HARVARD MEDICAL SCHOOL | DEPARTMENT OF Otolaryngology

OTOLARYNGOLOGY FOR THE PCP

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Otology

How to manage:

- Conditions of the external auditory canal
- Middle ear infections
- Facial paralysis
- Ear emergencies – “can’t miss” diagnoses

Disorders of the Auricle and EAC

Otitis Externa: Diagnosis

- Ear canal is swollen
- The skin is red and inflamed
- TM is difficult to see
- Pain with movement of pinna

Otitis Externa: Treatment

- Topical ear drops
  - Cortisporin solution
- Avoid water in the ear canal (swimming, shower)
- Add oral antibiotics if surrounding cellulitis
  - Keflex (staph coverage)
  - Cipro (pseudomonas coverage)

Otitis Externa Management

If no improvement on typical treatment:

- Obtain a culture
- Change ear drops
- Add an oral antibiotic
- Placement of ear canal wick
- Consider another diagnosis:
  - Otomycosis
  - Necrotizing otitis externa (malignant otitis externa)

Otomycosis

- Diagnosis:
  - White or black material in canal
  - No improvement with ear drops
- Treatment:
  - Irrigate out fungal material
  - Start Lotrimin -5 drops TID
  - Repeat irrigation in several days and re-examine

Necrotizing Otitis Externa: Diagnosis and Work up

- Diagnosis:
  - Severe otalgia
  - Diabetic or immunocompromised patient
  - Granulation tissue in ear canal
  - Cranial neuropathies such as facial palsy

- Work up:
  - Culture
  - Biopsy
  - High resolution CT temporal bone

Necrotizing Otitis Externa: Treatment

- Meticulous glucose control
- Aural toilet (frequent cleaning of the EAC)
- Topical antipseudomonal antibiotics
- Systemic antibiotics – usually started as IV therapy and then switch to oral therapy.
  - Response followed with high resolution temporal bone CT
  - Typically 8 weeks of therapy.

Eczema of Auricle and EAC

- Symptoms:
  - Pruritis, not pain
- Exam:
  - Dry, flaky, scaly skin
- Treatment:
  - Topical steroid ointment
  - Avoid manipulation
  - Avoid moisture

Auricular Cellulitis vs. Chondritis

- Cellulitis – superficial abrasion, insect bite
- Chondritis – laceration involving the cartilage, ear piercing
  - Broader spectrum oral antibiotics, including pseudomonas coverage
  - Concern for permanent cartilage damage/necrosis
  - Consider relapsing polychondritis

Cellulitis

Chondritis

Lobule spared

Herpes Zoster Oticus

- Otitis externa and cellulitis with vesicles
- Varicella
- Ramsay Hunt Syndrome:
  - Vesicular rash
  - Facial paralysis
  - Sensorineural hearing loss
  - Vertigo
- Treatment – antivirals and steroids
- Worse prognosis than Bell's palsy for facial nerve recovery

Abnormal Otoscopic Exam

OSTEOMA

EXOSTOSES

DISORDERS OF THE MIDDLE EAR

Acute Otitis Media

- Ear pain – dull, throbbing
- Ear canal is normal
- No pain with movement of pinna
- Hearing is decreased
- Ear feels “blocked”
- TM is inflamed – not translucent

- TREATMENT
  - Amoxicillin
  - Augmentin or Cephalosporin for failure

Acute Otitis Media with TM Perforation

- Diagnosis:
  - Severe ear pain
  - Drainage from ear with resolution of pain
  - Decreased hearing
- Treatment:
  - Oral antibiotics
  - Topical antibiotics
  - Water precautions
  - Most will heal

Serous Otitis Media

- Ear pain is gone
- Decreased hearing
- Ear still feels blocked
- This is the natural progression after acute otitis media
- TM is dull with fluid in the middle ear space
- Conductive hearing loss- confirm this with tuning fork

Serous Otitis Media: Treatment

- Observation
- Autoinsufflation – marginal benefit[1]
- Nasal steroid spray – no definite benefit[2]
- If no resolution, consider ENT referral for myringotomy
  - Typically offered at 3 months (except considered earlier if bilateral, need to fly)

1. Perera R, et a.. Autoinflation for hearing loss associated with otitis media with effusion. Cochrane Database Syst Rev. 2013 May 31;5:
2. Gluth MB, et al. Management of eustachian tube dysfunction with nasal steroid spray: a prospective, randomized, placebo-controlled trial. Arch Otolaryngol Head Neck Surg. 2011 May;137(5):449-55.

