UPPER AIRWAY OBSTRUCTION

MBCHB VI 2021
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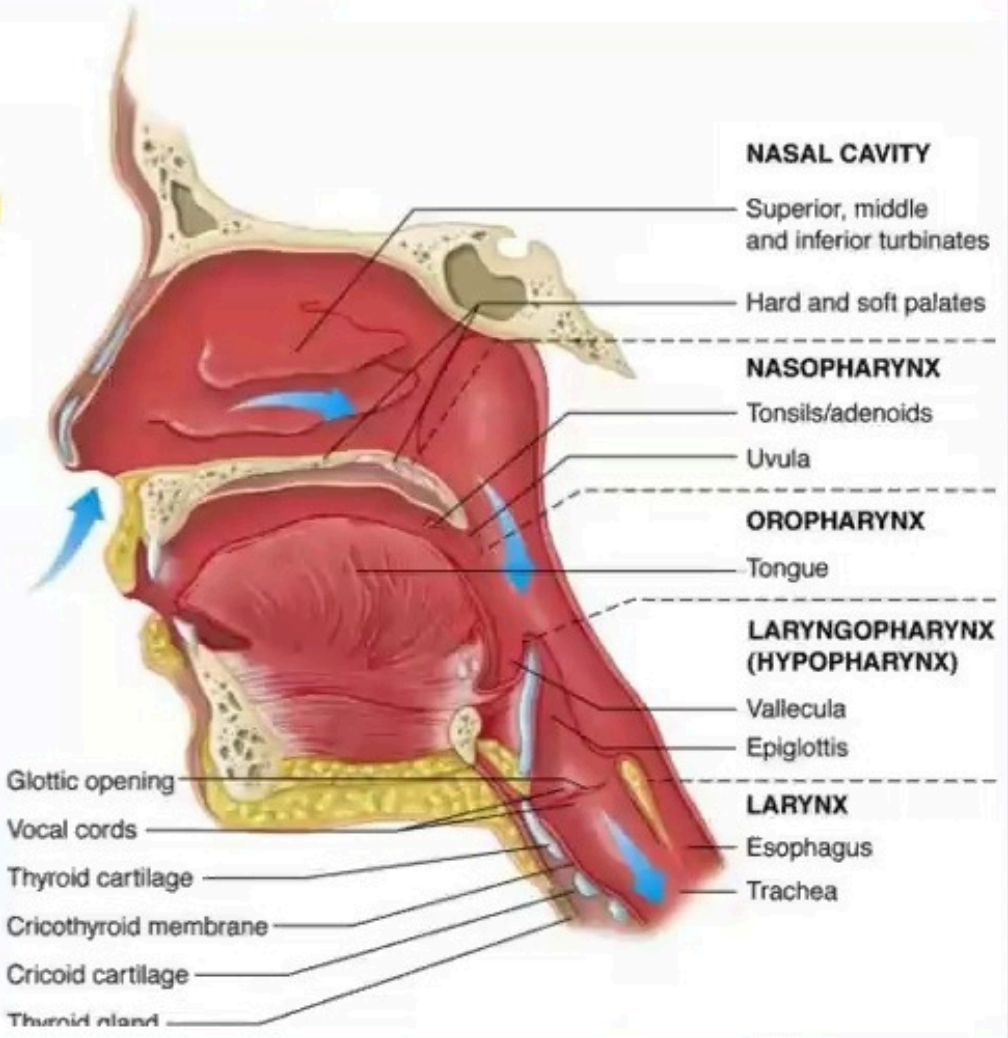
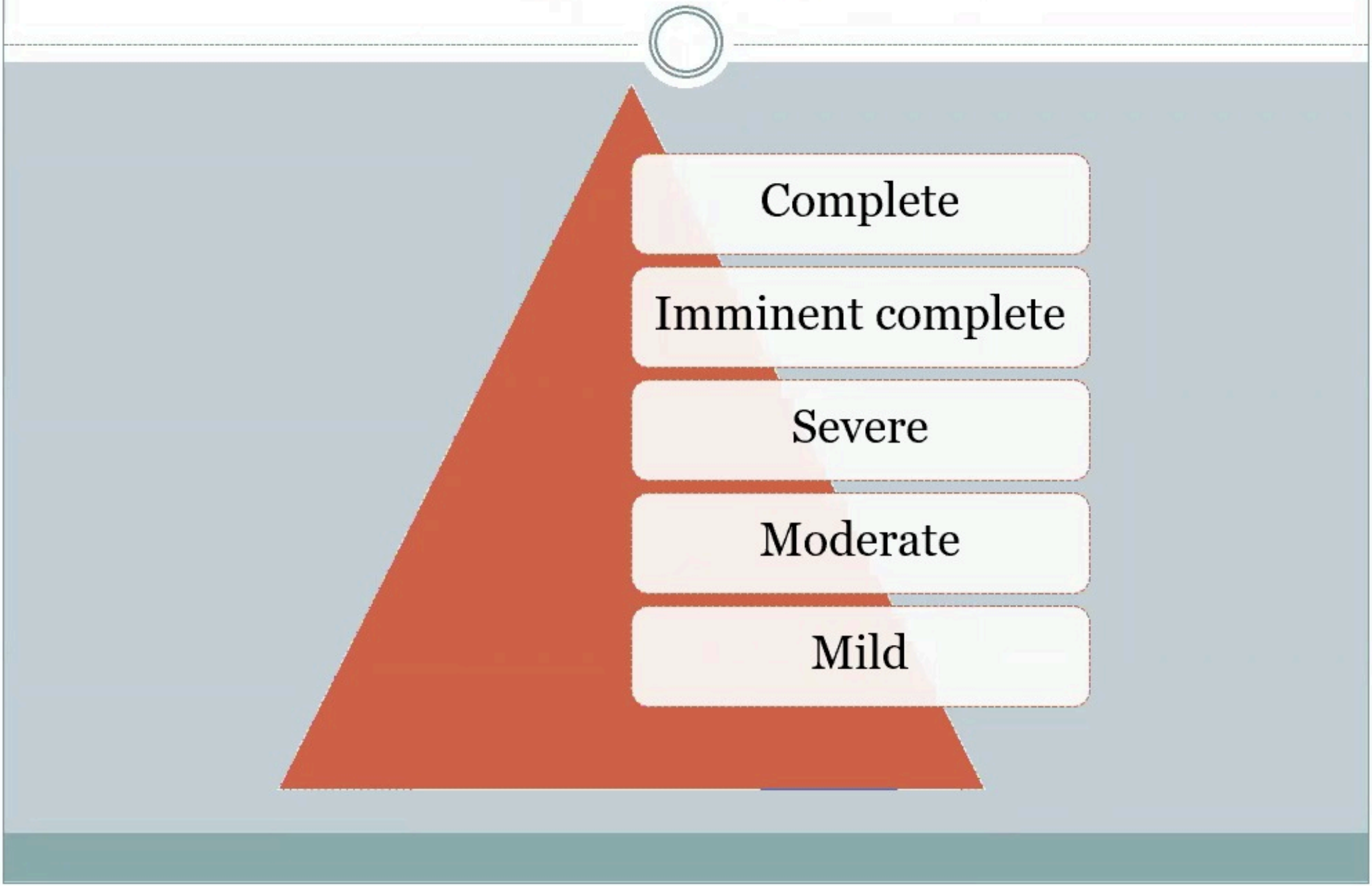
Anatomy of the Upper Airway



