



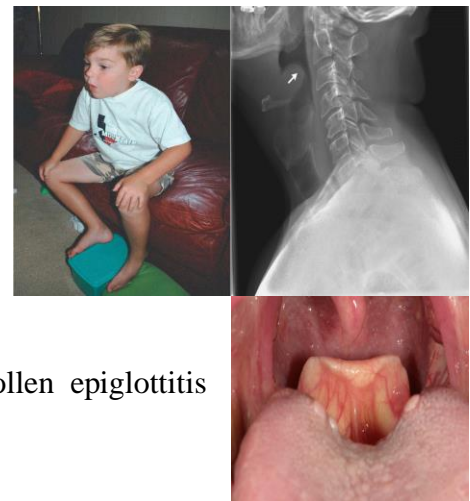
- **Otitis media:**

- **What are the risk factors?**
  - ✓ Upper Respiratory Tract Infections URTIs (most common).
  - ✓ Allergies.
  - ✓ Craniofacial abnormalities (e.g. Down syndrome).
  - ✓ Passive smoking.
- **Why do infants have more risk than adults to have otitis media?**
  - ✓ Because in infants, Eustachian tube is short and horizontal (instead of being relatively long and oblique as in adults).
- **Mention the organisms which can cause otitis media.**
  - ✓ *S. pneumoniae*
  - ✓ *H. influenza*
  - ✓ *Moraxella catarrhalis*.
  - ✓ Viruses include: RSV, rhinovirus and parainfluenza virus.
- **What are the clinical features of otitis media?**
  - ✓ Ear pain, fever, crying/irritability, vomiting/diarrhea and young children may tug on their ears.
- **What are the findings in physical examination?**
  - ✓ Erythematous and bulging tympanic membrane.
  - ✓ Reduced light reflex.
- **What is your treatment?**
  - ✓ Amoxicillin (10-14 days) and if there is resistance → amoxicillin + clavulanic acid will be given.
- **What are the complications of otitis media?**
  - ✓ Tympanic membrane perforation.
  - ✓ Mastoiditis.
  - ✓ Meningitis.
  - ✓ Cholesteatoma.

Notice that recurrent otitis media can cause reduced hearing, speech or language delay.

- **Epiglottitis:**

- **It is an acute inflammation and edema of epiglottis occurring in children between 2-7 years of age.**
- **Causative organism:** is *H. influenza* type b (but it is rare now due to immunization program).
- **Clinical manifestations:**
  - ✓ High-grade fever.
  - ✓ Muffled speech and quiet stridor.
  - ✓ Drooling.
  - ✓ Sitting forward in tripod position with neck hyperextension.
- **Diagnosis:**
  - ✓ It is made upon clinical features described above.
  - ✓ Using a laryngoscope: a cherry red swollen epiglottitis will be seen.
  - ✓ Lateral neck X-ray shows “thumb sign”.
- **Management:**
  - ✓ Epiglottitis is a medical emergency in which the patient must be intubated and treated with antibiotics (e.g. 3<sup>rd</sup> generation cephalosporin).