Chronic Otitis Media

INACTIVE COM

ACTIVE COM

CHOLESTEATOMA

- Hearing Loss
- Recurrent infections
- Intermittent ear drainage
- TM perforation

Dry TM Perforation: Management

3 Options:

1. Observation
   - Annual exam (to check for epithelial ingrowth or cholesteatoma)
   - Water precautions
2. Hearing aid
   - Usually only if hearing significantly impaired or bilateral hearing loss
3. Surgical repair (tympanoplasty)
   - Generally good results with healing and hearing improvement
   - Outpatient, elective surgery
   - Transcanal vs. post -auricular

Facial Paralysis: Bell's Palsy

- Rapid onset (usually over 72 hours)
- All branches affected
- Often preceded by URI, otalgia, facial numbness
- Usually resolves within 3 weeks
- Treatment
  - Prednisone taper (60mg daily x 5 days then taper by 10mg daily)
  - Antivirals (Valacyclovir)

Facial Paralysis DDx (It's not always Bell's palsy)

- Ear Infection – OM, COM
- Herpes Zoster Oticus (Ramsay Hunt)
  - Otalgia, vesicles in EAC
- Lyme Disease
  - Secondary Lyme
  - Can be unilateral or bilateral
- Malignancy – parotid, facial nerve, skull base
  - Can be slowly progressive

Facial Paralysis

When to refer to Otolaryngology:

- Otogenic source
  - Associated hearing loss
  - Abnomal otoscopic examination
- Atypical presentation of Bell's palsy
  - Not all branches affected
  - Slowly progressive
- Incomplete recovery after Bell's palsy

Ear Emergencies:
Complications of acute or chronic otitis media

- Mastoiditis
- Facial paralysis
  - This is not Bell's palsy
- Meningitis
- Intracranial abscess

Treatment:

- Systemic and/or topical antibiotics
- Drainage of the infection via wide myringotomy
- Additional surgical management may include mastoidectomy or intracranial abscess drainage

Ear Emergencies: Sudden Sensorineural Hearing Loss

- Acute onset hearing loss
- Often associated with tinnitus
- Humming test
- Normal otoscopic exam
- Do a tuning fork exam

Rauch SD. Idiopathic sudden sensorineural hea

Ear Emergencies: Sudden Sensorineural Hearing Loss

- Urgent referral for audiology and ENT
- Early institution (< 4 weeks after onset) of steroids can improve hearing recovery

- Most cases (>95%) are idiopathic
  - All patients should get evaluated for retrocochlear causes
  - May consider screening for lyme disease or syphilis

THE NOSE

RHINOSINUSITIS

ACUTE – lasting up to 4 weeks with total resolution of symptoms

SUBACUTE – persisting more than 4 weeks, but less than 12 weeks, with total resolution of symptoms

RECURRENT ACUTE – 4 or more episodes per year, with resolution of symptoms between attacks

