

# Upper Respiratory Tract Infection URTI

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# Objectives

- \* To learn the epidemiology and various clinical presentation of URT
- \* To identify the common etiological agents causing these syndromes
- \* To study the laboratory diagnosis of these syndromes
- \* To determine the antibiotic of choice for treatment

# Definition

- \* Pharyngitis
- \* Otitis Media
- \* Sinusitis
- \* Epiglottitis

## Conducting Passages

Upper respiratory tract

Nasal cavity

Pharynx

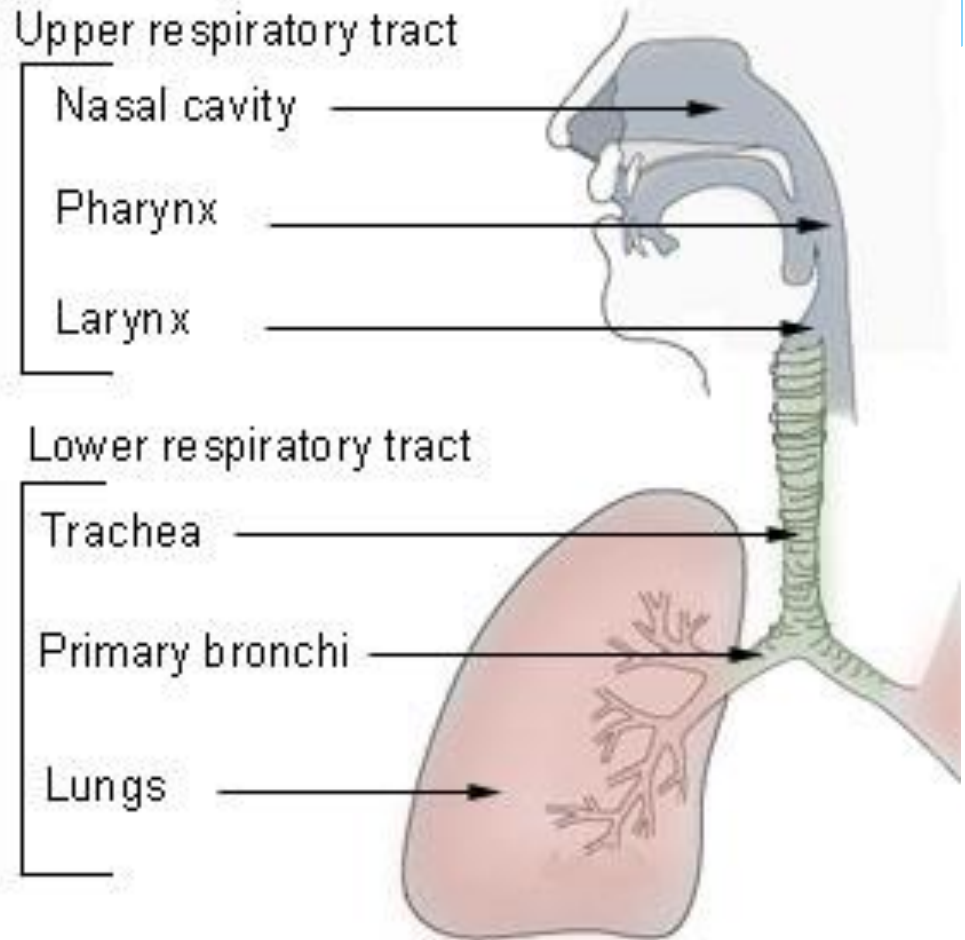
Larynx

Lower respiratory tract

Trachea

Primary bronchi

Lungs



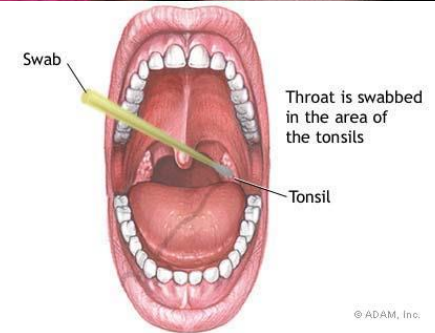
# Pharyngitis

- \* Late fall, winter, early spring
- \* 5 to 15 years
- \* erythema, edema, and/or exudates
- \* Tender, enlarged  $> 1$  cm lymph nodes
- \* Fever  $38.4$  to  $39.4^{\circ}$  C
- \* No signs and symptoms of viral infections



