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ENT Emergencies

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I. Otalgia

- Acute suppurative otitis media
- External otitis
- Referred from infection, neoplasm, dental
- Temperomandibular joint (TMJ)
- Herpes Zoster
- Mastoiditis
- Chrondritis
A. Acute Otitis Media: suppurative

• **Diagnosis**
  Appearance of TM: dull, red, loss of landmarks
  Decreased mobility of TM
  Hearing Loss

• **Treatment**
  Antibiotics: *Amoxicillin*, Septra, Bactrim, Ceclor, Pedialyte (40 mg/Kg/day in pediatrics)
  Decongestants?
  Myringotomy? (rarely needed)

• **Pitfalls**
  Overdiagnosed; must have hearing loss
  Don’t miss mastoiditis / meningitis
B. **External Otitis**

- **Diagnosis**
  - Normal hearing (unless canal edema or debris)
  - Pain on movement of pinna
  - History of swimming, Q-tips, itching

- **Treatment**
  - Topical antibiotics: Cortisporin, Vasocidin
  - Systemic antibiotics if pinna erythematous
  - Water avoidance
  - Clean debris from ear canal
  - Wick if necessary
  - Analgesics

- **Pitfalls**
  - Don’t miss chondritis
  - Failure of treatment or recurrences: patient compliance, predisposing etiology not eliminated, sensitivity to topical antibiotics, otomycosis
C. Acute Myringitis (Bullous)

- **Diagnosis**
  - Herpetic-like, painful blebs on TM
  - Purplish hue
  - Viral etiology; Mycoplasma
  - Fever, hearing loss

- **Treatment**
  - Self-limited
  - E-Mycin or azithromycin?
  - Relieve pain: open blebs? Auralgan
D. Referred Otalgia

- **Diagnosis**
  - Normal ear exam
  - High index of suspicion: smoking, alcohol
  - ENT exam: pharyngitis, erupting or infected dentition, neoplasm
  - History: hoarseness, odynophagia

- **Treatment**
  - Treat underlying disease

- **Pitfalls**
  - Lack of confidence in ear exam
E. TMJ Syndrome

- **Diagnosis**
  - Normal ear exam
  - Normal hearing
  - Tender over joint
  - Crepitus or popping of joint
  - Ill-fitting dentures or bruxism

- **Treatment**
  - Soft diet
  - Anti-inflammatory analgesics (Motrin)
  - Heat
  - Dental consultation (consider referral to TMJ specialist)

- **Pitfalls**
  - Don’t miss referred otalgia from occult neoplasm
  - Frequently overlooked diagnosis
F. Herpes Zoster

• **Diagnosis**
  Vesicles appear 24 to 48 hours after otalgia
  Other cranial neuropathies may be present
  (Ramsay-Hunt Syndrome)

• **Treatment**
  Systemic steroids early
  Secondary infection: antibiotics?

• **Pitfalls**
  Impossible diagnosis first 24 hours before vesicles
G. Mastoiditis

- **Diagnosis**
  - Swelling, tenderness, erythemia over mastoid
  - Hearing loss, febrile, toxic
  - Otitis media on exam

- **Treatment**
  - Systemic antibiotics
  - Admission for IV antibiotics
  - Drainage of abscess?
  - Myringotomy?

- **Pitfalls**
  - Too much emphasis on X-rays; misleading
  - Not a subtle diagnosis; patients with it always look sick
H. Chondritis

- **Diagnosis**
  - Exquisite tenderness
  - Erythema, induration, purulence

- **Treatment**
  - Admission to hospital
  - IV antibiotics
  - Drainage and/or debridement

- **Pitfalls**
  - Failure to recognize
  - Failure to treat aggressively
II. Otorrhea DDx:

- CSF leak
- Acute otitis media with perforation
- Infected chronic perforation
- Infected cholesteatoma
- Infected myringotomy tube
- Eczema ear canal
ENT Emergencies

A. CSF Leak

• **Diagnosis**
  History of trauma; spontaneous leaks rare
  Characteristics of fluid

• **Treatment**
  Neurologic consultation
  Systemic antibiotics
  Water avoidance

• **Pitfalls**
  Failure to recognize
B. **Acute Otitis Media (with perforation)**

- **Diagnosis**
  
  History: Pain, relief with otorrhea
  
  Examination of TM

- **Treatment**
  
  Systemic antibiotics
  
  Water avoidance
  
  Topical antibiotics? (not all ENT’s think necessary)
  
