

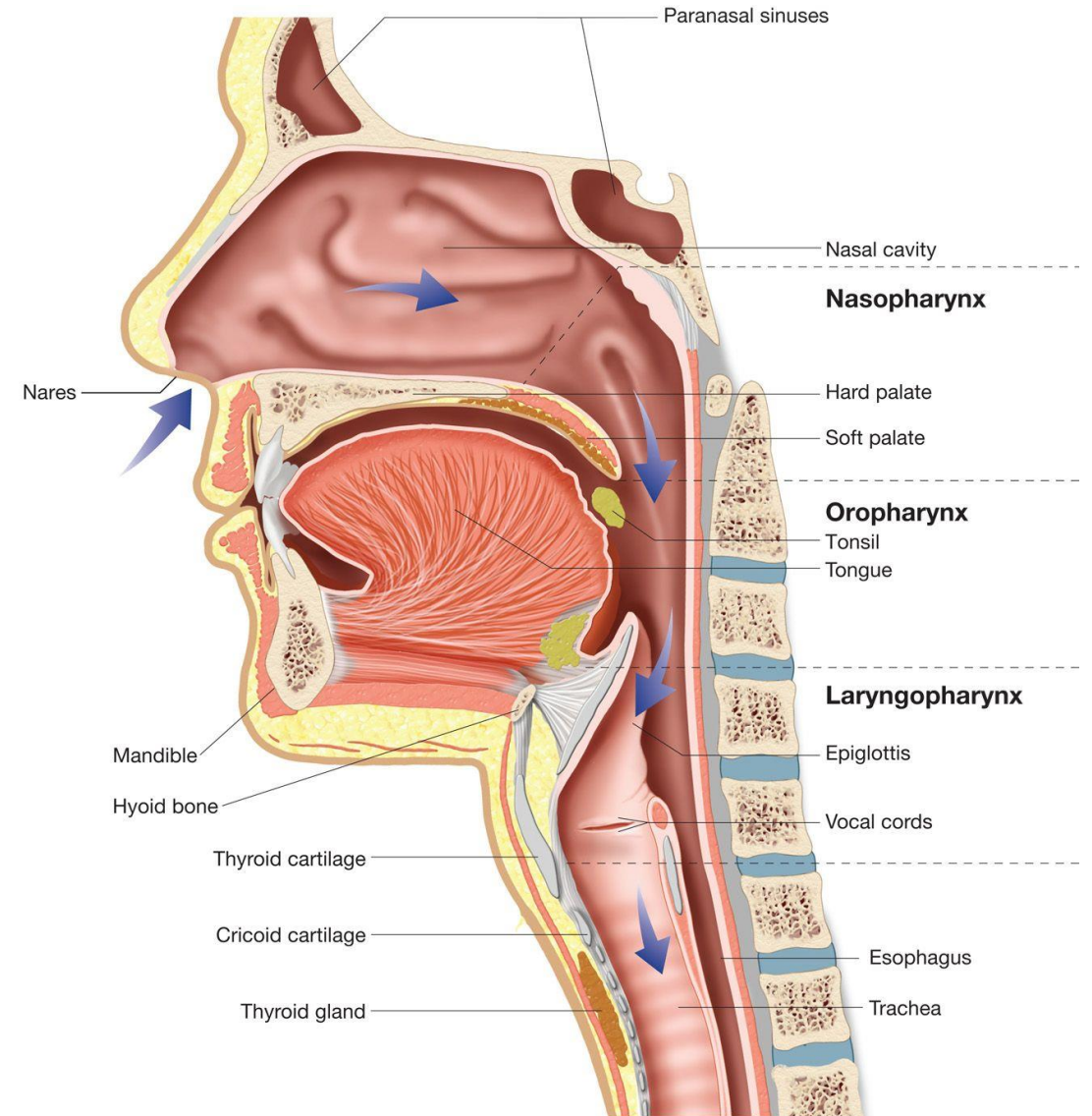
Upper Airway Obstruction in Children



Dr Montaha AL-Iede, MD,DCH,FRACP

Anatomy

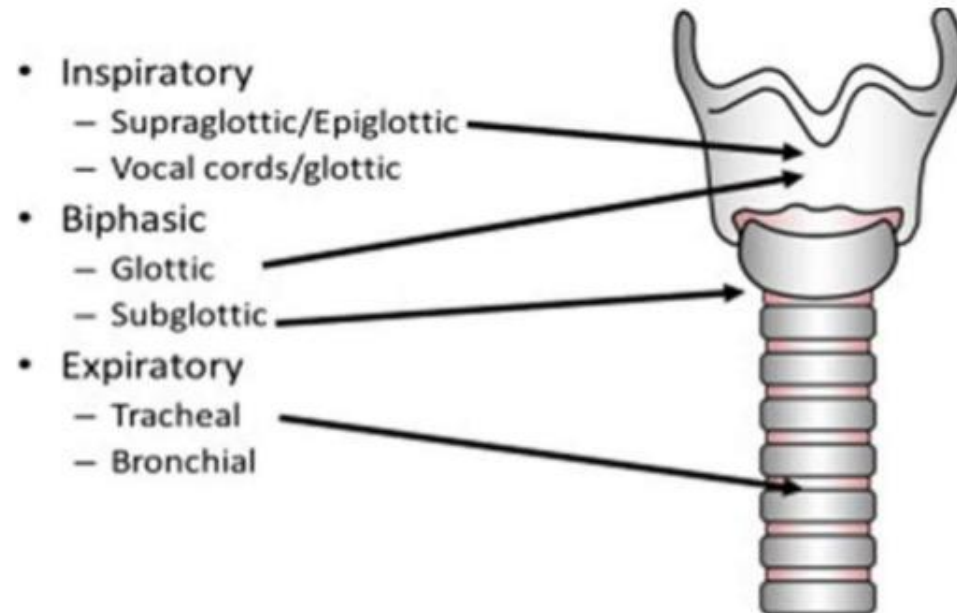
- Upper airway includes:
 - ✓ Nose
 - ✓ Pharynx
 - ✓ Larynx
 - ✓ Trachea



