**Epistaxis**

Pathophysiology

- Most nasal bleeding is anterior, originating from a plexus of vessels in the anteroinferior septum (kiesselbach’s area).
- Less common but more serious are posterior nosebleeds, which originate in the posterior septum overlying the vomer bone, or laterally on the inferior or middle turbinate.
- Posterior nosebleeds tend to occur in patients who have preexisting atherosclerotic vessels or bleeding disorders and have undergone nasal or sinus surgery.

Etiology

The most common causes of epistaxis are

- Local trauma (e.g., nose blowing and picking)
- Drying of the nasal mucosa
- Hypertension may contribute to the persistence of a nosebleed that has already begun but is unlikely to be the sole etiology.

History

- Which side began bleeding first
- Duration of bleeding
- Any triggers (e.g., sneezing, nose blowing, picking)
- Attempts by the patient to stop the bleeding.
- Melena may occur, and swallowed blood is a gastric irritant → vomiting blood.
- Associated symptoms prior to onset include symptoms of an URTI, sensation of nasal obstruction, and nasal or facial pain.
- The time and number of previous nose-bleeding episodes and their resolution should be identified.
- Symptoms of excessive bleeding, including easy bruising; bloody or tarry stools; hemoptysis; blood in urine; and excess bleeding with tooth brushing, phlebotomy, or minor trauma.
- Conditions associated with defects in platelets or coagulation, particularly cancer, cirrhosis, HIV, and pregnancy.
- Drug history: aspirin and other NSAID, other antiplatelet drugs (e.g., clopidogrel), heparin, and warfarin.

Physical examination

- Vital signs should be reviewed for indications of intravascular volume depletion (tachycardia, hypotension)
- Marked hypertension.
- During active bleeding, inspection is difficult (stop bleeding first)
- Anterior bleeding sites are usually apparent on direct examination.
- If no site is apparent and there have been only 1 or 2 minor nosebleeds, further examination is not needed.
• If bleeding is severe or recurrent and no site is seen, fiber optic endoscopy may be necessary.
• The general examination should look for signs of bleeding disorders, including petechiae, purpura, and perioral and oral mucosal telangiectasia’s as well as any intranasal masses.

Red flags
The following findings are of particular concern:
• Signs of hypervolemia or hemorrhagic shock
• Anticoagulant drug use
• Cutaneous signs of a bleeding disorder
• Bleeding not stopped by direct pressure or soaked pledgets
• Multiple recurrences, particularly with no clear cause

Testing
• Routine laboratory testing is not required.
• Bleeding disorder and those with severe or recurrent epistaxis should have CBC, PT, and PTT.
• Ct if foreign body, a tumor, or sinusitis is suspected.

Treatment
Bob mash page 166
1. First aid
   • Sit leaning forward
   • Pinch nose with thumb and forefinger over little’s area for 10 min
   • Ice packs on forehead and back of neck ➔ vasoconstrict
   • Cotton wool in nose and compress again
Professional help
• Blow nose or suction out clots
• Constrict mucous membrane with lignocaine – adrenaline mixture. Apply for 3 mins on cotton wool or tampon
• If bleeding visible as small clot ( <4mm) cauterize with silver nitrate stick. Then irrigate surrounding mucosa with normal saline and cotton wool. Dry nose
• If continues to bleed- pack nose – anterior tamponade. (gauze with ribbon socked in bismuth iodoform paraffin paste. Pack from floor upwards. Leave for 1 day
• If continue to bleed- remove packing and place 14f Foley catheter with 30ml balloon in nostril till it can bee see by tip of pharynx – inflate , then pack nose as above , deflate catheter in 12 hours ( posterior tamponade)

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• If digital pressure fails – vasoconstrictor – oxymetazoline 0.025% nose drops 1-2 drops in nose and then apply pressure
• Lidocaine spray 2% before packing
• Hb< 8 - packed red cells iv 10-15ml/kg
**Tonsillitis**
- Tonsillitis is inflammation of the pharyngeal tonsils.
- The inflammation usually extends to the adenoid and the lingual tonsils; therefore, the term pharyngitis may also be used.
- Most cases of bacterial tonsillitis are caused by group A beta-hemolytic *Streptococcus pyogenes* (GABHS).

**Signs and symptoms**

**Tonsillitis**
- Fever
- Sore throat
- Foul breath
- Dysphagia
- Odynophagia
- Tender cervical lymph nodes
- Airway obstruction may manifest as mouth breathing, snoring, sleep-disordered breathing, nocturnal breathing pauses, or sleep apnea.