CHRONIC – Signs and symptoms lasting longer than 12 weeks

Otolaryngology–Head and Neck Surgery (2007) 137, S1-S31

GUIDELINES

Clinical practice guideline: Adult sinusitis

Richard M. Rosenfeld, MD, MPH, David Andes, MD,

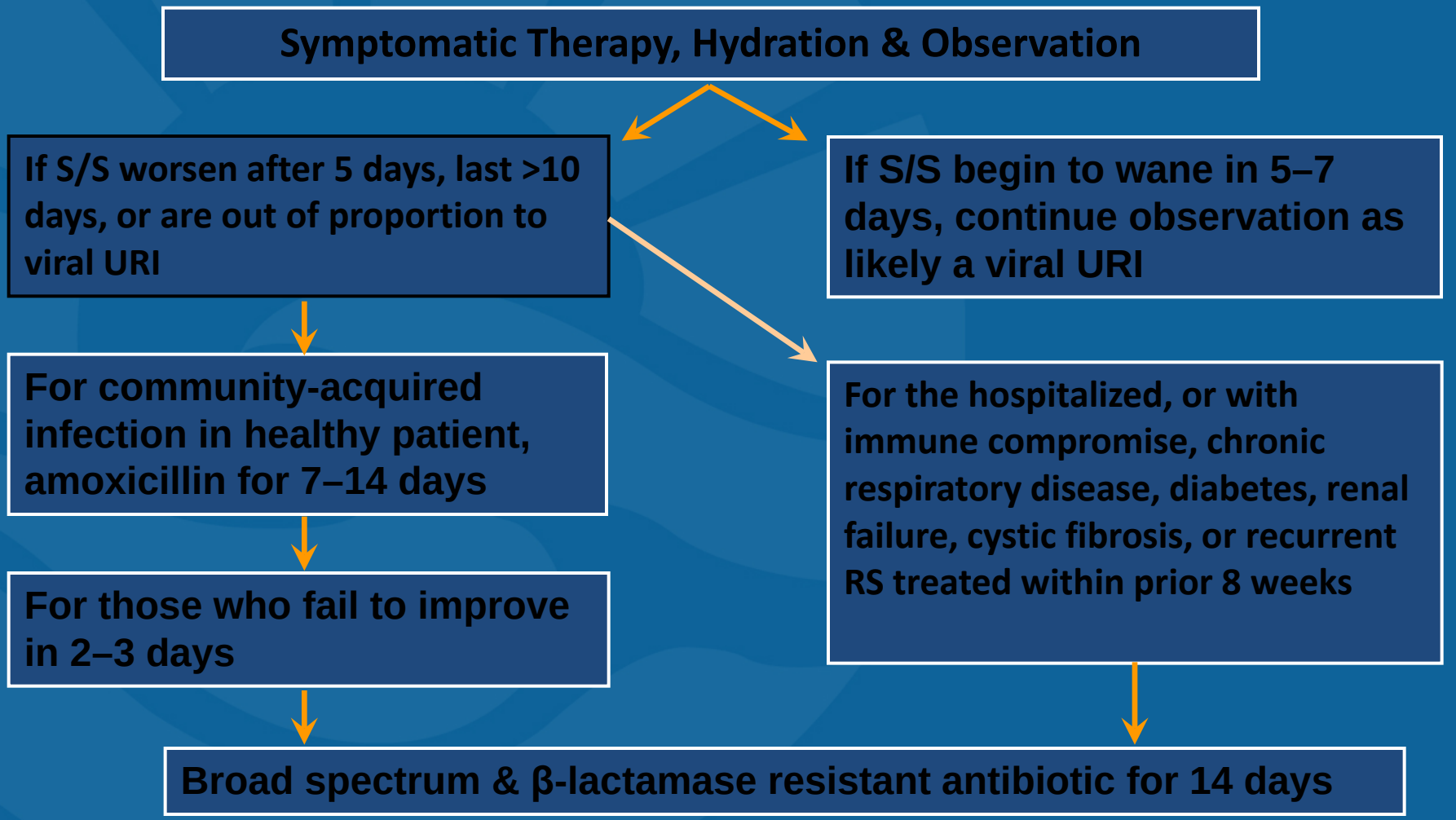
Acute rhinosinusitis definitions

Term	Definition
Acute rhinosinusitis	Up to 4 weeks of *purulent nasal drainage* (anterior, posterior, or both) accompanied by *nasal obstruction*, *facial pain-pressure-fullness*, or both: • *Purulent nasal discharge* is cloudy or colored, in contrast to the clear secretions that typically accompany viral upper respiratory infection, and may be reported by the patient or observed on physical examination. • *Nasal obstruction* may be reported by the patient as nasal obstruction, congestion, blockage, or stuffiness, or may be diagnosed by physical examination. • *Facial pain-pressure-fullness* may involve the anterior face, periorbital region, or manifest with headache that is localized or diffuse.
Viral rhinosinusitis (VRS)	Acute rhinosinusitis that is caused by, or is presumed to be caused by, viral infection. A clinician should diagnose VRS when: a. symptoms or signs of acute rhinosinusitis are present less than 10 days and the symptoms are not worsening
Acute bacterial rhinosinusitis (ABRS)	Acute rhinosinusitis that is caused by, or is presumed to be caused by, bacterial infection. A clinician should diagnose ABRS when: a. symptoms or signs of acute rhinosinusitis are present 10 days or more beyond the onset of upper respiratory symptoms, *or* b. symptoms or signs of acute rhinosinusitis worsen within 10 days after an initial improvement (double worsening)

