1. **Given an appropriate history and/or physical examination:**
2. **Differentiate life-threatening conditions (epiglottitis, retropharyngeal abscess) from benign conditions.**
3. **Manage the condition appropriately.**

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|  | **Clinical Presentation** | **Diagnosis** | **Treatment** |
| **Croup** | -Common, 6 mos to 4 yrs-Fall, early winter-Hoarse voice, barking cough, stridor, worse at night | -Clinical-Atypical presentation: CXR 🡪 ‘steeple sign’ | -Humidified O2; dexamethasone; epinephrine-Intubation if unresponsive to treatment |
| **Bacterial Tracheitis** | -Rare, all age groups-Similar to croup, but more rapid deterioration and fever-Toxic appearance-Not respond to croup trt | -Clinical-Definitive Dx via endoscopy | -Start croup therapy-Often requires intubation-Antibiotics |
| **Epiglottitis** | -Rare-Toxic appearance, rapid progression, severe airway obstruction, drooling, stridor, tripod position, anxiety | -Clinical diagnosis-Avoid throat exam to avoid further exacerbation | -Intubation-Antibiotics\*Prevented with Hib vaccine |
| **Retropharyngeal Abscess** | -Sore throat, fever, torticollis, dysphagia, neck pain, muffled voice-Respiratory distress, stridor, neck edema, cervical lymphadenopathy | -Contrast CT neck | -IV hydration-IV Antibiotics (clinda 600-900mg, cefoxitin 2gm, or pip/tazo)-+/- Surgical intervention  |
| **Peritonsillar Abscess** | -Fever, sore throat, odynphagia, dysphagia, otalgia-Trismus, muffled/’hot potato’ voice, inf & med displacement tonsil, contralateral deflection uvula, drooling, lymphadenopathy | -Often clinical-Needle aspiration purulent material if dx in question-CT with contrast to confirm and/or if concern of spread | -Needle aspiration, I&D, or, rarely, tonsillectomy-Although polymicrobial, most common grp A Strept 🡪 10 d course Abx against GAS and oral anaerobes (amox/clav, PenV+metronidazole, clinda)-Single dose IV methylprednisolone-F/up 24 hrs post aspiration |
| **Ludwigs Angina** | -Dysphagia, odynphagia, trismus, edema upper neck & floor of mouth-Tongue may displace 🡪 airway compromise-Stridor, cyanosis | -Clinical-Ct with contrast may augment clinical findings | -Definitive airway management (fiberoptic intubation/tracheostomy)-Systemic antibiotics (clinda or amp + nafcillin, PCN + metronidazole until Cx available)-+/- I&D |

1. **Make the diagnosis of bacterial sinusitis by taking an adequate history and performing an appropriate physical examination, and prescribe appropriate antibiotics for the appropriate duration of therapy.**

\*FYI: Most common sinus involved: MAXILLARY > Ethmoid > frontal > sphenoid

**ACUTE RHINOSINUSITIS (< 4 WEEKS)**

-VIRAL > bacterial

 -Viruses: rhinovirus, parainfluenza, influenza

 -Bacterial: S. pneumo, nontypable H. Flu, Moraxella Caterhalis (children), small % staph aureus

 -Fungal: most common in immunocompromised, repetitive & invasive infections

SIGNS & SYMPTOMS:

 -Nasal drainage, congestion, facial pain/pressure, headache, cough, sneeze, fever

 -Tooth pain & halitosis associated with bacterial sinusitis

-Symptoms may localize with further invasion of sinus: increased symptoms when bending/supine

-COMPLICATIONS: meningitis, epidural abscess, cerebral abscess

-DIAGNOSIS: clinical

-Recommended reserve bacterial diagnosis to: PERSISTENT SYMPTOMS (>10d in adult, >10-14d in children), PRURULENT DISCHARGE, NASAL OBSTRUCTION, AND, FACIAL PAIN

 -CT Sinuses: to evaluate persistent, chronic, or recurrent symptoms

-TREATMENT:

 -Decongestants, nasal saline lavage, nasal glucocorticoids

 -Suspect bacterial/persistent: Antibiotics:

 -Amoxicillin 500 mg tid x 10 d

 -If PCN allergy: Doxycycline 100 mg bid Day 1, then 100 mg daily for 10-14 d course

 -Suspect fungal: REFER (may need biopsy)

 -Severe/intracranial complications: IV antibiotics +/- surgical intervention

**CHRONIC RHINOSINUSITIS (> 12 WEEKS)**

-more commonly bacterial/fungal; high morbidity

-constant congestion, sinus pressure, intermittent increase in severity for YEARS

-CT may identify extent of disease, detect underlying defects/obstruction, assess response to therapy

-TREATMENT: difficult

 -Refer to Otolaryngologist for endoscopic exam +/- biopsy

-Repeated culture guided antibiotics 3-4 wks duration, intranasal glucocorticoids, sinus irrigation, +/- surgery

1. **In a patient presenting with upper respiratory symptoms:**
2. **Differentiate viral from bacterial infection (through history and physical examination).**
3. **Diagnose a viral upper respiratory tract infection (URTI) (through the history and a physical examination).**
4. **Manage the condition appropriately (e.g., do not give antibiotics without a clear indication for their use).**

-Etiology of Nonspecific URTI:

-Rhinovirus (30-40%), influenza, parainfluenza, coronavirus, adenovirus, RSV (pediatric, elderly, immunocompromised)

-Viral URTIs lack anatomic localization of signs and symptoms

-Course is acute, mild and self limited; median duration approx. one week (2-10d)

-Signs & Symptoms may include: rhinnorhea, nasal congestion, cough, sore throat, fever, malaise, sneezing, lymphadenopathy, hoarseness

