Minimally Invasive Surgery for Achalasia: Combined Experience of Two European Centers

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*Lenval Hospital, Nice (France)
ESOPHAGEAL ACHALASIA (EA)

- Characterized by the manometric triad:
  - Absent relaxation of the lower esophageal sphincter (LES)
  - High lower-esophageal sphincter pressure
  - Absent primary peristalsis
The symptoms are related to age..

- In children <1 year old, findings are typically:
  - Regurgitation
  - Choking
  - Apnea
  - Pneumonia
  - Failure to thrive

- Older children mimic adult complaints including:
  - Dysphagia
  - Regurgitation of undigestive food
Solid food are generally a problem initially and this progresses to difficulty with liquids.

The differential diagnosis includes:

- Gastroesophageal reflux
- Connective tissue
- Neuromuscular disorders
AIM

..to define outcomes after laparoscopic Heller myotomy with anterior fundoplication in pediatric patient with esophageal achalasia (EA)

- Unit of Pediatric Surgery, University of Siena (Italy)
- Lenval Hospital, Nice (France)
Patients and Methods

1997 / 2005

14 pt were treated for EA...

2 pt were excluded
✓ 1 had benefited from pneumatic dilatation
✓ 1 waiting

DEMOGRAPHIC DATA

| TOT PATIENT | 12 |
| MALE / FEMALE | 7 / 5 |
| MEDIAN AGE | 11 YEARS (range: 3.5/16 y) |
### Patients and Methods

#### Symptoms before surgery

<table>
<thead>
<tr>
<th>SYMPTOMS</th>
<th>PT</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESPIRATORY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DYSPNEA</td>
<td>3 / 12</td>
<td>25</td>
</tr>
<tr>
<td>COUGH</td>
<td>7 / 12</td>
<td>58.3</td>
</tr>
<tr>
<td><strong>DIGESTIVE</strong></td>
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<td></td>
</tr>
<tr>
<td>DYSPHAGIA</td>
<td>12 / 12</td>
<td>100</td>
</tr>
<tr>
<td>REGURGITATION</td>
<td>12 / 12</td>
<td>100</td>
</tr>
<tr>
<td>VOMITING</td>
<td>12 / 12</td>
<td>100</td>
</tr>
<tr>
<td><strong>OTHERS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANOREXIA</td>
<td>2 / 12</td>
<td>16.6</td>
</tr>
<tr>
<td>LOSS OF WEIGHT</td>
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<td>58.3</td>
</tr>
<tr>
<td>HEARTH-BURN</td>
<td>3 / 12</td>
<td>25</td>
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</table>

**CLINICAL DATA (preoperative)**
Patients and Methods

Associated disease

- Triple A syndrome 1 / 12 pt
- Rett syndrome 1 / 12 pt
- Juvenile Parkinson syndrome 1 / 12 pt
- Severe neuropsychomotor retardation 1 / 12 pt
DIAGNOSIS

✓ Chest X-ray
✓ Barium radiograph
✓ Esophageal manometry
✓ Esophageal gastric duodenoscopy
TREATMENT

All patient underwent modified Heller extramucosal myotomy with Thal / Dor antireflux plastic surgery by open laparoscopy
TREATMENT
RESULTS

INTRAOPERATIVE COMPLICATIONS

✓ One case of mucosal perforation, identified and corrected during surgery

POSTOPERATIVE PARAMETERS

<table>
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<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>TOT PROCEDURES</td>
<td>6 THAL and 6 DOR</td>
</tr>
<tr>
<td>DURATION OF SURGERY</td>
<td>120 min (range: 90/180 min)</td>
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<tr>
<td>NGT REMOVED</td>
<td>30 hours (range: 24 / 48 h)</td>
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<tr>
<td>ORAL FEEDING</td>
<td>3 days (range: 2 / 4 days)</td>
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<tr>
<td>HOSPITAL STAY</td>
<td>6 days (range: 5 / 8 days)</td>
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</table>
FOLLOW-UP

✓ CLINICAL EXAMINATION
   1st, 6th, 18th month

✓ BARIUM RADIOGRAPH
   6th month

✓ ESOPHAGEAL MANOMETRY
   ..if necessary!
## CLINICAL DATA (postoperative)

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<th>6(^{th}) m</th>
<th>18(^{th}) m</th>
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FOLLOW-UP

6th mounth

Barium radiograph

Normal in 11 / 12 pts

1 pt with hearth-burn

Residual narrowing of the junction

A surgical repeat intervention showed an insufficient myotomy on the stomach
FOLLOW-UP

6th mounth

Esophageal manometry in 5 symptomatic pts..showed a normal results
DISCUSSION

Few studies have been published on the treatment of the EA in children.

..pharmacological therapy is not well defined!

None of our patients were given pharmacological treatment!!!
The choice between endoscopic dilatation, myotomy and fundoplication is still debated!

*Esposito et al. Surg Endosc. 2000;14:110-113*


A laparoscopic Heller myotomy with anterior fundoplication effectively improved all symptoms of EA
DISCUSSION

..this study showed the benefit of the surgical approach!

MYOTOMY + FUNDOPPLICATION

The fundoplication not only seems to decrease the risk of reflux, but also helps to keep the site of myotomy open
CONCLUSION

Our study showes two significant results:

1. Low rate of intra/post-operative complication
2. A significant improvement of the quality of life
   - Regression of the respiratory symptoms in all pt
   - 2 pt (16.6%) reported postoperative dysphagia
   - 3 pt (25%) reported postoperative hearth-burn

Heller myotomy with anterior fundoplication is our preferred surgical approach for EA. Our data request a long-term evaluation!
Thanks!!!