AMERICAN COLLEGE OF EMERGENCY PHYSICIANS
SCIENTIFIC ASSEMBLY
1999

Case Studies in ENT Emergencies

By using multiple patient encounters, this course details the ear, nose, and throat (ENT) problems of patients who may present to the emergency department. This case-based course includes the evaluation and treatment of masses, swelling, and lumps in the head and neck region, as well as epistaxis. The treatment for ENT trauma and for injury involving the maxillofacial and mandibular bones will be described, as well as functional difficulties with the lips, tongue, and swallowing mechanisms. Techniques will be presented that will make these patients easier to evaluate. A thorough review of ENT anatomy will be provided.

- Review ENT anatomy and functional relationships with examination.
- Describe common ENT problems, including infections, masses, trauma, and cranial nerve abnormalities.
- Discuss cost-effective evaluation and management techniques for ENT problems, including foreign body removal and radiographic interpretation.

TU-87
Tuesday, October 12, 1999
12:30 PM - 2:25 PM
Room # N204
Las Vegas Convention Center

**Consultant - Helix Medical*
Consultant - Olympus America

FACULTY

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Tumor of the Ear Canal

- 62 year old male was told by his PMD that he had a tumor of the ear canal. The patient came to the ED because he could not get an appointment with the specialist for at least one week.
- What is your next step in the evaluation of this patient?
- 1. Reassure the patient that he can wait to see the specialist
- 2. Immediate referral
- 3. Biopsy in the ED
- 4. Lavage

47 year old male with burn to auricle and face

Treatment should include?

1. Removal of tar with mineral oil
2. Bacitracin ointment
3. Silvadene cream
4. IV antibiotics

18 year old “EDP” with bugs in his head

- 18 year old presents to the ED extremely agitated. He is disrupting the entire waiting room screaming that he has “bugs” in his head. The triage nurse called security to escort the patient to the psychiatric emergency area. According to his mother the patient has no prior psych history and is a well adjusted teenager.

What else could this possibly be ????????

3 year old with swelling and erythema of the right auricle

PE: The child appears playful
VS stable afebrile
Right auricle is erythmatous and swollen (as shown)
Canal and TM appear normal
How would you manage this child?

3 year old with swelling and erythema of the right auricle

What is the appropriate management of this patient?

1. IV antibiotics and admission for malignant otitis externa
2. PO antibiotics
3. Antibiotic ointment and hydrocortisone cream
4. Immediate referral

55 year old male with pain and redness of the auricle now spreading onto face

- 2 day history of increasing pain and redness of the auricle
- Denies any trauma or past medical history
- Denies any discharge or change in hearing

55 year old male with pain and redness of auricle

- VS stable afebrile
- HENT normal except as shown
- Auricle diffusely erythematous and tender
- Canal essentially normal
- Tympanic membrane normal with good mobility

55 year old male with pain and redness of auricle

- What is your diagnosis?
  - 1. Otitis externa
  - 2. Mastoiditis
  - 3. Relapsing perichondritis
  - 4. Perichondritis

Perichondritis

- Treatment
  - Local with gentamicin cream plus hydrocortisone cream
    - Mastoid dressing
  - Systemic fluroquinolone i.e.: ciprofloxin

28 year old female with pain and redness of the ear lobe

- VS stable
- Auricle with redness and crusting
- Canal clear TM intact and mobile

28 year old female with pain and redness of ear lobe after placing a new ear ring

- What is your Diagnosis ?
  - 1. Atopic Dermatitis
  - 2. Allergic Reaction to Nickel
  - 3. Otitis Externa
  - 4. Insect bite

34 year old male with blunt trauma with laceration to auricle

- 34 year old male presents to the ED at 10 AM with AOB and laceration to auricle secondary to blunt trauma. Pt states that injury took place sometime last night.
- PE: Alert but still intoxicated
  - Stellate lesion auricle superficial without any involvement of cartilage
  - Canal clear
  - TM intact
  - PERRL
  - No other signs of head trauma

34 year old male with blunt trauma with laceration to auricle

- Superficial laceration with friable edges
- Cartilage intact
- Unable to suture skin together
- Treatment?

35 year old male with trauma to left auricle

Management would include?

1. Removal of the auricle
2. I & D with #11 blade
3. Needle aspiration with mastoid dressing
4. Immediate consultation

41 year old female with severe ear pain

- 41 year old female with severe pain and will not allow you to introduce the speculum into the canal. Multiple attempts are unsuccessful and the patient is very upset.
- How would you proceed?

