Treatment of synechia of the anterior commissure

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Synechia of the anterior commissure / laryngeal web

- **Laryngeal webs**
  - Bridges of abnormal fibrous tissues covered by epithelium between two structures within the larynx
  - Variation in length, width and thickness
  - Anterior, posterior or complete
  - Acquired or congenital

Congenital laryngeal webs

- Uncommon
- Often associated with abnormalities of cricoid shape
- Extension to the subglottis
- 5% of all congenital anomalies of the larynx
Acquired laryngeal webs

- Secondary to laryngeal injury
  - Laryngeal surgery
  - Endotracheal intubation
  - Laryngeal trauma
  - Radiotherapy
  - Inflammatory laryngeal processes

Clinical presentation

- Depends on laryngeal structures involved
  - Dysphonia
- Depends on amount of airway compromise → length of the laryngeal web
  - Decreased exercise tolerance
  - Severe airway obstruction

Indications for treatment

- Improvement of laryngeal airway
- Avoidance of tracheotomy
- Improvement of vocal quality

- Anterior webs less than 2-3 mm in extent are often asymptomatic and do not require treatment

Goal

- Is treatment of laryngeal web with a Teflon sheet/Goretex patch positioned using needle carrier instrument by Lichtenberger successful in reducing airway obstruction and improvement of vocal quality?
Material & Methods

- Retrospective, long-term evaluation
- Treatment
  - Endolaryngeal resection of the web
  - Placement of a Teflon or GoreTex sheet
  - External fixation using sutures through the thyrohyoid and cricothyroid membrane
  - Use of the Lichtenberger endo-extralaryngeal needle carrier

Fixation of the Teflon sheet or GoreTex patch
Material & Methods

- Records of 8 patients
- Videolaryngostroboscopy
  - Shape of the vocal folds
  - Overall glottal closure
  - Mucosal wave
  - Supraglottic involvement
- Vocal function evaluation using the VHI and analysis by speech therapist

Results (n=8)

- Causes of acquired laryngeal web
  - Five due to laryngeal surgery
  - Two due to laryngitis
  - One post-intubation

- Length of web
  
<table>
<thead>
<tr>
<th>Length of Web</th>
<th>Count</th>
</tr>
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<tbody>
<tr>
<td>&gt;2 cm</td>
<td>1</td>
</tr>
<tr>
<td>2 - 1.5 cm</td>
<td>5</td>
</tr>
<tr>
<td>1.5 - 1 cm</td>
<td>2</td>
</tr>
<tr>
<td>1 - 0.5 cm</td>
<td></td>
</tr>
<tr>
<td>&lt; 0.5 cm</td>
<td></td>
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</tbody>
</table>
Results - treatment

- Excision laryngeal web:
  - Microlaryngoscopic instruments (n=4)
  - CO$_2$ laser (n=3)
  - Both (n=1)
- Fixation sheet
  - Teflon (n=2)
  - Goretex (n=6)
- Lichtenberger needle carrier was used in all procedures
- Mitomycin 0.5 mg/ml was applied in 4 patients

Results - effects

- All procedures were well tolerated by our patients
- Reasonable postoperative voice, without dyspnoea or impairment of swallowing
- Re-webbing was seen in one patient, needing re-intervention with mitomycin-C application

Discussion

- Successful treatment of laryngeal webs rests upon a two-stage technique
  1. Web lysis
  2. Re-epithelialization of the vocal folds without re-stenosis
- Methods to prevent re-stenosing
  - Mucosal flaps for coverage
  - Stents and keels to allow re-epithelialization
  - Adjuvants such as mitomycin-C

Conclusions

- Successful procedure with significant improvement of laryngeal airway and vocal quality
Conclusions

- Achievement of complete pre- and postoperative records is difficult
  - Initial presentation of patients with laryngeal webs can occur in an emergency situation
- Placement of the sheet for 1 week is enough to prevent scar formation and recurrence of web