It is indeed useful that the operator stands on the right side of the patient to increase the ease of manipulating the instrument in the right hand. However, as a policy in our institution, the operator stands at the ventral aspect of the patient. For partial resection of the right lung using TTP type I, the target trocar is set into the fourth or third intercostal space in the mid-axillary line, and the soft tissue around the right axilla interfering with the instrument is maneuvered from the dorsal position. Furthermore, when the operator stands on the right side of the patient using TTP type II, for example, when we perform a partial resection of segment 6 of the right lower lobe, the trocar for the right hand should be placed in the posterior axillary line or mid-axillary line. Therefore, the direction of insertion of the automatic suture instruments does not coincide with the major fissure line. If the operator stands at the ventral aspect of the patient using the TTP type II, it is easy to perform VATS by inserting the automatic suture instruments along the major fissure line through the trocar, which is set into the seventh intercostal space in the anterior axillary line.

The origin of this TTP was based on the fundamental concept that forceps and automatic suture instruments meet at a right angle [1]. Kohno and Mun [2] reported that it is possible to perform VATS without moving the camera through one trocar which is inserted into the fourth intercostal space in the anterior axillary line during the operation. If the camera is inserted through the target trocar using TTP type I, it is possible to perform a similar operation. However, this maneuver differs from our principle in that the automatic suture instruments and forceps meet at a right angle.

We also use a 30° thoracoscope and two monitors. We think it is a good idea that one of the two monitors for the assistant is set in an upside-down orientation.

In case of multiple lesions, when the targets are in two places, such as segment 8 of the lower lobe and segment 1 of the upper lobe, we set the apex of the triangle for two targets. VATS was performed setting the trocar placement to form an equilateral triangle according to a principle of TTP type I or II.

Our TTP is intended to assist thoracic surgeons who are beginning their thoracoscopic experience with a basic operative set-up for VATS. With the TTP, the operator is guided by images easily obtained during the course of surgery. We believe that positional fixation of the trocar in relation to the lesion is not important, because of individual differences in habitus and differences in the shape of the chest. Therefore, the TTP method provides images that allow adjustment of trocar position, which should allow the surgeon to smoothly carry out the operation.

References


Letter to the Editor

Esophago-gastric submucosal lymphatic drainage

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In their paper published in the December 2004 issue of the journal, Ebihara and colleagues [1] report on 13 cases of intramural stomach metastasis from esophageal squamous cell carcinoma observed among a total of 1259 surgical resections (1.0%). Primary cancer was located in the middle (n=3) or lower esophagus (n=10) and 12 of the 13 (92.3%) had lymphatic invasion. The metastatic tumours resembled submucosal tumors. They suggested that the most likely reason for metastases to form such mucosal tumors was that they occurred via submucosal lymphatic vessels, which was first suggested by Watson in 1933 [2] and further documented by Weinberg in 1972 [3] on a pathology specimen at the level of the stomach. In an anatomic study of the lymphatic drainage of the esophagus in the adult [4], we had the opportunity to observe submucosal lymphatic vessels in nine out of 50 subjects (18%). In three cases, two out of 20 (10%) from the middle and one out of 15 (7%) from the lower esophagus, these submucosal lymphatic vessels made their way downwards to the cardia and fundus so connecting with the stomach lymph drainage.

Demonstration of these submucosal pathway illustrates and further supports Ebihara and coll’s hypothesis.

References


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