Stridor

Is a high-pitched breath sound resulting from turbulent air flow in the upper airways...A cute or chronic

TYPES OF STRIDOR



Causes of Stridor in Children

Acute Stridor

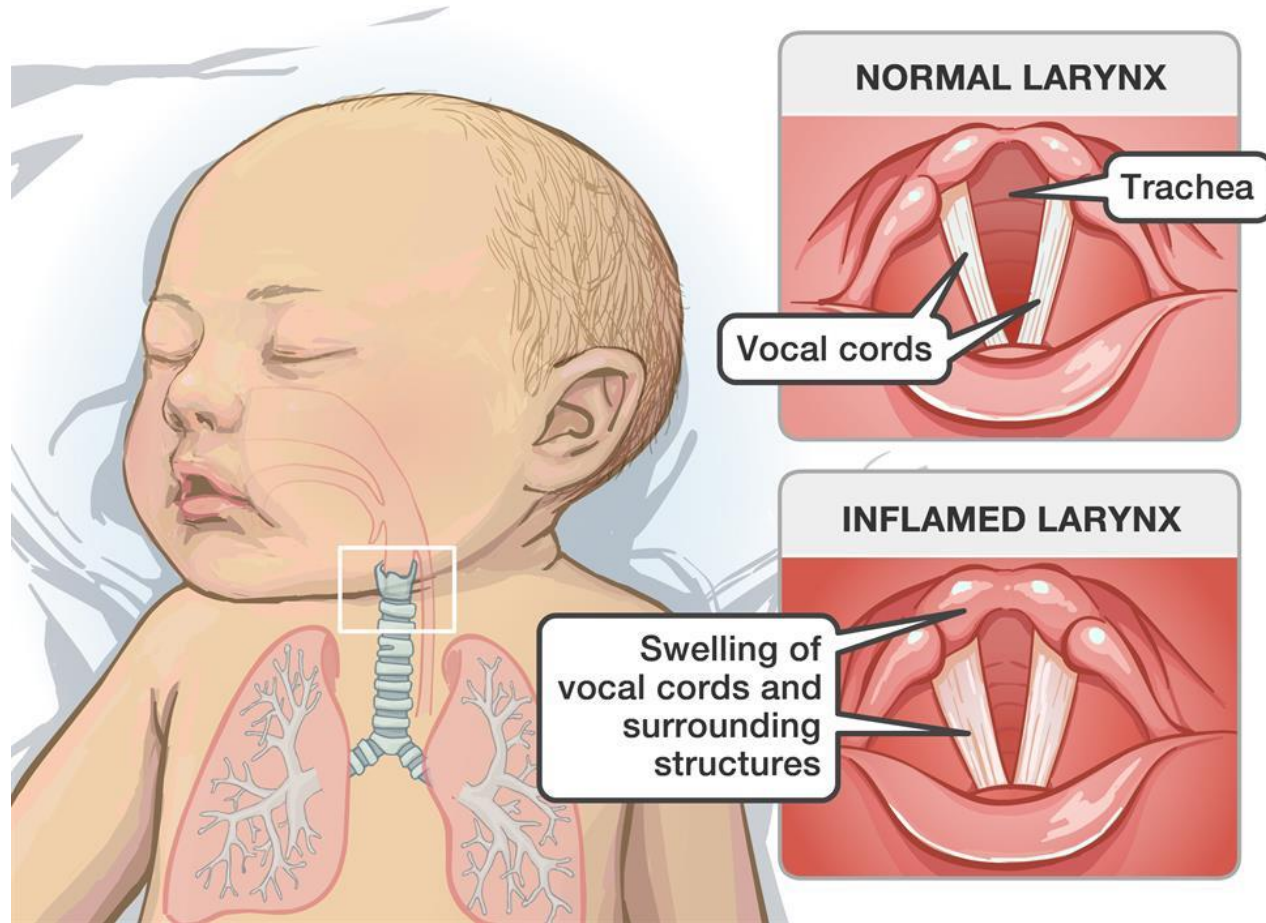
➤ Infectious Causes:

- Croup
- Trachietis
- Epiglottitis
- Retropharyngeal Abscess
- Foreign Body Aspiration

Chronic Stridor

- Laryngomalacia
- Vocal cord palsy

Croup



Clinical Manifestations

- Usually starts with **minor respiratory symptom**: non-specific cough, rhinorrhea and fever
- **Barking cough**, stridor, and resp distress that develops suddenly during the evening or at night
- **Stridor** typically occurs during **inspiration**. Biphasic with more severe cases.
- Hoarseness of voice

Key Points

- Croup is a common cause of airway obstruction in young children.
- Symptoms are usually mild to moderate (worse at night and on day two) and self-limiting but
- can be severe and rarely, life-threatening.
- Avoid distressing a child with croup as this may exacerbate symptoms.

Steeple sign on CXR



Management

- Recommended management includes:
- The appropriate use of corticosteroids and nebulised adrenaline. These interventions have been shown to reduce the need for, and duration of endotracheal intubation, length of stay, and representation rates to emergency services.
- Nursing the child upright on carer's lap

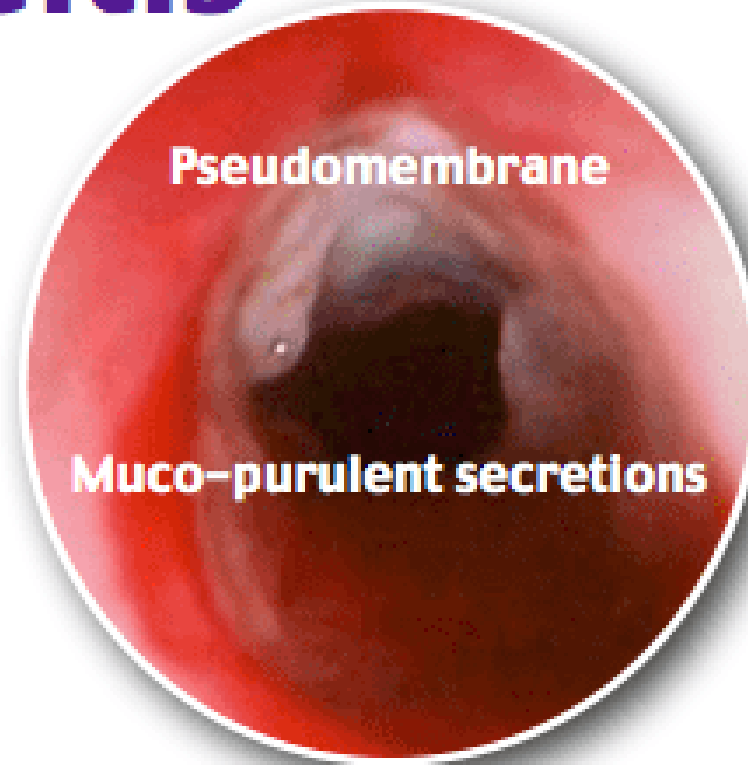
Bacterial Tracheitis



- 3 - 5 years old
- Fever
- Barky cough
- Stridor

[Looks similar to croup/epiglottitis]

