POEM vs Heller –POEM beyond Achalasia

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Guideline

The 2018 ISDE achalasia guidelines

Achalasia

Initial result: viral, toxin?
- Chronic infection

Immunogenetics:
- HLA DQ8101 or HLA DQB1063

- Abnormal autoimmune response
- Cytotoxic T cells
- Autoimmune antibodies

- Ganglionitis or loss of neurons

- Achalasia

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EGD and Barium Swallow

Manometry - Pattern of Achalasia
Esophageal Motility Disorder – Treatment Options

- Medications
- Endoscopic options
  - Botox injection
  - Pneumatic dilation
- Myotomy
  - Endoscopic
  - Heller myotomy
Heller Myotomy

- 80-90% of satisfactory results short and medium term
- 75% long term results

Heller Myotomy

Long term results > 10 year – 85-90% success rate with 10-30% reflux rate
Re-intervention After Heller Myotomy for Achalasia: Is It Inevitable?

- 248 patients over 12+ years – annual f/u for 36 mo
- 69% had at least one symptom in f/u
- At 5 years, number of re-interventions per 100 patients was 72 for type I, 51 for type II, and 13 for type III.


GERD after per-oral endoscopic myotomy as compared with Heller's myotomy with fundoplication: a systematic review with meta-analysis.

- 17 POEM studies (1542 patients)
- 28 HM/fundo studies (2581 patients)
- Symptomatic GERD:
  - POEM = **19%**
  - Lap HM/fundo = **8.8%**
- pH pos GERD
  - POEM = **39%**
  - Lap HM/fundo = **16.8%**
- Esophagitis
  - POEM = **29.4%**
  - Lap HM/fundo = **7.6%**
Long Term Results – Heller Myotomy

Per Oral Endoscopic Myotomy

- Inoue H first reported success rate of 100% and a significant reduction in LOS pressure in 17 patients

- Steps:
  - Pre planning
  - Procedure
    - Mucosotomy
    - Tunnel creation
    - Myotomy
    - Closure of mucosotomy

<table>
<thead>
<tr>
<th>Study</th>
<th>Number of patients</th>
<th>Follow-up (months)</th>
<th>Patients in remission (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oelschlager et al (2003)**</td>
<td>110</td>
<td>46</td>
<td>100 (91%)</td>
</tr>
<tr>
<td>Perrone et al (2004)**</td>
<td>100</td>
<td>26</td>
<td>92 (92%)</td>
</tr>
<tr>
<td>Rossetti et al (2005)**</td>
<td>195</td>
<td>83</td>
<td>179 (92%)</td>
</tr>
<tr>
<td>Torquati et al (2006)**</td>
<td>200</td>
<td>43</td>
<td>170 (85%)</td>
</tr>
<tr>
<td>Schuchert et al (2008)**</td>
<td>184</td>
<td>32</td>
<td>180 (95%)</td>
</tr>
<tr>
<td>Zaninotto et al (2008)**</td>
<td>400</td>
<td>30</td>
<td>347 (87%)</td>
</tr>
<tr>
<td>Snyder et al (2009)**</td>
<td>134</td>
<td>22</td>
<td>115 (86%)</td>
</tr>
<tr>
<td>Finley et al (2010)**</td>
<td>261</td>
<td>36</td>
<td>181 (69%)</td>
</tr>
<tr>
<td>Rosemurgy et al (2010)**</td>
<td>505</td>
<td>31</td>
<td>404 (80%)</td>
</tr>
<tr>
<td>Carter et al (2011)**</td>
<td>169</td>
<td>62</td>
<td>125 (76%)</td>
</tr>
<tr>
<td>Total</td>
<td>2264</td>
<td>42*</td>
<td>84%</td>
</tr>
</tbody>
</table>

*Mean

Table: Remission of symptoms after laparoscopic myotomy in series of 100 or more patients
Technique Beyond POEM

- Z- POEM – Zenker’s
- POET – Tumor resection
- POP – Pyloroplasty
Z-POEM

Zenker’s Cricopharyngeal Myotomy
Per Oral Pyloroplasty

Per oral endoscopic pyloromyotomy for refractory gastroparesis: initial results from a single institution

