Approach to Common ENT Problems

Colleen Cagno, MD
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Dates and Location of CME Activity: August 24-26, 2018, Loews Chicago O’Hare Hotel, Rosemont, IL, United States

Name of Faculty/Moderator: Colleen Cagno, MD

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<tr>
<th>Organization With Which Relationship Exists</th>
<th>Clinical Area Involved</th>
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<td>1. Roche – my brother Kevin Kraus works for this company</td>
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Approach to Common ENT Problems

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University of Arizona
August 2017
Case Vignette

- Warf A. Rinn is a 37 y/o male who presents for acute epistaxis. He denies trauma, intranasal drug use, symptoms of allergic or viral rhinitis or history of bleeding difficulties. He is otherwise healthy.
- On exam, BP is 140/80 mmHg, pulse 85. There are several clots in one nostril that are easily removed and no obvious sources of bleeding are seen. Bleeding stops with external pressure but then recurs in 30 minutes.

Which of the following is now indicated?
A. Complete blood count and coagulation studies
B. Topical oxymetazoline
C. Silver nitrate cautery
D. Anterior packing
E. Posterior packing

Epistaxis: Causes

Local causes
- Idiopathic (85%)
- Nose picking
- Facial trauma
- Foreign body
- Nasal or sinus infections
- Prolonged inhalation of dry air
- Intranasal neoplasms or polyps
- Irritants (cigarette smoke)
- Medications (topics steroids)
- Septal deviation or perforation

Systemic causes
- Medications:
  - + anticoagulants
  - + /- aspirin
- Hereditary hemorrhagic telangiectasia (Osler-Weber Rendu disease)
- Blood dyscrasias
- Aneurysm of carotid artery
- Post-surgical
Epistaxis: Classification

• Anterior bleeds
  • 90% cases from vascular watershed area (Keisselbach’s plexus)
  • Most commonly from mucosal trauma or irritation

• Posterior bleeds
  • 10% of episodes of epistaxis
  • Most commonly arterial in origin
  • Presents with a greater risk of airway compromise, aspiration and difficulty in controlling the hemorrhage
  • Most patients with posterior bleeds have significant comorbid conditions
  • Often bleed from both nostrils, feel drip down throat rather than nose

Epistaxis: Classification

• Differentiating anterior verses posterior bleeding
  • Neither volume nor rate of bleeding can distinguish
  • Pinching alae stops most anterior bleeds but posterior bleeds can stop spontaneously making interpretation difficult
  • Best way is to place bilateral anterior packing b/c brisk bleeding despite proper packing strongly suggests a posterior source.
  • Patients who continue to bleed after anterior packing, likely have posterior bleeds and requires posterior packing.
Epistaxis: Management

• Primary first aid as indicated for blood loss
• Apply digital pressure at the cartilaginous part of the nose (alae) for a minimum of 10 minutes
• Sit patient upright, lean forward to minimize swallowing blood and risk of aspiration
• Many ENT recommend oxymetazoline to hasten hemostasis (although little data exist to support)
• Coagulation studies are not indicated, unless patient is taking anticoagulants

http://emj.bmj.com/content/emermed/22/7/470/F1.large.jpg

Epistaxis: Management

• Examine the nose with a nasal speculum, ideally anesthetized prior to exam
• If source of anterior bleeds is visualized – cautery with silver nitrate or electrocautery
• If bleeding continues despite cautery or reoccurs w/in 30 min., anterior nasal packing indicated
• Routine use of prophylaxis antibiotics for anterior nasal packing isn’t recommended
• Evaluation by ENT is recommended within 24 – 48 hours after anterior packing
• If bleeding continues after anterior packing, requires posterior packing and emergent evaluation
Case Vignette

- Vinny Vango is a 52 y/o male who presents with sudden right sided hearing loss. He noticed it yesterday morning upon waking and attributed it to an ear blocked with wax. Tinnitus is present but he denies trauma, ear pain, or prior hearing loss. On exam, external ear canal is clear, and tympanic membrane is intact with no signs of infection bilaterally. Neurologic exam reveals no focal findings.