  Most will resolve spontaneously

- **Pitfalls**
  
  Failure to caution regarding water in canal
C. Chronic Perforation (infected)

- **Diagnosis**
  - Frequently painless
  - Usually drainage is foul, recurrent
  - History of “hole in eardrum”, childhood ear disease
  - Long history of hearing loss, even when not draining

- **Treatment**
  - Topical antibiotics (Cortisporin)
  - Systemic antibiotics?
  - Culture not necessary acutely
  - Water avoidance

- **Pitfalls**
  - Inadequate follow-up, patient noncompliance
  - Systemic antibiotics only
  - Failure to instruct regarding water in canal
D. Infected Myringotomy Tube

- **Diagnosis**
  
  History of tube placement
  
  Pain may or may not be present
  
  May not be able to see tube

- **Treatment**
  
  Systemic antibiotics (Amoxicillin, Bactrim)
  
  Topical antibiotics (Cortisporin)
  
  Water avoidance

- **Pitfalls**
  
  Failure to use drops
  
  Failure to instruct regarding water in canal
  
  Inadequate follow-up
E. Eczema of Ear Canal

- **Diagnosis**
  - Recurrent external otitis
  - Chronic itching
  - Weeping of the canals

- **Treatment**
  - Topical steroids (Synalar solution 0.01 %, Kenalog cream 0.025 %)

- **Pitfalls**
  - Failure to recognize
  - Treatment with wrong ear drops
III. Hearing Loss

- Serous otitis media
- Severe external otitis
- Cerumen
- “Sudden” neurosensory hearing loss
- Temporal bone fracture
A. Serous Otitis Media

• **Diagnosis**
  - Appearance of TM
  - Mobility of TM
  - History of preceding URI or allergy

• **Treatment**
  - Antibiotics ?
  - Decongestants ?
  - Antihistamines if allergic symptoms
  - ENT follow-up

• **Pitfalls**
  - Don’t miss occult neoplasm if otitis is unilateral
B. Cerumen impaction

- **Diagnosis**
  - Ear exam
  - History: Hearing loss after showering

- **Treatment**
  - Irrigation if no history of underlying pathology
  - Mechanical removal carefully
  - Chemical softeners (Debrox, Cerumenex, Murine)
  - Hydrogen peroxide

- **Pitfalls**
  - Over-zealous removal
  - Sensitivity to softeners
  - Failure to irrigate after softening
C. “Sudden” Neurosensory Hearing Loss

- **Diagnosis**
  Sudden, often profound loss of hearing
  Frequently accompanied by tinnitus, vertigo
  Normal TM

- **Treatment**
  Steroids ?
  ENT follow-up ; diagnosis of exclusion

- **Pitfalls**
  Failure to arrange follow-up
IV. Ear Trauma

- Temporal bone fracture
- Perforated TM
- Lacerated pinna
- Auricular hematoma
A. Temporal Bone Fracture

• Classification

*Longitudinal* (75 %) ; parietal force
- Hemorrhagic otorrhea, torn TM
- Conductive hearing loss
- CSF otorrhea common
- 20 % facial paralysis

*Transverse* (20 %) ; occipital force
- Hemotympanum
- Neurosensory hearing loss
- Vertigo
- 50 % facial paralysis

*Mixed* (5 %)
Temporal Bone Fracture (cont.)

**Diagnosis**
- Loss of consciousness frequent but not necessary
- Bloody otorrhea or hemotympanum is hallmark
- Hearing loss always present
- Radiographs have limited value
  - Skull series have 50% false negative rate
  - CT scan for persistent otorrhea or facial paralysis

**Treatment**
- Observe neurologically as skull fracture
- Antibiotics if CSF leak apparent
- Hearing loss: no immediate treatment
- Steroids have no proven value
- Vertigo: treat symptomatically (Meclizine)
- Facial paralysis: early exploration if onset immediate

**Pitfalls**
- Treat foremost as skull fracture
- Failure to examine face initially
B. **Perforated Tympanic Membrane**

- **Diagnosis**
  
  History: sudden loss of hearing, pain, ? vertigo
  Perforation can usually be visualized

- **Treatment**
  
  If not contaminated, antibiotics not necessary
  If contaminated (water) use systemic (and topical ?)
  antibiotics
  Water avoidance
  Most heal spontaneously