41 year old female with severe ear pain

- Regional block with bupivicaine
- Posterior will work in most cases
- Supplemental anterior block if needed
- Place ear wick with water soluble otic ear drop
- Rescue pain medication for home

3 year old male with history of pulling on left ear

- What is your advice to the parents?
  - 1. Reassure the mother that it takes 5- 7 days for the antibiotic to work
  - 2. IM ceftriaxone 50mg/kg
  - 3. Admission and full sepsis work up
  - 4. Change to oral antibiotic to cover B-lactamase producing organisms and f/u 24-48hrs.

6 year old brought to ED because mother states child's face looks funny

- 6 year old with with hx of recurrent otits media with new onset of right ear pain, fever of 102F. Mother states that the child's face looks funny when the child smiles. Past medical history is significant for otitis media. The child lives in a major metropolitan area and has not been outside the city.
- PE: right tympanic membrane red and bulging
- Right side of face initially appears normal
- Pulls to left side with smiling
- Tympanic membrane as shown with erythema and bulging

6 year old brought to ED because mother states child's face looks funny

What is your initial diagnosis?

- 1. Bell's Palsy
- 2. Lyme Disease
- 3. Acute OM with facial nerve paralysis
- 4. Mastoiditis

6 year old brought to ED because mother states child's face looks funny

- What is the next step in the work up of this child?
  - 1. PO antibiotics and close follow up
  - 2. Work up for Lyme Disease and clinic follow up
  - 3. Treatment for Bell's Palsy with antiviral medications and steroid
  - 4 .Admit with early consultation for OM with facial nerve involvement

Facial Nerve Paralysis

- Acute and Chronic Otitis Media
- Dehiscence of the facial nerve in horizontal portion
- Nerve exposed to the inflammatory pathology

6 year old brought to ED because mother states child's face looks funny

Appropriate treatment would consist of ?

- 1. Admission
- 2. IV antibiotics ie:ceftriaxone
- 3. IV dexamethasone 1mg/kg
- 4. Surgical drainage with culture of aspirate
- 5. All the above

5 year old with protruding ear

- 5 year old with 3 day history of left ear pain and temp to 103F. The mother states that the child's ear began to protrude about 6 hours ago. She also noted that the area behind the ear was red and warm.

5 year old with protruding ear

- PE: 5 year old female appears irritable and does not want to be examined. The left ear is obviously protruding and the postauricular area is erythematous. The area is noted to be fluctuant and tender. The tympanic membrane is bulging and yellow.

5 year old with protruding ear

- What is the appropriate management of this patient?
  - 1. Second line therapy for otitis media and follow up in 24 hours
  - 2. IV antibiotics and observation
  - 3. IV antibiotics, early ENT referral for mastoidectomy
  - 4. Neurosurgical evaluation for possible brain abscess

5 year old with protruding ear

- Coalescent mastoiditis is a surgical emergency
- IV antibiotics i.e.: ceftriaxone should be started ASAP in ED
- Infection spreads from medial to lateral and may spread intracranially
- Definitive treatment is mastoidectomy with C+S to guide antibiotic Rx

17 year old with protruding ear brought to ED for evaluation of “Mastoiditis”

17 year old with protruding ear brought to ED for evaluation of “Mastoiditis

- 17 year old in NAD afebrile but with ear obviously protruding. Postauricular area is mildly erythematous with minimal tenderness. Tympanic membranes are completely within normal limits. There appears to be a small area of infected hair follicles superior to the auricle.

17 year old with protruding ear brought to ED for evaluation of “Mastoiditis

- Diagnosis: Folliculitis with posterior lymph node involvement
- Treatment: P.O. antistaphylococcal medication and topical bactroban

9 year old boy with sudden onset of vomiting and inability to walk

- 9 year old boy brought to ED by mother because child had sudden onset of vomiting and has an unsteady gait. The mother states that the child has had a draining ear on and off for the past 12 months but has not been compliant with medications. The child had tubes placed in his ears 3 times in the past.

9 year old boy with sudden onset of vomiting and inability to walk

- On physical exam the child is alert but c/o of a severe headache. He is unable to walk without holding onto his mother. Examination of his left ear (as shown) reveals a middle ear space filled with a yellow purulent material. There appears to be a retraction pocket in the posterior aspect of the TM in the area of the attic.

9 year old boy with sudden onset of vomiting and inability to walk

- What is your next step in your treatment?
  - 1. PO antibiotics and antibiotic ear drops
  - 2. Early referral for chronic draining ear
  - 3. Suction out ear and place wick with antibiotic drops
  - 4. CT scan

9 year old boy with sudden onset of vomiting and inability to walk

- What is your diagnosis?
  - 1. Cholesteatoma
  - 2. Malignant otitis externa
  - 3. Meningitis
  - 4. Cholesteatoma with brain abscess

9 year old boy with sudden onset of vomiting and inability to walk

- Treatment of Cholesteatoma with brain abscess?
  - 1. IV antibiotics with coverage for Staph, Psuedomonas and anaerobes
  - 2. Mastoidectomy
  - 3. Neurosurgical drainage of abscess
  - 4. All the above

FACIAL TRAUMA

37 year old male presents to the emergency department after being punched in the left eye. The patient complains of pain and difficulty seeing out of his left eye. +AOB Last TT was 2 years ago.

