

## A Simple Technique Using Tape to Expose the Subcarinal Lymph Node Station : Move the Field

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In systemic lymph node dissection for lung cancer surgery, the subcarinal lymph node (# 7) is situated far from any access incision. Therefore, it is difficult to identify # 7 through the access wound used for video-assisted thoracic surgery lobectomy. This is also true in the case of a left-sided approach because of the descending aorta. Here, we propose a simple technique using tape to expose # 7. This saves time and benefits the patient. (Kitakanto Med J 2008 ; 58 : 403~404)

**Key Words :** primary lung cancer, subcarinal lymph node dissection

### Introduction

Radical surgery for primary lung cancer requires systemic lymph node dissection, which routinely includes dissection of the subcarinal lymph node (# 7 ; station 7). Of the lymph node stations, # 7 is situated far from any access wound. Therefore, it is difficult to identify # 7 through the access wound used for video-assisted thoracic surgery (VATS) lobectomy. This is also true in the case of a left-sided approach because of the descending aorta. Here, we propose a simple technique using tape to expose # 7. This saves time and benefits the patient.

### Technique

We use the lymph node nomenclature used in the original lymph node map for lung cancer reported by Naruke *et al.*<sup>1</sup>

As a working port, we routinely make a 5- to 7-cm anterior or lateral incision in the fourth or fifth intercostal space. Additional 0.5- to 1.5-cm thoracic ports are made in the seventh intercostal space in the anterior axillary line or the ninth intercostal space in the posterior axillary line. The working port is protected with a polyurethane Alexis wound retractor (Applied Medical, CA, USA). A rib spreader is not used. We use nearly direct visualization through the working port.

When performing a lower lobectomy, we divide the pulmonary veins and arteries, and dissect the hilar, interlobar, and lobar lymph nodes around the lower bronchus. Next, we loop non-stretch cotton tape around the bronchus (Fig. 1A), pull the tape forward through one of the thoracic ports, and elevate the carina (Fig. 1B). Then, the subcarinal lymph node is dissected (Fig. 1C). This provides very good exposure of the subcarinal region (Fig. 2). Care should be taken to dissect # 7 before dividing the lower bronchus.

### Comment

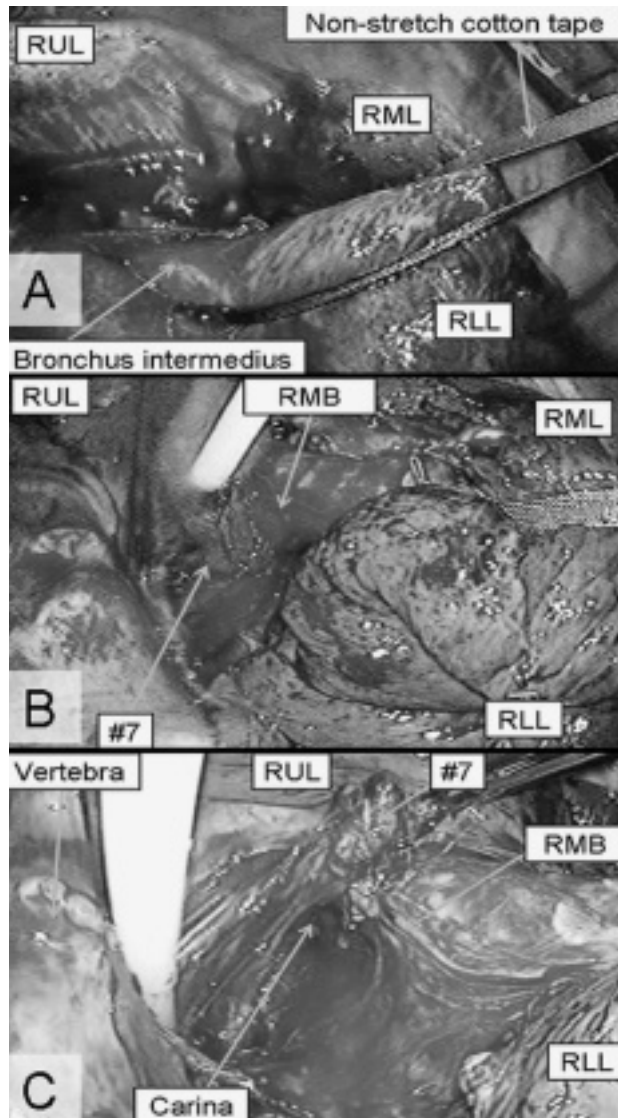
Naruke *et al.*<sup>2</sup> studied the incidence of lymph node metastasis in each lobe in primary lung cancer. The extent of lymph node metastasis was lobe specific.<sup>3</sup> The usual site of metastasis to the mediastinal lymph nodes for both lower lobes was # 7.<sup>2,3</sup> Therefore, a thorough dissection that includes # 7 is very important for lower lobe tumors.

