



# Robotic assisted thoracic surgery: advanced procedures in lung and mediastinum

In the era of minimally invasive surgery, thoracic surgeons have video-assisted thoracoscopic surgery (VATS) and robot-assisted thoracoscopic surgery (RATS) in their arsenal. However, when the procedure becomes challenging most surgeons prefer open thoracotomy to ensure safety and good oncological outcomes.

Robotic surgery has grown in last decades with nowadays few expert surgeons pushing the limits of this approach to perform some complex cases with excellent results.

This series cover the new fields of advanced procedures in lung and mediastinum with different authors reporting their experiences in order to help thoracic surgeons already comfortable with the robot platform and who are looking for tips and tricks to progress in more difficult cases.

We will develop the surgery following induction treatment, with a particular attention on pulmonary resection after immunotherapy which will be more and more common in the near future because of the large adoption of this treatment for patients with lung cancer.

We will detail anatomical infra lobar resections that will be practiced more often for small peripheralized non-small cell lung cancer, and a focus on challenging atypical segmentectomies and the situation with multiple segments to resect.

We will show the great help of the robot for the borders of the thoracic cavity, especially for the apex thanks to the camera and the multiport access.

We will report the advantage of the robot when reconstruction is needed, and the ease of suturing for bronchial sleeve lobectomies.

We will explain the management of pulmonary artery bleeding during a robotic procedure in order to secure the procedure as much as possible.

We will review thymic resections and demonstrate the contribution of CO<sub>2</sub> inflation for mediastinal procedures.

In conclusion, this series will emphasize the benefit of the robotic platform for the patients and the surgeon. Indeed, it ensures surgical dexterity, mandatory for these complex cases requiring hard skill and bimanual dissection. Thus, the robot offers an open surgery in a closed chest with advanced tools (as fluorescence or image-assisted surgery or dual console), allowing to push the border of the minimally invasive approach.

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Ilies Bouabdallah



Jean-Marc Baste

**Ilies Bouabdallah**

*Department of Thoracic Surgery, Hospital Saint Joseph, Marseille, France.  
(Email: [ibouabdallah@hopital-saint-joseph.fr](mailto:ibouabdallah@hopital-saint-joseph.fr))*

**Jean-Marc Baste**

*Department of General Thoracic Surgery, Rouen University Hospital, Rouen, France.  
(Email: [Jean-Marc.Baste@cbu-rouen.fr](mailto:Jean-Marc.Baste@cbu-rouen.fr))*

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