- **Pitfalls**
  
  Failure to instruct regarding water in canal
C. **Lacerated Pinna**

- Meticulous skin closure (esp. helix)
- Direct cartilage suturing rarely necessary
- Prophylactic antibiotics for staph
- Local block will facilitate suturing
- If meatus involved, use wick; acts as stent to prevent canal stenosis (pack with cotton)
- Pressure dressing
- Close, **early** follow-up
- **Pitfalls**: Failure to stent meatus
  - Failure to arrange early follow-up
D. Auricular Hematoma

- **Diagnosis**
  - Loss of pinna contour
  - Fluctuance

- **Treatment**
  - Incision, drainage, placement of drain
  - Pressure dressing
  - Antibiotics
  - Close, early follow-up

- **Pitfalls**
  - Aspiration alone rarely successful
  - Failure to arrange early follow-up
  - Failure to place pressure dressing
V. Foreign Bodies in the Ear Canal

• General
V. Foreign Bodies in the Ear Canal (cont.)

- Treatment
  - Insects: immobilize with mineral oil, alcohol or xylocaine
  - Vegetable matter: no water or ear drops before removal
  - Suction apparatus useful
  - Antibiotic ear gtts after removal if canal inflamed
V. Foreign Bodies in the Ear Canal (cont.)

- Pitfalls
  - Overly aggressive attempts at removal
  - Ear drops before removal
  - Failure to caution regarding water before and after
  - Failure to record hearing
VI. Rhinorrhea

- Allergic rhinitis
- Sinusitis
- Vasomotor rhinitis
- CSF
- URI
A. Rhinitis

- **Diagnosis**
  - Duration of symptoms
  - History of trauma or surgery
  - Seasonal variation
  - Other allergy symptoms
  - Facial pressure or pain in teeth
  - Characteristics of drainage

- **Treatment**
  - Antihistamines (Claritin: no drowsiness)
  - Intranasal steroids (Vancenase, Beconase, Nasalcrom, Nasalide)
  - Decongestants
B. **Acute Sinusitis**

- **Diagnosis**
  - Purulent nasal drainage
  - Radiographic evidence

- **Treatment**
  - Topical decongestants
  - Systemic decongestants and antihistamines (Entex)
  - Antibiotics (Amoxicillin, Bactrim, Azithromycin)

- **Pitfalls**
  - Over diagnosis based on symptoms or X-ray
  - Inadequate duration of treatment
  - CT more accurate and sensitive than plain films
VII. Epistaxis
   A. Etiology
      - Nose picking: most common
      - Foreign body
      - Trauma
      - Blood dyscrasias
      - Nasal or sinus neoplasm
      - Nasal or sinus infection
      - Vitamin deficiency
      - Toxic metallic substances
      - Dry mucosa
      - Septal deformity
      - Atrophic rhinitis
      - Hereditary hemorrhagic telangiectasia
      - Angiofibroma
      - Cerebral aneurysm rupture
      - Hypertension?: only if very severe
VII. Epistaxis (cont.)

B. Evaluation
   • Determine site of bleeding if possible
     ▪ Suction and illumination
     ▪ Avoid vasoconstrictors until site is determined
   • Hb, Hct if prolonged or excessive bleeding
   • Coagulation tests if indicated by history

C. Treatment
   • Vasoconstrictors and anesthesia (cocaine) ; not always needed
   • Pressure for 10 minutes
   • Blood pressure control (questionably helpful)
   • Electro or chemical cautery
   • Correct coagulation abnormalities
   • Anterior nasal packing : if cautery doesn’t work
   • Pterygo palatine injection
   • Posterior nasal packing : if done → the patient must be admitted
   • Operating room
     ▪ Repack / septoplasty
     ▪ Arterial ligation
VII. Epistaxis (cont.)

D. Nasal Packing

- Consider hospitalization
  - Unreliable patients
  - Poor risk
  - Recurrent bleeders
  - Uncontrolled bleeders
- Topical and systemic antibiotics (prevent sinusitis)
- Topical analgesia (cocaine)
- Type of nasal pack
  - Continuous gauze
  - SMR packs
  - Balloon catheters
- Bilateral packing is more effective
- Analgesics for pain and BP control
- Examine posterior pharynx after packing
- Leave in place 48 to 72 hours
VII. Epistaxis (cont.)
  E. Pitfalls

  • Failure to examine posterior pharynx after “control”
  • Failure to aggressively treat (admit) after multiple visits
  • Be suspicious of hematemesis
  • Failure to determine site of bleeding
  • Ineffective anterior packing
VIII. Nasal Trauma

