Long-Term Outcome After Laparoscopic Myotomy for Achalasia

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Mayo Clinic, Rochester, MN
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No disclosures
Achalasia is characterized by:
- Loss of esophageal peristalsis
- Failure of the LES to relax
- High LES pressure
- Many treatment options available
Purpose

- Examine the long-term outcome of laparoscopic myotomy with and without partial fundoplication
  - Utilizing a standardized 30-day dysphagia questionnaire
Long-Term Laparoscopy Outcome

Methods

- Mayo Foundation IRB approved
- Retrospective review of all patients that underwent surgical treatment for achalasia
  - Esophagectomy and thoracotomy for long myotomy excluded
- Medical records reviewed
Long-Term Laparoscopy Outcome

Methods

- Standardized 30-day dysphagia questionnaire sent to all patients
  - 28 questions about swallowing
  - Non-responders were sent a second questionnaire
- Factors affecting results were analyzed by univariate and multivariate analysis
Long-Term Laparoscopy Outcome
Demographics

April 1998 – June 2011

500 Patients

Median Age - 51
(range 8 – 89)

276 Men

224 Women
### Long-Term Laparoscopy Outcome

#### Symptoms

<table>
<thead>
<tr>
<th>Symptom</th>
<th># of Patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dysphagia</td>
<td>472(94%)</td>
</tr>
<tr>
<td>Regurgitation</td>
<td>382(76%)</td>
</tr>
<tr>
<td>Heartburn</td>
<td>203(41%)</td>
</tr>
<tr>
<td>Chest Pain</td>
<td>168(34%)</td>
</tr>
</tbody>
</table>
Long-Term Laparoscopy Outcome
Prior Therapy

- Dilation 239(48%)
- Botulism toxin 135(27%)
- Surgical myotomy 30(6%)
- At least one 303(61%)
Long-Term Laparoscopy Outcome
Manometric Findings

- Absent peristalsis: 403/413 (81%)
- LES > 25 mm Hg: 233/367 (63%)
- No LES relaxation: 318/412 (77%)
# Long-Term Laparoscopy Outcome

## Operations

<table>
<thead>
<tr>
<th>Procedure</th>
<th># of Patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lap. myotomy + Toupet</td>
<td>268 (54%)</td>
</tr>
<tr>
<td>Lap. myotomy + Dor</td>
<td>209 (42%)</td>
</tr>
<tr>
<td>Lap. myotomy only</td>
<td>23 (4.6%)</td>
</tr>
<tr>
<td>Conversion to open</td>
<td>16 (3.2%)</td>
</tr>
<tr>
<td>Mucosal breach</td>
<td>7</td>
</tr>
<tr>
<td>Adhesions</td>
<td>5</td>
</tr>
<tr>
<td>Bleeding</td>
<td>4</td>
</tr>
</tbody>
</table>
Long-Term Laparoscopy Outcome
Length of Stay

Median – 2 days (range 1 to 20)

Days
Long-Term Laparoscopy Outcome
Mortality and Morbidity

- Operative mortality – 0
- Morbidity – 18 (3.6%)
  - Urinary retention – 4
  - Ileus – 3
  - Atrial fibrillation – 3
  - Bowel perforation requiring surgery – 2
  - Pneumonia – 2
  - UTI, respiratory failure, diarrhea, leg cellulitis, herpes zoster, and esophageal obstruction – 1 each
Dysphagia questionnaires sent to all 500 pts.

- Returned completed: 241 (48%)
- No response: 164 (33%)
- Returned unopened: 64 (13%)
- Notified of pt. death: 10 (2%)
- Declined participation: 21 (4%)
Long-Term Laparoscopy Outcome

Follow-up

Median length of follow-up
77.5 months

(range 15 mos. – 14 years)
Long-Term Laparoscopy Outcome

Follow-up

- No swallowing problems 80/241 (33%)
- Reported some problems 161/241 (67%)
Long-Term Laparoscopy Outcome

Follow-up

Severity of difficulty swallowing

# of patients

Not at all severe

Severity

Very severe

0 1 2 3 4 5 6 7 8 9 10

0 10 20 30 40 50 60 70 80 90
Age ≥ 65 only factor affecting outcome
- ≥ 65 years – 2.1 times more likely to have no swallowing problems at follow-up
- Gender, previous treatment or conversion did not significantly affect outcome
Long-Term Laparoscopy Outcome

Outcome vs. Length of Follow-up

- Follow-up ≤ 5 years
- Follow-up > 5 years

P=0.22
Long-Term Laparoscopy Outcome
Outcome Based on Motility

- All 3 achalasia motility criteria
- Missing at least one motility criteria

P=0.95
Conclusions

- Laparoscopic myotomy with partial fundoplication is a safe operation.
- Long-term outcome is extremely effective in 1/3 of patients.
Conclusions

- Those with persistent symptoms rarely have severe or frequent complaints
- Older patients tend to have a better outcome