Thoracoscopic Segmentectomy

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Disclosures

- Consultant for Scanlan
- No conflicts related to this presentation
Indications for sublobar resection vs lobectomy for solid nodules

- Tumor size <2cm
- Margins >2cm
- Favorable segment-specific location
- Significant patient co-morbidity
- Previous resection(s)
Pulmonary Segmentectomy: Thoracotomy Or Thoracoscopy

• 77 sub-lobar anatomic resections (2000-06)
  Thoracotomy (OS)  29 patients
  Thoracoscopy (TS)  48 patients

• No rib spreading
• Complete hilar/mediastinal lymph node dissection
Thoracoscopic Segmentectomy

<table>
<thead>
<tr>
<th></th>
<th>OS (n=29)</th>
<th>TS (n=48)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operative time</td>
<td>130 min</td>
<td>136 min</td>
</tr>
<tr>
<td>Estimated blood loss</td>
<td>280 ml</td>
<td>250 ml</td>
</tr>
<tr>
<td>Nodal stations sampled</td>
<td>3.9 ± 3</td>
<td>4.1 ± 3</td>
</tr>
<tr>
<td>Chest tube duration</td>
<td>3.7 days</td>
<td>3.5 days</td>
</tr>
<tr>
<td>Length of stay (p=0.03)</td>
<td><strong>6.8 days</strong></td>
<td><strong>4.3 days</strong></td>
</tr>
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</table>
Video-Assisted Thoracoscopic Surgery Is a Safe and Effective Alternative to Thoracotomy for Anatomical Segmentectomy in Patients With Clinical Stage I Non-Small Cell Lung Cancer


- 193 segmentectomies, 47% by VATS
- No significant differences in c-stage, p-stage, total # LNs, or N2 stations sampled
- VATS: ↓ LOS and pulmonary complications
- 5-yr DFS favored VATS: 58% vs 47%; p = 0.013
- 5-yr OS favored VATS: 75% vs 62%; p = 0.017
Video-Assisted Thoracoscopic Surgery Is a Safe and Effective Alternative to Thoracotomy for Anatomical Segmentectomy in Patients With Clinical Stage I Non-Small Cell Lung Cancer
### Bronchopulmonary Segments

<table>
<thead>
<tr>
<th>Right Upper Lobe</th>
<th>Right Lower Lobe</th>
</tr>
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<tbody>
<tr>
<td><strong>S1</strong> Apical</td>
<td><strong>S6</strong> Superior</td>
</tr>
<tr>
<td><strong>S2</strong> Posterior</td>
<td><strong>S7</strong> Medial basal</td>
</tr>
<tr>
<td><strong>S3</strong> Anterior</td>
<td><strong>S8</strong> Anterior basal</td>
</tr>
<tr>
<td></td>
<td><strong>S9</strong> Lateral basal</td>
</tr>
<tr>
<td><strong>Right Middle Lobe</strong></td>
<td><strong>S10</strong> Posterior basal</td>
</tr>
<tr>
<td><strong>S4</strong> Lateral</td>
<td></td>
</tr>
<tr>
<td><strong>S5</strong> Medial</td>
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# Bronchopulmonary Segments

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<tr>
<td><strong>Lingula</strong></td>
<td>S9 Lateral basal</td>
</tr>
<tr>
<td>S4 Superior</td>
<td>S10 Posterior basal</td>
</tr>
<tr>
<td>S5 Inferior</td>
<td></td>
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</table>
Right upper Lobe

- S2 (Posterior segment)
  - Relatively easy
  - Likely to provide an advantage in lung function
- S3 (Anterior segment)
  - More difficult
  - Less likely to provide advantage
- S1 (Apical segment)
  - Most difficult
Left upper lobe

- S1-3 (Lingular-sparing)
  - Common, easy, may be analogous to RUL

- S4-5 (Lingulectomy)
  - Common, easy, not analogous to RML (bronchial drainage)
  - 2 cm margin rule should be kept
Lower lobe

- **S6 (Superior segmentectomy)**
  - Very easy, but margins should be scrutinized
- **S7+8+9+10 (Basilar segmentectomy)**
  - Very easy, but what is the value?
- **S7 or S8 or S7+8**
  - Relatively easy
- **S9 or S10 or S9+10**
  - Most difficult, probably most useful with GGOs
Three-dimensional computed tomography bronchography and angiography in the preoperative evaluation of thoracosopic segmentectomy and subsegmentectomy

Wei-Bing Wu, Xin-Feng Xu, Wei Wen, Jing Xu, Quan Zhu, Xiang-Long Pan, Yang Xia, Liang Chen
AATS
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