Classification

- Acute or chronic
- Partial or complete
- Acquired or congenital

Grading/Severity of UAO



Stridor – Key sign

- Stridor=high pitched sound during breathing.
  - Inspiratory – supraglottic cause
  - Biphasic- Glottic and subglottic
  - Expiratory – trachea
- Differentiate from
- Stertor- low pitch from nasal/pharyngeal sites
- Wheeze- high pitched from lower airway sites

Clinical signs of UAO

- Complete
  - Respiratory distress followed by cardiac arrest
- Imminent complete
  - Severe respiratory distress with cyanosis or Spo2 < 90%
  - Agitation or lethargy
  - Tachycardia

- Severe
  - Stridor at rest
  - Severe respiratory distress with ;
    - Severe intercostal/subcostal/substernal recessions
    - Nasal flaring
    - Severe tachypnoea
- Moderate
  - Stridor with agitation
  - Moderate respiratory distress with
    - Moderate chest wall recessions and moderate tachypnoea
- Mild
  - Cough, hoarse voice , no respiratory distress

General management measures

- Immediate recognition of UAO and its severity
- History and physical examination should be quick, focused and should not delay airway management
- Except in mild cases,
  - Monitor Spo2
  - Administer O2 continuously to maintain SpO2 above 90% in adults and 94% in children
  - If oximeter not available, give at least 5L of O2/min
- Additionally where blockage is severe or worse,
  - CPR
  - Secure airway by way of ETT/tracheostomy
  - Manage in ICU/HDU

- In mild UAO and after stabilizing severe cases, radiological investigations may be considered

Acute UAO

- This is a life threatening emergency requiring immediate assessment and management. Common causes include,
  - Infectious
    - Viral, bacterial
  - Foreign bodies
  - Trauma
    - Physical, burns
  - Anaphylaxis
  - Iatrogenic
    - Recurrent laryngeal nerve injury in neck/thoracic injury

Acute - Viral

- Viral croup (Acute viral laryngotrachebronchitis)
  - Causes UAO in children below 2 yrs
  - Caused by parainfluenza virus in 75% cases
  - Presents with barking cough, hoarse voice or cry +/- stridor. Preceded by symptoms of a cold with low grade fever
  - Treatment is systemic or inhaled steroids and nebulised adrenaline
  - Less than 3% may require ETT intubation

Acute-viral

- Infectious mononucleosis
  - Caused by EBV
  - Marked tonsillar enlargement
  - Presents with sorethroat, dyspnoea, dysphagia and drooling

Acute - Bacterial

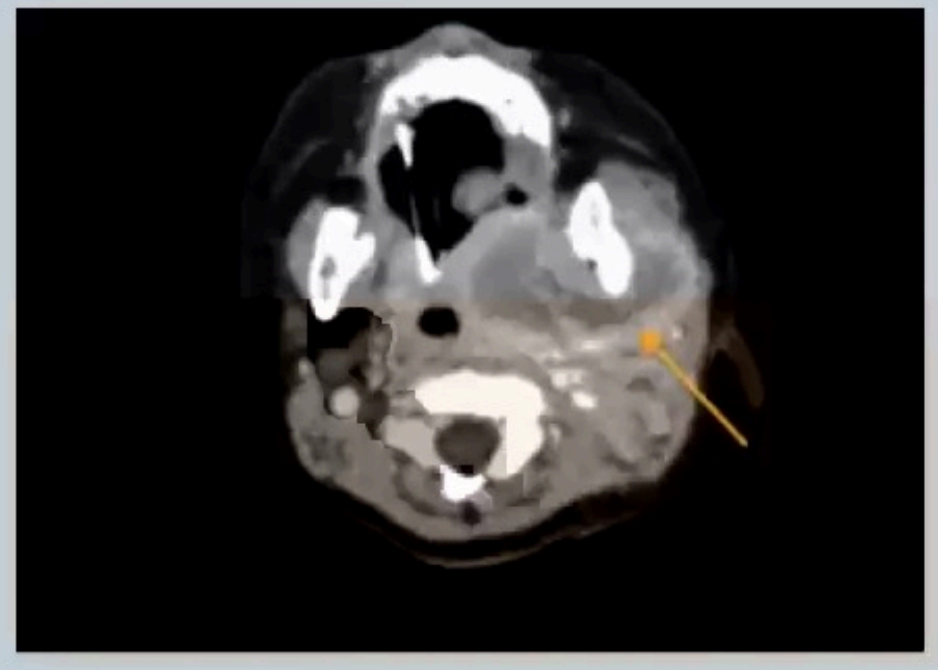
- Bacterial tracheitis
  - Life threatening with 80% of children requiring intubation
  - Older children than those with croup
  - Caused by S aureus, strep and H influenza
  - Starts as URTI that suddenly deteriorates
  - Presents very toxic, high fevers, productive cough, hoarse voice, respiratory distress
  - Ceftriaxone first line

