Does sialendoscopy have a role in children?

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Objectives

- Review most common pediatric salivary gland disorders
- Understand role of imaging in pediatric salivary gland disorders
- Understand appropriate indications for pediatric sialendoscopy
- Understand expected outcomes of pediatric sialendoscopy
Salivary Obstruction

• Symptoms
• Traditional management
  – Dx: Xray, U/S, CT, MRI, Sialography
  – Conservative treatment
  – Duct dilation
  – Transoral excision
  – Sialadenectomy

Recurrent parotid inflammation
  – Weeks-months between episodes
  – Unknown cause; can resolve in puberty

Treatment
  – Conservative
  – Parotidectomy
  – Duct Sclerosis
  – Sialendoscopy: 89% without recurrence at 11 months

Juvenile Recurrent Sialadenitis (JRS)

Pediatric Salivary Gland Disorders: Role of Imaging
Pediatric Salivary Gland Disorders: Role of Imaging

- Rule out neoplasm
- Examine all glands
- Identify stones

Pediatric Salivary Gland Disorders: Other Workup

- Autoimmune blood profile
**Sialendoscopy**

- Endoscopic visualization of the salivary duct
  - Gundlach et al. HNO. 1990
  - Marchal et al. NEMJ. 1999.
  - Diagnostic and therapeutic
  - Spares the salivary glands

**Equipment**

- Sialendoscope (Karl Storz)
  - Marchal Basic Set
  - 0.75mm fiber
- Diagnostic sheath
  - Single channel
- Therapeutic sheath
  - Working channel
Interventional Sialendoscopy

- Salivary Duct Dilators (0000 to 6)
- Conical dilator
- Wire baskets, balloon
- Forceps
- Guide wire
- Laser fiber

Technique

- General anesthesia
- Identify papilla
- Serial dilation
  - Wharton’s duct papilla is narrow
- Limited distal sialodochotomy
  - Papillotomy risks stenosis
- Introduce sialendoscope
  - Saline irrigation
Technique
Technique

Technique
Technique

Technique

FLEX FILTER
Stones – treatment algorithm

- **Small, mobile stones**
  - Basket or forceps retrieval

- **Larger stones**
  - Interventional sialendoscopy
    - Laser lithotripsy
    - Forceps
    - * Extracorporeal lithotripsy
  - Combined approach

- **Examine duct after stone removal**
  - Ensure patency
  - Check for residual stones or fragments

Basket Retrieval – Submandibular
Challenges

• Dilation of Wharton’s duct papilla
  – Rate-limiting step; Up to 20% failure for beginners
• Dilation over guide wire (Chossegros et al. 2006)
• Limited distal sialodochotomy technique (Chang JL, Eisele DW. 2012)

Complications

• Duct stricture (2.5%)
  – Worse with papillotomy
• Duct perforation
• Infection
• Ranula formation (2.5%)
• Wire basket/instrument impaction
• Temporary lingual nerve injury (0.4%)
Review of Current Literature

- Lyon, France
  - 38 patients/35 endo procedures
  - JRS: 21
  - Sialolithiasis: 14
  - Normal: 3
  - Ave follow-up: 24 months
  - 18 pts with parotid duct stenosis
    - 4 recurrence
    - Ave time to recurrence: 6 months

Review of Current Literature

- Lyon, France
  - Technique
    - Solution: 50% xylocaine (2%) and 50% Saline (0.9%) with 120mg prednisolone
    - Post-op: 7 days Augmentin and 3 days Decadron 1mg/kg/d
  - Complications
    - 1 Stensen duct perforation
    - 2 airway obstructions
Review of Current Literature

- U of Iowa and U of Pitt
  - 18 patients/33 procedures
  - JRS: 12
  - Sialolithiasis: 4
  - Ave age sx onset: 7.7 yo
  - Ave age at sialendoscopy: 9.7 yo
  - Parotid: 13 patients
  - Submandibular: 5 patients

Current Literature

- U of Iowa and U of Pitt
  - Complications
    - ?Transient swelling?
    - Pain at 1 week
    - Possible ductal breech with stent placement
Current Literature

- **U of Iowa and U of Pitt**
  - *Outcomes*
    - Ave #episodes: 4.7
    - Ave f/u=11.7 months
    - **JRS**
      - 8 pts=1 procs
      - 2 pts=2 procs
      - 1 pt=parotidectomy
      - 1 pt lost to f/u

Current Literature

- **U of Iowa and U of Pitt**
  - *Outcomes*
    - **Sialolithiasis**
      - Aborted in submandib stone – ended up with gland removal
      - Laser tip embedded in stone – broke off – gland removed
UCSF Experience

18 patients
1 parotid stone
2 submandibular stones
15 JRS
Ave # episodes: 7
Ave age at presentation: 7 yo
Outcomes:
33% no further episodes
50% fewer episodes
17% no change in frequency

Conclusions

• Diagnostic and therapeutic
• Treatment of sialadenitis +/- stenosis and sialolithiasis
• Minimally invasive, gland sparing approach
Future Directions

• Can this procedure be done in the office in children
• What type of flushing agent most effective
  — Saline
  — Steroids
  — Antibiotics
  — Other immune modulators