Endoscopic Stapes Surgery:
To do or NOT to do!

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Conflict of interest

• Organizer Glasgow EES dissection course
• Sponsored by Storz & Medtronic
• Organizer Glasgow temporal bone dissection course
• Sponsored by Stryker & Oticon
Problems & advantages
Endoscopic Stapes Surgery: A Comparison With Microscopic Surgery

Rhona Sproat, Constantina Yiannakis, and Arunachalam Iyer

• Data prospectively collected September 2009 for all stapedotomies

• Patients were divided into two groups. Endoscopic vs non-endoscopic

• Pure tone audiometry was carried out pre- and post-operatively

• Complications were recorded at routine follow-up.

• Data was analysed using MiniTab ® 17 statistical software
Results

- 34 patients were in the endoscopic group. Average time to first follow-up was 5 months (Range: 1-26 months).
- 47 were in the non-endoscopic group. Average time to first follow-up was 10 months (Range: 2-60 months)
- All procedures in the non-endoscopic group had their operation before March 2014, and all those in the endoscopic group after March 2014.
### Post-op hearing outcomes

<table>
<thead>
<tr>
<th>Air-Bone Gap (dB HL)</th>
<th>Endoscopic Group ((n = 34))</th>
<th>Non-endoscopic Group ((n = 47))</th>
<th>Chi-squared test</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of patients (Percentage, %)</td>
<td>Number of patients (Percentage, %)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-10 dB</td>
<td>27 (79 %)</td>
<td>37 (79 %)</td>
<td></td>
<td>0.940</td>
</tr>
<tr>
<td>11-20 dB</td>
<td>7 (21 %)</td>
<td>9 (19 %)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-30 dB</td>
<td>0 (0 %)</td>
<td>1 (2 %)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 30 dB</td>
<td>0 (0 %)</td>
<td>0 (0 %)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Intra-operative

<table>
<thead>
<tr>
<th></th>
<th>Endoscopic group (n=34)</th>
<th>Non-endoscopic group (n=47)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chorda tympani</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laceration (intact, bruised)</td>
<td>2 (6 %)</td>
<td>0 (0 %)</td>
</tr>
<tr>
<td><strong>Damaged</strong></td>
<td>2 (6 %)</td>
<td>11 (23 %)</td>
</tr>
<tr>
<td><strong>Incision type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endaural</td>
<td>0</td>
<td>16 (34 %)</td>
</tr>
<tr>
<td>Permeatal (no incision)</td>
<td>34 (100 %)</td>
<td>31 (66 %)</td>
</tr>
</tbody>
</table>
Complications

- **Dysgeusia:**
  - 2/47 (4%) of the non-endoscopic group. Both patients had intact chorda intra-operatively.
  - 2/34 (6%) of the endoscopic group complained of dysgeusia; chorda was intact intra-operatively.

- **Tinnitus:**
  - No patients in the non-endoscopic group complained of tinnitus.
  - 1/27 (3%) of the endoscopic group complained of intermittent tinnitus at first follow-up. This patient had a successful audiological outcome, with the air-bone gap closed to 3 dB HL. Resolved at 6 months.

- **Sensorineural hearing loss:** No patients in either group had a post-operative sensorineural hearing loss (SNHL); defined as a reduction in the bone-conduction (BC) PTA of 15 dBHL or more.

- No patient in either group had facial nerve paresis or reported vertigo.
Primary Endoscopic Stapes Surgery: Audiologic and Surgical Outcomes


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Conclusions: Endoscopic stapedotomy and stapedectomy are effective techniques to manage stapes fixation resulting in a median postoperative ABG of 6.25 dB and ABG closure to within 10 dB in 84% of patients. Key Words: Endoscopic
No significant difference in hearing outcomes

Dysgeusia much less in EES (OR 0.31, 95%CI [0.14, 0.69], p = 0.00)

Scutum drilling much less in EES (OR 0.01, 95%CI [0.00, 0.07], p = 0.00)
Discussion

- **Hearing results:**
  - The results do not demonstrate a significant difference between groups.
  - No endaural or postaural incisions were required in the endoscopic group.
  - Improved visualization of the stapes superstructure conferred by the endoscope.
  - There was no significant difference in complications between groups.
  - Less dysguesia & scutum drilling in TESS.
Thanks