Complete thoracoscopic lobectomy and mediastinal lymph node dissection

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ABSTRACT To evaluate the complete thoracoscopic lower right lobectomy and mediastinal lymph node. During the surgery, the lower right pulmonary artery and vein, bronchi and lymph nodes were treated using a unidirectional approach. Eight stations (2, 3, 4, 7, 8, 9, 10 and 11) of lymph nodes were dissected completely en bloc. Repeated stretch and flipping was avoided in this procedure, which was beneficial for the unaffected side of the lung. The operation of lymph node dissection was completed thoroughly in accordance with standard principles.

KEY WORDS Thoracoscopy; lung cancer; lymph node dissection

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In February 2013, we performed lower right lobectomy and mediastinal lymph node dissection under video-assisted thoracoscopy (Video 1) for a 66-year-old male patient with lower right lung cancer of about 2 cm × 3 cm × 1.5 cm. The patient was placed in a left lying position under double-lumen endotracheal anesthesia. An observation port was created in the 7th intercostal space at the right anterior axillary line, and the working port and auxiliary port were in the 4th intercostal space at the anterior axillary line and 9th intercostal space at the posterior axillary line, respectively. The inferior pulmonary ligament and the right inferior pulmonary vein were initially divided with an electrotome. The 9th station lymph nodes were dissected. The right inferior pulmonary vein was cut and closed with an endoscopic stapler (COVIDIEN ENDO GIA). The right inferior bronchus was freed at the distal edge of the inferior pulmonary vein, during which the 11th station lymph nodes were also dissected. The 8th station and part of the stations 7 and 8 lymph nodes were dissected along the side of the esophagus. The right inferior bronchus was freed and closed with an endoscopic stapler (COVIDIEN ENDO GIA). Before the right inferior bronhus was cut, an anesthetist was asked to expand the lung to avoid injury to the middle lobe bronchus. The right inferior pulmonary artery sheath was open, separated and

Video 1. Complete thoracoscopic lobectomy and mediastinal lymph node dissection.

retracted, and then cut and closed with the endoscopic stapler (COVIDIEN ENDO GIA). The 11th station lymph nodes were dissected. The oblique interlobar fissure was cut with the stapler. The 4th and 7th stations were dissected. The upper and middle segment of the lung was pulled towards the posterior and inferior direction to expose the anterior part of the hilum. The vena cava and the pleura anterior to the hilum were open. The right side of vena cava and the azygos vein were denuded as much as possible. Lymph nodes of stations 2, 3, 4 and 10 were dissected, during which the azygos vein was completely freed to facilitate the dissection of lymph nodes at the posterior, superior and inferior regions. Caution was given to protect the right vagus nerve trunk. During this surgery, the pulmonary vein, bronchi,

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pulmonary artery and oblique fissure were in a unidirectional process, so was the lymph node dissection, which was interwoven throughout the lobectomy, thereby avoiding repeated stretch and flipping of the upper and middle lobes. In this way, the unaffected side of the lung was well protected, and the incidence of lung injury and postoperative complications such as pneumonia was reduced. Meanwhile, that allowed further extensive and thorough lymph node dissection involving eight stations (2, 3, 4, 7, 8, 9, 10 and 11). Compared with open surgery, this procedure enables wider vision and genuine en bloc resection of lymph nodes.

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