# Pharyngitis

- \* Etiology
- \* Viral is the most common  
i.e Respiratory viruses,  
Enterovirus, HSV, EBV,  
HIV.
- \* Bacterial Group A  
streptococcus
- \* Neisseria gonorrhoeae
- \* Anaerobic bacteria i.e  
Lemierre's syndrome
- \* Corynebacterium  
diphtheriae



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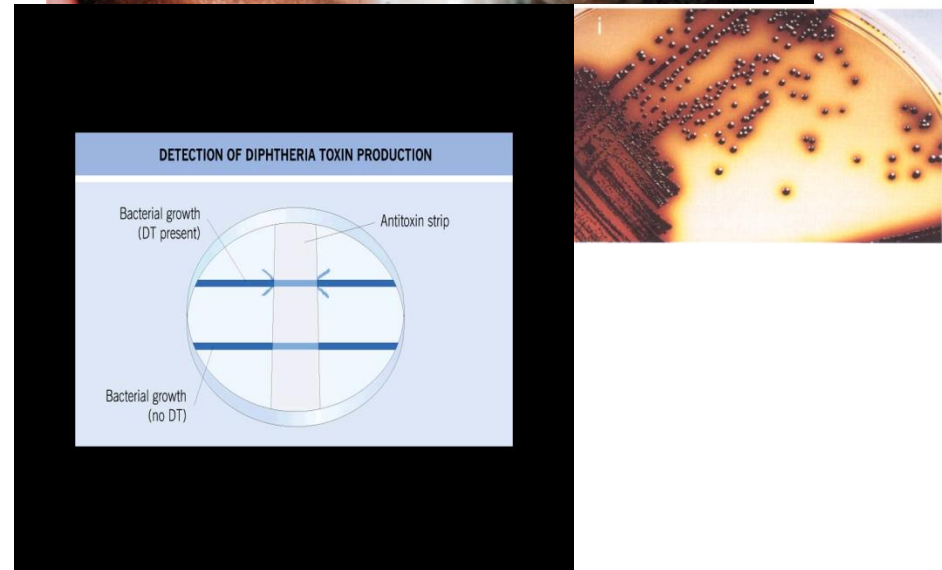


# Diagnosis of Group A Streptococcus

- \* Rapid Bacterial antigen detection
- \* Culture
- \* Antistreptolysin O

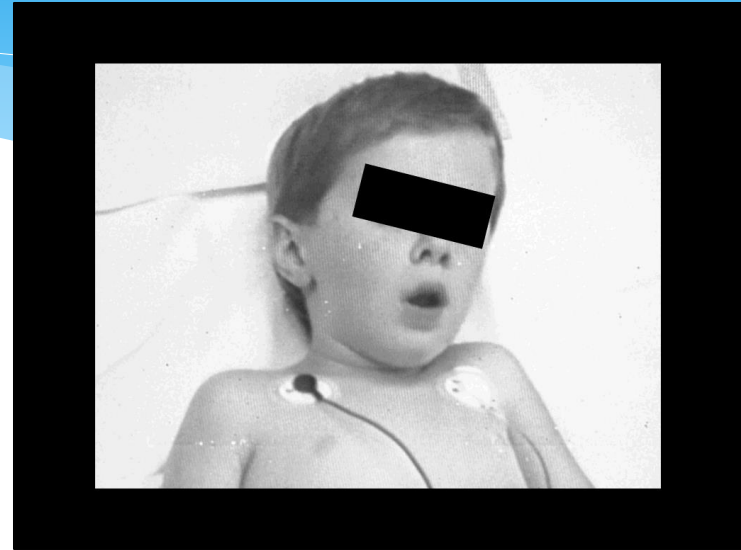
# Corynebacterium diphtheriae

- \* One of the most common causes of death in unvaccinated children 1-5yrs.
- \* Toxin mediated disease
- \* Rapid progression tightly adhering gray membrane in the throat
- \* Tinsdale media
- \* ELIK's Test for confirmation
- \* Penicillin or erythromycin