John H. Rodriguez¹ · Ivy N. Haskins¹ · Andrew T. Strong¹ · Ryan L. Plescia¹ · Matthew T. Allemang¹ · Robert S. Butler² · Michael S. Cline³ · Kevin El-Hayek¹ · Jeffrey L. Ponsky¹,5 · Matthew D. Kroh¹,4,5

- 47 patients underwent POP during the defined study period. Twenty-seven (57.4%) patients had idiopathic gastroparesis, 12 (25.6%) had diabetic gastro-paresis, and eight (17.0%) had post-surgical gastroparesis.
<table>
<thead>
<tr>
<th>Measure of gastroesophageal reflux (GLES)</th>
<th>Pre-procedure</th>
<th>3-Month follow-up</th>
<th>( p )-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI, kg/m² (mean, SD)</td>
<td>27.2 ± 9.4</td>
<td>26.7 ± 7.7</td>
<td>0.73</td>
</tr>
<tr>
<td>Average GCSI score (mean, SD)</td>
<td>4.9 ± 1.3</td>
<td>2.8 ± 1.6</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Nausea/vomiting score</td>
<td>4.8 ± 1.9</td>
<td>3.8 ± 1.7</td>
<td>0.002</td>
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<tr>
<td>Post-prandial fullness score</td>
<td>4.7 ± 1.3</td>
<td>3.1 ± 1.7</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Total score</td>
<td>4.6 ± 0.9</td>
<td>3.3 ± 1.4</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Number of medications ((N, %))</td>
<td>0.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proton pump inhibitor</td>
<td>38 (80.9%)</td>
<td>40 (85.1%)</td>
<td>0.59</td>
</tr>
<tr>
<td>1</td>
<td>7 (14.9%)</td>
<td>4 (8.5%)</td>
<td>0.59</td>
</tr>
<tr>
<td>2</td>
<td>2 (4.2%)</td>
<td>3 (6.4%)</td>
<td>0.59</td>
</tr>
<tr>
<td>Antacid</td>
<td>10 (21.2%)</td>
<td>28 (59.8%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>1</td>
<td>20 (42.6%)</td>
<td>6 (12.3%)</td>
<td>0.05</td>
</tr>
<tr>
<td>2</td>
<td>34 (72.9%)</td>
<td>12 (25.5%)</td>
<td>0.01</td>
</tr>
<tr>
<td>3</td>
<td>1 (2.1%)</td>
<td>1 (2.1%)</td>
<td>0.59</td>
</tr>
<tr>
<td>Antigas/antioxidant medication</td>
<td>0.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>32 (68.2%)</td>
<td>32 (68.1%)</td>
<td>0.7</td>
</tr>
<tr>
<td>1</td>
<td>30 (61.2%)</td>
<td>12 (25.5%)</td>
<td>0.05</td>
</tr>
<tr>
<td>2</td>
<td>5 (10.6%)</td>
<td>3 (6.4%)</td>
<td>0.05</td>
</tr>
<tr>
<td>Antigas/gas relief medications</td>
<td>0.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>41 (87.2%)</td>
<td>45 (95.7%)</td>
<td>0.27</td>
</tr>
<tr>
<td>1</td>
<td>6 (12.8%)</td>
<td>2 (4.3%)</td>
<td>0.27</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Measure of gastroesophageal reflux (GLES)</th>
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</thead>
<tbody>
<tr>
<td>GES, % retention (mean, SD)</td>
<td>37.2 ± 25.1</td>
<td>20.4 ± 36.1</td>
<td>0.03</td>
</tr>
</tbody>
</table>

**POET**
Summary

• Laparoscopic Heller myotomy still remains most durable surgical treatment option
• POEM has higher incidence of reflux disease compared to LHM
• Endoscopic Zenker’s is good surgical option with least morbidity
• Long term results of endoscopic sphincterotomy (Heller, cricopharyngeal or pyloromyotomy) still awaited