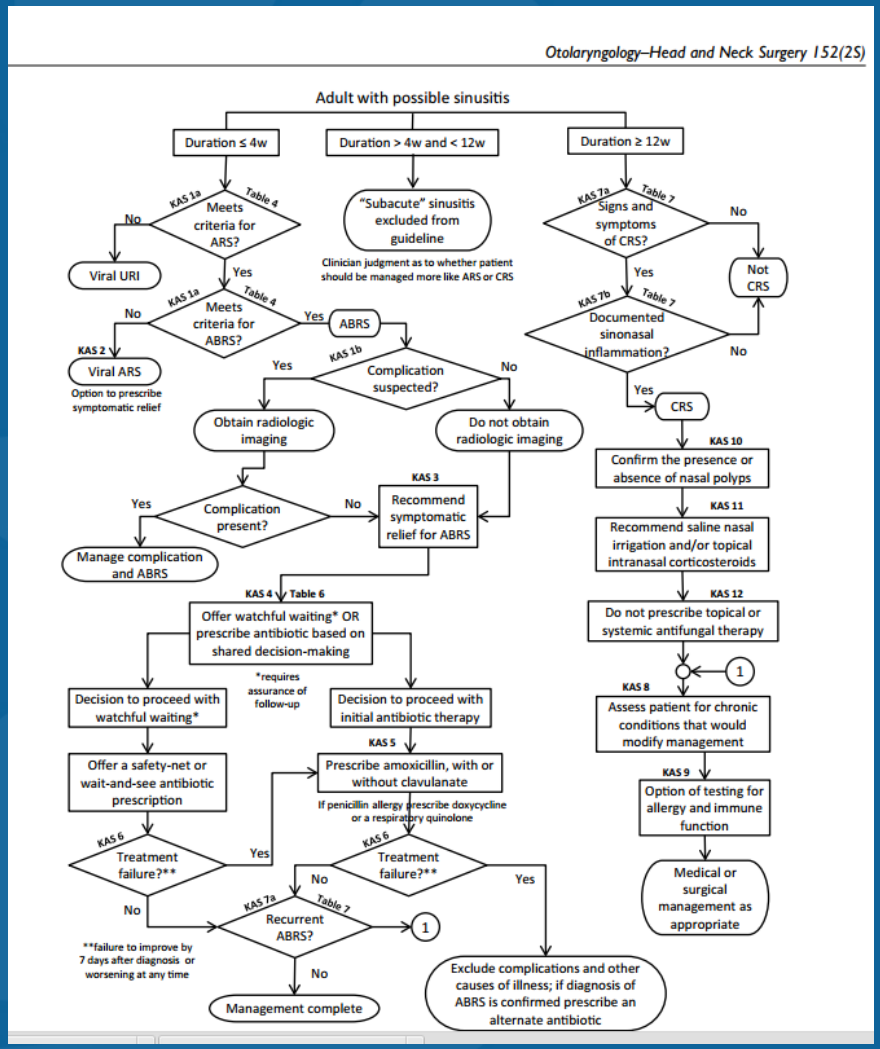
DIAGNOSIS OF ACUTE BACTERIAL RHINOSINUSITIS

- History
- Anterior Rhinoscopy
- Fiberoptic nasal endoscopy
- CT scan – not usually necessary
  - Perform if there is a concern for an intracranial or orbital complication

TREATMENT OF ACUTE RHINOSINUSITIS



Rosenfeld, Clinical Practice Guidelines



Rosenfeld, et al. Oto HNS 2015

ACUTE RHINOSINUSITIS
THE ROLE OF THE OTOLARYNGOLOGIST

- Recurrent acute rhinosinusitis
  - Concern for frequent use of antibiotics
- Failure to respond to appropriate medical therapy
- Complications of sinusitis
- Abnormal CT scan

CHRONIC RHINOSINUSITIS

Inflammation of the mucosa of the nose and paranasal sinuses of at least 12 consecutive weeks duration.

