



ORIGINAL ARTICLE

The learning curve of the three-port two-instrument complete thoracoscopic lobectomy for lung cancer—A feasible technique worthy of popularization



Yu-Jen Cheng*

Division of Thoracic Surgery, Department of Surgery, E-DA Hospital, School of Medicine for International Students, I-Shou University, Kaohsiung, Taiwan, ROC

Received 15 January 2014; received in revised form 22 April 2014; accepted 23 October 2014
Available online 5 January 2015

KEYWORDS

lung neoplasms;
thoracic surgery;
thoracoscopy;
video-assisted

Summary *Background/objective:* Cosmetic factors are important when considering minimally invasive surgery. For cosmetic improvement, a complete thoracoscopic lobectomy is accomplished via the three-port two-instrument (TPTI) technique. The resected specimen is removed without extending the port wounds. Only three wounds at 1.2 cm are used to finish the procedure. *Methods:* From June 2012 to December 2013, 60 patients with lung cancer were to undergo lobectomy and complete mediastinal lymph node dissection via the TPTI technique without an accessory wound. The initial 28 cases (learning curve group) and the latest 28 cases were compared to assess the learning curve.

Results: Excluding four cases of conversion, there were 28 cases in each group. There were no differences between these two groups with respect to age, sex, tumor size, location of the lobectomy, mean blood loss, mean postoperative drainage time, and mean hospitalization time ($p > 0.05$). The mean surgery time significantly decreased, the mean number of lymph nodes removed significantly increased, and the postoperative stage was significantly more advanced in the latest 28 cases ($p < 0.05$). The conversion rate was similar in both groups.

Conclusion: Three-port complete thoracoscopic lobectomy with the two-instrument technique is feasible for lung cancer treatment. The length of the learning curve consisted of 28 cases. This TPTI technique should be popularized.

Copyright © 2014, Asian Surgical Association. Published by Elsevier Taiwan LLC. All rights reserved.

Conflicts of interest: There are no potential financial and non-financial conflicts of interest.

* Division of Thoracic Surgery, Department of Surgery, E-DA Hospital, Number 1, E-DA Road, Jiau-Shu Village, Yan-Chau District, Kaohsiung 824, Taiwan, ROC.

E-mail address: yujen.cheng@msa.hinet.net.

<http://dx.doi.org/10.1016/j.asjsur.2014.10.001>

1015-9584/Copyright © 2014, Asian Surgical Association. Published by Elsevier Taiwan LLC. All rights reserved.

1. Introduction

Video-assisted thoracoscopic (VATS) lobectomy was first used in 1991.¹ The standard VATS lobectomy approach involves two thoracoscopic ports and one accessory incision of 4 cm.² Usually four instruments are required to perform the procedure. The ideal thoracoscopic lobectomy should maximize the cosmetic result, thereby minimizing the size of the incisions without compromising standard surgical oncologic principles. The three-port two-instrument (TPTI) thoracoscopic lobectomy technique is a complete thoracoscopic approach without an accessory wound. To maintain the advantage of less wound trauma of the TPTI technique, a distinct way to remove the resected specimen without extending the port-wound was designed. The initial cases were compared with the latest cases to detail the learning curve.

2. Methods

2.1. Patients

From June 2012 to December 2013, 60 patients with lung cancer underwent lobectomies and complete mediastinal lymph node dissections via the TPTI technique. All of them had the specimen removed without extending the thoracoscopic-port wounds. The TPTI technique was routinely performed to treat lung cancer starting in June 2012 at E-DA Hospital, Kaohsiung, Taiwan. The cases of bulky N2 disease were not included for surgery. All surgical procedures were performed by the author (Y.-J.C.). The TPTI is associated with a learning curve. These cases were analyzed and an attempt to define the length of the learning curve was made.

