# Locally advanced N2 non-small cell lung cancer and the robotic platform: are we asking the right question?

## Jean-Marc Baste

Department of General and Thoracic Surgery, Rouen University Hospital, Normandie University, Rouen, France
*Correspondence to:* Jean-Marc Baste, MD, PhD. Department of General and Thoracic Surgery, Rouen University Hospital, Normandie University, 1 rue de Germont, 76000 Rouen, France. Email: jean-marc.baste@chu-rouen.fr.
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This case report by Cheng *et al*. aims to highlight the capabilities of the robotic platform to perform minimally invasive (MI) lung resection for more advanced lung cancer. They have described a characteristic case of right upper lobectomy (RUL) with difficult N2 disease.

Does the robotic platform allow more complex resection for more advanced cases?

This problematic has already been raised by Dylewski *et al*. in his editorial "Achilles' heel" published in 2012. He claimed that the robotic platform was launched for more advanced cases (1). The arguments developed are the same but still need to be validated. The robotic platform is built for a larger surgical community and a wider range of lung resections (segmentectomies, sleeve resection, N2 disease, etc.).

However, we have to admit that expert video-assisted thoracic surgery (VATS) surgeons are also able to operate complex cases demonstrated by outstanding videos and strong series (2,3). These authors have described very well the evolution of their techniques and advocated the use of more precise instruments and the dissection of the fissure first (fissure based technique). The dissection is then more anatomic and more reliable. This surgical strategy could be very difficult for non-expert VATS surgeons, thus limiting their resection to early cases.

Here the authors have described a difficult case of bulky resectable N2 but also a bulky N1, perfectly resected following international recommendations (ESTS guidelines). Their video is the proof of the quality of resection and the accuracy of the robotic platform. The

authors should have emphasized the ability of the robot to perform safe resection of big N1 which is clearly more difficult than *en-bloc* N2 resection. New energy and sealant instruments facilitate mediastinal lymphadenectomy by VATS. However, for difficult N1 lymphadenectomy, VATS is still complicated even with these new devices.

The 3-arm technique described here is probably the simplest way of using the robotic platform and the most affordable technique (4). Nevertheless, improvements in the robotic platform with the new Xi and X platforms will ease the adoption of 4 arms, which could facilitate exposure and dissection. Videos released on CTSnet and other surgical media show clearly the progress made by the platform but also the standardization of the technique with Capnothorax.

These new platforms allow more novice surgeons to perform advanced cases, not only experts. This is due to simplification of the platform, better standardization of the robotic technique and better access with worldwide diffusion.

These comments should be considered with caution given that these robotic systems are difficult to obtain in many thoracic centers. The other major problem is access even in centers with the system, which is often shared limiting its utilization.

Notwithstanding the robotic platform should allow a wider use of the minimally invasive approach for a larger spectrum of lung carcinomas and also complex mediastinal resections.

The question should also be focused on the general thoracic surgical community which can perform these

advanced cases as well as VATS experts who are able to perform all complex cases.

A good surgical platform will provide more standardized procedures and better access to minimally invasive surgery (MIS) not only for the patient but also for the surgeon.

The only limitations which slow down the adoption of robotics are logistics and costs, not the accuracy of the platform. These reasons are good reasons but they are not enough to condemn the robot.

For VATS surgeons who have easy access to the robotic platform and perform robotic cases in routine, they all understand the superiority of this approach in terms of precision, ergonomy, safety, and versatility (wide range of lung and mediastinal resections) (5). Unfortunately, these arguments are not yet sufficient to convince the pro-VATS community due to lack of evidence. The current literature cannot clearly determine the superiority of robotic-assisted thoracoscopic surgery (RATS) over VATS (5-7).

In conclusion, this informative case report will not convince opponents of this technique but may reinforce their doubts.

Time and not N2 will do the job…for robotic conversion!

## Acknowledgements

None.

## Footnote

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