Which of the following is not indicated in the initial evaluation and treatment?

A. Weber and Rinne test
B. Audiometric evaluation
C. Computed tomography (CT) of the head/brain
D. Offer prompt treatment with course of oral glucocorticoids
E. Patient education to improve compliance and outcomes

Sudden Hearing Loss: Diagnosis

- Sudden sensorineural hearing loss (SSNHL):
  - acute (less than a 72-hr) unexplained hearing loss
  - unilateral
  - idiopathic, prognosis depends on the severity
- SNHL should be differentiated from conductive hearing loss in patients with sudden hearing loss.
  - Diagnosis is based on history, physical examination, tuning fork tests, and audiometry.
  - Over the telephone, the patient can be told to hum and asked if the sound lateralizes to one side.
    - Lateralization to side of hearing loss suggests conductive loss.
    - No lateralization or lateralizes to opposite side, patient requires urgent evaluation for SSNHL.
  - Weber and Rinne tests
- In SNHL, evaluate for bilateral and recurrent sudden hearing loss + focal neurologic findings.
  - SNHL can be due to underlying disease, including Meniere disease, and systemic, autoimmune, metabolic, and neurologic disorders.
Sudden Hearing Loss: Diagnosis

- **Weber and Rinne tests**
  - **Weber test** - vibrating tuning fork placed middle of head or forehead
    - Compares Air and Bone conduction
    - Patient with normal hearing will hear equally on both sides
    - Lateralize to normal ear in SN HL
    - Lateralizes to affected ear in Conductive HL
  - **Rinne test** – vibrating tuning fork placed on mastoid until no longer heard, then placed in front of ear canal.
    - AC should be twice as long as bone conduction.
    - In Conductive loss, Bone Conducted sound is longer than Air Conduction

<table>
<thead>
<tr>
<th>Weber</th>
<th>Rinne (Rinne + or -)</th>
<th>Diagnosis</th>
</tr>
</thead>
</table>
| Lateralizes to Right | Right ear: AC > BC (+)  
Left ear: AC > BC (+) | Left SNHL |
| Lateralizes to Right | Right ear: AC < BC (-)  
Left ear: AC > BC (+) | Right CHL |

Credit: Clinical Neurology, 10e, 2017
Sudden Hearing Loss: Evaluation

• Computed tomography (CT) of the head/brain should not be performed during initial evaluation of patients with presumptive sudden SNHL.

• Diagnosis of idiopathic sudden SNHL can be confirmed when:
  • hearing loss of at least 30 dB at three consecutive frequencies on audiometry, assuming an underlying condition is not identified by history and physical examination.

• Laboratory testing should not be routinely performed in patients with idiopathic sudden SNHL.

• MRI, auditory brainstem response, or follow-up audiometry should be performed to evaluate for retrocochlear pathology.

Sudden Hearing Loss: Management

• Glucocorticoids are considered first-line therapy for SSNHL and may be administered systemically (generally orally) or locally via intratympanic installation

• Offered treatment with oral glucocorticoids, after discussing risks, with the greatest likelihood of some response if started promptly after diagnosis, and within two weeks.

• Dose prednisone 1mg/kg/day (to 60mg max) as single dose for 10-14 day course.

• In addition to glucocorticoids, some experts suggest treatment with an antiviral agent for possible HSV-1 infection
Sudden Hearing Loss: Management

- Prognosis is reasonably good.
- 2/3 patients with idiopathic SSNHL will experience recovery, although this recovery is often not complete.
- Patients who have not improved within three months will generally not recover significantly.
- Prognosis is worse in patients who are older and may be worse in those with vertigo
- Obtain follow-up audiogram within 6 months of initial diagnosis

Case Vignette

- Lucy Ball is a 46 y/o elementary school teacher presents for evaluation of hoarseness for one week. She reports her voice gets weak at the end of the school day and sounds raspy. Her students often have difficulty hearing her instruction in class. She has rhinorrhea but denies symptoms of heartburn, is a non-smoker and has not had recent surgery.

Which of the following is indicated?