Rapid progression



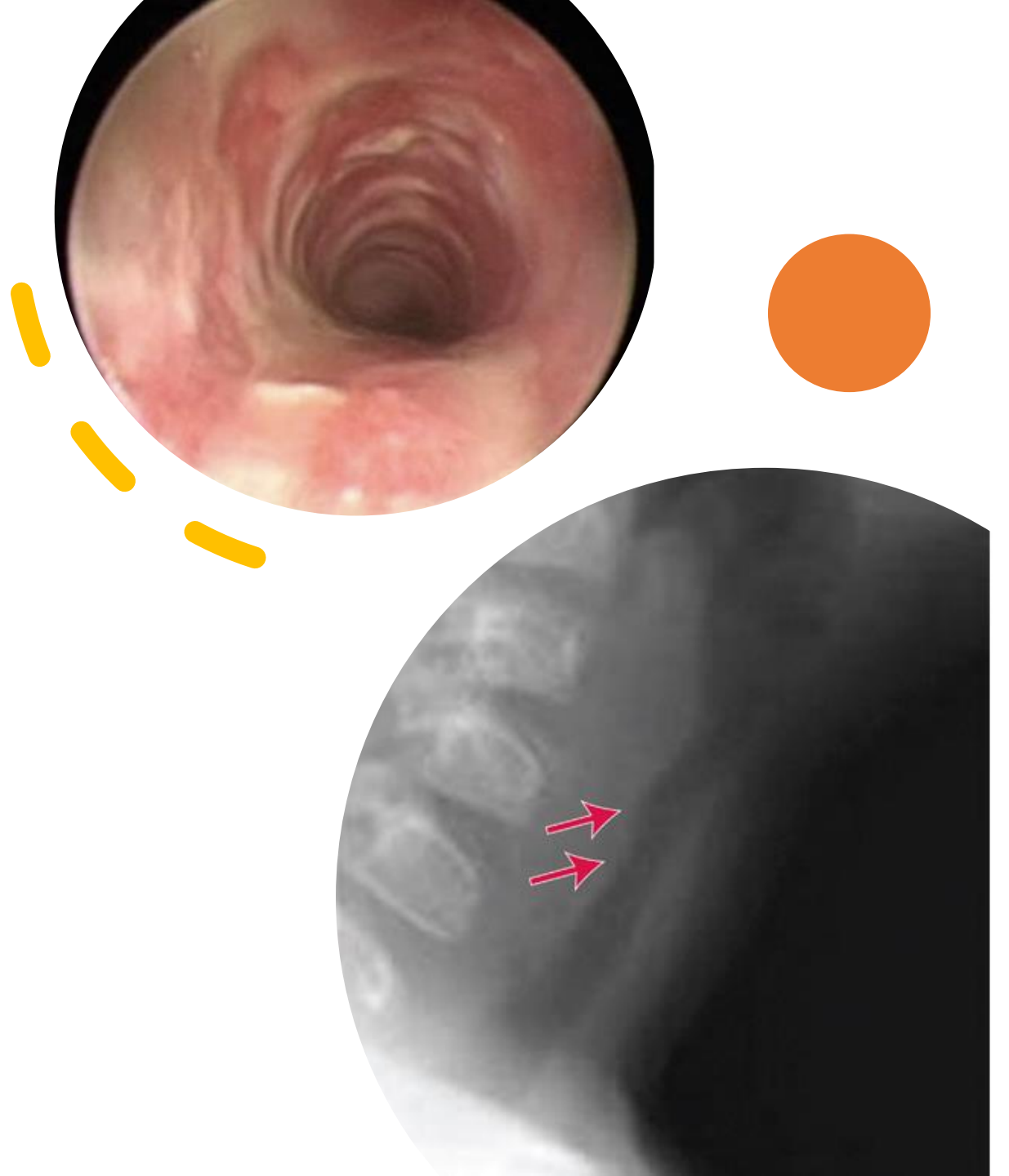
But...Toxic appearing

Airway emergency

- Aggressive airway management (in OR)
- IV antibiotics (broad spectrum)
- IV fluids
- Bronchoscopy

Diagnosis

- Direct laryngoscopy
- Characteristic x-ray findings



Management

- Adequate airway ensured
- Antibiotics effective against ***S. aureus*** and streptococcal species
- Initial antibiotics should cover *S. aureus*, including methicillin-resistant *S. aureus* (MRSA), and streptococcal species; IV vancomycin and ceftriaxone may be appropriate empirically.

