Essential ENT Knowledge for the ED: A Collaborative Perspective

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Objectives

- At the end of this presentation, attendees will be able to
  - Identify perforated eardrums, epistaxis, and peritonsillar abscesses
  - Provide stabilizing management in the emergency department
  - Determine which patients require immediate consultation or follow up care
  - Avoid common pitfalls

Perforated Ear Drum

The case:

24yo M patient presents to the ED with left-sided otorrhea and muffled hearing. He reports that he was scuba diving yesterday and dove rapidly without properly equalizing, resulting in immediate severe otalgia. Since that time, the pain improved but his hearing has not. He denies any other injuries. He does report that he had recently recovered from a sinus infection. He takes no medications daily and has no pertinent medical history.

Perforated Eardrums-Risk Factors

Foreign body insertion
- Qtips, etc.

Sudden barometric pressure changes
- Airplane flight, diving, or blunt facial trauma (slapped on the side of the head, airbag deployment in cars)

History of pressure equalization difficulty on airplanes
- Most common way people will be able to suspect and report an equalization issue (the average person will not know what eustachian tube dysfunction is)

History of chronic or recurrent middle ear infections within the same age stratum
- Child/adolescent/adult

Middle ear neoplasm
- Benign versus malignant

History of chronic or recurrent sinus/nasal issues or current acute sinus/nasal issue
- Moderate to severe allergies within the current season
- Acute upper respiratory or sinus infection
- Adenoid hypertrophy, deviated nasal septum, turbinate hypertrophy

Perforated Eardrums-The ED Exam

Physical exam findings

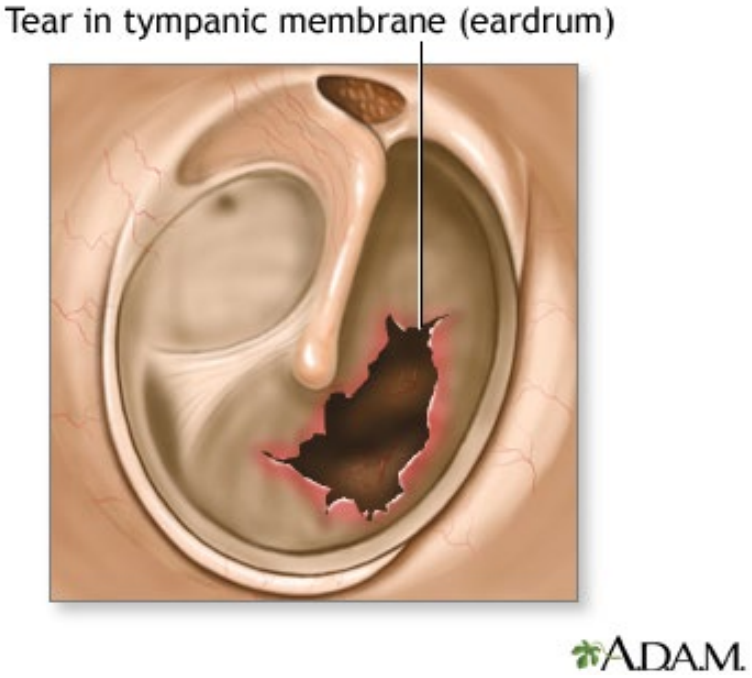
- L sided ear drum perforation with moderate erythema to the canal
- R side essentially normal
- Decreased hearing to the L with normal hearing to the R
- Afebrile, non-tachycardic, or tachypnic

Initial work up

- Labs
  - WBC 13.5 w 80% neutrophils
  - CRP 2.3
- Imaging?

Initial management?

Perforated eardrums



Perforated Eardrums-The Consult

Key information:

- Mechanism of injury
- Time lapsed since injury
- Patency/visibility of the ear canal
- Any signs/symptoms beyond muffled hearing

Additional recommendations

- Non-contrast CT of the temporal bones if suspected transgression of anatomic borders
  - 1 month passed since injury with purulent otorrhea completely occluding the canal and uncertain duration of the infection
  - Blunt trauma with suspicion for mastoid fracture (transverse versus longitudinal)
- Use antimicrobial therapy if the wound is contaminated
- Use ear drops to moisturize-rinse any debris (either ofloxacin or mineral oil)
- Follow up with ENT

Perforated Eardrums-Pearls and Pitfalls

Be careful which topical medications you prescribed due to risk for ototoxicity - Ofloxacin, ciprofloxacin, and mineral oil only. No topical lidocaine, tobramycin (Tobradex), or other ear drops.

Pay attention to the mechanism of injury - prescribed a broad spectrum antimicrobial if contaminated wound, order imaging if symptoms or trauma mechanism warrant it.

Acute, small perforations will often (but not always) close on their own within 1 month if the original insult mechanism is contained and resolved. Old perforations and large perforations are less likely.

