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## Learning Objectives for Rotation in Otolaryngology Year 3 Clerkship

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### EAR INFECTIONS - OBJECTIVES

#### Skills

- examine the outer ear, ear canal and tympanic membrane and describe normal versus abnormal findings
- differentiate signs and symptoms of otitis externa from otitis media
- perform pneumatic otoscopy

#### Knowledge

- understand the anatomy of the ear
- understand the pathology, presentation and management of:
  - acute otitis media (AOM)
  - serous otitis media (SOM)
  - chronic suppurative otitis media (CSOM)
  - otitis externa (OE)
- understand the risk factors for AOM and OE
- describe complications associated with AOM
- know the common pathogens for AOM and OE
- recognize the presentation of malignant OE
- understand prevention and treatment of otorrhea in patients with tympanostomy tubes or chronic tympanic perforation
- discuss the indications for myringotomy and tubes

#### Assessment

- History
- ear pain and drainage
- hearing loss
- dizziness
- previous tube or known perforation
- trauma to the ear canal
- diabetes and immune-compromised states

#### Physical Exam

AOM - redness and dullness of tympanic membrane; loss of mobility of tympanic membrane on pneumatic otoscopy; mastoid tenderness

OE - pain with traction of the pinna or tragal compression; erythema, edema and debris in external canal

#### Investigations

- usually none for uncomplicated OE or AOM
- CT scan of the temporal bones and bone scan help diagnose malignant OE
- CT scan of temporal bones for suspected mastoiditis

## Management

AOM – analgesics, antibiotics, ventilation tubes for recurrent cases

OE – debridement, topical antibiotics, ear wick

malignant OE – aggressive topical and systemic antibiotics directed against *Pseudomonas aeruginosa* and surgical debridement in some cases

## Cases

1. A 53-year old woman presents with a 3 day history of ear pain and discharge from her left ear.
2. An 18-month old presents with fever and irritability and is tugging at his ear.

## HEARING LOSS - OBJECTIVES

### Skills

- recognize and describe abnormal findings on ear examination
- perform Weber and Rinne tuning fork tests and be able to differentiate between conductive and sensorineural hearing loss using tuning fork tests
- understand a basic audiogram

### Knowledge

- understand the anatomy of the ear
- understand the etiology, presentation and management of common ear disorders causing hearing loss
  - cerumen impaction
  - otitis externa (OE)
  - otitis media (OM)
  - tympanic membrane perforation
  - otosclerosis
  - presbycusis
  - noise-induced hearing loss
  - cholesteatoma
- give a differential diagnosis of conductive and sensorineural hearing loss
- recognize the presentation of sudden sensorineural hearing loss and initial management  
define tinnitus
- recognize the presentation of hearing loss in children
- know when infants and children require hearing testing

### Assessment

- History
- duration and degree of hearing loss
- unilateral or bilateral
- associated ear symptoms – tinnitus, aural fullness, pain, otorrhea, vertigo
- family history of hearing loss
- head trauma
- history of recurrent ear infections
- noise exposure
- ototoxic medications
- speech delay

## Physical Exam

- ear canal, tympanic membrane, middle ear space
- abnormalities of external ear
- Weber and Rinne tuning fork tests

## Investigations

- audiogram

## Management

- amplification (hearing aid) – useful for most causes of hearing loss
- myringotomy and tube – for SOM
- surgery – for perforations, otosclerosis, ossicular chain abnormalities, cholesteatoma

## Cases

1. A 42-year old woman complains of worsening hearing in her right ear for the past 2 years.
2. A 3-year old is brought in by parents who are concerned about his hearing ability and speech development

# VERTIGO - OBJECTIVES

## Skills

- obtain a history characterizing dizziness to differentiate vestibular vs. non-vestibular causes of dizziness
- conduct a neuro-otologic examination to include tuning fork tests, cranial nerve and cerebellar testing, oculomotor examination, gaze and positional nystagmus, Dix-Hallpike maneuver

## Knowledge

- define vertigo
- recognize the presentation of:
  - benign paroxysmal positional vertigo (BPPV)
  - Meniere's disease
  - vestibular neuronitis
- list management options for a patient with acute vertigo
- list features of vertigo that differentiate peripheral from central disorders

## Assessment

- History
- true vertigo vs. light headedness
- duration of vertigo (seconds, hours, days)
- relationship to head movement
- associated otologic symptoms

## Physical Exam

- neuro-otologic examination

## Investigations

- testing is usually only required in difficult cases or those with associated ear symptoms
- audiogram
- electronystagmography

## Management

### BPPV

- usually resolves over months
- can be successfully treated with particle repositioning maneuvers
- surgery for refractory cases

### vestibular neuronitis

- anti-emetics and sedatives initially
- try to mobilize early to facilitate central compensation for vestibular injury

### Meniere's disease

- low salt diet
- diuretics
- gentamicin ablation
- surgery

## Cases

1. A 49-year old man complains of a 2 day history of spinning sensation when he is lying down.
2. A 55-year old man comes into ER with dizziness, nausea and vomiting. He has been seen by the ER physician and has had a normal CT scan of the head and normal ECG.

