

Cite this article as: Vieira A, Ugalde Figueroa P. Uniportal middle lobectomy after a previous right upper lobectomy. *Interact CardioVasc Thorac Surg* 2017;24:476–7.

# Uniportal middle lobectomy after a previous right upper lobectomy

Arthur Vieira and Paula Ugalde Figueroa\*

Division of Thoracic Surgery, Institut Universitaire de Pneumologie et Cardiologie de Québec, Québec City, QC Canada

\* Corresponding author. Division of Thoracic Surgery, Institut Universitaire de Cardiologie et de Pneumologie de Québec, 2725 chemin Sainte-Foy, Pavillon Laval, 3e étage, porte L-3540, Québec, QC G1V 4G5, Canada. Tel: +1-418-6568711 (5504); fax: +1-418-6564762; e-mail: paula.ugalde@criucpq.ulaval.ca (P. Ugalde Figueroa).

Received 19 July 2016; received in revised form 7 October 2016; accepted 19 October 2016

## Abstract

Video-assisted thoracoscopic surgery (VATS) using a 3.5 cm single incision (uniportal) may not only result in better pain control, earlier mobilization and shorter hospital stays, but can also provide safer and clear visualization to perform thoracoscopic dissection during complex surgeries. This is a case of a 55-year-old woman who underwent redo-thoracoscopy through uniportal approach for a middle-lobe lobectomy, after a previous right-upper lobectomy.

**Keywords:** Lung cancer Thoracic surgery • Uniportal • Lobectomy • Single-port

## INTRODUCTION

In the early 1990s, VATS operations were performed through multiple surgical ports. Progressively, surgeons developed the technique to use fewer ports even in complex cases. The 2 ports approach (1 for the camera and 1 as a working incision) was popularized in 2006 [1]. In 2004, the uniportal, or single-port, approach was first described, initially for wedge resection and subsequently, in 2010, for lobectomy [2].

Uniportal VATS is quickly gaining popularity, especially in Asia and Europe. In a propensity-matched analysis, uniportal VATS lobectomy was shown to be equivalent to multiport thoracoscopic lobectomy with the added advantages of better pain control and earlier patient mobilization [3]. Recently, a randomized trial compared uniportal VATS versus other VATS approaches regarding postoperative outcomes [4]. Even though this study was strongly criticized [5], it concluded that uniportal and multiportal VATS have similar outcomes.

## CASE REPORT

A 55-year-old woman underwent a uniportal right-upper lobectomy for a stage I pulmonary adenocarcinoma. During follow-up, a 6-mm semi-solid nodule in the middle-lobe progressed to 11 mm. Due to high suspicion of a second primary adenocarcinoma, oncologic workout was completed. The positron emission tomography (PET) scan revealed a nodule with 3.6 standardized uptake value, no hilar or mediastinal lymphadenopathy and no signs of distant metastasis. A transthoracic needle biopsy confirmed an adenocarcinoma. The patient had normal pulmonary function and no previous cardiovascular comorbidities. Surgery was indicated.

Under general anaesthesia, single lung ventilation was established. Surgery was performed through a single 3.5 cm incision in the 5th intercostal space with a 5-mm, 30° angled camera.

We began dissecting the hilum, to identify the superior pulmonary vein and the pulmonary artery. As expected, there was a great amount of adhesions, which increased the complexity of the case. Through the straight view offered by the single-port approach, the dissection felt safer and the vascular structures were under control. With the use of a harmonic scalpel and dedicated thoracoscopic instruments, we were able to find a good plane for dissection and completely identify the elements from the border of the azygos vein to the inferior pulmonary vein (Video 1).



**Video 1:** Uniportal middle-lobe lobectomy after a right-upper lobe lobectomy. [Copyright 2015, used with permission from CTSNet (www.ctsnet.org). All rights reserved].

The most vital stage of the dissection occurred between the middle lobe vein and the pulmonary artery. Once the middle lobe vein was dissected, we decided to complete the anterior portion of the major fissure so to have better exposure of the hilum. Subsequently, the middle lobe vein was divided with a stapler and vascular load. We then turned our attention to the bronchus. This was a tedious part of the operation since there were important adhesions between the bronchus, lymph nodes and the artery. In this case, it was easier

to staple first the bronchus, and at last the middle lobe artery. Fissure was completed and the lobe removed with a plastic bag. As usual, the lymphadenectomy was performed at the stations 4R, 10R and 11R, all sent for frozen analyses. During the patient's previous right upper lobectomy, lymphadenectomy had been performed in the same stations. Therefore, we did not expect to find important adenopathy. We performed routinely intercostal nerve block and under water insufflation to test for any air leaks.

Pathology report revealed an adenocarcinoma, T1aN0M0, and immunohistochemistry suggested a second primary lung cancer. Patient recovery was uneventful and discharged home 2 days postoperatively.

## DISCUSSION

The uniportal approach, as seen in this video, offers an excellent view and exposure, allowing a controlled and safe dissection, even in a previously manipulated pulmonary hilum.

**Conflict of interest:** none declared.

## REFERENCES

- [1] Onaitis MW, Petersen RP, Balderson SS, Toloza E, Burfeind WR, Harpole DH Jr *et al.* Thoracoscopic lobectomy is a safe and versatile procedure: experience with 500 consecutive patients. *Ann Surg* 2006;244:420-5.
- [2] Gonzalez-Rivas D. VATS lobectomy: surgical evolution from conventional VATS to uniportal approach. *Sci World J* 2012;2012:780842.
- [3] Li C, Ma H, He J, Ni B, Xu C, Zhao J. Clinical analysis of thoracoscopic lobectomy in the treatment of peripheral lung cancer with single utility port. *Chin J Lung Cancer* 2013;16:487-91.
- [4] Perna V, Carvajal AF, Torrecilla JA, Gigirey O. Uniportal video-assisted thoracoscopic lobectomy versus other video-assisted thoracoscopic lobectomy techniques: a randomized study. *Eur J Cardiothorac Surg* 2016;50:411-5.
- [5] Gonzalez-Rivas D, D'Amico T, Jiang G, Sihoe A. Uniportal video-assisted thoracic surgery: a call for better evidence, not just more evidence. *Eur J Cardiothorac Surg* 2016;50:416-7.