Sialorrhea: Considerations and Management

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Outline

• Basics of Salivary Flow and Sialorrhea
• Social and Medical Implications of Sialorrhea
• Pharmacologic Agents
• Botox
• Surgical Interventions
Basics of Sialorrhea

- Unintentional loss of saliva from the mouth
  - Anterior – spilling from the mouth that is clearly visible
  - Posterior – spilling posteriorly creating an aspiration risk
- Generally not due to excessive salivary secretion
  - Dysfunction of the oral phase of swallowing
  - Deficient lip closure
  - Disorganized tongue movement
  - Reduced frequency of swallowing

Effects of Sialorrhea

- Social rejection
- Constant damp and soiled clothing
- Unpleasant odor
- Irritated facial skin
- Oral and perioral infections
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- Dehydration
- Decreased masticatory function
- Damage to books and communication devices
- Aspiration

Interventions for drooling in children with cerebral palsy.
Waish M, Smith M, Pennington L.
Cochrane Database Syst Rev. 2012 Nov 14;11
Basics of Sialorrhea

Pharmacologic Agents

Muscarinic Anticholinergic Agents
- Glycopyrrolate
- Scopolamine
- Benztropine
- Atropine

Side Effects
- Xerostomia
- Urinary retention
- Constipation
- Drowsiness
- Behavioral changes
Botulinum Toxin

- Blocks presynaptic release of acetylcholine
- Reduces amount of saliva
- Generally 1U/Kg per gland
- Direct injection versus ultrasound guided

Botulinum Toxin (Botox)

Vashishta R, Nguyen SA, White DR, Gillespie MB.
Botulinum toxin for the treatment of sialorrhea: a meta-analysis.
Tympanic Neurectomy

Salivary Gland Surgery

- Submandibular Duct Rerouting
- Parotid Gland Duct Rerouting
- Submandibular Gland Duct Ligation
- Parotid Gland Duct Ligation
- Submandibular Gland Excision
- Parotidectomy

Table 2. Results Summary

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No. of Studies</th>
<th>Subjective Success Rate (95% Confidence Interval), %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>59</td>
<td>81.6 (77.5-85.7)</td>
</tr>
<tr>
<td>Mean follow-up duration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>=1 year</td>
<td>42</td>
<td>83.9 (78.6-89.1)</td>
</tr>
<tr>
<td>&lt;1 year</td>
<td>17</td>
<td>76.6 (69.3-84.4)</td>
</tr>
<tr>
<td>Surgical procedure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSM duct rerouting</td>
<td>21</td>
<td>84.4 (77.7-91.1)</td>
</tr>
<tr>
<td>BSMG excision and bilateral parotid duct rerouting</td>
<td>8</td>
<td>87.8 (83.5-91.1)</td>
</tr>
<tr>
<td>BSMG duct rerouting and BSLG excision</td>
<td>8</td>
<td>71.5 (63.6-79.4)</td>
</tr>
<tr>
<td>BSMG excision and bilateral parotid duct ligation</td>
<td>9</td>
<td>85.2 (78.6-91.7)</td>
</tr>
<tr>
<td>4-Duct ligation</td>
<td>4</td>
<td>64.1 (27.5-100)</td>
</tr>
</tbody>
</table>

Abbreviations: BSLG, bilateral sublingual gland; BSM, bilateral submandibular gland; BSMG, bilateral submandibular gland.

Surgical management of drooling: a meta-analysis.
Reed JI, Mans CK, Brietzke SE.
Schema in the Management of Drooling in Children

- Review of posture and positioning
- Oral awareness and oral motor skills training (possibly also with an oral stimulation device)
- Orthodontic treatment
- Pharmacotherapy
- Botulinum toxin
- Surgery


Conclusion

- Drooling or sialorrhea is unintentional loss of saliva from the oral cavity
- There are many social and medical implications that can arise from sialorrhea/drooling
- Pharmacologic agents can have a high number of negative side effects
- Botox injection serves as a localized pharmacologic agent for drooling
- Salivary gland surgery can be effective in many patients
References


• Surgical management of drooling: a meta-analysis. Arch Otolaryngol Head Neck Surg. 2009 Sep;135(9):924-31. Reed J1, Mans CK, Brietzke SE.