTURE: PRINCIPLES & COSTS

Marc Boada

Hospital Clínic de Barcelona

Since the first report of Robotic Assisted Thoracic Surgery (RATS), its implementation rapidly expanded to perform minimally invasive operations on the chest, including pulmonary, mediastinal, and esophageal procedures(1). Surgical robotic technology allows surgeons to operate with greater precision, dexterity, and visibility. The key principles of RATS include the use of small incisions, high-definition 3D cameras, and robotic instruments with articulated joints that provide a greater range of motion and avoid pressure on the intercostal spaces(2).

The benefits of robotic surgery are numerous: less blood loss, reduced postoperative pain, shorter hospital stays, and faster recovery compared to traditional open surgery. In the other hand, RATS has also limitations(3). The lack of feedback and the distance of the main surgeon to the field for eventual massive bleeding control are easily solved. In addition, the effectiveness of robotic surgery depends on the surgeon's experience and the type of procedure. However, fast learning curves with good clinical results have been reported(4)

In terms of costs, RATS is more expensive than other minimally invasive surgical techniques, such as video-assisted thoracoscopic surgery (VATS). Contributing factors to the higher cost include the high price of the robotic system (between \$1.5 and \$2.5 million), maintenance expenses, and the use of disposable instruments(5). Nevertheless, many strategies can be used to reduce the costs including intensive robotic use, hybrid robotic surgeries and patient selection.

References

1. Melfi FMA, Menconi GF, Mariani AM, Angeletti CA. Early experience with robotic technology for thoracoscopic surgery q. [cited 2023 Feb 16]
2. Veronesi G, Novellis P, Voulaz E, Alloisio M. Robot-assisted surgery for lung cancer: State of the art and perspectives. Lung Cancer [Internet]. 2016 Nov 1 [cited 2024 Oct 11];101:28–34.

3. Finan MA, Rocconi RP. Overcoming technical challenges with robotic surgery in gynecologic oncology. *Surg Endosc* [Internet]. 2010 [cited 2024 Oct 11];24(6):1256–60.
4. Paglialunga PL, Molins L, Guzmán R, Guirao A, Bello I, Ureña A, et al. Robotic Lobectomy Learning Curve Has Better Clinical Outcomes than Videothoracoscopic Lobectomy. *J Clin Med* [Internet]. 2024 Mar 1 [cited 2024 Oct 11];13(6).
5. Singer E, Kneuertz PJ, D'Souza DM, Moffatt-Bruce SD, Merritt RE. Understanding the financial cost of robotic lobectomy: calculating the value of innovation? *Ann Cardiothorac Surg* [Internet]. 2019 [cited 2024 Oct 11];8(2):194–201.