VS: 134/77 pulse 88 RR 20 temp. 98

What is the most important piece of information missing from this triage note?

FACIAL TRAUMA

- VISUAL ACUITY !!!
  - 20/20 OD
  - 20/40 OS

FACIAL TRAUMA

- PHYSICAL EXAM
  - CANALS: CLEAR NO BLOOD
  - TM: INTACT MOBILE
  - OD: PUPIL REACTIVE EOM WNL
  - OS: GROSS EXAMINATION AS SHOWN
  - NOSE: BLOOD NOTED FROM BOTH NOSTRILS

FACIAL TRAUMA

- WHAT IS YOUR INITIAL WORKING DIAGNOSIS?
- 1. RUPTURED GLOBE
- 2. HYPHEMA
- 3. ORBITAL FRACTURE
- 4. RETROBULBAR HEMATOMA

FACIAL TRAUMA

- ORBITAL FRACTURE
  - This patient presents with decreased extraocular motion both superiorly and laterally. No blood in the anterior chamber. Pupils appear equal and reactive to light.

  What is the next step in your work up?

ORBITAL FRACTURE

- Slit lamp exam: pressure 18 OU
  anterior chamber clear
  sclera grossly injected
  pupil round no sphincter tears
- Plain films
- CT scan of the orbit and paranasal sinuses

ORBITAL FRACTURE

- CT scan (axial and coronal cuts)
  - fracture of the medial wall
  - fracture of the superior rim of orbit
  - fracture of the floor

ORBITAL FRACTURE

- Treatment
  - PO antibiotics
  - Cyclogel (as per ophthalmology consult)
  - Pred Forte (as per ophthalmology consult)
  - Surgical exploration after swelling subsides

Embarrassed Patient

- 37 year old male refused to leave his house because he did not want anyone to see his swollen eye. Over the next week the eye became increasingly swollen and his vision deteriorated and he decided to seek medical attention

Swollen Eye and Headache

- 9 year old with swelling of the left eye that started 24 hours ago.
- Temp 100.7
- Visual acuity 20/20 OD 20/100 OS

10 year old with proptosis, chemosis and visual changes

- Pt now unable to open left eye
- can only see fingers with left eye but can not see eye chart
- Diagnosis: Ethmoid sinusitis with orbital cellulitis

65 year old male with swelling of floor of the mouth

- Swelling of the floor of the mouth
- Recently had blood pressure medication changed
- Diagnosis ?

Sudden onset on Submandibular Swelling

- 23 year old male with his of sudden onset of submandibular swelling after eating for the last 24 hours. The swelling subsides but recurs every time he eats

Foreign Body Sensation of Throat

- 70 year old female with a FB sensation of the throat for the last 1-2 weeks. The patient can not recall eating any fish with bones. PMH +PPD no dysphagia

52 year old male with right facial swelling

- 52 year old male with 3 week history of increasing facial swelling now with temp of 103. Pt now has truisms and is unable to eat. Inspection of Stoniness' duct revealed pus.

52 year old male with right facial swelling

- What is your diagnosis and treatment?
  - 1. Parotids
  - 2. Dental abscess
  - 3. Lugwigs's Angina
  - 4. Parotid gland tumor

52 year old male with right facial swelling

- IV antibiotic with staph and anaerobic coverage
- Treatment of dehydration
- Possible I+D in the OR

30 Year old with facial deformity

Bell's Palsy

- Historically thought to be idiopathic
- New evidence suggests viral etiology
- Diagnosis of exclusion
- Consider Lyme Disease in endemic areas

57 year old female with painful facial paralysis

- Pt woke up this am with left sided facial pain and left facial paralysis. She also noted small "blisters" on her left auricle

Chronic Otitis Externa

- 65 year old female with a diagnosis of chronic otitis externa presents to the ED for ear pain. She has been on ear drops for over three weeks and her ear has only become worse. IDDM FS 400

Unilateral Swelling of Left Tonsil

- Pt has history of tonsillitis in the past

Down the Hatch

- 25 year old male was drinking with friends. He flips a bottle cap into the air and catches it in his mouth. Now he can not seem to find the bottle cap. What is the next step in the work up?

Bleeding from Stoma Site

- 56 year old male is brought immediately into the resuscitation suite with acute onset of bleeding from his stoma site. The pt is acutely short of breath and coughing up blood from his indwelling metal trach tube. Pt has a history of cancer of the larynx and is s/p laryngectomy and radiation therapy. The nurse is unable to get vital signs because the pt is so agitated.