**Peritonsillar abscess**
- Severe throat pain
- Fever
- Drooling
- Foul breath
- Trismus (difficulty opening the mouth)
- Altered voice quality (the hot-potato voice)
- Physical examination of a pt. almost always reveals unilateral bulging above and lateral to one of the tonsils.

**Diagnosis**
- Tonsillitis and PTA are clinical diagnoses.
- Testing is indicated when GABHS infection is suspected.
- Throat cultures are the criterion standard for detecting GABHS.
- For patients in whom acute tonsillitis is suspected to have spread to deep neck structures (i.e., beyond the fascial planes of the oropharynx), radiologic imaging using plain films of the lateral neck or CT scanning with contrast is warranted.
- In cases of PTA, CT scanning with contrast is indicated.

**Management**
- Supportive: maintain adequate hydration and caloric intake, control pain and fever.
- Corticosteroids may shorten the duration of fever and pharyngitis in cases of infectious mononucleosis (MN). - EBV
- GABHS infection obligates antibiotic coverage.
Tonsillectomy + adenectomy is indicated for the individuals who have experienced the following:

- More than six episodes of streptococcal pharyngitis (confirmed by positive culture) in 1 year
- Five episodes of streptococcal pharyngitis in 2 consecutive years
- Three or more infections of the tonsils and/or adenoids per year for 3 years in a row despite adequate medical therapy
- Chronic or recurrent tonsillitis associated with the streptococcal carrier state that has not responded to beta-lactamase-resistant antibiotics
- Because adenoid tissue has similar bacteriology to the pharyngeal tonsils and because minimal additional morbidity occurs with adenoidectomy if tonsillectomy is already being performed, most surgeons perform an adenoidectomy if adenoids are present and inflamed at the time of tonsillectomy.

**Peritonsillar abscess**

- Aspiration and incision and drainage (I&D).
- Antibiotics, either orally or intravenously, are required to treat PTA medically, although the condition is usually refractory to antibiotic therapy alone.

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- Empiric antibiotic treatment
- Ceftriaxone iv 80mg/kg/dose once daily
- Metronidazole iv 7.5 mg/kg/dose 8 hourly
- Change to oral Augmentin when tolerated
- Paracetamol for pain and fever

**EDL 2015 17.6**

**Peritonsilar abscess**

- Drainage with needle aspiration, incision and drainage or abscess tonsillectomy
- Antibiotics for 10 days
- Benzylpenicillin iv 2million units 6 hourly
- Metronidazole iv 500mg 8 hourly
- Switch to oral amoxicillin/clavulanic acid oral 875/125mg 12 hrly
- Pain – ibuprofen 8 hourly with meals
**Otitis media (OM)**
Any inflammation of the middle ear without reference to etiology or pathogenesis. It is very common in children.

Subtypes of OM
- Acute OM (aOM)
- OM with effusion (OME)
- Chronic suppurative OM
- Adhesive OM

**Signs and symptoms**
AOM implies rapid onset of disease associated with one or more of the following symptoms:
- Otolgia
- Otorrhea
- Headache
- Fever
- Irritability
- Loss of appetite
- Vomiting
- Diarrhea

OME often follows an episode of AOM.
- Hearing loss
- Tinnitus
- Vertigo
- Otolgia
- Clear fluid, no fever, no discharge.
- School teacher often picks up hearing loss
- Yellow sucked in eardrum

Chronic suppurative otitis media is a persistent ear infection that results in tearing or perforation of the eardrum.

Adhesive otitis media occurs when a thin retracted eardrum becomes sucked into the middle ear space and stuck.

**Diagnosis**
OME does not benefit from antibiotic treatment. Therefore, it is critical to distinguish normal middle ear status from OME or AOM.

**Examination**
- Pneumatic otoscopy remains the standard examination technique for patients with suspected
- Evaluation of the following four TM characteristics:
- Color – a normal TM is a translucent pale gray; an opaque yellow or blue TM is consistent with middle ear effusion (MEE)
- Position – in AOM, the TM is usually bulging; in OME, the TM is typically retracted or in the neutral position
- Mobility – impaired mobility is the most consistent finding in
patients with ome (flat line on tympanometry)
• Perforation – single perforations are most common

Adjunctive screening techniques
• Tympanometry, which measures changes in acoustic impedance of the tm/middle ear system with air pressure changes in the external auditory canal
• Acoustic reflectometry, - reflected sound from the tm; the louder the reflected sound, the greater the likelihood of an mee.