Epiglottitis

Clinical presentation

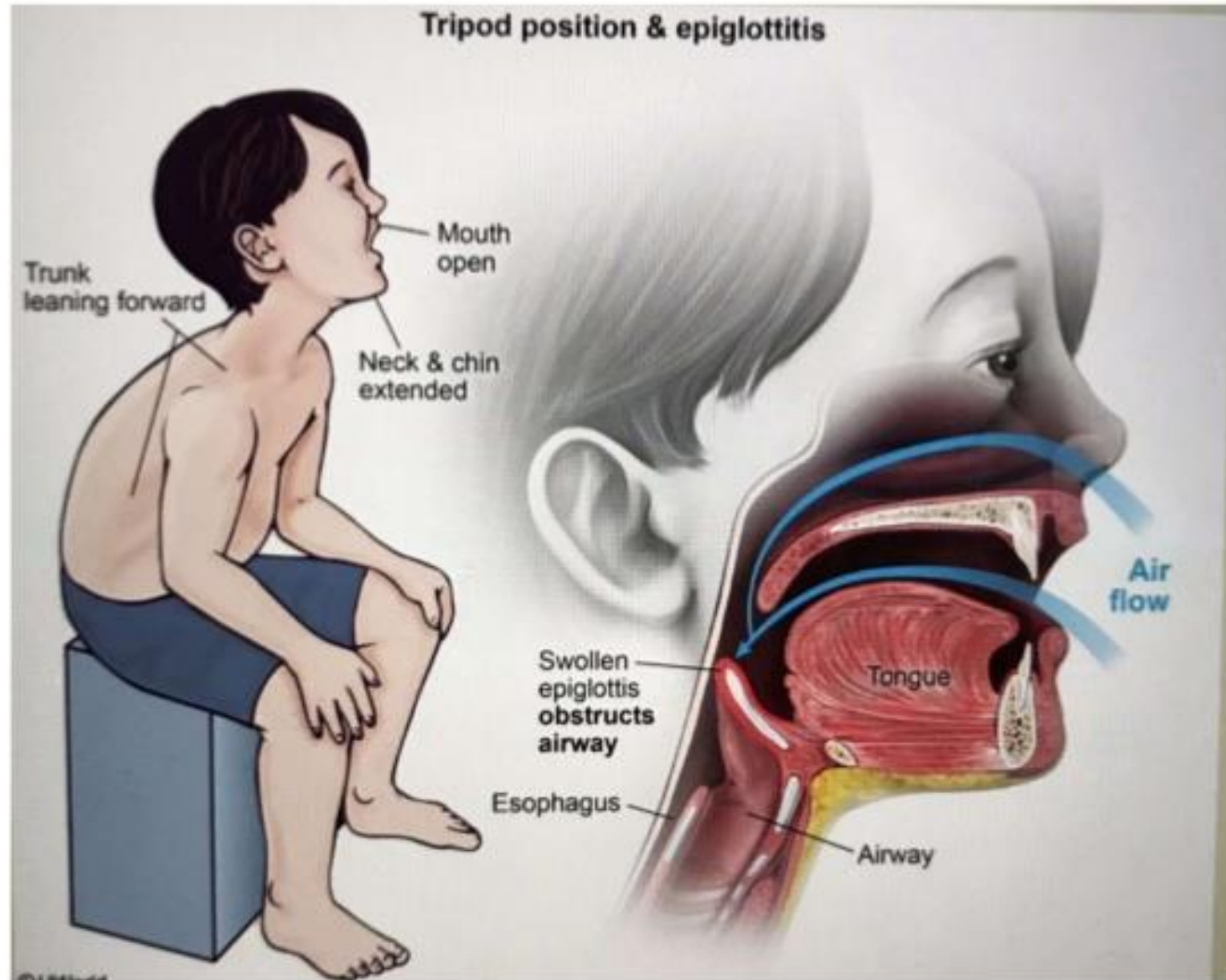
Drooling

Sick looking

Hyperextended neck

Stridor

Cough is unusual





Thumb sign-narrowing of airways

Assessment

- Initial rapid assessment of potential for epiglottitis

Examination

- Approach the child calmly and avoid aggravating the child, do not use a tongue depressor to examine the oral cavity

Personnel Resources

- Ensure the multi-disciplinary team is available and alerted for the potential patient

Airway Management

- Airway management if necessary should be performed in the operating room with mask ventilation proceeding to airway evaluation and intubation; a surgical airway is a last resort