What is your initial step in the management of this patient?

Bleeding from Stoma Site

- Attempt to suction indwelling trach tube clear of all blood and secretions
- If unable to clear tube and pt is still short of breath then REMOVE tube and replace with cuffed tracheostomy tube or endotracheal tube.
- Assist with ventilation
- Vital signs and reevaluate the patient

Bleeding from Stoma Site

- IV access
- Type and Cross
- Monitor Oxygen saturation
- Immediate consultation
- CT scan with contrast
- Possible OR for ligation of Common Carotid Artery

Bleeding from Stoma Site

- Diagnosis Sentinel Bleed from metastatic cancer of the neck
- Prognosis is poor

Bleeding from Stoma Site

18 year old male - stab wound to lateral neck- expanding hematoma

- appears stable but anxious
- Physical Exam
  - VS stable pulse 100 bpm
  - Pulse oximetry 100%
  - No stridor
  - Lungs clear
  - Sputum clear

18 year male old with stab wound to the lateral neck with expanding hematoma. Portable X-Ray as shown

- What is your next step?
  - 100 % Oxygen with non-rebreather mask
  - Immediate cricothyroidotomy
  - Fiberoptic evaluation and if airway stable, then surgical consult
  - Fiberoptic examination of the airway with possible cricothyroidotomy

AIRWAY is ALWAYS FIRST consideration in the ED

Patients with traumatic neck injuries may require a surgical airway

18 year male old with stab wound

- Fiberoptic examination normal
- Surgical consult
- Patient taken to operating room for exploration of neck wound

TRAUMATIC ETIOLOGY OF MASS

- Blunt versus penetrating trauma
- All wounds that violate the platysma require surgical consultation

TRAUMATIC ETIOLOGY OF MASS

- Zone of Injury will determine management of injury
  - Zone I: Below the cricoid
  - Zone II: Between the cricoid and mandible
  - Zone III: Above the angle of the mandible
    - Presents as mass behind ascending mandibular ramus

Zone I &III

- Stable patients will require work up to assess the trauma to underlying structures
- Angiography can identify damage to the vasculature and dictate surgical approach
- Zone I may rapidly deteriorate and require emergent thoracotomy

Zone II :

- Surgical exploration of this area is usually straight forward and does not require angiography
- Angiography usually recommended for stable patients
- Expanding hematoma in this area can be identified by observation

30 year old with blunt trauma

- 30 year old male struck to anterior neck with a baseball bat. The patient presents with SOB and coughing up blood. He his having difficulty speaking and has a breathy voice. What is your next therapeutic intervention?

30 year old with blunt trauma

- Which treatment ?
  - Multiple attempts at orotracheal intervention
  - Nasotracheal intubation because of blood in orophaynx
  - Immediate surgical airway
  - Open repair of larynx with neck exploration

30 year old female with trismus and swelling of submental area

- History of recent dental surgery
- History of increasing swelling of submental area
- Pain on swallowing and trismus
- Physical examination
  - VS stable temp 101.2
  - neck diffusely swollen "brawny edema"
  - tonsils appear normal

30 year old female with trismus

- What is your initial clinical impression?
  - Acute parotitis
  - Blockage of Wharton's duct
  - Retropharyngeal abcess
  - Ludwig's angina

LUDWIG'S ANGINA

- Most commonly from dental origin
- Swelling and erythema of submental and submandibular spaces
- Can progress to rapid obstruction of upper airway from posterior and superior position of tongue
- Brawny edema of submental and submandibular areas

50 year old with Stridor and Swelling of the Neck

- 50 year old patient presents in acute respiratory distress. The patient's neck appears diffusely swollen. Temp 103
- RR 4- with drooling of oral secretions O2 Sat 84%
- How would you manage this patient?

34 year old with hoarseness

- Differential diagnosis?
- Retropharyngeal abscess
- Ludwig's angina
- Peritonsillar abscess
- Epiglottis

VIDEO 1

Swollen Uvula

- 23 year old male presents to the ED with c/o of waking up with FB sensation in throat. No pain but sense of discomfort. Pt tried to dislodge the foreign body by pulling it out. Pt was unable to remove the foreign body

VIDEO 2

Swollen Uvulua

- Diagnosis of Uvulitis
- Rx:
  - Dexamethasone 10 mg IM
  - Antibiotic coverage
  - Gentle saline gargles
  - Topical lidocaine anesthesia

VIDEO 3 “Mike Tyson Syndrome”

Selected Reading List

- Guarisco J: A Foucus on Otitis Media, Clinical Case Studies in Pediatrics, Scientific Exchange Inc. 1997
- Levin W. Epistaxis: A Practical Clinical Approach. Emergency Medicine 1998;10
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EAR, NOSE and THROAT CASE STUDIES

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