Follow up with ENT for myringoplasty vs tympanoplasty

- May eventually be referred to otologist or neurotologist if ossicular chain reconstruction is needed

Epistaxis

The case:

Ethel, a 67yoF patient with pmhx atrial fibrillation who is anticoagulated on Xarelto presents to the ED with an uncontrolled, spontaneous nosebleed. She explains that she was watching TV when she noticed a large amount of bright red blood coming from her nose. She called EMS who has been unable to control the bleed despite pinching her nose and leaning her forward. They report patient has a blood pressure of 190/78

Epistaxis-Risk Factors

Dry air
- Winter season
- Deserts
- CPAP machine use without a humidifier
- Oxygen use with nasal cannula

Nose picking

Intranasal inflammation
- Active infection
- Severe allergies

Intranasal substance use
- Not limited to snorting cocaine, overuse of many common nasal sprays will also dry out the nasal mucosa

Blood thinner use

History of bleeding disorder

Increased blood pressure
- Hypertension
- Physical exertion
- Bending/stooping positions

Epistaxis-The ED Exam

Physical exam findings
- Patient appears to be bleeding out of the L nare
- She is tachycardic 110

Labs
- Hgb 11.2
- Coagulation

Initial management
- Nose clips
- Rhino Rocket
- Medications
  - Afrin
  - Lidocaine
  - TXA
- Cautery

Epistaxis-The Consult

Key information:

- What hemostatic measures have been attempted thus far
- Why has the bleeding not stopped? (rate of blood flow/loss too severe, patient not tolerating topical nasal medications, patient not tolerating Rapid Rhino/Rhino Rocket)
- Any recent nasal/sinus/nasopharyngeal surgeries
- Duration of bleeding and also current IV access sites

Additional recommendations

- Use multimodal topical therapy (tranexamic acid with either oxymetazoline or phenylephrine) every 15 minutes for up to 1 hour
- Administer antiemetic if nausea is present or imminent (preferably IV, otherwise orally dissolvable tablet)
- Preemptively mix the above topical agents 50/50 with 4% lidocaine if catheter placement or cautery is needed
- Consider reversal agents for blood thinners, FFP, transfusion, etc.

Epistaxis-Pearls and Pitfalls

The majority of nosebleeds are anterior

- Use manual pressure over the soft, cartilaginous portion of the nose (down to the bony base of the cheeks/face) to resolve most nosebleeds
- Emergency room will likely have some selection bias for non-anterior bleed
- Check for recent sinus/nasal surgery within the past 3-4 weeks

Avoid emesis

- Contaminates the open wound
- Reduces total body fluid/hydration which makes IV access harder and also makes additional emesis more likely
- Increases vascular pressure and makes nasal bleeding worse, can dislodge an early thrombus

Preemptively mix the your topical agents 50/50 with 4% lidocaine if catheter placement or cautery is needed

- The less pain the patient feels, the less they will move, the easier it is to get the job done
- Topical lidocaine tastes terrible

Make the call to go to the OR before patient stability is lost

The Case:

John, a 32-year-old male, presents to the emergency department (ED) with a 4-day history of severe sore throat, fever, and difficulty swallowing. He reports the pain started as mild but has progressively worsened over the past 24 hours. He is unable to swallow solid food and feels like his throat is "swollen." He also has difficulty opening his mouth fully

The patient describes feeling overall fatigued, with chills and night sweats. He notes that he has a "lump" on one side of his throat that he believes has been causing the pain. His voice sounds muffled. He denies any recent trauma or injury to the mouth or throat.

Peritonsillar Abscesses-Risk Factors

History of chronic or recurrent tonsillitis

Periodontal, gingival, or other oral mucosal disease

Contaminated exposures

- Example: oral sexual activity

Smoking

Immunocompromisation

Peritonsillar Abscesses: The ED Exam

Physical exam
- Patient has breathless sounding voice
- Tonsils pushed right
- Significant erythema and cobblestoning to the posterior oropharynx

Is airway protected?

Labs
- WBC 19.5
- Lactate 2.6
- Strep?

Imaging
- CT
- Ultrasound

Management
- Antibiotics
- Drainage

. Peritonsillar Abscesses-The Consult

Key information:

- Airway patency
- Evidence of sepsis?
- Any trismus present?

Additional recommendations

- Topically and then locally anesthetize the region, and then I&D or needle aspirate the abscess.
- Avoid trauma to carotid and jugular! Use minimum insertion necessary (plus a few millimeters) to aspirate or drain the abscess.
- Treat with *liquid format* antimicrobial agent for 10-14 days
- Give the patient viscous lidocaine to use at night
- Follow up with ENT if full resolution is not expected

Peritonsillar Abscesses-Pearls and Pitfalls

Anesthesia, anesthesia, anesthesia!

- Use topical 4% lidocaine first and wait 5 minutes. Helps to gargle topical 4% lidocaine and also coat the tongue and surrounding oropharyngeal mucosa to reduce gag reflex.
- Then inject 2% lidocaine with 1:100,000 epinephrine using a 3cc syringe and a 27-30g, 1.0-1.5in needle, and wait another 5 minutes. ***You can sometimes skip this part if you are doing a needle aspiration***

Take your time

- Unless you suspect sepsis or airway compromise, the patient is not in immediate danger of life/limb injury. Topical/local anesthesia takes time to work. There is risk of injury to proximal branches of the carotid, jugular, and other associated proximal branches if the patient moves suddenly due to pain.

Intubate and take to the OR if airway compromise is present

- Also consider intubation/OR if the patient cannot tolerate the procedure, and if the abscess is too large to manage with antimicrobial agents alone

Aftercare:

- Give oral antimicrobial agents in liquid format regardless of age
- Give viscous lidocaine to use at home to help them sleep at night

Beware of malignancy as a lookalike

- Differentiate erythema versus angiogenesis with hypervascularity

Peritonsillar cellulitis without abscess can present similarly

Questions?

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