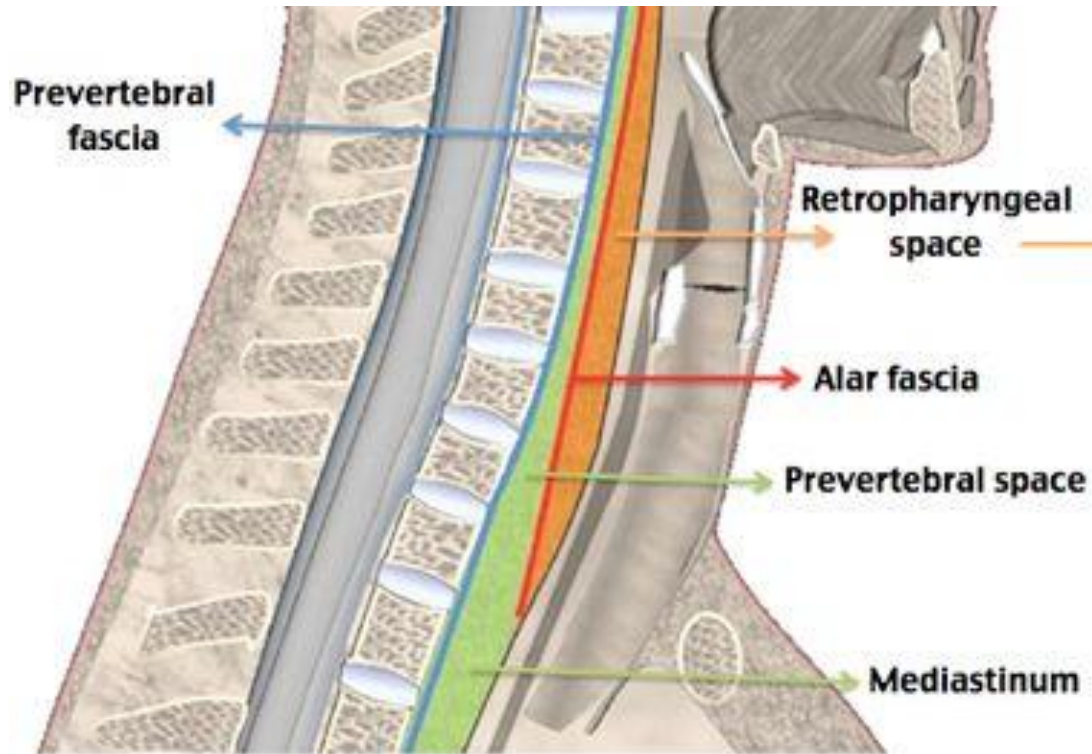
Ongoing Care

- Obtain cultures if possible, continue airway intubation in an ICU setting until a leak develops, and begin appropriate antibiotics as indicated

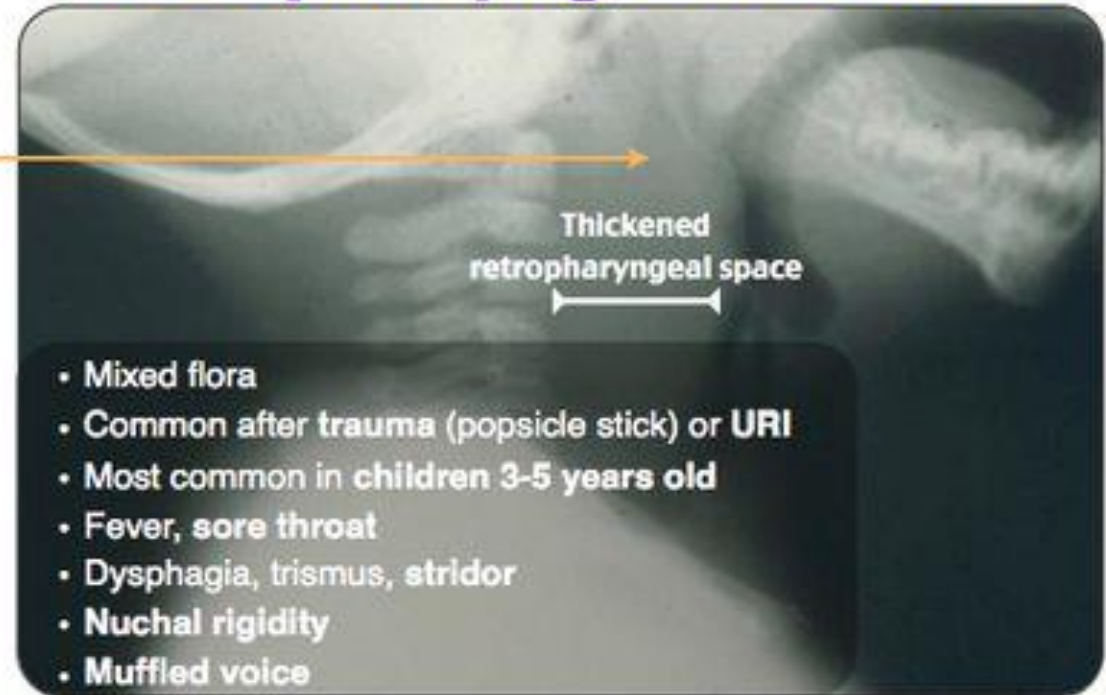
Extubation

- Wean to extubate as airway parameters permit; consider an interval examination in the operating room prior to extubation

Retropharyngeal Abscess



Retropharyngeal Abscess



Continue.....

- Retropharyngeal abscesses are uncommon but potentially life-threatening diagnoses.
- They can occur at any age, although are most commonly found in children under the age of five.
- Without proper treatment, retropharyngeal abscesses can lead to upper airway obstruction and asphyxiation.

Continue....

