WHEN IS ESOPHAGECTOMY THE BEST FOR BENIGN ESOPHAGEAL DISEASES?

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Indications

• Primary motility disorder (Dysfunctional esophagus)
  ▪ End Stage Achalasia
  ▪ Refractory esophageal motility disorder
• GERD
  ▪ Failed anti-reflux surgery
• Refractory stricture
Indications

• Watson et al, 1998
• 104 patients from 1975-1996 requiring esophagectomy for benign disease
• 98% felt cured or improved symptoms
• 2% mortality rate

Indications

Table 1. Symptoms of end-stage esophageal disease (n = 104)

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dysphagia</td>
<td>90</td>
</tr>
<tr>
<td>Regurgitation</td>
<td>57</td>
</tr>
<tr>
<td>Heartburn</td>
<td>52</td>
</tr>
<tr>
<td>Weight loss</td>
<td>32</td>
</tr>
<tr>
<td>Chest pain</td>
<td>25</td>
</tr>
<tr>
<td>Epigastric pain</td>
<td>22</td>
</tr>
<tr>
<td>Vomiting</td>
<td>20</td>
</tr>
<tr>
<td>Coughing</td>
<td>18</td>
</tr>
<tr>
<td>Nausea</td>
<td>18</td>
</tr>
<tr>
<td>Choking</td>
<td>9</td>
</tr>
<tr>
<td>Voice change</td>
<td>7</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>3</td>
</tr>
<tr>
<td>Odynophagia</td>
<td>2</td>
</tr>
<tr>
<td>Anorexia</td>
<td>1</td>
</tr>
<tr>
<td>Blouting</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 3. Benign esophageal conditions leading to replacement

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>No. of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>End-stage GERD</td>
<td>37</td>
</tr>
<tr>
<td>Undilatable stricture</td>
<td>25</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
</tr>
<tr>
<td>Advanced motility disorder</td>
<td>37</td>
</tr>
<tr>
<td>Traumatic or iatrogenic injury or spontaneous</td>
<td></td>
</tr>
<tr>
<td>perforation</td>
<td>15</td>
</tr>
<tr>
<td>Corrosive injury</td>
<td>8</td>
</tr>
<tr>
<td>Congenital abnormality</td>
<td>6</td>
</tr>
<tr>
<td>Extensive leiomyoma</td>
<td>1</td>
</tr>
</tbody>
</table>

*GERD:* Gastroesophageal reflux disease.

Indications

- Madenci et al 2013
- 661 underwent esophagectomy for benign disease
- 111 had prior intervention

Indications for esophagectomy

- May consider esophagectomy after 2nd/3rd intervention

Achalasia

- Refractory dysphagia from atonic esophagus
- Megaesophagus, sigmoid esophagus


https://radiologykey.com/esophageal-achalasia-2
Achalasia

- Esophagectomy may be required in up to 5% of patients with achalasia

- Molena et al showed lower postoperative mortality (2.9 vs. 7.8 %, \( p = 0.08 \)) in patients with achalasia undergoing esophagectomy when compared for cancer

## Achalasia Outcomes after Esophagectomy

<table>
<thead>
<tr>
<th>Author</th>
<th>N</th>
<th>Year</th>
<th>Conduit</th>
<th>Mortality</th>
<th>Follow-up (years)</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peters et al.</td>
<td>19</td>
<td>1995</td>
<td>Colon</td>
<td>0</td>
<td>6</td>
<td>93% cured/improved/d/satisfied</td>
</tr>
<tr>
<td>Miller et al.</td>
<td>37</td>
<td>1995</td>
<td>Stomach = 26 colon = 6 small bowel = 5</td>
<td>5.4%</td>
<td>6.3</td>
<td>91% excellent/good</td>
</tr>
<tr>
<td>Banbury et al.</td>
<td>32</td>
<td>1999</td>
<td>Stomach</td>
<td>0</td>
<td>3.6</td>
<td>87% “felt better”</td>
</tr>
<tr>
<td>Devaney et al.</td>
<td>93</td>
<td>2001</td>
<td>Stomach = 91 colon = 2</td>
<td>2%</td>
<td>3.2</td>
<td>93% “felt better”</td>
</tr>
<tr>
<td>Hsu et al.</td>
<td>9</td>
<td>2003</td>
<td>Colon (short)</td>
<td>0</td>
<td>6</td>
<td>75% good</td>
</tr>
</tbody>
</table>

Other Motility Disorders

• Diffuse esophageal spasm
• Scleroderma
GERD


Baylor St. Luke’s Medical Center, Houston, TX
GERD

• Up to 6% of all anti-reflux procedures will require re-operative intervention

• Options after failed anti-reflux surgery include:
  ▪ Redo fundoplication
  ▪ Roux-en-Y diversion
  ▪ Esophagectomy

GERD

- 31 patients (11.3%) had failure of redo
  - 4 patients required esophagectomy
  - Trend for multiple redo operations to be associated with failure
  - Conversion to esophagectomy individualized, not specific to # of redo surgeries

GERD

- Review experience of patients undergoing esophagectomy after fundoplication, 1988-2008
  - 80 patients underwent esophagectomy after at least 1 prior anti-reflux surgery
  - Compared to matched controls undergoing esophagectomy for esophageal cancer

GERD

• Mortality 3.7%

• Patients with previous anti-reflux surgery when undergoing esophagectomy had higher rates of anastomotic leak when compared to control group

GERD

- Chang et al, 2010
- Retrospective review, 258 patients
  - Evaluate the impact of prior gastroesophageal operations on outcomes after esophagectomy for recurrent GERD or hiatal hernia.
- 2% mortality
GERD

• In setting of previous GERD/hiatal hernia surgery:
  • Transhiatal resection accomplished in fewer patients undergoing reoperation
  • Gastric conduit was used as the esophageal replacement in fewer patients
  • Fewer patients reported good to excellent swallowing function

Chang AC, Lee JS, Sawicki KT, Pickens A, Orringer MB.
Stricture

• Majority of experience for esophagectomy for caustic injury is in pediatric population
  • Typically performed after serial dilations for stricture have failed

• No consensus on type of esophageal replacement in pediatric population

Choice of conduit

- Conduit: stomach, colon, jejunum
- Location: posterior mediastinum, retrosternal
- Operative technique: transhiatal, transthoracic, minimally invasive, vagal-sparing
- No randomized controlled trials, Level 1 data supporting one method over other
Conclusion

• Esophagectomy can be an effective treatment in patients with end stage esophageal disease

• Reconstruction can be done with low mortality and acceptable morbidity

• Operative approach and choice of conduit is up to surgeon experience and needs to be individualized

• Assessment and surgery should be done by experienced surgeons at high volume centers
Thank you