A. Referral and evaluation by speech pathologist to confirm diagnosis of hoarseness
B. Complete review of current medications, associated symptoms, and physical exam
C. Schedule a laryngoscopy
D. Computed tomography (CT) of the head and neck
E. Prescribe a histamine H2 antagonist
Key Points: Hoarseness

- Usually caused by benign condition
  - Acute laryngitis from URI or acute vocal strain
  - When laryngitis persists beyond 3 weeks it is defined as chronic
- Prompt evaluation to detect more serious condition
- Clinical diagnosis
  - Findings: altered voice quality, pitch, loudness which impairs communication or reduces voice quality of life
  - Reported by patient or proxy, or physician or both
  - No testing or evaluation is required unless severe or significant other symptoms
  - Hoarseness can be associated with discomfort speaking, increased phonatory effort, weak voice, and altered voice (shakiness, breathiness, raspy)
- Impact on quality of life

Hoarseness: Diagnosis

<table>
<thead>
<tr>
<th>Medication</th>
<th>Mechanism of Impact on Voice</th>
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<tr>
<td>ACE-I</td>
<td>Cough</td>
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<tr>
<td>Antihistamines, diuretics,</td>
<td>Drying effect on mucosa</td>
</tr>
<tr>
<td>anticholinergics</td>
<td></td>
</tr>
<tr>
<td>Antipsychotics</td>
<td>Laryngeal dystonia</td>
</tr>
<tr>
<td>Bisphosphonates</td>
<td>Chemical laryngitis</td>
</tr>
<tr>
<td>Danzol, testosterone</td>
<td>Sex hormone production</td>
</tr>
<tr>
<td>Inhaled steroids</td>
<td>Dose related mucosal irritation, fungal laryngitis</td>
</tr>
<tr>
<td>Anticoagulants</td>
<td>Vocal fold hematoma</td>
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</tbody>
</table>
Hoarseness: Diagnosis of Underlying Cause

• Warning symptoms:
  • SOB, hemoptysis, dysphagia, odynophagia, unilateral otalgia, airway compromised, weight loss, worsening symptoms, neurologic symptoms

• History of:
  • TOB, EtOH, Recent surgery, trauma, immunocompromised, foreign body

• Physical exam:
  • Voice quality
  • Neck mass

• Special population:
  • Hoarseness in neonate warrants prompt evaluation

Hoarseness: Evaluation and Treatment

• Laryngoscopy may be performed at any time, although it is recommended when:
  • Symptoms last 3 months
  • If a serious underlying cause is suspected
  • Symptoms persist for 2 weeks without signs of acute laryngitis

• CT or MRI should not be performed in patients with primary hoarseness before visualizing the larynx and vocal folds.

• Anti-reflux medications may be used if there are signs or symptoms of chronic laryngitis

• Oral corticosteroids and Antibiotics should not be routinely prescribed empirically

• Voice therapy indicated when hoarseness reduces voice-related quality of life

• Surgery indicated when suspected laryngeal malignancy, benign laryngeal soft tissue lesions, or glottic insufficiency

• Botulinum toxin injections indicated for the treatment spasmodic dystonia

• Preventive measures (voice rest, avoid whispering)
Case Vignette

Linda Blair is a 26 y/o female presents with dizziness that comes and goes for several weeks. She can’t identify any specific triggers for the dizziness. She has difficulty describing or characterizing the dizziness but sometimes feels the room spinning. At times she notices hearing loss and tinnitus with the dizziness.

Which of the following support the diagnosis of Meniere’s disease?

