Differential Diagnosis

Dizziness– caused by many, many conditions

- Cardiologic
  - orthostatic HTN, arrhythmia, CAD, etc.
- Neurologic
  - Acoustic neuroma, TIA, stroke, Parkinson's, neuropathy, Migraine
- Hematologic
  - Anemia
- Psychological
  - Anxiety, panic

- Metabolic/Endocrine
  - Hypothyroidism
  - Menopause
- Orthopedic
  - Cervical disk disease
  - Lower extremity arthritis
- Geriatric
  - Proprioception
  - Center of balance
- Pharmacologic
  - Polypharmacy
  - Side effects
Differential Diagnosis

- Vertigo (a false impression of movement)
  - Peripheral (otologic)
    - Benign Paroxysmal Positional Vertigo (BPPV)
    - Meniere’s Disease
    - Acute Labyrinthitis / Vestibular Neuronitis
  - Central (Neurologic)
    - MS, Migraine HA’s, benign intracranial hypertension
BPPV (Benign Paroxysmal Positional Vertigo)

- Intermittent vertigo which lasts less than a minute, usually 10-15 seconds
- Provoked by supine head movements to the right or left
- Better when holding head still
- Caused by displaced otoliths in the semicircular canals
- Positive Dix-Hallpike maneuver
- Treated with Epley maneuvers
Meniere’s Disease

• A disorder of increased endolymphatic fluid pressure

• Classic Triad-
  Episodic SNHL, Vertigo x hours, and Roaring Tinnitus

• Low-frequency SNHL, ascending, and usually unilateral.

• Treatment:
  • Diuretics
  • Low sodium diet
  • Anti-vertigo medication
  • Surgery (to prevent vertigo)

• Surgical options include:
  • Endolymphatic sac decompression
  • Gentamicin injection
  • Labyrinthectomy
Labyrinthitis

- Infection or inflammation of the inner ear.
- Vertigo is severe, lasts 24-72 hours, is disabling.
- Vertigo subsides and the patient will have several weeks of imbalance.
- Treat acute vertigo with meclizine or diazepam.
- Treat chronic imbalance with physical therapy.
- If accompanied with sudden SNHL, treat with high dose prednisone.
Vertigo Recap

- BPPV - lasts seconds, head movements, no hearing loss
- Meniere’s - lasts several hours, associated hearing loss, tinnitus, ear fullness
- Labyrinthitis - lasts 1-3 days, gradual recovery with or without hearing loss
Sample PANRE question #4

Axel Rosenthal, age 43 presents with a complaint of loss of hearing in his right ear. Tuning fork tests revealed that air conduction is greater than bone conduction bilaterally. The Weber test lateralized to the left. What is the probable diagnosis?

a. Right sided conductive hearing loss
b. Right sided sensorineural hearing loss
c. Left sided conductive hearing loss
d. Left sided sensorineural hearing loss
e. The patient has normal hearing
Sample PANRE question #5

Pat Benicar is a 75 year old female who presents with momentary room-spinning vertigo which occurs whenever she looks up or rolls over in bed. She denies hearing loss, tinnitus, and ear fullness. What is the appropriate treatment?

a. Low salt diet, 1500-2000mg per day.

b. Meclizine 25mg TID

c. Prednisone, high dose x 12 days

d. Epley Maneuvers

e. Amoxicillin 500mg TID
Sample PANRE question #6

Gareth Brooks is a 54 year old man who presents for an evaluation of vertigo. Every few weeks, the patient will experience severe vertigo associated with ringing in the left ear and decreased hearing. What is the most appropriate first treatment for this condition?

a. Epley maneuvers  
b. Meclizine 25mg three times a day  
c. CT brain with contrast  
d. Initiate a low salt diet  
e. Start the patient on amlodipine 10mg daily
RHINOLOGY
Epistaxis

- Anterior- Kiesselbach’s plexus
- Posterior- Woodruff’s plexus
- Local risk factors
  - Digital manipulation
  - Septal deviation
  - Inflammation
    - (allergies, infection)
  - Cold dry air
  - Foreign body
  - Juvenile angiofibroma
  - Septal perforation
  - Drug use
    - Nasal steroids
    - Illicit drugs

