Eustachian Tube Balloon Dilation
Patient Selection

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Disclosures

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Patient Selection

- Patient symptoms: Ciliary dysfunction vs Barotrauma
  - Ciliary dysfunction
    - Ear fullness/pressure
    - Muffled hearing
    - Ear pain
    - Popping/crackling
    - Recurrent OME
  - Barotrauma
    - Trouble with flying or SCUBA diving
Patient Selection

- Who is a Candidate?
  - Rule out any other pathology (otitis media, cholesteatoma TMJ and rare stuff – SSCD…)
  - Failed medical therapy
    - Randomized Control Trial (Gluth et al.) with nasal steroid – 18.9% of tympanograms normalized
    - Anywhere from 15% to 33% improvement with medical therapy for symptoms and objective measures (tympanograms)
  - Rule out any contraindications
    - Patulous or Carotid abnormality

Patient Selection

- Do you need a CT?
  - For patients with no other sinus symptoms → no
    - Nasal endoscopy should be sufficient
    - Do you need to assess Carotid Abnormality?
  - For patients with Sinusitis → yes
Do you need a negative pressure tympanogram to perform ETBD?
- Recent Clinical Consensus Statement (2019) stated Yes

What about in the patient with Barotrauma related ETD?

- Anand et al. 12 Month Follow up Study (Oto-HNS 2019)
  - 39% of pts normalized tympanogram and 57% improved
  - 39% of pts normalized there ETDQ7 and 79% improved
  - Many patients had improvement of their ETDQ7 scores with non-normalized tympanograms
    - Placebo or procedure efficacy?
Office vs Operating Room

- Is there concurrent disease?
  - Reflux?
    - Treat
  - Chronic sinusitis
    - Rate of concurrent Sinus disease and Eustachian tube dysfunction (ETD) is 43%!!!
    - Diagnosis clinically and with CT
    - Treat
  - If fail medical therapy for both ET and Sinusitis → In Office Candidate
    - No reimbursement, but not losing on the balloon cost
- If NO concurrent sinus disease → OR
  - Code for diagnostic nasal endoscopy and outfracture of turbinates
  - Very rare reimbursement for ET balloon in Michigan

Case 1

- Presented to me in late fall 2017 for evaluation
- 60 year old male that spends his winters in Belize
- Avid SCUBA diver and dives every other day during the 3-4 months he is down there
- Over the past 5-6 years, he has trouble equalizing pressure in his middle ear with auto-insufflation upon decent
- 2 years prior was only able to perform 1 dives before his ears hurt too much to continue
- No history of ear infections, no ear surgery, no baseline pressure in his ears
- Mild pressure with flying, but did not last long
- Had been on fluticasone for years
Case 1

- **Exam:**
  - Ear exam within normal limits
  - Good movement with pneumatic otoscopy
  - Audio normal

- **Tympanogram:**
Case 1

- Management
  - Offered medical therapy
    - Continue fluticasone
    - Pseudofed and afrin prior to diving
  - Offered ETD
  - Cannot do Tympanostomy tube
Case 1 – 1 year follow up

- Was able to do 11 dives without any issues over a 30 day period and then started to have a slight bit of pressure
  - He has a water scooter – he descends and ascends very quickly
  - He stated it was the best his ears had felt diving in his life
  - Felt a slight bit of pressure that resolved after 3 days, but did not want to push it

- He recently underwent another dilation (December 2019)
  - Did very well during the dives and felt it was his best dive season in many years
    - Able to get through all dives