- Fractures
- Lacerations
- Hematomas
A. Nasal Fractures
   • **Diagnosis**
     Clinical examination most useful
     Radiographs have limited value
     Uncommon in young children
   • **Treatment**
     Indications for closed reduction: nasal obstruction or cosmetic deformity
     Timing of therapy is critical
     “Open” fractures have low infection rate
     Emergent reduction not necessary except to control epistaxis
   • **Pitfalls**
     Failure to recognize septal hematoma
     Failure to recognize CSF leak
     Failure to arrange timely follow-up
     Extent of injury may not be evident for several days
     Reduction must take place within 2 weeks
B. Nasal Septal Hematomas
   • **Diagnosis**
     Nasal obstruction is hallmark
     Marked increase in septal width
   • **Treatment**
     Incise and drain
     Antibiotics (Keflex)
     Pack nose both sides
     Follow-up 24 hours
   • **Pitfalls**
     Failure to recognize septal hematoma
     Aspirated rather than incision & drainage
     Failure to arrange 24 hour follow-up
     Failure to pack nose
C. Nasal Lacerations

Treatment

Meticulous closure

Antibiotic ointment

Early suture removal
IX. Nasal Foreign Bodies

- **Diagnosis**
  - Frequently presents as unilateral rhinorrhea
  - Can visualize in nose after decongesting

- **Treatment**
  - Decongest and anesthetize (cocaine, Pontocaine)
  - Conservative attempt at removal (alligator forceps)
  - Antibiotic coverage

- **Pitfalls**
  - Overzealous attempts at removal
  - Push foreign body “deeper” in nose
  - Failure to look for other foreign bodies
  - Failure to diagnose in young child with otorrhea
X. **Sinus Trauma**
   
   A. **Frontal Sinus Trauma**
      
      • **Diagnosis**
        Plain films may miss posterior table fracture
        CT scan indicated in all patients where suspicion of this fracture exists
      
      • **Treatment**
        If posterior table or nasofrontal duct involved, may need exploration
        Cosmetic repair for anterior table fractures
      
      • **Pitfalls**
        Long-term late sequelae if not diagnosed and treated appropriately
        Failure to obtain CT scan
B. Maxillary Sinus Trauma

• **Diagnosis**
  
  Fractures frequently visible on plain films
  
  Infraorbital anesthesia, epistaxis

• **Treatment**
  
  Antibiotic prophylaxis
  
  No surgical treatment unless functionally or cosmetically disabled
XI. Vertigo

- **Diagnosis**
  Must distinguish vertigo and dysequilibrium from lightheadedness and syncope

- **Treatment**
  Diazepam (Valium) 5 to 10 mg IV or PO
  Meclizine (Antivert) 12.5 to 25 mg PO
  Transderm scopolamine
XII. Sore Throat

- Pharyngitis / tonsillitis
- Supraglottitis
- Neoplasm
A. Pharyngitis

• Bacterial
  Strep (groups A,C,G.)
  Neisseria gonorrhea : mild symptoms
  Corynebacterium diphtheria : severe symptoms

• Viral
  Herpangina : fever, vesicles
  Mononucleosis : steroids?
  Measles and varicella
  Parainfluenza, rhinovirus, Herpes simplex
  Pharyngoconjunctival fever (adeno virus)
  Cytomegalovirus : mimics mono
  Acute lymphonodular pharyngitis : Coxsackie

• Fungal

• Miscellaneous

• Systemic

B. Supraglottitis (see below)
ENT Emergencies

XIII. Difficulty Breathing

- Supraglottitis
- Laryngotracheobronchitis
- Neoplasm
- Bilateral vocal cord paralysis
- Tonsillar hypertrophy
- Angioedema
- Laryngospasm
- Psychogenic
- Foreign body
A. **Difficulty Breathing**: general considerations

- **Evaluation**
  - Must be able to perform indirect exam
  - Must differentiate stridor from wheezing
  - Stridor demands immediate diagnosis and treatment

- **Treatment**
  - Know the etiology before attempting to relieve the obstruction.
  - If acute airway control is necessary, intubate, if possible before tracheostomy.
    - Posture to optimize airway
    - Steroids (delayed benefit)
    - Racemic epinephrine
    - Helium – oxygen
      - 8 liters/min Heliox = 40% helium
      - Heliox = 80% helium 20% O₂

- **Pitfalls**
  - If laryngeal pathology is present, intubation attempt may precipitate laryngospasm
  - Do not delay airway control if obstruction is probable
B. Emergent Tracheostomy