-Secondary Bacterial infections complicate approx. 0.5-2% of viral URTI (e.g. sinusitis, OM, pneumonia)

 -Infants, elderly, chronically ill are at higher risk

-Present with prolonged course, increased severity, anatomic localization of signs and symptoms, often as a rebound after clinical improvement

-TREATMENT:

 -Symptom based: decongestants, NSAIDS, dextromethorphan, lozenges with topical anaesthetic

 -Zinc, vitamin C, Echinacea have not shown consistent benefit in clinical trials

 -Antibiotics are NOT indicated for nonspecific/viral URTI without other specific indication

1. **Given a history compatible with otitis media, differentiate it from otitis externa and mastoiditis, according to the characteristic physical findings.**

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| **OTITIS MEDIA** (*Streptococcus pneumonia*, *Haemophilus influenza*, *Streptococcus pyogenes*)-HISTORY: Often preceded by URTI; Otalgia, aural pressure, pyrexia, decreased hearing, otorrhea-PHYSICAL EXAM: AOM: thickened, hyperemic, immobile TM;  OME: dull gray- or yellow tinged, immobile TM, if TM clear may see bubble/air-fluid levels-TREATMENT: Analgesia & Antipyretics -Antibiotics: for all children < 6 mos, children 6 mos – 2 years with certain diagnosis, and all children with  severe infection (moderate to severe otalgia or temperature > 39 deg C); Otherwise Abx may be deferred provided reliable observation and ready access to medical care/f-up -Amoxicillin 80-90 mg/kg/d div bid; Macrolides/Clinda/Cephalosporin in PCN allergy/resistant infection |
| **OTITIS EXTERNA** (gm neg: *pseudomonas, proteus*; fungi: aspergillus)-HISTORY: often history of recent water exposure (e.g. swimming) or mechanical trauma (e.g. scratching/cotton swabs); otalgia, pruritis-PHYSICAL EXAM: Erythema & edema of external canal, purulent exudate, pain with manipulation of auricle-TREATMENT: Acidification with drying agent (50/50 mix isopropyl alcohol/white vinegar)-infection: acidic otic antibiotic drops containing aminoglycoside/fluoroquinolone +/- corticosteroid (e.g. neomycin sulfate, polymyxin B sulfate; used abundantly – 5 or more drops tid-qid to penetrate the canal) |
| **MASTOIDITIS** (*S pneumoniae* & *S pyogenes*, with *S aureus* and *H influenzae* occasionally)-HISTORY: usually follows weeks of inadequately treated OM; post-auricular pain & erythema, spiking fever-PHYSICAL EXAM: Postauricular pain, edema & erythema; fever; down & outward displaced pinna; OM on otoscopy-TREATMENT: IV Antibiotics: ceftriaxone + nafcillin or clindamycin until Cx results; then Cx guided for 2-3 weeks -Myringotomy for Cx +/- drainage -Failure of medical therapy 🡪 mastoidectomy |

1. **In high-risk patients (e.g., those who have human immunodeficiency virus infection, chronic obstructive pulmonary disease, or cancer) with upper respiratory infections: look for complications more aggressively and follow up more closely.**
2. **In a presentation of pharyngitis, look for mononucleosis.**

-SIGNS & SYMPTOMS:

 -fever, pharyngitis, fatigue, anorexia, myalgia

-tonsillar exudates, splenomegaly (in up to 50% cases), lymphadenopathy (especially posterior cervical chain), maculopapular (occasionally petechial) rash in <15% of patients (>90% cases if ampicillin has been given)

 -symptoms generally resolve over 2-3 weeks, fatigue may persist for months

-DIAGNOSIS:

 -CBC: lymphocytosis (>50% lymphocytes), atypical lymphocytes on smear

 -Monospot: identifies heterophile antibodies thought to be diagnostic of EBV infection

-may be negative early in course (i.e. specific, but not sensitive early on, usually positive by 4 wks)

 -sensitivity also decreased in infants and elderly

-COMPLICATIONS: Secondary bacterial pharyngitis (often streptococcal), splenic rupture, acalculous cholecystitis, hepatitis, pericarditis, myocarditis, transverse myelitis, encephalitis, Guillain-Barre syndrome

-TREATMENT: rest and analgesia (acetaminophen/NSAIDS)

 -AVOID all contact sports for minimum 4 weeks after illness onset to avoid splenic injury

 \*Note: Use of corticosteroids is associated with increased complications and is recommended only for patients

 with severe disease, such as upper airway obstruction, neurologic disease, or hemolytic anemia

 \*Note: Acyclovir decreases viral shedding but with no clinical benefit

1. **In high-risk groups:**
2. **Take preventive measures (e.g., use flu and pneumococcal vaccines).**
3. **Treat early to decrease individual and population impact (e.g., with oseltamivir phosphate [Tamiflu], amantadine).**

**INFLUENZA VACCINE CANDIDATES IN BC 2011 SEASON:**

<http://www.healthlinkbc.ca/healthfiles/hfile12d.stm>

**PNEUMOCOCCAL VACCINE**

**PNEUMOCOCCAL CONJUGATE (PCV13) VACCINE**

<http://www.healthlinkbc.ca/healthfiles/hfile62a.stm>

**PNEUMOCOCCAL POLYSACCHARIDE VACCINE**

<http://www.healthlinkbc.ca/healthfiles/hfile62b.stm>

**USE OF ANTIVIRAL DRUGS FOR INFLUENZA**

<http://www.bccdc.ca/resourcematerials/guidelinesandforms/guidelinesandmanuals/antiviraldrugsinfluenza.htm>