2.2. Surgical technique

The TPTI technique is defined as a lobectomy performed during a complete thoracoscopic procedure. There are only three ports in three separate wounds of 1.2 cm without accessory thoracotomy wound (Fig. 1A and B). The patient is placed in the flexed lateral decubitus position tilted slightly backward for the upper/middle lobectomy, or forward for the lower lobectomy, for ease of the venous approach. The camera port is placed at the sixth interspace along the anterior axillary line for right-sided lesions and the seventh interspace along the posterior axillary line for left-sided lesions. The operator is always standing on the right side of the patient. The other two ports are created under the inspection of the camera. Usually they are placed at the 7th interspace along the posterior axillary line and 10th interspace along the scapular line in the right side. In the left side they are placed at the 6th interspace along the anterior axillary line and 10th interspace along the scapular line. Sometimes if the 10th interspace port is too low to be created, it will be replaced by the 9th interspace port. These two ports are for the two instruments, usually a Harmonic scalpel (Ethicon Endo-Surgery, Cincinnati, Ohio, USA) and endo-forceps. The pulmonary vessels and the lobar bronchus are individually dissected. The small vessels are clamped with Hemolock (Hospiinz International, Coimbatore, Tamil Nadu, India), and larger vessels are applied with endo-staplers. During the procedure CO₂

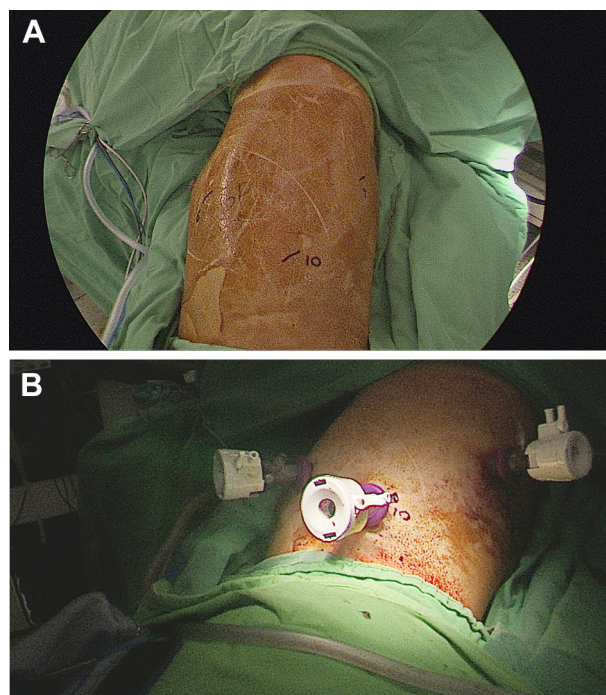


Figure 1 (A) The position of the port-wound in the left chest wall is marked. All three ports are located in the lower chest to upwardly manipulate the instruments and the thoracoscopy. (B) The three ports are shown.

inflation is maintained at a pressure of 7–10 cm H₂O to ease the manipulation. The resected lobe is cut into several strips using endo-staplers, with a cutting margin of at least 1 cm away from the tumor mass.¹ The lung strips are then placed into a two-layer endo-bag, and are removed separately. The lung-strip with malignant tissue is the last to be removed. Following removal of all specimens, complete mediastinal lymph node dissection is carried out according to the European Society of Thoracic Surgeons guideline.³ All of the removed tissues is sent for detailed pathological examination.

2.3. Statistical analysis

Quantitative data are presented as mean \pm standard deviation. Two-sided Student *t* test is used to determine the significance between these two groups. The Pearson Chi-square test is used for comparison of category data between these two groups. A *p* value $<$ 0.05 is considered statistically significant. The receiver operating characteristic (ROC) curve is graphically constructed by plotting sensitivity against the false-positive rate (1-specificity) for detecting the length of the learning curve based on the surgery time and the number of lymph nodes resected.

3. Results

Among the 60 intended surgical procedures there were four conversions. The remaining 56 surgical procedures were analyzed. There were 33 females and 23 males with mean age of 61.4 ± 9.9 years. The postoperative stages (pStages)

Download English Version:

<https://daneshyari.com/en/article/4282670>

Download Persian Version:

<https://daneshyari.com/article/4282670>

[Daneshyari.com](https://daneshyari.com)