

Right middle-lower lobectomy by Video-assisted Thoracic Surgery (VATS)

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J Thorac Dis 2013;5(S3):S315-S316. doi: 10.3978/j.issn.2072-1439.2013.07.33

Introduction

Video-Assisted Thoracic Surgery (VATS) lobectomy is well established and performed all around the world. With growing experience with the technique, it is now generally accepted that the outcome of a VATS procedure is at least as good as, even more superior to lobectomy via traditional thoracotomy (1). Compared to open surgery, VATS may provide patients with a lower rate of morbidity and mortality, reduced pain, a shorter length of stay, better pulmonary function, and earlier return to regular activities without compromising the quality of the procedures (2).

VATS means different things to different surgeon. However, the most common definition is that the true VATS lobectomy is defined by no rib spreading along with anatomical hilar dissection and only monitor based vision rather than looking through the utility incision. VATS represents a different mode of access, but the basic principles of pulmonary resection are unchanged (3).

At our center we have a large experience with VATS pulmonary resection performed by standardized three-port anterior approach. We here describe the VATS lobectomy of a 71-year old male patient with right lower superior segment squamous carcinoma invaded the lower bronchial orifice (Video 1).

Operative techniques

The procedure is carried out with the patient under general anesthesia, using selective single-lung ventilation. The patient is turned to full lateral decubitus position and positioned and secured as for an open thoracotomy. Then we flex the operating table at the level of the nipple which opens up the intercostal spaces for insertion of the thoracoscope and in instruments.

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Submitted Jul 23, 2013. Accepted for publication Jul 24, 2013.

Available at www.jthoracdis.com

ISSN: 2072-1439

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Video 1. Right middle-lower lobectomy by VATS.

The camera port is placed in the seventh intercostal space over the midaxillary line. The posterior instrument port is placed in the posterior axillary line in the ninth intercostal space. The accessory incision is positioned just posterior to the pectoralis muscle in the fourth intercostal about 4 cm length.

With the thoracoscope in the midaxillary incision, the presence of the tumor in the superior segment of right lower lobe is confirmed. The lung is retracted anteriorly, and the pleura is incised between the lung and the esophagus. The lower lobe retracted laterally and superiorly to incise the pleura overlying the inferior pulmonary vein, which then is encircled and stapled. The middle lobe retracted posteriorly, and the superior pulmonary vein is identified and mobilized. The middle lobe vein is encircled and stapled. Further superior retraction of the lower and middle lobes improve exposure of the bronchus, at the bifurcation of the upper lobe bronchus and the intermedium. The intermedium bronchus is then encircled and stapled, exposing the lower and middle lobe arteries, which are then stapled and divided. Finally, the transverse fissure is completed and the specimen is retrieved.

The remaining lung is retracted anteriorly and the subcrinal lymph node bordered by the two main bronchi, esophagus and pericardium is exposed and resected en bloc. The pleura is opened above and under the azygos vein. The anterior paratracheal lymph

node stations (level 2, 4) are resected en bloc.

Comments

VATS pulmonary resection has both physiologic and biologic advantages over open thoracotomy. It been shown to be a safe and cost-effective operation in experienced hands. As the established benefits of VATS resection become increasingly well recognized by both surgeons and patients, it is becoming ever more difficult to justify not using VATS as the surgical approach of choice in the selected patients (4).

Acknowledgements

Disclosure: The authors declare no conflict of interest.



Cite this article as: Zhong D, Gao G, Zhang T, Han Y, Gu Z. Right middle-lower lobectomy by Video-assisted Thoracic Surgery (VATS). *J Thorac Dis* 2013;5(S3):S315-S316. doi: 10.3978/j.issn.2072-1439.2013.07.33

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