# Epiglottitis

- \* Usually young unimmunized children presented with dysphasia, drooling, and distress
- \* *H.influenzae* Type b
- \* *S.pneumoniae*
- \* *S.aureus* or Beta hemolytic streptococcus
- \* Viral or candida
- \* Ceftriaxone





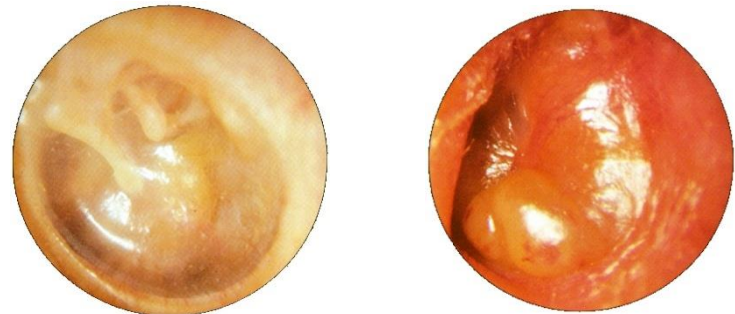
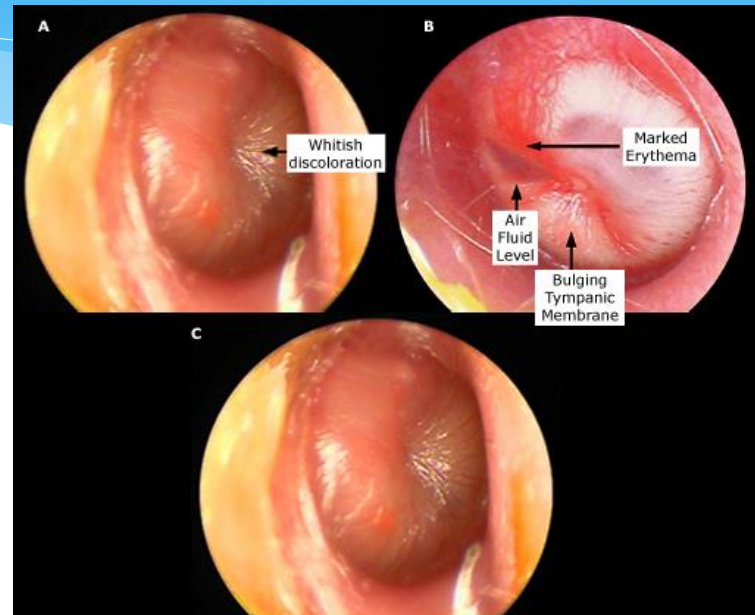
# *Pertussis* (whooping cough)

- \* *Bordetella pertussis* (GNB)
  - \* Pertussis toxin (PT )\*
  - \* Filamentous hemagglutinin (FHA)
  - \* Pertactin (PRN)
- \* Incubation period 1 to 3 wks
- \* Catarrhal Stage 1-2 weeks
- \* Paroxysmal Stage 1-6 weeks
- \* Convalescent Stage 3-6 weeks
- \* Leukocytosis with lymphocyte predominance
- \* **Nasopharyngeal (NP) swabs**
- \* Charcoal-horse blood T media
- \* Regan-Lowe, Bordet-Gengou
- \* Treatment erythromycin and prevention by vaccination



# Acute otitis media

- \* *S. pneumoniae*
- \* *H. influenzae*
- \* GAS
- \* *S. aureus*
- \* *Moraxella catarrhalis*
- \* Viral and fungal
- \* Tympanocentesis
- \* Amoxicillin or AMC
- \* Mastoiditis treat for 2 wks



