VATS left upper lobe posterior segmentectomy

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ABSTRACT A 56-year-old male patient was admitted due to one small pulmonary nodule in the posterior segment of left upper lobe. Preoperative examinations showed no distant metastasis, pulmonary ventilation function and small airway function were highly damaged and could not tolerate lobectomy. Chest computed tomography (CT) showed one small pulmonary nodules on the posterior segment of left lung, which was considered to be early malignant lesions. In addition, no remarkably swollen lymph node was visible in the mediastinum. Therefore, video-assisted thoracic surgery (VATS) left upper lobe posterior segmentectomy was performed, and intraoperative frozen section confirmed the diagnosis of adenomatous hyperplasia of alveolar epithelial. 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. The Electric hook used in this surgery enables careful dissection and dissociation, with clear visual field and small blood loss.

KEY WORDS Video-assisted thoracic surgery (VATS); segmentectomy; electric hook; sequential dissection

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Case report

A 56-year-old male patient was admitted due to one small pulmonary nodule in the posterior segment of left upper lobe. Preoperative examinations showed no distant metastasis, pulmonary ventilation function and small airway function were highly damaged and could not tolerate lobectomy. Chest computed tomography (CT) showed one small pulmonary nodules on the posterior segment of left lung, which was considered to be early malignant lesions. In addition, no remarkably swollen lymph node was visible in the mediastinum. Therefore, video-assisted thoracic surgery (VATS) left upper lobe posterior segmentectomy was performed (Video 1), and intraoperative frozen section confirmed the diagnosis of adenomatous hyperplasia of alveolar epithelial.

Procedure

The three-port method was applied: the observation port was made in the 7th intercostal space at the middle axillary line, the main working port was in the 4th intercostal space at the anterior axillary line, and the remaining one auxiliary port was located in the 8th intercostal space at the posterior axillary line.

Sequential dissection (left posterior segmental vein, left segmental bronchus, branches of left posterior segmental arteries) was applied. The main device used in the surgery was electric hook. Firstly, a VATS lung clamp was applied to lift the left upper lobe to expose the pulmonary hilum. Electric hook was then applied to open the pleura covering the surface of superior pulmonary vein and continued downwards to identify the presence of inferior pulmonary vein. Meanwhile, the spaces between the first branch of superior pulmonary vein and its deep bronchi were separated, and the lymph nodes in the pulmonary hilum (station 10, near the root of left lung artery) were dissected. After the left pulmonary trunk was exposed, the left superior pulmonary posterior segmental vein was dissociated, followed by the treatment using Ethicon Endo-Surgery endoscopic cutter and white staple cartridge.

The left posterior segmental bronchus was dissociated, and the station 7 (subcarinal) lymph nodes were dissected behind the pulmonary hilum. After the left bronchus was completely exposed and the left upper lobe posterior segmental bronchus was completely dissociated at the bifurcation of the upper lobe anterior and posterior bronchi, Ethicon Endo-Surgery endoscopic cutter and blue staple cartridge were applied.

The distal stump of the left upper lobe posterior segmental bronchus was clamped to tract the left upper lobe backwards. Electric hook was used to dissect the interlobar lymph nodes

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Video 1. VATS left upper lobe posterior segmentectomy.

near the pulmonary trunk and to dissociate the branches of the left upper lobe posterior segmental pulmonary artery. The first branch was treated with Ethicon Endo-Surgery endoscopic cutter and white staple cartridge. The remaining branches were anterior and lingual segmental arteries.

The left upper posterior segment pulmonary was divided using Ethicon Endo-Surgery endoscopic cutter and blue staple cartridge, and then the posterior segment of left upper lobe was placed in an endobag and extracted.

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. The Electric hook used in this surgery enables careful dissection and dissociation, with clear visual field and small blood loss.

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About GCTAB

The Greater China Thoracoscopic Advisory Board (GCTAB) was officially established as medical science develops and minimally invasive surgery rapidly advances in China on April 22, 2011. The purposes of GCTAB include integrating the elites in thoracic surgery all over Greater China; promoting thoracoscopic surgery in China for better quality and higher ratio of minimally invasive surgery in thoracic disease; striving for benefits and better lives for more patients. The goals of GCTAB are to establish and improve standards of minimally invasive thoracic surgery; establish training models of thoracoscopic surgery and provide domestic training; push forward communication of thoracoscopic surgery and correlated academic research and promote thoracoscpic surgery in China.