Systemic Causes of Epistaxis
Systemic Causes of Epistaxis

- Clotting Disorder
- Hypertension
- Leukemia
- Liver disease
- Medication (aspirin, plavix, coumadin)
- Thrombocytopenia
- Wegener’s Granulomatosis
Epistaxis

- Treatment
  - Manual compression
  - Afrin
  - Cautery
  - Anterior/Posterior Packing
  - Surgical
    - Arterial Ligation
    - Embolization
    - Cauterization
Allergic Rhinitis

- IgE mediated reaction causing mast cells and basophils to release histamine, leukotriene, serotonin, and prostaglandins
- Common allergens: Grass/Tree pollen, mold, dust, dander
- This causes inflammation of the nasal mucosa.
  - Nasal congestion
  - Rhinorrhea
  - Sneezing
  - Itching
  - Watery eyes
  - Allergic Shiner
Allergic Rhinitis
Treatment

- Avoidance of allergens
- Nasal Saline lavage
- Nasal steroids
  - (fluticasone, mometasone, budesonide)
- Antihistamines
  - 2\textsuperscript{nd} generation (fexofenadine, cetirizine, loratadine)
  - Topical
    - nasal: (azelastine)
    - eye: (olopatadine, azelastine)
- Leukotriene inhibitor (monteleukast)
- Immunotherapy (allergy shots)
Nasal Polyposis

- Seen with chronic rhinosinusitis, Samter’s Triad, and cystic fibrosis
- Treat allergies
- Nasal steroids
- Systemic steroids
- Surgical if obstructive, frequent infections, bony destruction
Vasomotor (Non-Allergic) Rhinitis

- Similar to allergic rhinitis, but caused by non-allergy mediated inflammation due to irritation of nasal mucosa
  - Temperature
  - Exercise
  - Foreign body
  - Fumes
  - Food
  - Medication
Rhinitis Medicamentosa

- Drug induced rhinitis caused by overuse of topical decongestants (phenylephrine, oxymetazaline)

- Rebound congestion

- Treatment: STOP using the spray
  - May substitute nasal steroids or antihistamine
  - Afrin taper
  - Prednisone taper
**Viral Rhinitis**

- Upper respiratory tract infection caused by *adenovirus, parainfluenza, corona virus, rhinovirus* (and many more).

- Symptoms usually last <7 days
  - Sore throat
  - Nasal congestion
  - Rhinorrhea (may be yellow/green)
  - Fever
  - Cough (may be productive)
  - Malaise
  - Fatigue

- Treatment: Supportive and time. OTC antihistamines, decongestants, mucolytics, fluids, ibuprofen, acetaminophen, rest.
SINUSITIS
Acute Bacterial Rhinosinusitis (ABRS)

- Signs and Symptoms
  - Persistent Symptoms (>10 days)
    - Localized Facial Pain
    - Upper Tooth Pain
    - Purulent nasal discharge
    - Nasal congestion
  - Severe Sx (3-4 days):
    - Fever >102 AND
      - Purulent discharge OR
      - Facial pain
  - Double Sickening (3-4 days)
    - New onset of headache, fever, nasal d/c following viral URI which was improving after 5-6 days
Acute Sinusitis

- **Primary Treatment**
  - **Empiric Antibiotics**
    - **Pathogens**
      - *Strep. pneumo, H. flu, M. catarrhalis, Staph. aureus*
  
  - **1\textsuperscript{st} Line (7-10 days adults, 10-14 days children)**
    - Amoxicillin-clavulanate (Augmentin)
  
  - **2\textsuperscript{nd} Line (10-14 days)**
    - High dose amox/clav (2g BID or 90mg/kg/day BID)
    - Cephalosporins (Cefdinir)
    - Macrolides (clarithromycin, azithromycin)
    - Sulfa (SMX/TMP)
    - Doxycyline
    - Quinolones (levofloxacin, moxifloxacin)
    - Clindamycin
Chronic Sinusitis

