

VATS right middle lobectomy

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ABSTRACT

A 48-year-old patient was admitted due to space occupying lesion in the right middle lobe, which was found by her healthy examination 1 month ago. Preoperative examinations displayed that the cardiopulmonary functions of the patient was normal, and chest computer tomography (CT) showed lesion located in the peripheral lung, diameter of the lesion was 3 cm, there was evidence that lymph node was visible in the mediastinum and no metastasis. Video-assisted thoracic surgery (VATS) right middle lobectomy was preformed, and intraoperative frozen section ensures the diagnosis of adenocarcinoma.

KEY WORDS

Video-assisted thoracic surgery (VATS); right middle lobectomy

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Case report

A 48-year-old patient was admitted due to space occupying lesion in the right middle lobe, which was found by her healthy examination 1 month ago. Preoperative examinations displayed that the cardiopulmonary functions of the patient was normal, and chest computer tomography (CT) showed lesion located in the peripheral lung, diameter of the lesion was 3 cm, there was evidence that lymph node was visible in the mediastinum and no metastasis. Video-assisted thoracic surgery (VATS) right middle lobectomy was preformed (Video 1), and intraoperative frozen section ensures the diagnosis of adenocarcinoma.

Surgical procedure

Positioning and port placement

The patient is placed in the lateral position with the table break maximally-flexed at the patient's hip level, and then reverse Trendelenburg tilts the table so the patient's lateral chest wall is parallel to the floor. Single lung ventilation is established and the camera port is placed at the seventh interspace in the midaxillary line. The posterior port is then placed in the

scapular line in the 8th or 9th intercostal space. The utility incision (no larger than 4 cm in length) is placed in the anterior axillary line in the 4rd or 5th intercostal space which exposed the superior pulmonary vein for middle lobectomy. A Weitlaner retractor is used to retract the soft tissues, there is no need for rib spreading.

Operative steps

Sequential dissection (i.e., right middle pulmonary vein-right middle lobe bronchus-right middle pulmonary arteries-crack) was applied. The main device used in the surgery was electrocautery and aspirator, the Harmonic SYNERGY (Ethicon Endo-Surgery, Cincinnati, Ohio) was used in lymph node dissection, which was featured by good hemostatic effect, clear operative field.

The middle and superior lobes was retracted laterally and the pleura was overlying the middle lobe vein. Once the vein was dissected, it was transected by an endovascular stapler placed via the posterior port, exposing the middle lobe bronchus. After encircling the bronchus with a monofilament suture, an Endo Cutter 3.5 stapler is placed via posterior port to transect the bronchus. A ring forceps were then placed on the middle lobe bronchus for traction, exposing the one or two arteries of the middle lobe, which are then transected from the anterior incision. Sometimes, the middle lobe artery may be transected from the posterior port. The fissure was then completed by passing staplers via the utility incision. The right middle lobe was placed in an endobag and extracted. After the right middle lobe was resected, systemic mediastinal lymph node dissection was performed. Care must be taken to protect the right recurrent laryngeal nerve and vagus nerve.

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Video 1. VATS right middle lobectomy.



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Comments

Sequential dissection (or, single-direction approach) was applied in this surgery to avoid frequent turn-over of the lung lobes and shift of visual angle during the procedures. VATS pulmonary resection has both physiologic and biologic advantages over open thoracotomy. It has 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.

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