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ENT Emergencies

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ENT Emergencies

I. Otalgia

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

ENT Emergencies

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, Pediazole (40 mg/Kg/day in pediatrics)
  - Decongestants ?
  - Myringotomy ? (rarely needed)
- Pitfalls
  - Overdiagnosed ; must have hearing loss
  - Don't miss mastoiditis / meningitis

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

III. Hearing Loss

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

ENT Emergencies

A. Serous Otitis Media

- Diagnosis
  - Appearance of TM
  - Mobility of TM
  - History of preceeding URI or allergy
- Treatment
  - Antibiotics ?
  - Decongestants ?
  - Antihistamines if allergic symptoms
  - ENT follow-up
- Pitfalls
  - Don’t miss occult neoplasm if otitis is unilateral

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

IV. Ear Trauma

- Temporal bone fracture
- Perforated TM
- Lacerated pinna
- Auricular hematoma

ENT Emergencies

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 %)

ENT Emergencies

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

ENT Emergencies

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 contamined (water) use systemic (and topical ?) antibiotics
  - Water avoidance
  - Most heal spontaneously
- Pitfalls
  - Failure to instruct regarding water in canal

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

V. Foreign Bodies in the Ear Canal

- General

  Grossly assess hearing before and after removal if possible and record.

  Do not attempt removal in uncooperative child.

  Avoid multiple attempts at removal.

  Water avoidance before and after removal.

  Emergent removal rarely necessary.

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

VI. Rhinorrhea

- Allergic rhinitis
- Sinusitis
- Vasomotor rhinitis
- CSF
- URI

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

VIII. Nasal Trauma

- Fractures
- Lacerations
- Hematomas

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

C. Nasal Lacerations

Treatment

Meticulous closure

Antibiotic ointment

Early suture removal

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

XII. Sore Throat

- Pharyngitis / tonsillitis
- Supraglottitis
- Neoplasm

ENT Emergencies

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

ENT Emergencies

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 % O_2
- Pitfalls
  - If laryngeal pathology is present, intubation attempt may precipitate laryngospasm
  - Do not delay airway control if obstruction is probable

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

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 (O_2, blood draw)
  - Send to X-ray without airway support
  - Attempt intubation in ER

ENT Emergencies

XIV. Voice Change

- Laryngitis
- Vocal nodules
- Neoplasm
- Vocal cord paralysis : acute idiopathic ; common
- Psychogenic : mouths words, no sound at all
- Metabolic

ENT Emergencies

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, preceeding URI
- Pitfalls
  - Failure to visualize cords (or refer) for hoarseness present longer than 2 to 3 weeks
  - Failure to inquire re : airway compromise

ENT Emergencies

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)

ENT Emergencies

XIV. Foreign Body Sensation

- Foreign body
- Globus pharyngeus : spasm of cricopharyngeus muscle
- Tonsolith
- Neuralgia

ENT Emergencies

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**

ENT Emergencies

XV. Neoplasm

- Stricture
- Zenker's diverticulum
- Cricopharyngeal spasm
- Neuromuscular
- Psychogenic
- Foreign body

ENT Emergencies

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

ENT Emergencies

XVI. Abscess

- Peritonsillar
- Retropharyngeal
- Prevertebral
- Neck

ENT Emergencies

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

ENT Emergencies

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

ENT Emergencies

Addendum

I. Antibacterial Otic Drops
   A. With Neomycin
      - Cortisporin
      - Otobiotic
      - Otocort
      - Colymycin
   B. Without Neomycin
      - Aerosporin
      - Lidosporin
      - Pyocidin
      - Chloromycetin
      - Garamycin
      - Vasocidin

ENT Emergencies

II. Antibacterial Otic Drops
- Aqueous merthiolate
- Cryselate

III. Otic Drops Without Antibiotics

Name	Indications
Auralgan	Pain
Tympagesic	Pain
Cerumenex	Cerumen
Debrox	Cerumen
Vosol Otic	External otitis
Vosol NC Otic	External otitis
Domeboro Otic	External otitis