Sinusitis for >12 weeks

Pathogens

- Same as acute (*S. pneumo, H. flu, M. cat., S. aureus*)
- *Klebsiella, Pseudomonas, Proteus, Enterobacter, MRSA*
- Consider anaerobic and fungal etiologies
- Consider antibiotic resistance as cause
  - Culture and sensitivity
- Consider structural abnormality: (non-contrasted CT Sinus) obtained after appropriate antibiotics
Sinus CT
Nasal Foreign Body

• Seen often in pediatrics

• Consider if patient has foul nasal odor, chronic nasal discharge, nasal obstruction, sinusitis

• Chronic foreign bodies can cause pressure ulcers, infection, abscess

• Once removed, treat with antibiotics if signs of infection are present
Small E. Biggs is one of your frequent patients who is Notorious for asking for antibiotics whenever he is sick. He complains of an itchy runny nose, nasal congestion, cough and post-nasal drip. His symptoms have been present for 2 months. What is the most effective medication for this patient?

a. Two pack of azithromycin 250mg
b. Diphenhydramine 25mg
c. Moxifloxacin 400mg a day
d. Guaifenesin/dextromethorphan elixir
e. Fluticasone nasal spray
PHARYNGITIS

Inflammation of the tonsils, pharynx and larynx
Pharyngitis

- Differential Diagnosis
  - Post-nasal drip
  - Viral pharyngitis
  - Group A strep
  - Tonsillitis
  - Mononucleosis
  - Peritonsillar abscess
  - Cancer
  - HIV
  - Rare: gonorrhea, HSV
Viral Pharyngitis

- **Pathogens**
  - adenovirus, coronavirus, rhinovirus, influenza, parainfluenza, coxsackievirus

- **Self-limiting illness**

- **Symptoms**
  - Erythema
  - Edema
  - Dysphagia
  - Pain
  - Fever
  - Lymphadenopathy
  - Upper respiratory illness symptoms

- **Resolves in 3-7 days**

- **Treat with OTC supportive meds**
Strep Pharyngitis

• Signs and Symptoms
  • Sore throat
  • Dysphagia and Odynophagia
  • Erythema (w/ or w/o exudate)
  • Airway obstructive symptoms
  • Tender lymphadenopathy
  • Fever and malaise

• Only a culture can distinguish between viral tonsillitis and GABHS
  • Rapid Strep Test
  • If negative, 24 hour culture

• Treat initially x 10 days
  • 1st Line: PenVK, Bicillin injection, Amoxicillin, Amox/clav
  • 2nd Line: 1st gen cephalosporin (not if PCN allergy), clindamycin, azithromycin, Quinolone
Acute Tonsillitis

- Bacterial (Usually GABHS) 15-30%
- Viral
  - EBV, CMV, HSV, adenovirus
- Symptoms: pain, odynophagia, lymph nodes, fever
- Treat: If bacterial, antibiotics. If viral supportive
Peritonsillar Abscess

- A collection of mucopurulent material in the peritonsillar space
- Often follows tonsillitis

Signs/Symptoms
- “Hot potato” voice
- Severe throat pain and dysphagia
- Inability to open jaw (trismus)
- Asymmetric swelling of soft palate
- Uvula deviation
- Copious salivation
- Fever, severe malaise
Peritonsillar Abscess

- Treatment
  - Incision and Drainage
  - Antibiotics with anaerobic coverage
    - Amox/clav
    - Clindamycin
Mononucleosis

- Pathogens
  - EBV- Epstein Barr Virus
  - CMV- Cytomegalovirus
- Most mono patients were asymptomatic
- Signs/Symptoms
  - Fatigue
  - Malaise
  - Severe sore throat with tonsillar edema/erythema/exudate
  - Lymphadenopathy
  - Hepatosplenomegaly
- Labs:
  - Monospot (heterophile antibody test)
  - CBC diff may show atypical lymphocytes
- Treatment: OTC, pain control, consider steroids, avoid contact sports, seatbelt counseling
Parotitis/Sialadenitis

- Painful swelling of parotid/salivary gland
  - Can often express pus from the parotid duct (Stensen duct)

