Letter to the Editor

Principle for video-assisted thoracic surgery

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Received 13 May 2005; accepted 27 June 2005; Available online 25 August 2005

Keywords: Video-assisted thoracic surgery (VATS); Trocar placement

We read with interest Sasaki and colleagues’ article [1] on a logical strategy to decide trocar placement and approach based on the target location in the thoracic cavity for video-assisted thoracoscopic wedge resection. We also prefer a trocar placement close to the target location, because we use Kuniyoshi P.N.CATCH (Takasago Medical Industry Co., Ltd; Tokyo, Japan. http://www.takasagoika.co.jp/index.html) to grasp it in lung parenchyma. Therefore, our trocar placement has been similar to Sasaki’s triangle principle, and invariably depends on the target location as a result. However, we have changed it to a fixed style; following learning several principles in video-assisted thoracic surgery (VATS) from Drs Kohno and Mun at the Toranomon Hospital, Tokyo, Japan. They usually perform lobectomy using three access ports (7-, 10-, and 11.5 mm diameters) without minithoracotomy [2]. This is feasible through a 30° thoroscope, and an articulating endoscopic linear cutter and several tips that are essential, one for the operator is set up normally and another for the assistant on the opposite side who operates the thoracoscope is set up in upside-down manner to prevent mirror image problems. (2) The operator always stands on the right side of patient to maintain a wide working space for his right hand in the patient’s caudal direction. Thus, manipulation is performed with a backward approach for the right lung and with a forward approach for the left one. (3) For the right lung, trocar ports are placed at the anterior axillary line in the fourth intercostal space for the scope, at the midaxillary line in the sixth intercostal space for the right hand and at the posterior axillary line in the sixth intercostal space for the left hand. For the left lung, trocar ports are placed at the posterior axillary line in the sixth intercostal space for the scope, at the midaxillary line in the sixth intercostal space for the right hand and at the anterior axillary line in the fourth intercostal space for the left hand. In cases where the target lesion is located in the upper or lower part in the thoracic cavity, these trocar ports may be shifted one intercostal space up or downward. Because this approach makes it possible for a 30° thoroscope to monitor everywhere in the thoracic cavity from a single fixed port, and the longitudinal direction of the image on the monitors is identical with that of the patient and is unchangeable during operation; it is particularly advantageous in cases of multiple lesions that need to be resected or in TTP type III, which the authors noted needed to be refined. Finally, although VATS is an evolving technique, and preferred approaches differ somewhat among operators [2–4], the core concept and its rationale have practical importance [5]. The author’s work is excellent and has been most informative for us.

References


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doi:10.1016/j.ejcts.2005.06.021

Reply to Takao et al.

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Received 23 June 2005; accepted 27 June 2005; Available online 25 August 2005

Keywords: Video-assisted thoracoscopic surgery (VATS); Trocar placement; Lung tumors

We appreciate the comments of Dr Motoshi Takao about our paper concerning the Triangle Target Principle (TTP) [1].
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 anterior axillary line during the operation. 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 thorascopic 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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Received 10 March 2005; received in revised form 13 March 2005; accepted 29 June 2005; Available online 25 August 2005

Keywords: Esophagus; Cancer; Lymphatics

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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do:10.1016/j.ejcts.2005.06.022

The authors of the original paper [1] were invited to reply to this Letter to the Editor but they did not respond.