- Chronic Rhinosinusitis with polyps
- Chronic rhinosinusitis without polyps

Source: Benninger M. Ferguson BJ, Hadley JA, et al. Adult Chronic Rhinosinusitis: Definitions, Diagnosis, Epidemiology, and Pathophysiology. Otolaryngol Head Neck Surg 2003;129(suppl 3):S1-32.

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Table 10
Chronic and recurrent rhinosinusitis definitions

Term	Definition
Chronic rhinosinusitis (CRS)	Twelve (12) weeks or longer of two or more of the following signs and symptoms: • mucopurulent drainage (anterior, posterior, or both) • nasal obstruction (congestion), • facial pain-pressure-fullness, or • decreased sense of smell AND inflammation is documented by one or more of the following findings: • purulent (not clear) mucus or edema in the middle meatus or ethmoid region, • polyps in nasal cavity or the middle meatus, and/or • radiographic imaging showing inflammation of the paranasal sinuses
Recurrent acute rhinosinusitis	Four (4) or more episodes per year of ABRS without signs or symptoms of rhinosinusitis between episodes: • each episode of ABRS should meet diagnostic criteria in Table 5

Rosenfeld, et al. Oto HNS 2015

MEDICAL MANAGEMENT OF CHRONIC RHINOSINUSITIS

- Improvement in nasal hygiene
  - Nasal saline irrigation
- Consider broad spectrum antibiotics for 3 – 6 weeks
- Consider oral steroids
- Topical steroid or antihistamine spray
- Consider allergy testing for patients with history of allergies
- Possible role for decongestants, mucolytics, antihistamines for acute exacerbations
- Consider surgical intervention if medical therapy has failed

CHRONIC RHINOSINUSITIS SURGICAL INTERVENTION

- When medical management fails
- Not all CRS is the same

- It is NOT curative
  - Intent is to improve QOL
  - Polyps always recur
- It improves aeration and widens sinus ostia
- Can improve topical therapy delivery

RHINOSINUSITIS EMERGENCIES

ORBITAL COMPLICATIONS

- Pre-septal cellulitis
- Orbital cellulitis
- Subperiosteal abscess
- Orbital abscess
- Cavernous sinus thrombosis

SIGNS AND SYMPTOMS

- Pain with eye movement
- Diplopia
- Unilateral eye swelling
- Conjunctival injection

RHINOSINUSITS EMERGENCIES

INTRACRANIAL COMPLICATIONS

- Meningitis
- Epidural abscess
- Subdural abscess
- Intracerebral abscess
- Pott's puffy tumor – osteomyelitis of the frontal bone

- Most commonly occurs with frontal sinusitis

IMMUNOCOMPROMISED PATIENTS

INVASIVE FUNGAL SINUSITIS

- Immunocompromised
  - Transplant
  - Poorly controlled diabetes

- Fever is not always present
- Sinus symptoms
- New facial/orbital/palatal swelling, eschar, pain, or numbness

INVASIVE FUNGAL SINUSITIS

- Emergency Consult
- Endoscopic exam and MT biopsy
- CT/MRI
- Requires surgical debridement
- IV antifungals
- High mortality even with rapid diagnosis

INDICATIONS FOR SINUS SURGERY

- Rhinosinusitis complications
  - Orbital abscess
  - Intracranial abscess
- Sinus mucocele/mucopyocele
- Fungal Sinusitis
- Massive polyps
- Sinonasal neoplasm
- Chronic rhinosinusitis unresponsive to medical management

UNILATERAL SINUS SYMPTOMS

- Unilateral blockage or drainage
  - Structural problem
  - Nasal polyps
  - Sinonasal tumor – inverted papilloma, malignancy

UNILATERAL SINUS SYMPTOMS

- CSF rhinorrhea
  - Clear, watery, salty
  - Usually unilateral
  - More prominent with bending forward
  - Trauma
  - Spontaneous leak
    - Benign Intracranial HTN
    - Typically obese

NASAL OBSTRUCTION

SEPTAL DEVIATION

NASAL VALVE COLLAPSE

INFERIOR TURBINATE HYPERTROPHY

THE THROAT

INFECTIOUS CAUSES OF SORE THROAT

- PHARYNGITIS
- TONSILLITIS
- SUPRAGLOTTITIS
- DEEP NECK SPACE ABSCESS
  - Peritonsillar abscess
  - Parapharyngeal space abscess
  - Ludwig's angina
  - Retropharyngeal abscess