- Cricothyrotomy is usually safer, easier than tracheostomy
- Penumothorax following sudden establishment of airway is not rare
- Large bore needle technique?
- Retrograde wire intubation may be quicker and better
C. **Acute Laryngotracheobronchitis (Croup)**

- **Diagnosis**
  - Age 3 months to 3 years
  - Slow onset
  - Low grade fever, croupy cough, URI, hoarse, stridor
  - X-ray shows “steeple sign”

- **Treatment**
  - Airway support: may need intubation (rarely)
  - PO or IM dexamethasone 0.6 mg / kg
  - Racemic epinephrine aerosol if severe
  - Humidity (?)
  - Antibiotics ? (rarely useful)

- **Pitfalls**
  - Failure to differentiate from epiglottitis
  - May require hospitalization
D. Acute Epiglottitis

• Diagnosis
  Age 3 to 7 years
  Sudden onset
  Sore throat, stridor, high fever, normal voice
  X-ray shows “thumbprint sign”

• Treatment
  Minimal disturbance
  Arrange controlled intubation in OR if possible

• Pitfalls
  Failure to diagnose
  Failure to intubate once diagnosed
  Precipitate laryngospasm
    Tongue blade or mirror
    Irritate child (O₂, blood draw)
  Send to X-ray without airway support
  Attempt intubation in ER
XIV. Voice Change

- Laryngitis
- Vocal nodules
- Neoplasm
- Vocal cord paralysis: acute idiopathic; common
- Psychogenic: mouths words, no sound at all
- Metabolic
A. Voice Change: general considerations

- **Evaluation**
  - Quality of voice: breathy, coarse, hesitant, non-existent
  - Duration: persistent or recurrent
  - Airway patency
  - Risk factors: smoking, voice abuse, preceding URI

- **Pitfalls**
  - Failure to visualize cords (or refer) for hoarseness present longer than 2 to 3 weeks
  - Failure to inquire re: airway compromise
B. Acute Laryngitis

• **Diagnosis**
  
  Diffusely erythematous vocal cords with or without edema
  
  Voice abuse or URI history likely
  
  Prolonged symptoms in smoker

• **Treatment**
  
  Voice rest
  
  Stop smoking
  
  Humidity
  
  Steroids: useful for singers
  
  Antibiotics? (seldom useful)
XIV. Foreign Body Sensation

• Foreign body
• *Globus pharyngeus*: spasm of cricopharyngeus muscle
• Tonsilith
• Neuralgia
Foreign Body : general instructions

• Evaluation
  Direct and indirect exam ; look for mucosal injury
  Soft tissue x-rays : recognize the normal calcified structures
  Barium swallow
  Follow-up

• Pitfalls
  Inadequate follow-up
  Over-reading x-rays
XV. Neoplasm

- Stricture
- Zenker’s diverticulum
- Cricopharyngeal spasm
- Neuromuscular
- Psychogenic
- Foreign body
Difficulty Swallowing: general instructions

• Evaluation
  Weight loss
  Persistent or recurrent
  Liquids or solids
  Regurgitation of undigested food
  Aspiration
  Indirect exam and esophagogram

• Pitfalls
  Inadequate follow-up
  Failure to recognize dehydration
XVI. Abscess

- Peritonsillar
- Retropharyngeal
- Prevertebral
- Neck
A. **Abscess** : General considerations
   - Soft tissue x-rays ; often not helpful
   - CT scan : most reliable
   - Ultrasound

B. **Peritonsillar Abscess**
   - Evaluation : Unusual before 48 hours of symptoms
   - Usually occurs anterior / superior to tonsil
   - Differentiate abscess from cellulitis
C. Other Abscesses

- Retropharyngeal
  Lateral x-rays always abnormal
  C-2 normal prevertebral space 1 to 7 mm
  C-6 normal prevertebral space 10 to 20 mm

- Parapharyngeal
  Toxic
  Diffuse neck swelling and tenderness
  Can be difficult to diagnose

- Cervical adenitis
  Usually jugulodigastric
  Usually Staph
  IV antibiotics, admission
  Incision & drainage if abscessed
Addendum

I. Antibacterial Otic Drops
   A. With Neomycin
      • Cortisporin
      • Otobiotic
      • Otocort
      • Colymycin
   B. Without Neomycin
      • Aerosporin
      • Lidosporin
      • Pyocidin
      • Chloromycetin
      • Garamycin
      • Vasocidin
II. Antibacterial Otic Drops
   • Aqueous merthiolate
   • Cryselate

III. Otic Drops Without Antibiotics

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