A. Episodic nature of dizziness
B. Lack of identifiable triggers associated with episodes of dizziness
C. Vertigo associated with unilateral hearing loss
D. Symptoms improve with low-salt diet and diuretic use
E. All of the above

Dizziness: Approach

• TiTrATE
• Timing of the symptom
• Triggers that provoke symptom
• And a Targeted Examination and Targeted eye movement exam.
• The responses place the dizziness into one of three clinical scenarios: episodic triggered (BPPV), spontaneous episodic (Meniere), or continuous trigger (gentamicin) or continuous spontaneous (post. fossa stroke)
Dizziness: Meniere disease

• Diagnostic criteria:
  • episodic spontaneous vertigo (at least two episodes lasting at least 20 minutes)
  • associated with documented low- to medium-frequency sensorineural hearing loss by audiometric testing in the affected ear and tinnitus or aural fullness in the affected ear.
  • auditory symptoms are initially unilateral
  • Excess endolymphatic fluid pressure leading to inner ear dysfunction; however, the exact cause is unknown.
  • Unidirectional, horizontal-torsional nystagmus during vertigo episodes. Also, N/V during attacks, no other neuro. symptoms.

Dizziness: Treatment of Meniere disease

• First-line treatment involves lifestyle changes:
  • limiting dietary salt intake to less than 2,000 mg /d
  • reducing caffeine intake
  • limiting alcohol to one drink / d
  • Add daily thiazide diuretic therapy if vertigo is not controlled w/ lifestyle changes
  • Transtympanic injections of glucocorticoids and gentamicin can improve vertigo.
  • Vestibular suppressant medications may be used for acute attacks. (Prochlorperazine, promethazine, and diazepam)
  • Surgery for refractory symptoms.
  • Vestibular exercises may be helpful for patients with unilateral peripheral vestibular dysfunction.
  • Vestibular rehabilitation for persistent tinnitus or hearing loss.
Case Vignette

Elmer Fudd is a 24 y/o ill-appearing male presents to you with fever, worsening throat pain, especially on the left side. On exam, trismus is present as patient has difficulty opening his mouth. His voice sounds muffled. Left tender swollen cervical lymph nodes are palpated. Oropharynx reveals tense swelling and erythema of the anterior tonsillar pillar and the uvula is deviated to the right.

Which of the following is the most appropriate next step?
A. The patient should be sent home with a 10-day course of macrolide antibiotic.
B. The patient should be given a dose of dexamethasone and told to return the following day.
C. Needle aspiration or incision and drainage should be performed.
D. Computed tomography is required before further evaluation.
E. Schedule patient for immediate tonsillectomy.

Peritonsillar Abscess: Evaluation

• Diagnosis based on clinical presentation and physical examination
• Differential diagnosis: peritonsillar cellulitis, retropharyngeal abscess, retromolar abscess, infectious mononucleosis, epiglottitis (esp. in children), and neoplasm (lymphoma or carcinoma).
• Peritonsillar cellulitis is distinguished by the absence of pus on needle aspiration.
• Thumb print lateral neck xray
• Imaging (contrast CT or intraoral ultrasonography) indicated when:
  • presence of an abscess remains uncertain after needle aspiration
  • If there is suspicion that infection has spread beyond the peritonsillar space or if there are complications involving the lateral neck space, CT or (MRI) is required.
• Infectious mononucleosis can coexist.
  • Test if splenomegaly, lymphadenopathy, bilateral tonsillar infection, etc.
Peritonsillar Abscess: Treatment

1. Drainage
   - Some type of drainage procedure is appropriate for most patients
   - Drainage or aspiration should be performed by skilled provider, in a setting where possible airway complications can be managed and the patient can be observed for a few hours afterward to ensure adequate fluid intake
   - After local anesthesia, aspirate.
   - Do not insert needle more than 8mm b/c carotid artery.

2. Antibiotic therapy

3. Supportive therapy for maintaining hydration

4. Pain control

Peritonsillar Abscess: Treatment

- Polymicrobial mixture of aerobic and anaerobic bacteria.
  - Group A streptococcus, Streptococcus milleri group (a subgroup viridans streptococci)
  - Fusobacterium necrophorum is predominant anaerobe

- Several suggested antimicrobial regiments options (po and iv)

- Macrolides should be avoided secondary to Fusobacterium resistance

- Indications for admission:
  - dehydration, inability to manage oral fluid intake, airway concerns (kissing tonsils), and failure of outpatient management.

- If the physician is inexperienced in treating peritonsillar abscess, or complications or questions arise during treatment, ENT should be consulted.
References