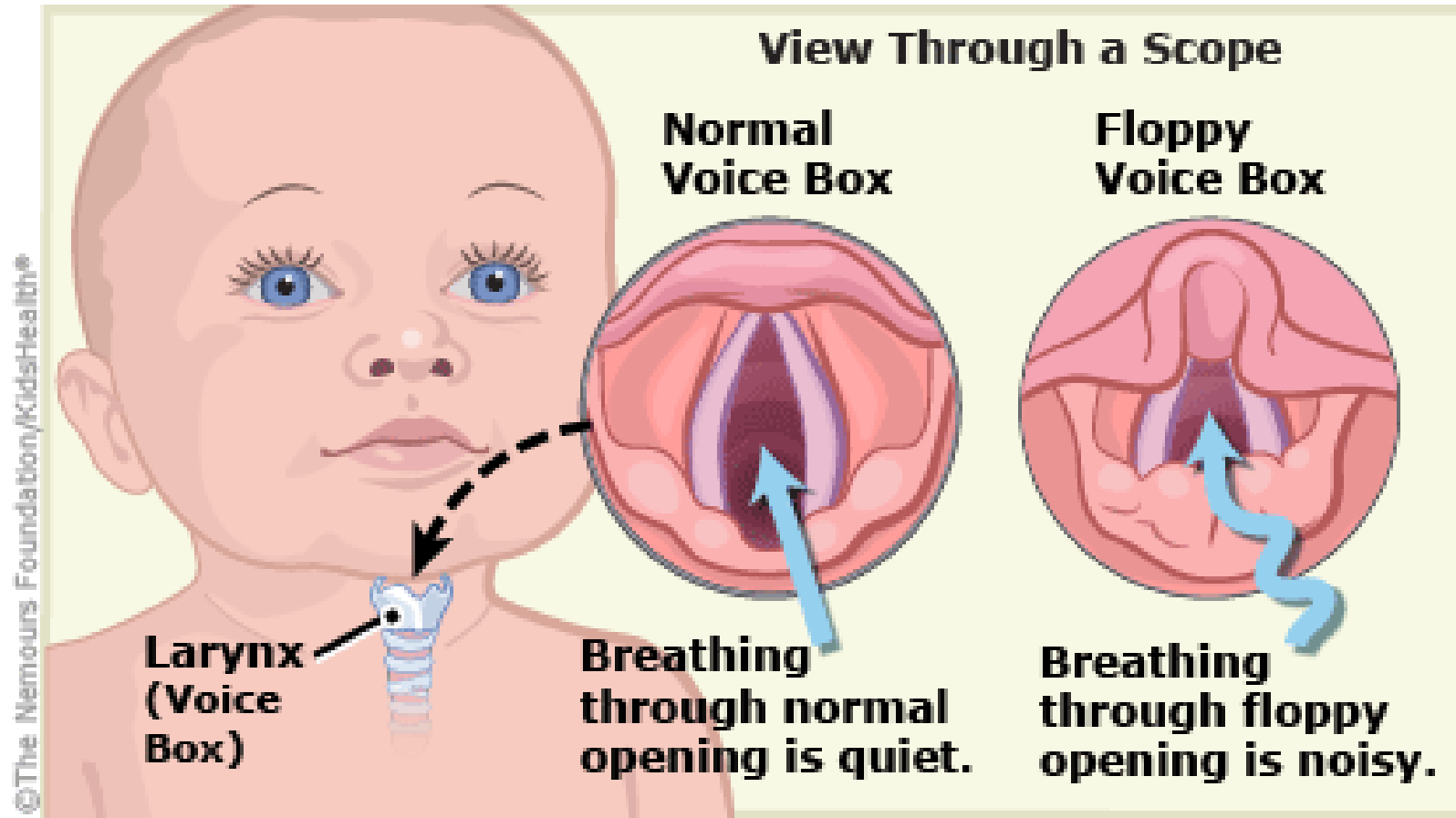
- Retropharyngeal abscesses are often polymicrobial infections.
- Bacteria that commonly contribute to these infections include **Group A Streptococcus pyogenes, Staphylococcus aureus, Fusobacterium, Haemophilus species**, and other respiratory anaerobic organisms.

