

Quality issues in sub lobar resections

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Summary

- Resection margins
- Lymph node dissection
- Frozen section analysis
- Control of air leak
- Case selection

Resection margins

Good quality

- Anatomical boundaries
- Greater than tumour diameter
- Schuchert, Ann Thorac Surg 2007,
El Sherif, Ann Surg Oncol 2007*
- Preop 3D CT reconstruction

Poor quality

- Non-anatomical - wedge
- R1
- Inadequate anatomical assessment – segmental ischaemia

Is there any benefit in sublobar resection of a non-functional lobe ? Lobar LVR effect ?

Lymph node dissection

Good quality

- **Systematic nodal dissection**
even < 1cm NSCLC
unless female, normal CEA or GGO
Zhou , ICTS 2010 10:53-7
- N1 stations 10-13 (ND1)
- Lobe specific N2 stations (ND2)
up to 10% cT1 have N2,
Watanabe, EJCTS 2002;22:995
- ? sentinel node identification
Muraoka, EJCTS 2007;32:356

Poor quality

- No nodal specimens
- Nodal sampling of abnormal nodes only
- Nodal dissection of hilum (ND1) only ?

When segmentectomy is electively performed in poor performance patients who will not tolerate chemotherapy – what is the point of mediastinal nodal dissection ?

the therapeutic value of lymph node dissection

Sasako M, Br J Surg. 1995 Mar;82(3):346-51

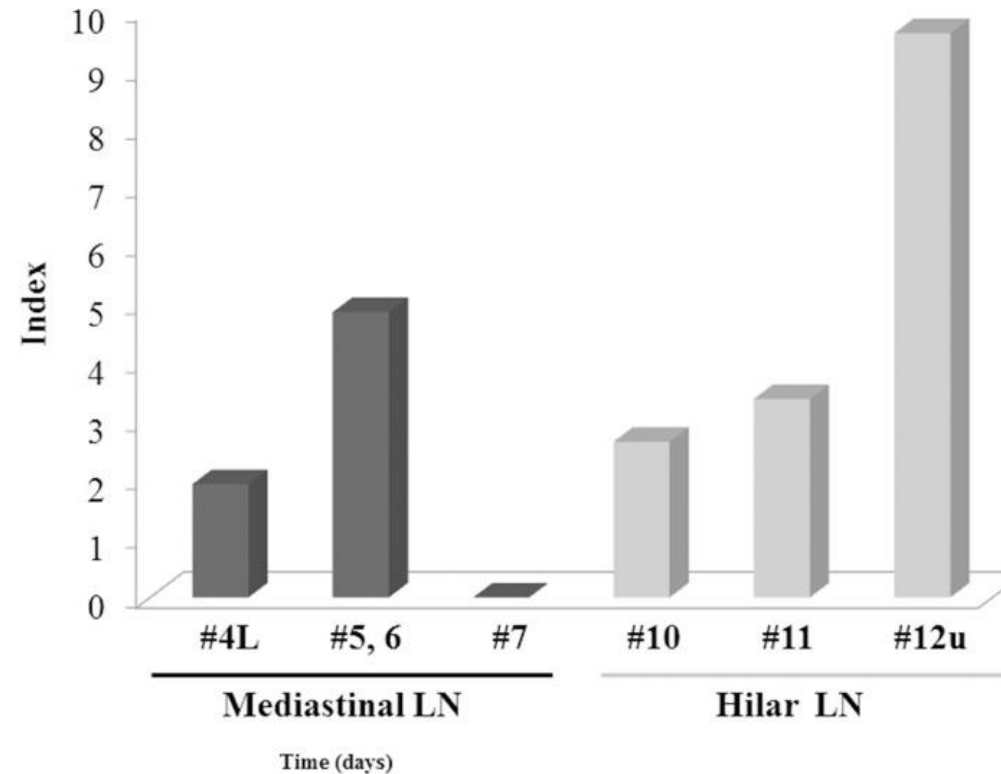
New method to evaluate the therapeutic value of lymph node dissection for gastric cancer.

multiplying the frequency of metastasis to the station and the 5-year survival rate of patients with metastasis to the station

Kuroda H, PLoS One. 2015 Aug 6;10(8):e0134674.

Lymph Node Metastases and Prognosis in Left Upper Division Non-Small Cell Lung Cancers: The Impact of Interlobar Lymph Node Metastasis.

The therapeutic index of estimated benefit from lymph node dissection for #11 was 3.38, #4L was 1.93, and the aortopulmonary window was 4.86 in primary left upper division NSCLC.



Frozen section analysis

Good quality

- Intraoperative analysis of resection margins
- **Lobectomy if positive**
- Intraoperative analysis of N1 nodes
- ? Intraoperative analysis of tumour invasiveness
- ***Lobectomy if positive ?***

Poor quality

- Proceeding to sublobar resection **WITHOUT** intraoperative nodal analysis
- Proceeding to sublobar resection with **POSITIVE** intraoperative nodal analysis

Postoperative air leak

Good quality

- Identification of intersegmental plane
- Stapled resection
- Energy devices
- Sealants
- Suture adjacent remaining segments

Poor quality

- Non anatomical resection
- Electrocautery to divide parenchyma

Case selection in c Stage I disease

- Do hilar lymph node metastases indicate lobar lymphatic invasion ?
- ***Yes ,LVI is associated with N1 in stage I NSCLC***
Kang, Thorac Cardiovasc Surg. 2014 Sep;62(6):521-4
Tumors with LVI showed a significantly higher rate of nodal metastases (46%) than those without (3%, P=0.003)
- Does limited parenchymal resection defy oncological principles because of *“incomplete intraparenchymal lymphatic pathway resection “?*
Baisi, JTCVS 2014;148:1772
- ***No, the extent of resection does not influence survival in N1***
Matsuoka, J Thorac Oncol 2007;2:1098, Van Velzen , Ann Thorac Surg 1997;63:1436, 1999;67:903
- ***Survival in N1 more dependent on : site (station 10,12 v 13), extent of N1 and visceral pleural invasion.***

The importance of lymph node dissection

- “the quality of lymph node dissection during segmentectomy for lung cancer is most likely a crucial part of the procedure”

Gossot D, J Thorac Dis. 2013; 5(Suppl 3): S200–S206.

- “when **lymph nodes were sampled** with sublobar resection, local recurrence rate and overall and recurrence-free survival were **similar to those for lobectomy**”

Wolf AS, Ann Thorac Surg 2011;92:1819-23

Nodal metastasis represents systemic disease

- Univariate analysis demonstrated that visceral pleural invasion and age were associated with locoregional recurrence,
- whereas visceral pleural invasion and **N1 metastasis** were associated with **distant metastasis**

Fujimoto T,. Completely resected N1 non-small cell lung cancer: factors affecting recurrence and long-term survival. JTCVS 2006;132:499-506

- in 3 RCTs and 9 retrospective studies, 889 patients with pN1, **locoregional failure was lower than distant metastasis**

Luo H, J BUON. 2015;20:791-9.

So there is no point in trying to hold back systemic disease with greater local control

Segmentectomy and lymph node dissection rather than lobectomy in N1

Or trying to shut the stable door
once the horse has bolted