# Bacterial sinusitis

- \* **Acute sinusitis**
  - \* Children
  - \* Viral etiology 13%
  - \* Mainly clinical diagnosis
  - \* Aspiration in case Immunocompromized , treatment failure
  - \* Diagnosis X-rays CT/MRI
  - \* Periorbital cellulitis R/O sinusitis by CT/MRI
  - \* Post-septal involvement treat as meningitis
- \* **Chronic sinusitis**
  - \* Less local symptoms
  - \* Mimic allergic rhinitis
  - \* Dx Image less useful than acute (changes persist after TTT) and to R/O tumor
  - \* Obtain odontogenic X-rays if maxillary sinus

# Bacterial sinusitis

- \* Acute sinusitis

- \* S.pneumoniae
- \* H.infuenza
- \* M.catarrhalis

- \* Treatment

- \* Quinolones or
- \* Ceftriaxone
- \* For 1~2 weeks

- \* Chronic sinusitis

- \* S.pneumoniae
- \* H.infuenza
- \* M.catarrhalis
- \* Oral anaerobes

- \* Treatment

- \* Same as acute sinusitis
- \* Duration
  - \* For 2~4 weeks

# Clinical Presentations of Sinusitis



Figure 2. View of right nostril showing pale, boggy nasal mucosa with clear secretions in patient with perennial allergic rhinitis.

Figure 2 courtesy of Richard Hebert II, MD, and Mark Gerber, MD, department of otolaryngology, Children's Memorial Hospital, Chicago.

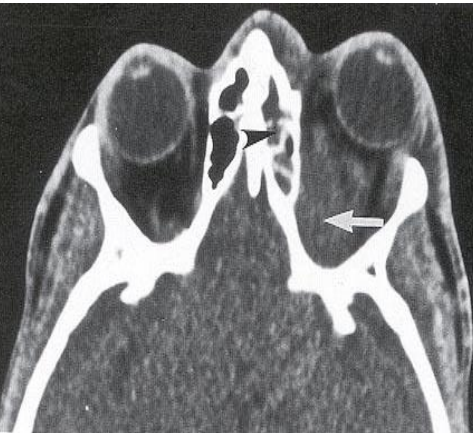
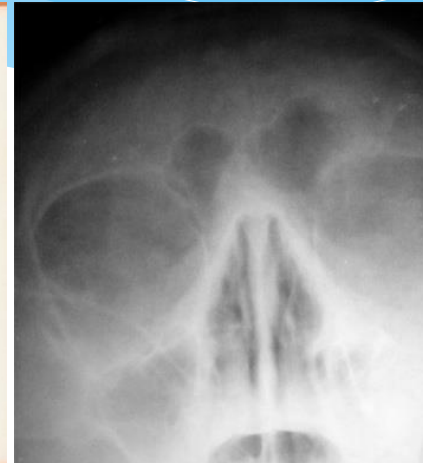
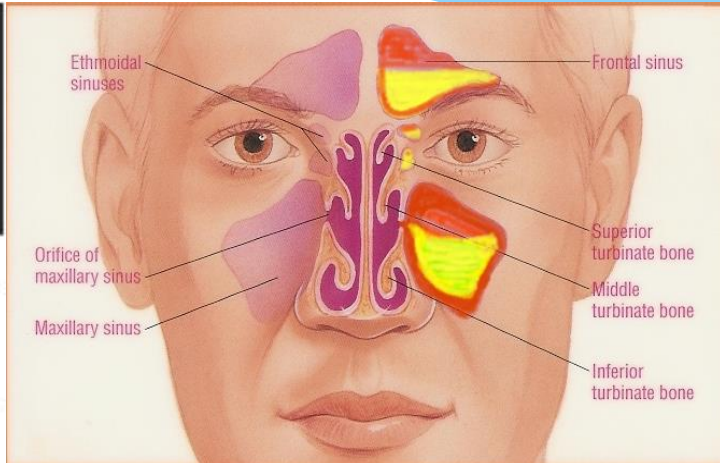
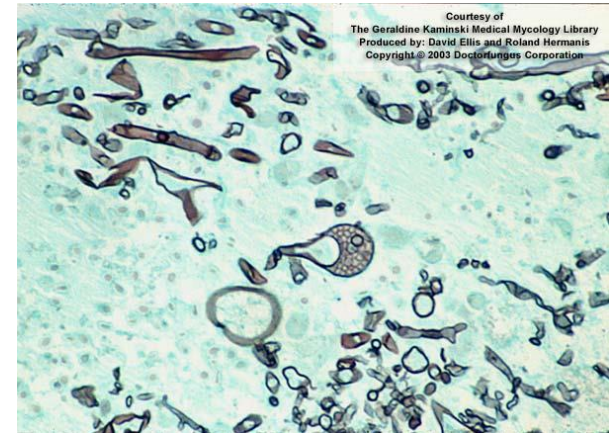