## NASAL OBSTRUCTION - OBJECTIVES

### Skills

- examine a nose using a headlight and nasal speculum
- recognize a nasal septal deviation
- recognize nasal polyps and differentiate from normal anatomy (turbinates)

### Knowledge

- list causes of nasal obstruction
- list classical signs and symptoms of allergic rhinitis
- list treatment options for allergic rhinitis
- list treatment options for nasal polyposis
- recognize rhinitis medicamentosa

### Assessment

- History
- allergies
- seasonal variation
- aggravating factors
- medication use – eg. birth control pills
- use of nasal sprays
- associated nasal symptoms – rhinorrhea, anosmia, epistaxis, facial pressure
- facial trauma

## Physical Exam

- external nasal examination
- nasal septum
- turbinates – pale mucosa, edema, discharge
- nasal polyps
- foreign body
- enlarged adenoids
- nasal tumours (rare)

## Investigations

X-ray – limited use

- useful for bony nasal septal deviations
- limited usage for assessing adenoids

allergy testing for suspected allergic rhinitis

## Management

- septal deviation and turbinate hypertrophy best managed surgically
- allergic rhinitis
- avoidance of allergens
- antihistamines
- nasal steroids
- nasal saline rinse
- nasal polyps
- treatment of any associated allergies (50% of patients with polyps)
- topical or systemic steroids
- surgery – polypectomy

## Cases

1. A 35-year old man complains of bilateral progressive nasal obstruction and loss of his sense of smell.
2. A 24-year old woman has itchy, watery eyes along with nasal congestion and sneezing.

## SINUSITIS - OBJECTIVES

### Skills

- examine a nose using a headlight and nasal speculum
- order appropriate investigations for acute and chronic sinusitis

### Knowledge

- list signs and symptoms of acute and chronic sinusitis
- identify the common pathogens for acute sinusitis
- understand the etiology of acute sinusitis
- list possible complications of acute sinusitis
- describe treatment of acute and chronic sinusitis
- list risk factors for chronic sinusitis

## Assessment

### History

- nasal congestion and obstruction
- purulent nasal drainage, postnasal drainage
- facial pain, facial pressure, maxillary dental pain, ear pressure
- fever, cough, fatigue
- allergy symptoms

### Physical Exam

- anterior nasal examination
- look for purulence in the oropharynx
- percussion of sinuses
- periorbital swelling
- transillumination has limited utility
- endoscopic examination preferable
- purulent discharge in middle meatus

### Investigations

- X-ray
- CT scan
- middle meatal swab
- sinus puncture, antral lavage

### Management

- antimicrobials
- decongestants
- nasal steroids
- mucolytics
- nasal saline rinse
- surgery

## Cases

1. A 45-year old woman has had a congested nose for 2 weeks and complains of right sided facial pain.
2. A 39-year old man had a bad sinus infection last year and since then, he has noticed ongoing nasal congestion, facial pressure and postnasal drip.

## EPISTAXIS - OBJECTIVES

### Skills

- examine a nose using a headlight and nasal speculum
- identify Little's area, a common site of epistaxis
- be able to manage a nosebleed

## Knowledge

- know the major blood supply of the nose
- list local and systemic factors that contribute to epistaxis
- list treatment options for epistaxis
- know common causes of epistaxis in different age groups

## Assessment

### History:

1. Local factors
  - a) infection
  - b) inflammation – rhinitis, nasal dryness, septal perforation
  - c) trauma (cocaine use, digital trauma, iatrogenic injuries)
  - d) foreign bodies
  - e) neoplasms – polyps inverting papilloma, angiofibroma, squamous cell carcinoma
2. Systemic factors
  - a) hypertension
  - b) atherosclerosis
  - c) coagulopathies

Medications that can predispose to bleeding

### Family history

- coagulopathies; hereditary hemorrhagic telangiectasia

### Physical Exam

- ABC's
- anterior rhinoscopy with special attention to Little's area
- clots should be blown out or suctioned to allow visualization
- nasal endoscopy

### Investigations

- CBC; coagulation parameters

### Management

- topical lubricants (saline gel, Vaseline)
- local pressure – patients should squeeze the anterior part of the nose (cartilaginous portion) for 10 minutes
- topical vasoconstriction
- packing
- reversal of coagulopathy if possible
- cauterization
- surgery
- embolization

### Cases

1. A 30-year old man presents with recurrent right-sided nosebleeds.
2. A 75-year old female has severe nosebleeds and a history of DVT.