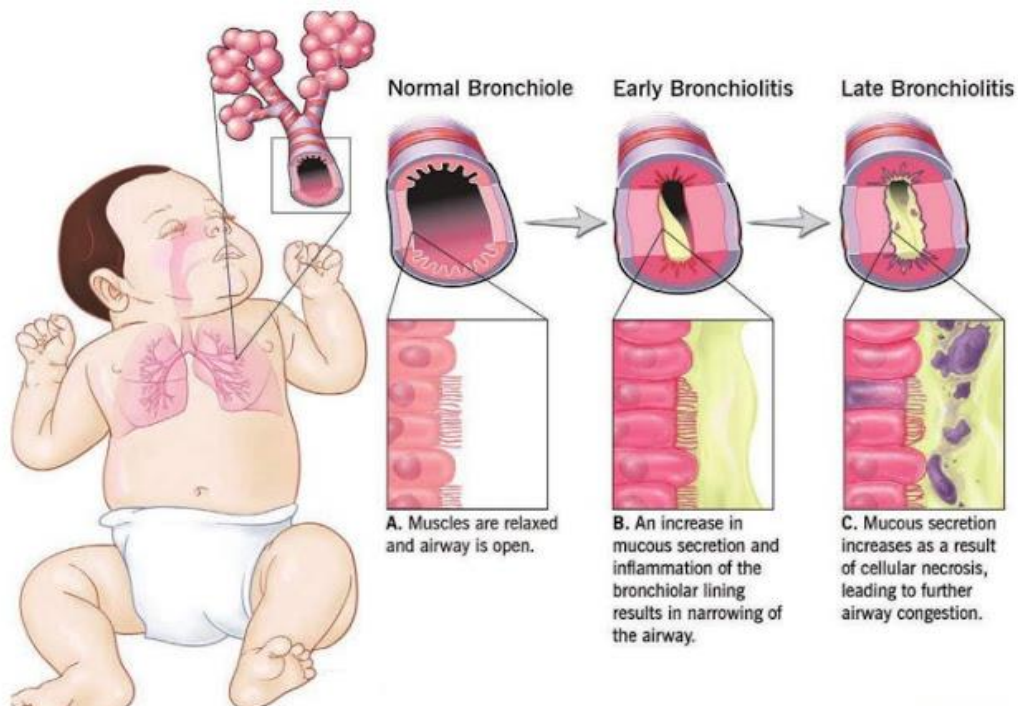
- **Croup (laryngotracheobronchitis):**

- It is inflammation and edema of subglottic: larynx, trachea and bronchi which occurs between 3 months – 3 years of age.
- **Causative organism:** Parainfluenza virus is the most common cause. Other causes include: RSV, rhinovirus, adenovirus, influenza A and B and Mycoplasma pneumoniae.
- **Clinical manifestations:**
  - ✓ Inspiratory stridor (worsening at night and with agitation).
  - ✓ Low-grade fever.
  - ✓ Barky cough.
- **Diagnosis:**
  - ✓ It is made upon clinical features described above.
  - ✓ Anterior-posterior neck X-ray shows “steeple sign”.
  - ✓ Management is supportive.



- **Bronchiolitis:**

- It is inflammation of bronchioles which occurs in the first 2 years of life especially from November – April.
- **Causative organism:** RSV is the most common cause. Other organisms include: parainfluenza virus, adenovirus, rhinovirus and Mycoplasma pneumoniae.
- **Clinical manifestations:**
  - ✓ Fever.
  - ✓ Cough.
  - ✓ Tachypnea and wheezing.
- **Diagnosis:**
  - ✓ It is made upon clinical features described above.
  - ✓ Chest X-ray shows hyperinflation of lungs with patchy infiltrates.
  - ✓ Diagnosis can be confirmed with viral antigen testing using nasopharyngeal aspirate.
- **Management:**
  - ✓ Improvement is noted within 2 weeks.
  - ✓ Supportive management with hydration and oxygen supply as needed.
  - ✓ Nebulized bronchodilators are controversial.

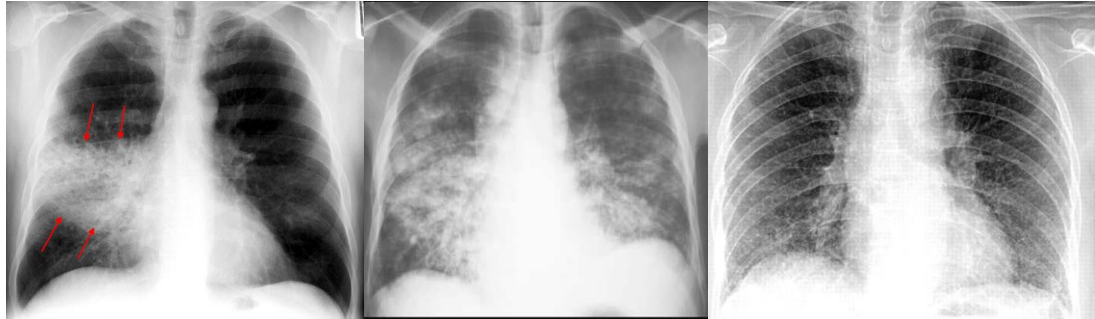




- **Pneumonia:**

- **It is infection and inflammation of lung parenchyma.**
- **Etiology (based on type of pneumonia):**
  - ✓ Lobar pneumonia: *S. pneumoniae*.
  - ✓ Bronchopneumonia: *S. pneumoniae*, *S. aureus* or *H. influenzae*.
  - ✓ Interstitial pneumonia: RSV.
- **Clinical manifestations:**

Viral pneumonia	Bacterial pneumonia
Fever, cough, dyspnea, rales, interstitial infiltrates on chest X-ray, lymphocyte predominance. Management is supportive	Fever, cough, dyspnea, rales, lobar consolidation on chest X-ray and neutrophil predominance. Management with antibiotics



**Lobar pneumonia**

**Bronchopneumonia**

**Interstitial pneumonia**

- **Pertussis (whooping cough):**

- **Causative organism:** *Bordetella pertussis*. Infants younger than 6 months of age are most at risk for severe disease. Notice that routine immunization begins at 2 months.
- **Clinical manifestations (there are three stages of the disease):**

Catarrhal stage (1-2 wks)	Paroxysmal stage (2-4 wks)	Convalescent stage (wks to months)
Upper respiratory symptoms (rhinorrhea, nasal congestion, conjunctival redness and low-grade fever)	Fits of forceful coughing, whoop and post-tussive vomiting	Recovery stage in which paroxysmal cough continues but becomes less frequent and less severe over time

- **Diagnosis:**
  - ✓ It is made based upon clinical features mentioned above.
  - ✓ ↑WBCs (lymphocytosis).
  - ✓ Gold standard: culture of nasopharyngeal secretions.
- **Management:**
  - ✓ Hospitalization of young infants during paroxysmal phase because of choking, apnea or cyanosis.
  - ✓ Antibiotics to prevent the spread of infection (azithromycin or erythromycin).