TONSILLITIS/PHARYNGITIS

- Usually bilateral
- Often associated with fever
- Viral or bacterial

- Rapid antigen test or Throat culture for strep
  - PCN or Amoxicillin for 10 days
  - For PCN allergic - Cephalosporin, Clindamycin or Clarithromycin for 10 days
- Consider Mono

Shulman et al. Clinical Practice Guidelines Group A Strep 2012, Clinical Infectious Disease

PERITONSILLAR ABSCESS

- Unilateral sore throat
- Deviation of uvula
- TRISMUS
- Ipsilateral otalgia

PERITONSILLAR ABSCESS

- TREATMENT
- Immediate referral
- Aspiration or I&D
- Antibiotics

SUPRAGLOTTITIS

- Severe sore throat.
- Muffled voice.
- Fever.
- Normal OP exam
- No trismus.
- Drooling.
- “Tripod” position

- Airway emergency

SUPRAGLOTTITIS

- TREATMENT

- Immediate ENT referral
- Establish airway
  - Intubation vs. tracheotomy
- Antibiotics
- Steroids

SORE THROAT

- OTHER CAUSES

- Unilateral sore throat
- More insidious onset
- Ispilateral otalgia
- No fever
- Lymphadenopathy

TONSILLAR CANCER

- TYPES OF MALIGNANCY
  - Squamous cell carcinoma – most common (70%)
  - Lymphoma
- Risk factors for SCCa
  - Tobacco
  - Alcohol
  - Association with HPV (in patients without alcohol or tobacco history)

SORE THROAT

- When to refer to an Otolaryngologist
  - Severe sore throat with no abnormality on exam.
    - Laryngoscopy needs to be performed.
  - Concern for an abscess.
  - Concern for malignancy.
  - Refractory to treatment.
  - Insidious onset.

HOARSENESS

- Laryngitis
  - Usually viral
  - Worse with straining voice
  - Vocal rest
  - Hydration
  - Resolves with time
  - If recurrent – can be fungal (steroid inhaler)

HOARSENESS

- When to refer to the Otolaryngologist
  - Laryngoscopy – only option for visualization
  - Persistent hoarseness – does not resolve after usual time period for URI
  - Recurrent episodes of hoarseness
  - Concerning associated symptoms
  - Interferes with quality of life

HOARSENESS

- Vocal Fold Nodules
- Vocal over-use
- Can be present since childhood

- Voice therapy

HOARSENESS

- Vocal Fold Polyps
  - Husky voice
  - Can cause obstruction
- Bilateral – associated with smoking (Reinke's edema)

- Surgical excision
- Smoking cessation

HOARSENESS

- Vocal Fold Mass
  - Squamous cell carcinoma
    - Associated with smoking
    - T1/T2 associated with much higher survial rate – early detection is important
  - Papilloma
    - Associated with HPV
    - Often presents in childhood

HOARSENESS

- Concerning symptoms
  - Pain – sore throat, ear pain
  - Dysphagia
  - Odynophagia
  - Aspiration

  - Concern for head and neck malignancy

HOARSENESS

- Vocal Fold Paralysis – breathy voice
  - Injury
    - Intubation
    - Trauma
    - Esophagoscopy, TEE
  - Viral
  - Malignancy (affecting RLN)
    - H&N malignancy
    - Esophageal cancer
    - Lung cancer
    - Thyroid cancer
    - Skull base tumor

HOARSENESS

LARYNGOPHARYNGEAL REFLUX

- Heartburn
  infrequent
- Throat clearing
- Hoarseness
- Globus sensation
- Post nasal drip

HOARSENESS

LARYNGOPHARYNGEAL REFLUX

- Vocal fold granulomas can form

- Treatment
  - High dose PPI
  - Diet/Behavior change
  - Months to resolve
  - Botox for granuloma

THE ROLE OF THE OTOLARYNGOLOGIST

- ENT complaints are very common
  - Most are easily treated/recognized by the PCP

- Refer if you are concerned about what you cannot see
  - Advantage of nasal endoscopy, fiberoptic laryngoscopy, oto-microscopy and debridement
- Refer if symptoms continue to affect patient's quality of life