## ADENOTONSILLAR DISEASE - OBJECTIVES

### Skills

- be able to examine the tonsils
- obtain a history of the onset and progression of sore throat and associated symptoms
- conduct a physical examination to differentiate causes of throat pain
- order appropriate investigations for evaluation of a sore throat
- recognize potential complications of tonsillitis and signs of spread of infection

### Knowledge

- know the anatomy and describe the location of the tonsils and adenoids
- recognize symptoms of obstructive sleep apnea in children
- know the indications for tonsillectomy and adenoidectomy
- know the common causes of an acute sore throat and describe their presentation and management
  - viral pharyngitis
  - bacterial tonsillitis
  - peritonsillar abscess
  - infectious mononucleosis
- know the possible complications of tonsillitis

### Assessment

#### History

- mouth breathing
- snoring, apneic episodes, respiratory effort at night
- general URTI symptoms, fever, malaise
- dysphagia, odynophagia
- otalgia
- oral intake, trismus, drooling

#### Physical Exam

- anterior nasal examination
- oropharynx – edema, erythema, asymmetry, exudate, trismus
- neck – lymphadenopathy, neck stiffness, torticollis

#### Investigations

- CBC and differential
- monospot
- throat C&S
- lateral soft tissue X-ray
- CT scan for complicated/deep neck abscesses
- flexible nasopharyngoscopy by ENT can assess adenoid size

#### Management

- hydration, analgesics
- antibiotics for bacterial pharyngitis
- supportive management for mononucleosis, steroids if severe obstruction
- incision and drainage for peritonsillar abscess
- tonsillectomy

#### Cases

1. A 15-year old female presents with a three day history of sore throat.
2. A 4-year old boy is brought in by his mother who is concerned about his snoring.



## AIRWAY OBSTRUCTION - OBJECTIVES

### Skills

- be able to assess a patient with stridor and differentiate stridor from wheeze
- be familiar with appropriate airway management in airway obstruction (especially suspected epiglottitis)
- obtain appropriate investigations in a patient with a suspected foreign body aspiration or ingestion

### Knowledge

- define stridor and understand how the quality of stridor can help localize the area of obstruction
- know the differential diagnosis and basic management of common causes of stridor in children
  - laryngomalacia; subglottic stenosis; subglottic hemangioma
- recognize the presentation of epiglottitis and describe appropriate management of the airway
- identify how foreign body aspiration can present and know the importance of disk battery ingestion
- list causes of hoarseness
- list causes of airway obstruction in adults
- list methods of securing the airway in a patient with airway obstruction

### Assessment

#### History

- stridor - inspiratory; biphasic; aggravating and alleviating factors
- respiratory distress - apneic episodes; cyanotic spells; dysphagia
- aspiration

#### Physical Exam

- general ENT and respiratory examinations noting signs of respiratory distress
- flexible endoscopy

#### Investigations

- x-ray – chest and lateral soft tissue neck
- laryngoscopy and bronchoscopy for atypical stridor or foreign body aspiration
- suspected epiglottitis does not require investigations before management in the operating room

### Management

#### Infectious causes

- croup
  - a) humidified oxygen
  - b) racemic epinephrine
  - c) steroids
- epiglottitis
  - a) secure airway in OR by intubation with surgical standby
  - b) antibiotic therapy

Structural causes of stridor usually require monitoring +/- surgery for severe symptoms

#### Cases

1. A 4-year old boy with chronic cough which is not responding to treatment for asthma.
2. A 63-year old man presents with progressive hoarseness and difficulty breathing.

## NECK MASSES - OBJECTIVES

### Skills

- conduct an examination of the neck and recognize normal and abnormal structures
- describe relevant characteristics of a neck mass
- order appropriate investigations for a neck mass
- identify Wharton's and Stensen's ducts

### Knowledge

- have an approach to differential diagnosis of a neck mass in an adult and child
- list risk factors for head and neck cancers
- identify common presenting symptoms of a patient with head and neck cancer
- understand basic treatment of oral cavity, laryngeal and nasopharyngeal cancer
- understand the basic presentation and treatment of acute sialadenitis

### Assessment

#### History

- age, location, duration, size and change of size
- associated symptoms
  - hoarseness
  - dysphagia
  - odynophagia
  - otalgia
  - non-healing oral ulcer
- smoking and alcohol use

#### Physical Exam

- complete ENT examination
  - including endoscopy of mucosal surfaces – pharynx and larynx
- neck mass
  - size
  - location
  - consistency
  - mobility

#### Investigations

- Fine needle aspirate (FNA)
- ultrasound
- chest x-ray
- CT scan
- open biopsy should only be performed when other tests are non-diagnostic

#### Management

- infectious - antibiotics
- cysts - surgical excision
- metastasis - treat primary and neck with surgery, radiation, chemotherapy or a combination

#### Cases

1. A 65-year old man has had a right sided neck swelling for 4 weeks.
2. A 42-year old woman presents with a painful swelling under her jaw which has been present for 3 days.