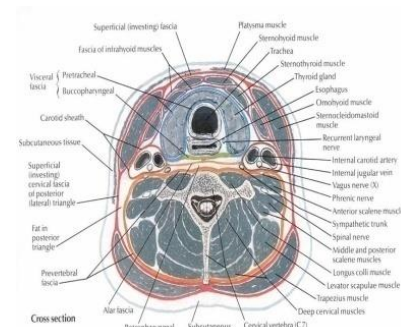
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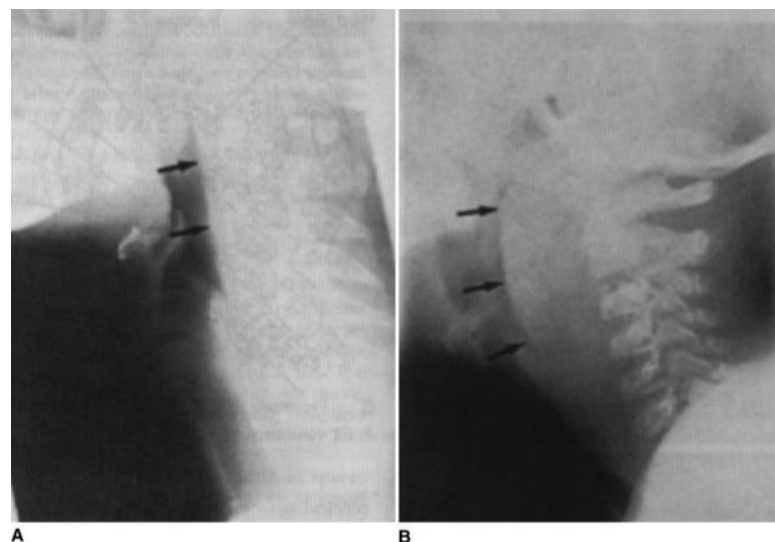
# Deep neck space infections

- \* Lateral pharyngeal, retropharyngeal or prevertebral space
- \* Patients are toxic with unilateral posterior pharyngeal soft tissue mass on oral exam
- \* Neck stiffness with retropharyngeal space infection/abscess
- \* Retropharyngeal ( danger space) infection may extend to mediastinum and present as mediastinitis
- \* Prognosis is poor without surgical drainage



# Deep neck space infections treatment

- \* Usual pathogens
  - \* Oral streptococci and anaerobes
- \* TTT
  - \* Meropenem or
  - \* Piperacillin
  - \* Clindamycin
- \* Duration
  - \* 2 weeks



# Other Infections

- \* Lemierre's syndrome
- \* As a complication peritonsillar abscess or post-dental infection
- \* Patient present with sore throat, fever and shock due IJV thrombophlebitis which leads to multiple septic emboli in the lung
- \* *Fusobacterium necrophorum*
- \* Medical TTT same as deep neck space infection
- \* Venotomy if not respond to medical treatment

