Open resection for lung cancer in right upper lobe

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ABSTRACT An open radical surgery for lung cancer of the right upper lobe is performed under suitable conditions in this case. According to the actual conditions, the horizontal fissure is made a "tunnel" dissociation during the operation to fully expose hilar structures (artery, vein, and bronchus). Since intraoperative frozen section diagnosis shows malignant result, lymph nodes are dissected. Hemostasis, protection of the important peripheral organs and standard postoperative placement of drainage tube should be noted. The observability of this surgery is the clear exposure and brief operation.

KEYWORDS Open resection; lung cancer; right upper lobe

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Introduction

Posterolateral chest incision is currently often performed in the open resection of lung cancer. The right chest wall at the fifth intercostal space is selected to be the incision in this case, which provides a good operation vision that permits clear exposure and dissection of the various hilar structures, making it easier to do systematic lymph node dissection. But the incision toward chest wall is large, which can easily leads to postoperative incision pain and some organ dysfunctions.

This procedure (Video 1) is long-time employed in the unit of cardiothoracic surgery at Yunnan Tumor hospital.

Technique

The first step in the procedure is to select a posterolateral incision, then cut the layers of tissue adherence, and place distraction device to fully expose the operative field. Hilar and mediastinal structures are the main operative parts, and this cut can maximize the exposure of these two anatomical structures.

The second step in the procedure is to fully explore surgery area. There is hypoplasia of horizontal fissure and enlarged hilar lymph nodes in this case. Firstly we generally separate fissure for such similar case, after "tunnel" dissociation, cutting/stapling devices is used to minimize the damage to pulmonary tissue, after which the important structure of the right upper lobe is fully exposed. According to the exposed location, the right upper lobar artery is cut, and the right upper lobar vein is treated, and then the tip of the anterior branch of the right upper lobar artery anterior is dealt with. Finally lymph nodes of the right upper lobe bronchus are dissected, then right upper lobe bronchus is processed and the specimens are removed for frozen biopsy, which suggests malignant.

The third step in the procedure is to fully expose hilar region (10th lymph nodes) and the lymph node groups in the superior aspect of azygos arch (group 2 and 4). Hook cautery is used for sharp separation, re-exposure and dissection of lymph nodes in the subcarinal region are completed (group 7).

The forth step of procedure is to check whether there is obvious bleeding and pulmonary air leakage. Then upper chest

Video 1. Open resection for lung cancer in right upper lobe.

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tube (second intercostal space at the right midclavicular line) and lower chest tube (eighth intercostal space at the right axillary line) are placed, and interrupted suture with double silk NO. 10 in the intercostals space and suture of tissue layer by layer are performed.

Comments

This surgery is a traditional lung cancer resection (including pulmonary lobectomy and radical systematic mediastinal lymphadenectomy) with the advantages of clear vision and short operating distance, however, this procedure has great damage to the chest wall and more postoperative complications, so some older patients are not willing to accept this sort of surgery at present. It has been gradually replaced by VATS in early lung cancer surgery.

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