In an upper lobectomy, the same view cannot be obtained because the tissue around the lower lobe bronchus is not exposed. However, a subcarinal lymphadenectomy is not always necessary for tumors of the right upper lobe or left upper segment.<sup>4</sup> Nevertheless, when a subcarinal lymphadenectomy is essential for tumors of the middle lobe and lingular segment, a similar view can be obtained with difficulty by holding the lung parenchyma of the superior segment

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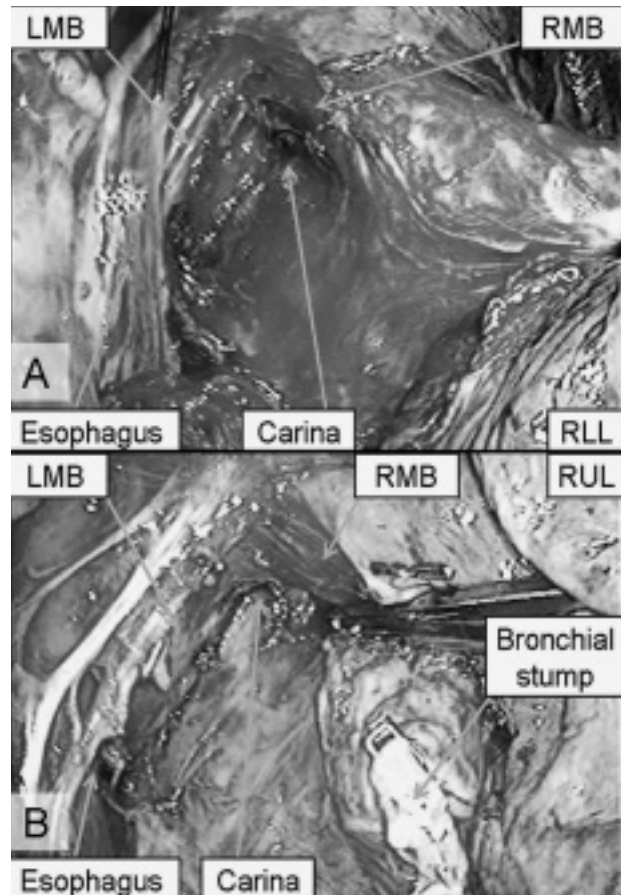
**Fig. 1** A : Non-stretch cotton tape is looped around the bronchus

B : The tape is pulled forward to elevate the carina

C : The subcarinal lymph node (# 7) is dissected. Note the relative position of the carina and vertebra.

of the lower lobe with lung-grasping forceps.

Basically, we perform a “sharp dissection” for lymph nodes, using scissors and vascular clips instead of an electric scalpel.<sup>5</sup> In our experience, the use of an electric scalpel results in bronchial fistulas and perforation. Moreover, the electric scalpel has caused greater tissue damage in animal experiments.<sup>6</sup> Care should be taken to avoid injuring the bronchial arteries near the carina. Some surgeons use an especially long retractor to expose # 7, but our technique does not use a special device.



**Fig. 2** A : The subcarinal region is very well exposed

B : A close-up picture of the carina after a lower lobectomy.

Abbreviations: RUL : right upper lobe; RML : right middle lobe; RLL : right lower lobe; RMB : right main bronchus; LMB : left main bronchus

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