- Bacterial - usually staph
  - Rarely: extrapulmonary TB

- Viral - Mumps

- Treat with antibiotics, sialagogues and warm compresses
Sialolithiasis

- Salivary duct calculus
- Most commonly located at the submandibular (Wharton’s) duct.
- Intense swelling of the salivary gland with salivation
- Symptoms subside between meals
- Treat with hydration, warm compresses, sialagogues.
- If not better, may need surgical removal.
Will I. Amherst is a 40 year old male who is seen on an urgent work-in for “sore throat” for the past 1 day. Upon exam he appears ill, is sitting uncomfortably with his neck extended. He speaks with a deep muffled voice. Upon exam, he is febrile, has trismus. His right soft palate is bulging, causing the uvula to shift past mid-line. The most likely diagnosis is:

a. Acute mononucleosis  
b. Acute streptococcal pharyngitis  
c. Acute peritonsillar abscess  
d. Viral pharyngitis  
e. Squamous cell carcinoma of the right tonsil
ORAL TUMORS AND LESIONS
Oral Candidiasis

- *Candida albicans*
- Usually when host flora is altered
  - Antibiotics
  - Steroid inhalers
  - Immunocompromised

- Signs:
  - Erythematous mucosa with white satellite lesions

- Treat with antifungals
  - Oral Nystatin solution
    - 5cc swish and swallow QID
  - Fluconazole
    - 200mg day 1, 100mg po day 2-5
Squamous Papilloma

- Caused by Human papilloma virus (HPV)
- Has the potential to become squamous cell carcinoma
- Excisional biopsy is recommended
- Often return despite biopsy
Leukoplakia

- Precancerous white plaque on a mucous membrane
- Can have different levels of dysplasia
  - Mild/Moderate/Severe
- Biopsy to confirm benign finding and stratify risk based on dysplasia
- Recommend routine monitoring
- Smoking cessation
Aphthous Ulcers

• Idiopathic ulcerations of mucous membranes
• Benign and self limiting
• Very painful, lasting 10-14 days
Oral Herpes Simplex

- Caused by herpes simplex virus. Very contagious.
- Painful grouped vesicles, located outside the oral cavity.
- Will crust over after 3-4 days
- Symptoms usually last 2 weeks.
- Treat with antivirals within 72 hours of symptoms (oral or topical)
Squamous Cell Carcinoma

Posterior Pharyngeal Wall

Lateral Surface of Tongue
Hoarseness

- Duration of symptoms
  - Acute or chronic

- Associated: sore throat, dysphagia, cough, hemoptysis, reflux, heartburn, allergies

- Occupation (teacher, singer, phone operator)

- Smoking and alcohol

- Recent surgery

- Thoracic Surgery
Hoarseness
Differential Diagnosis

- Acute but benign
  - Infectious Laryngitis
    - (viral, bacterial, or fungal)
  - Recent Intubation

- Acute and severe
  - Vocal Fold Paralysis
  - Vocal Cord Hemorrhage

- Chronic and benign
  - Allergic Post-Nasal Drip
  - LPR/GERD
  - Inflammation caused by irritants (smoking)
  - Vocal Abuse
  - Vocal Nodules, cysts, papilloma, and Polyps

- Chronic and severe
  - Cancer
Acute Laryngitis

- Usually self-limiting
- Can be caused by viral infection, vocal misuse, or exposure to noxious agents
- Treat with voice rest and fluids
- Smoking cessation a must
- Steroids and antihistamines not indicated
Squamous Cell Carcinoma of the Larynx

- Risks include Tobacco and ETOH
- Usually very hoarse
- Associated symptoms
  - Throat pain
  - Dysphagia/Odynophagia
  - Weight Loss
  - Ear pain
  - Hemoptysis
- Treated with a combination of modalities: Surgery, chemo, XRT
Sample PANRE question #9

Johnny Beck is a 75 year old man who complains of hoarseness and ear pain for the past 3 months. Associated symptoms includes pain when swallowing. What other finding would you expect to find on examination?

a. Axillary lymphadenopathy
b. 25 pound weight gain compared with his last visit
c. Bulging right tympanic membrane
d. Normal laryngoscopy exam
e. Exophytic lesion on left true vocal cord