LOBE SPECIFIC NODAL DISSECTION FOR LUNG CANCER

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Based on the results of ACOSOGZ0030 trial, mediastinal nodal dissection does not improve survival if nodal metastasis is not confirmed with systematic nodal sampling in clinical T1 or T2 and clinical N0 or N1 population. However, unsuspected N2 disease was found in 4% in the dissection group and this can lead to underestimation of lung cancer staging. Lobe specific nodal dissection was reported in 1998 by Dr. Okada in Hiroshima University, Japan.1 Lobe specific nodal dissection is supported by the fact that survival is not inferior to systematic nodal dissection and less stage migration compared with nodal sampling. Some report said that among 1099 resected NSCLC in the upper lobe, only 1.8% subcarinal nodal metastasis was noted, and survival of this group was dismal.2 Additionally, only 0.18% patients had subcarinal nodal metastasis when no metastasis was noted in the superior mediastinal nodes. The author concluded that subcarinal nodal dissection is not always necessary. Thus, lobe specific dissection may be better than systematic nodal sampling in terms of less stage migration.

According to the concept of lobe specific dissection, for lung cancer in the right upper lobe, superior zone, 2R and 4R should be dissected. For lung cancer in the left upper lobe, 4L, 5, and 6 should be dissected and for lung cancer in the lower lobe, 7, 8, and 9 should be dissected. There are three points to note. No.1. lobe specific concept is not applied to tumor in the middle lobe. No.2. Dissection of hilar nodes is mandatory. No. 3. Basically, intraoperative nodal evaluation with frozen section diagnosis is mandatory.

Successful mediastinal nodal dissection requires a thoracic surgeons to identify several anatomical landmarks. Left superior zone contains important landmarks such as vagal nerve, recurrent nerve, Botallo ligament, phrenic nerve, bronchus and pulmonary artery. By confirming these landmarks, lymph node dissection will proceed step by step. One of the most important procedure is the preservation of the recurrent nerve. Meticulous dissection is mandatory for preventing recurrent nerve palsy. I like to perform enbloc dissection of No. 10, 5, and 6, and another enbloc dissection of No. 10, and 4L. For right side, brachiocephalic artery, superior vena cava, azygous vein, trachea, vagal nerve and pulmonary artery are important anatomical landmarks. For lung cancer in the left lower lobe, successful subcarinal nodal dissection requires identification of the contralateral main bronchus and control of bronchial artery in deep side is important.

Disadvantage of lobe specific dissection is nodal recurrence in area where lymph node dissection has been omitted.3 Lobe specific nodal dissection is still controversial, and so JCOG1413 study has been conducted to evaluate the efficacy of this strategy.4 This important study also investigated patten of lymph node metastasis of lung cancer in the middle lobe, which is known to inapplicable to lobe specific dissection. For lung cancer in the middle lobe, where lobe specific dissection is not applicable, some pattern has been reported.5 This analysis investigated the importance of nodal status of 11i and superior zone for lung cancer in the middle lobe. If 11i is positive, prognosis was very poor, and superior zone had the same meaning. JCOG1413 study has been completed last month. Thoracic surgeons should look forward to discovering a new law for middle lobe as a result of JCOG1413.

Recent advancement of postoperative adjuvant therapy, including immunocheck point inhibitor, and/or molecular targeted agents, have increase the needs for thoracic surgeons to perform accurate staging of lymph node.

Selective nodal dissection is one of the options for thoracic surgeons. Thoracic surgeons should understand the following facts: No. 1, Lobe specific nodal dissection is being evaluated with JCOG1413 study; No. 2, Lobe specific dissection is unable to apply to middle lobe; No. 3, Thoracic surgeons in modern thoracic oncology are required to make accurate surgical staging.

References

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