Management

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Aom
• Amoxicillin oral 500mg 8 hrly 5 days
• If above fails – amoxicillin/clavulanic acid 875/125 mg 12hrly 5d
• Patients with URTI consider : cetirizine po 10 mg dly
• Pain ibuprofen oral 400 mg 8 hrly

Csom
• Dry mopping – cloth rolled into wick until ear is dry
• Exclude Tb and check HIV status
• After cleaning acetic acid 2% alcohol topical 3-4 drops every 6 hours
• Plus ciprofloxacin oral 500mg 12 hourly 5 days

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Aom - amoxicillin po 30mg/kg/dose 8 hourly and paracetamol 15 mg/kg/dose 6 hourly

Eom – amoxicillin/clavulanic acid – po 30mg/kg/dose and chlorphenamine oral 0.1mg/kg/dose 6 hourly (controversial – can give decongestant oxymetazoline and consider grommet)

Csom
• Dry mopping.
• Wick soaked in acetic acid 1% nacl 0.9% for 1 min
• Dry mopping
• Ofloxacin drops x2 8 hourly after dry mopping for 4 weeks
OTITIS MEDIA

- Pulling at ears
- Pain after tympanic membrane ruptures
- Appetite
- Postauricular and cervical lymph node enlargement
- Sucking
- Aggravates pain
- Fever 104° common

Tx:
- Rx: Antibiotics
- Auralgan ear drops
- Anti-pyretics
- Tubes (Myringotomy)
Nasal polyps
Nasal polyps are fleshy outgrowths of the nasal mucosa that form at the site of dependent edema in the lamina propria of the mucous membrane, usually around the ostia of the maxillary sinuses.

Etiology
- Allergic rhinitis
- Acute and chronic infections
- Cystic fibrosis all predispose to the formation of nasal polyps.
- Bleeding polyps occur in rhinosporidiosis.
- Unilateral polyps occasionally occur in association with or represent benign or malignant tumors of the nose or paranasal sinuses. They can also occur in response to a foreign body.
- Nasal polyps are strongly associated with
  - Aspirin allergy
  - Sinus infections
  - Asthma

Symptoms include
- Obstruction and postnasal drainage
- Congestion
- Sneezing
- Rhinorrhea
- Anosmia
- Hyposmia
- Facial pain
- Ocular itching.

Diagnosis
Generally is based on physical examination. A developing polyp is teardrop-shaped; when mature, it resembles a peeled seedless grape.

Treatment
- Topical corticosteroid spray (e.g. beclomethasone 42mcg/spray)
- Sometimes surgical removal
- Polyps tend to recur unless the underlying allergy or infection is controlled.
- After removal of nasal polyps, topical beclomethasone retard recurrence.
- In severe recurrent cases, maxillary sinusotomy or ethmoidectomy may be indicated. These procedures are usually done endoscopically.
**TYMPANIC MEMBRANE PERFORATION**

**Causes**
- Insertion of objects into the ear canal
- Concussion caused by an explosion or open-handed slap across the ear
- Head trauma (with or without basilar fracture)
- Sudden negative pressure
- Barotrauma
- Iatrogenic perforation during irrigation or foreign body removal

**Penetrating injuries of the tm**
- Dislocations of the ossicular chain,
- Fracture of the stapedial footplate
- Displacement of fragments of the ossicles
- Bleeding
- Perilymph fistula from the oval or round window resulting in leakage of perilymph into the middle ear space
- Facial nerve injury.

**Symptoms and signs**
- Sudden severe pain
- Bleeding from the ear
- Hearing loss
- Tinnitus.
- Hearing loss is more severe if the ossicular chain is disrupted or the inner ear is injured.
- Vertigo suggests injury to the inner ear.
- Purulent otorrhea may begin in 24 to 48 h

**Diagnosis**
- Otoscopy
- Audiometry
- Irrigation and pneumatic otoscopy are avoided.
- Extremely small perforations may require otomicroscopy or middle ear impedance studies for definitive diagnosis.
- Audiometric studies are done before and after treatment (trauma-induced and treatment-induced hearing loss)

**Treatment**
- Ear kept dry
- Oral/topical antibiotics if dirty injury (e.g. amoxicillin) not routine
- Most perforations close spontaneously,
• Surgery is indicated for a perforation persisting > 2 mo.
• Persistent conductive hearing loss suggests disruption of the ossicular chain, necessitating surgical exploration and repair.

