

VATS right upper lobectomy

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Abstract: A 56-year-old male patient was admitted due to one small pulmonary nodule in the apicoposterior segment of the right upper lobe, which was found on his health screening one month ago. Preoperative examinations showed no distant metastasis, and his heart and lung functions could tolerate the lobectomy. Chest computed tomography (CT) showed one small pulmonary nodules on the apicoposterior segment of the right upper lobe, which was considered to be malignant lesions. No remarkably swollen lymph node was visible in the mediastinum. Therefore, VATS right upper lobectomy was performed and intraoperative frozen section confirmed the diagnosis of adenocarcinoma.

Keywords: VATS; right upper lobectomy; sequential dissection

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Case report

Introduction

A 56-year-old male patient was admitted due to one small pulmonary nodule in the apicoposterior segment of the right upper lobe, which was found on his health screening 1 month ago. Preoperative examinations showed no distant metastasis, and his heart and lung functions could tolerate the lobectomy. Chest computed tomography (CT) showed one small pulmonary nodules on the apicoposterior segment of the right upper lobe, which was considered to be malignant lesions. No remarkably swollen lymph node was visible in the mediastinum. Therefore, VATS right upper lobectomy was performed and intraoperative frozen section confirmed the diagnosis of adenocarcinoma.

Procedure (Figure 1)

Operative techniques

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 3th intercostal space at the anterior axillary line, and the remaining one auxiliary port was located in the 9th intercostal space at the posterior

axillary line. Sequential dissection (right superior pulmonary vein-right pulmonary truncus anterior artery-right pulmonary posterior ascending artery-right upper lobe bronchus) was applied.

The main device used in the surgery was electric hook, which is featured by clear operation field, easy to operate and good hemostatic effect. The device used in lymph node dissection was ultrasonic scalpel, which had the advantage of good hemostatic effect and multiple procedures including clamping and propping using its different parts.

Firstly, a VATS lung clamp was applied to lift the right upper lobe to expose the hilum of the lung. 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. Then, the spaces between the superior pulmonary vein and its deep pulmonary artery trunk were separated; the right superior pulmonary vein was dissociated. An Ethicon Endo-Surgery endoscopic cutter (EC-60) and white staple cartridge were applied.

The right pulmonary truncus anterior artery was exposure and dissociated, an Ethicon Endo-Surgery endoscopic cutter and white staple cartridge was applied. Then the right pulmonary posterior ascending artery was separated and the lymph nodes in the pulmonary hilum



Figure 1 VATS right upper lobectomy (1).

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(station 10, near the root of right lung artery and right main bronchus) were dissociated. The right pulmonary posterior ascending artery was ligatured by surgical suture and dissected by ultrasonic scalpel.

The right main bronchus was exposed; an Ethicon Endo-Surgery endoscopic cutter and green staple cartridge was applied. After the right main bronchus was dissociated, the pulmonary fissure was then dissociated by Ethicon Endo-Surgery endoscopic cutter and blue staple cartridges. Then, the right upper lobe was placed in an endobag and extracted.

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Ultrasonic scalpel was used to dissect the interlobar, pulmonary hilum and mediastinum (station 2, 3, 4, 7, 9) lymph nodes. The nervi vagus and pulmonary plexus of the right pulmonary were protected during the dissection of the station 2, 4 and 7 lymph nodes.

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 and ultrasonic scalpel were used in this surgery enables rapid dissection and dissociation, with clear visual field and small blood loss. It is feasible and beneficial to protect the nervi vagus and pulmonary plexus during the dissection of the mediastinum lymph nodes.

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References

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