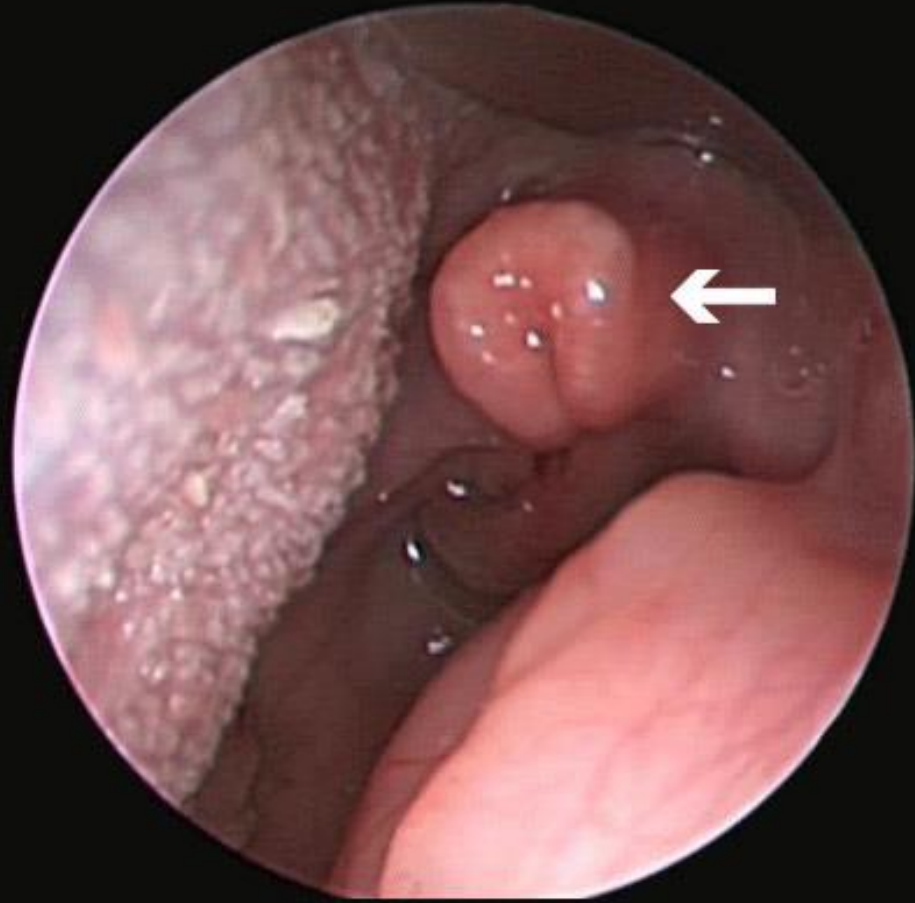
Treatment

- Hospital admission.
- Intravenous antibiotics: to cover upper respiratory organisms including anaerobic organisms.
- Patients presenting airway compromise should have immediate surgical incision and drainage performed to relieve their upper airway obstruction.

Laryngomalacia

M/C cause of chronic stridor



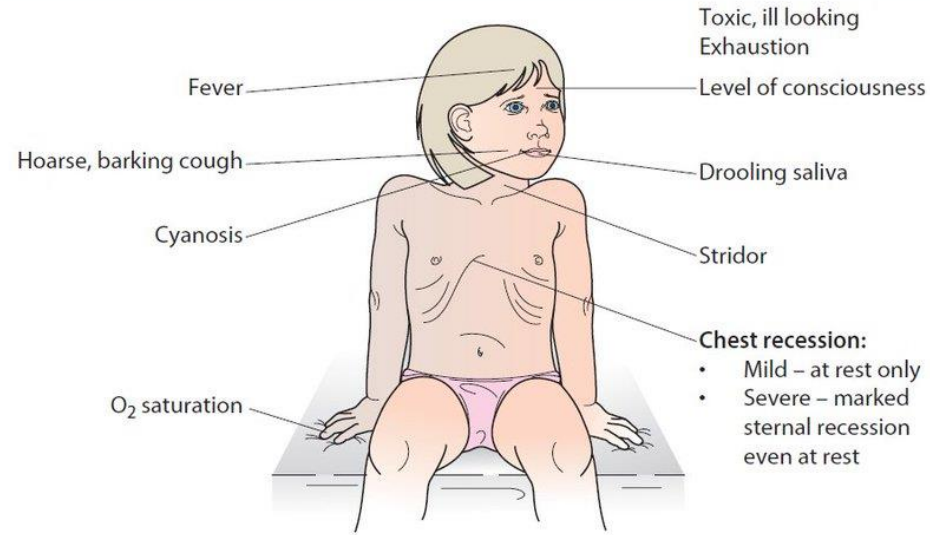


Signs/Symptoms

- Low pitched inspiratory stridor
 - Peaks at 6-9 months
 - Positional variation
 - Exacerbated by activity (feed, exertion), supine position, and during viral illnesses.
 - appears within first 2 weeks of life
 - diminishes by rest, prone position and sleeping
- Rarely produces cyanosis

The child with stridor

Clinical features to assess



Clinical conditions

Croup

- Mostly viral
- 6 months to 6 years of age
- Harsh, loud stridor
- Coryza and mild fever, hoarse voice

Bacterial tracheitis:

- High fever, toxic
- Loud, harsh stridor

Inhaled foreign body

- Choking on peanut or toy in mouth
- Sudden onset of cough or respiratory distress

Laryngomalacia or congenital airway abnormality:

- Recurrent or continuous stridor since birth

Epiglottitis:

- Caused by *H. influenzae* type b, rare since Hib immunisation
- Mostly aged 1–6 years
- Acute, life-threatening illness
- High fever, ill, toxic-looking
- Painful throat, unable to swallow saliva, which drools down the chin

Other rare causes:

- See Box 16.1

THANK YOU