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AJCC Classification.

- The importance of the N.
- Relationship with the prognosis.
- Be careful with the N2 stations.

- Could we perform a correct lymphadenectomy via VATS?
AJCC Classification – N₂

We achieve the same lymphadenectomy VATS or even better
Mediastinal nodes surgery

BIOPSY
- To obtain a fragment of lymph node.

SAMPLING
- To obtain same node from each station.

STANDAR MEDIASTINAL DISSECTION.
- To remove all the lymphs from at least three mediastinal stations from de affected side.

LOBER NODES DISSECTION
- Nodes stations from the affected lobar.

EXTENDED DISSECTION
- To also remove contralateral mediastinal nodes.
To remove all the lymph nodes from at least three mediastinal stations, and always subcarinal station.

Also the hiliar and pulmonary nodes.

No less than 6 nodes.

- Right side
  - 2R, 4R
  - 3a, 3p
  - 7, 8, 9

- Left side
  - 4L
  - 5, 6
Video-assisted thoracic surgery lobectomy: 3-year initial experience with 200 cases

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Abstract

Objective: To analyse the evolution of the video-assisted thoracoscopic (VATS) approach for lobectomy and results during the first 3 years of program. Methods: From 1st July-2007 to 31th July-2010 we carried out 200 lobectomies by VATS. In February 2009 we started performing VATS lobectomies with only 2 incisions. We have analyzed both annual and overall outcomes regarding type of approach, conversion rate, surgical time, lymphadenectomy and overall survival. Results: Distribution of the cases per year were as follows: first-year 32, second-year 65, third-year 103. Overall conversion rate was 14.5% (first-year 25%, second-year 20%, third-year 7.8%; p = 0.017). Surgical approach was: 4 ports (1 case), 3 ports (99 cases, 100% in first-year), 2 ports (99 cases, 80% in third-year), single-port (1 case, third-year) Mean surgical time in successful VATS was 193.8 min (210.8 first-year, 207.9 second-year, 181.1 third-year; p = 0.011), mean number of lymph nodes were 11.9 (9.3 first-year, 10.1 second-year, 13.9 third-year; p = 0.003) and mean explored stations was 4.2 (3.6 first-year, 3.8 second-year, 4.5 third-year; p < 0.001). Globally median chest tube duration was 3 days. Median length of stay was 4 days. The disease-free survival at 30 months was 85% for Stage I patients and 62% for non-stage I patients. Conclusions: As we gain more experience over time, with more cases performed each year and less invasive approaches, results improve in terms of less surgical time and more extended lymphadenectomies. Furthermore, we have observed a clear evolution in our surgical approach to a less invasive 2-port approach. In selected cases we have implemented the single-port lobectomy

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Keywords: Thoracoscopy/ VATS; Lobectomy; Lung cancer surgery; Surgical approach
OUR EXPERIENCE

• 3 years (2007-2010): 200 cases.

• We compared the differences: Three periods of time.
  - 1º: 3 ports.
  - 2º: 80% 2 ports.
  - 3º: The first single port lobectomy.

• We observed improvements with experience.
<table>
<thead>
<tr>
<th></th>
<th>First period</th>
<th>Second period</th>
<th>Third period</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conversion rate</td>
<td>8 (25%)</td>
<td>13 (20%)</td>
<td>8 (7.8)</td>
<td>0.017</td>
</tr>
<tr>
<td>Surgical time (minutes)</td>
<td>210.8±52.4</td>
<td>207.9±62.6</td>
<td>181.1±56</td>
<td>0.011</td>
</tr>
<tr>
<td>Number of lymph nodes</td>
<td>9.3±6.1</td>
<td>10.1±4.9</td>
<td>13.94±7.3</td>
<td>0.003</td>
</tr>
<tr>
<td>Number of explored nodal stations</td>
<td>3.65±1.2</td>
<td>3.85±1.2</td>
<td>4.57±1.22</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Tumor size (cm)</td>
<td>2.66±1</td>
<td>2.83±1.2</td>
<td>2.7±1.5</td>
<td>0.351</td>
</tr>
</tbody>
</table>
Lymph nodes stations

Number of explored lymph node stations (Mean and 95% CI)

July 2007 - June 2008
July 2008 - June 2009
July 2009 - June 2010
Lymph nodes

Number of resected lymph nodes

Videothoracoscopic mediastinal lymphadenectomy is just as possible as conventional surgery.

- The results clinical N0 and pathological N2 after lung resection (VATS/thoracotomy): no differences.
Material

Uniportal / Single-Incision
Scanlan® VATS Instruments
As recommended by Diego Gonzalez-Rivas, MD. FECTS

"Uniportal (single-incision) VATS surgery
"Avoiding the trocar improves the instrumentation and minimizes the compression of the intercostal nerve"
Dr. Gonzalez-Rivas

"Although uniportal video-assisted thorascopic (VATS) lobectomy can be performed with
conventional instruments, the use of specially adapted conventional material (such as
instrumentation with both proximal and distal articulations) seems to be more fitted for
successful single-port lobectomy."


Photo courtesy of Dr. Gonzalez-Rivas
Ergonomy
The instrumentation is the key.

The camera goes in the upper side of the incision.
The view and the surgeon moving are parallel.
Paratracheal lymphadenectomy-2 ports
Paratracheal lymphadenectomy-one port
Paratracheal lymphadenectomy—one port
Paratracheal lymphadenectomy-one port
Complex silicotic lymph nodes
Aortopulmonary window
N1 station
Subcarinal lymph node dissection
Danger! Deep subcarinal
Deep left subcarinal
Right side lymph node dissection
We currently perform a complete lymph node dissection in patients undergoing lobectomy for NSCLC via the VATS approach. As more cases are treated with the single-port approach, the number of lymph nodes removed increases – this reflecting improvement in executing the surgical technique. In our uniportal series, the mean number of lymph nodes resected is greater than the mean number we reported by two or three port VATS (14.5 ± 7 vs. 11.9 ± 6.7). In any case, we have performed the adequate mediastinal staging proposed by some authors.

If we divide the period into two years, we observe more lymph node dissection performed during the second period: 12.2 ± 4.7 vs 16 ± 8 (p=0.055)