**ALLERGIC RHINITIS**

• An inflammation of the nasal membranes that is characterized by sneezing, nasal congestion, nasal itching, and rhinorrhea, in any combination

**Signs and symptoms**

- Sneezing
- Itching: nose, eyes, ears, palate
- Rhinorrhea
- Postnasal drip
- Congestion
- Anosmia
- Headache

- Earache
- Tearing
- Red eyes
- Eye swelling
- Fatigue
- Drowsiness
- Malaise

Complications of this allergic rhinitis include the following:

- Acute or chronic sinusitis
- Otitis media
- Sleep disturbance or apnea
- Dental problems (overbite): caused by excessive breathing through the mouth
- Palatal abnormalities
- Eustachian tube dysfunction

**Physical examination**

Nasal features of allergic rhinitis can include the following:

- Nasal crease: a horizontal crease across the lower half of the bridge of the nose; caused by repeated upward rubbing of the tip of the nose by the palm of the hand
- Thin, watery nasal secretions
- Deviation or perforation of the nasal septum: may be associated with chronic rhinitis, although there can be other, unrelated causes

Manifestations of allergic rhinitis affecting the ears, eyes, and oropharynx include the following:

- Ears: retraction and abnormal flexibility of the tympanic membrane
- Eyes: injection and swelling of the palpebral conjunctiva, with excess tear production; dennie-morgan lines (prominent creases below the inferior eyelid); and dark circles around the eyes (“allergic shiners”), which are related to vasodilation or nasal congestion
- Oropharynx: "cobblestoning," that is, streaks of lymphoid tissue on the posterior pharynx; tonsillar hypertrophy; and malocclusion (overbite) and a high-arched palate
Diagnosis

- Allergy skin tests: determining (IgE-mediated) hypersensitivity to specific allergens
- Radioallergosorbent test (RAST): as above
- Total serum IgE: neither sensitive nor specific for allergic rhinitis,
- Total blood eosinophil count: neither sensitive nor specific
- Imaging studies used in the diagnosis and evaluation of allergic rhinitis include the following:
  - X-ray – to exclude structural abnormalities
  - Ct/ MRI - acute or chronic sinusitis

Management

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- Incorrect technique of topical medicines is a common reason for treatment failure
  1. Avoid allergens and irritants
  2. Budesonide topical aqueous nasal solution 1 spray of 100mcg each nostril 12 hourly
  3. If persist – add cetirizine oral 10mg daily
  4. Nasal blockage – oxymetazonline 0.05% intranasally 8 hourly for 5 days max (rebound congestion if > 5 days)
  5. Failure of above – prednisone 30mg daily for 5 days (continue topical steroid)
**Sinusitis**

1. Acute (completely resolved in < 30 days)
2. Sub acute (completely resolved in 30 to 90 days)
3. Recurrent (≥ 4 discrete acute episodes per year, resolved in < 30 days, with at least 10 days between complete resolution
4. Chronic (lasting > 90 days).

**Acute sinusitis**
- In immunocompetent patients almost always viral (e.g., rhinovirus, influenza, parainfluenza).
- Occasionally, a periapical dental abscess of a maxillary tooth spreads to the overlying sinus.
- Hospital-acquired acute infections are more often bacterial.
- May have acute invasive fungal sinusitis (see invasive sinusitis in immunocompromised patients).

**Chronic sinusitis**
- Chronic allergies
- Structural abnormalities (e.g., nasal polyps)
- Environmental irritants (e.g., airborne pollution, tobacco smoke),
- Mucociliary dysfunction,
- Organisms are commonly bacterial but may be fungal.
- Fungal infections tend to strike the elderly and immunocompromised patients.

**Allergic fungal sinusitis**
- Diffuse nasal congestion
- Markedly viscid nasal secretions
- Nasal polyps.
- It is an allergic response to the presence of topical fungi, often aspergillus, and is not caused by an invasive infection.

**Invasive fungal sinusitis** is an aggressive, sometimes fatal, infection in immunocompromised patients, there is necrosis of nasal or palatal mucosa and orbitals involvement – mucormycosis

**Risk factors**
- Factors that obstruct normal sinus drainage (e.g., allergic rhinitis, nasal polyps, nasogastric or nasotracheal tubes)
- Immunocompromised states (e.g., diabetes, HIV infection).
- Prolonged ICU stays, severe burns, cystic fibrosis, and ciliary dyskinesia.

**Pathophysiology**
- Swollen nasal mucous membrane obstructs the ostium of a paranasal sinus, and the o2 in the sinus is absorbed into the blood vessels of the mucous membrane.
The resulting relative negative pressure in the sinus is painful.
A transudate from the mucous membrane develops and fills the sinus.
The transudate serves as a medium for bacteria that enter the sinus through the ostium or through a spreading cellulitis or thrombophlebitis in the lamina propria of the mucous membrane.
An outpouring of serum and leukocytes to combat the infection results, and painful positive pressure develops in the obstructed sinus.
The mucous membrane becomes hyperemic and edematous.

Complications
Local spread of bacterial infection, causing periorbital or orbital cellulitis, cavernous sinus thrombosis, or epidural or brain abscess.

Symptoms and signs
- Purulent rhinorrhea
- Pressure and pain in the face
- Nasal congestion
- Obstruction
- Hyposmia
- Halitosis
- Productive cough (especially at night).
- Often the pain is more severe in acute sinusitis.
- The area over the affected sinus may be tender, swollen, and erythematous.
- Maxillary sinusitis - toothache, and frontal headache.
- Frontal sinusitis - frontal headache.
- Ethmoid sinusitis causes pain behind and between the eyes, a frontal headache often described as splitting, periorbital cellulitis, and tearing.
- Sphenoid sinusitis causes less well localized pain referred to the frontal or occipital area.
- Malaise may be present.
- Fever and chills suggest an extension of the infection beyond the sinuses.

Manifestations of complications include periorbital swelling and redness, proptosis, ophthalmoplegia, confusion or decreased LOC and severe headache.

Diagnosis
- Clinical evaluation
- Sometimes CT
- Cultures – immunocompromised or hospital acquired
**Pediatrics**
- Ddx URTI or foreign body
- Bacterial sinusitis is suspected when purulent rhinorrhea persists for > 10 days along with fatigue and cough.
- Fever is uncommon.
- Ct is avoided because of concerns about radiation exposure

**Management**
PEDL 17.10 2013
- Acute – amoxicillin , paracetamol, oxymetazalone
- Chronic - identify underlying causes- paracetamol – no need for antibiotics

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- Bacterial complicated - extended to orbit, intracranially or periosteal abscess
- Ceftriaxone iv 2g 12 hourly and refer

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**IS IT A COLD OR THE FLU?**

- Rare Headache
- Normal Temp
- Slight Aches & Pains
- Sneezing
- Runny Nose
- Sore Throat
- Mild to Moderate Hacking Cough
- Prominent Headache
- Sudden Onset of Temp 102° - 104° (lasts 3-4 days)
- Severe Aches & Pains
- Extreme Fatigue & Weakness (lasts 2-3 weeks)
- Severe Cough
- Chest Discomfort

- Rx: Rest
- Fluido
- Tissue
- Antihistamine
- Analgesia
- Antiviral
- Antimicrobial

- Rx: Soup
- Lemon
- Broth
- Fluids
- Steam
1. Epiglottitis
   - Severe sudden airway obstruction
   - H.influenza, herpes, trauma, chemicals heat
   - TX:
     - Humidified o2
     - 10 days ceftriaxone iv 1g daily → switch to oral
       amoxicillin/clavulanic 12 hourly (875/125)
     - Acute stage – hydrocortisone iv 100mg stat, adrenaline 1:1000 IMI
       nebulized (dilute with 0.9% NaCl 4-6 hourly)

2. Mastoiditis
   - Usually complicating otitis media – needs x-ray to confirm
   - Treatment: ceftriaxone iv 1g 12hourly

3. Otitis externa – necrotizing
   - Severe otalgia/otorhea unresponsive to medical therapy → cranial nerve palsies
   - P. Aerginosa (most common)
   - Associated with elderly, diabetics, immunocompromised
   - TX – debridement, insert dry wick for 2 days, ciprofloxacin

4. Vertigo
   - Peripheral
     - Including benign paroxysmal positional vertigo (positive dix-hallpike test)
     - Aminoglycoside, vestibular toxicity, vestibular neuritis (dizziness, recent flu, tinnitus, new deafness for two weeks)
   - Central – brainstem or cerebellar dysfunction
   - TX:
     - Find cause
     - BPPV – Epley maneuver
     - Symptomatic relief → promethazine 10mg 8 hourly (sedating)

5. Neurofibromatosis – genetic
   - Benign/ malignant tumor involving central/peripheral nerves causes pigmented skin macules
   - Benign is more common
   - Café-au-lait spot, freckle like macules distributed over trunk, pelvis, flexor creases of elbows and knees, vertebral scalloping, scoliosis, thinning of long bone cortex, absence of greater wing of sphenoid bone
   - NF 1 – cutaneous, neurologic, bone abnormalities
   - NF 2 – bilateral acoustic neuromas
   - TX – benign – removal surgically, malignant – radiotherapy