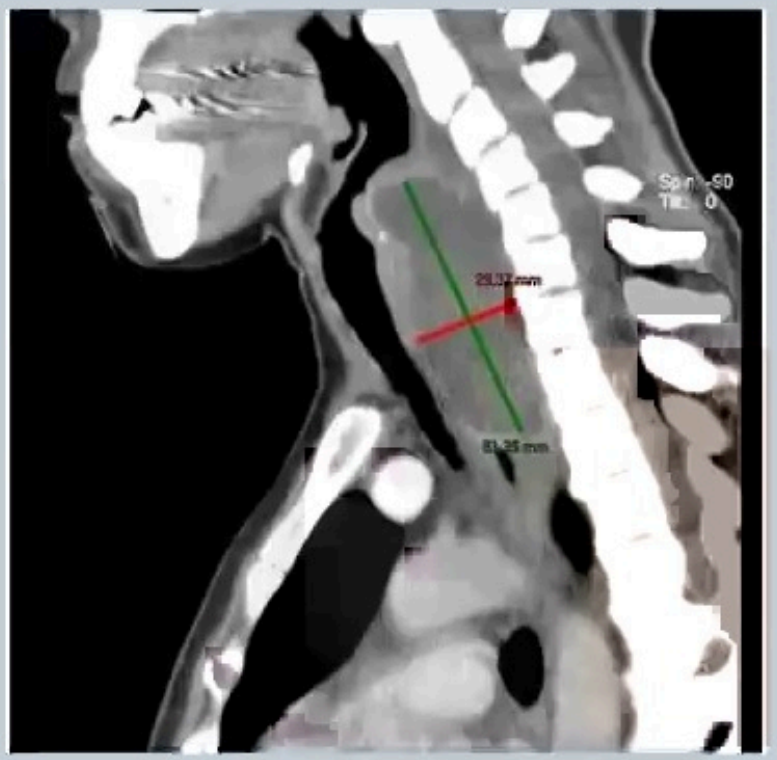
Acute- Bacterial

- Epiglottitis
  - In both children and adults
  - May present with severe UAO
  - Caused by H influenza type b that causes oedema of the entire supraglottis
  - Presents with drooling, dysphagia, dysphonia and dyspnoea
  - Will require ET intubation
  - Ceftriaxone 1st line rx

Acute-Bacterial

- Abscesses (Include retropharyngel, parapharyngeal, peritonsillar, Ludwig's angina etc)
  - Commonly retropharyngeal in children and peritonsillar in young adults
  - Caused by staph and strep
  - Presents with neck pains, swelling, trismus, dysphagia, fever and may cause UAO
  - Rx with Abx and sometimes surgical drainage






خناق لودفيج

Tracheobronchial foreign body aspiration

- High index of suspicion in a previously well child who develops sudden onset cough, choking or stridor
- Less commonly with features of chronic cough and wheezes. These cases have mistakenly been rx as refractory asthma, Pneumonia or TB
- Suspected FB, especially in the acute setting will require immediate bronchoscopic removal

Angioneurotic oedema

- Ig E dependent - eg by allergy to foods, drugs, insect venom
- Ig E independent eg hereditary AE, ACE inhibitor associated AE
- Treatment is targeted to the cause and airway support

Trauma

- Blunt or penetrating
- Thermal /inhalational burns
  - Manage appropriately

Chronic UAO

- Though this might not present as a life-threatening emergency, it might decompensate and present as acute UAO. Causes include,
  - Inflammatory
  - Anatomical
  - Neoplastic

Inflammatory

- Infectious
  - Laryngeal TB
- Non-infectious
  - Granulomatous conditions eg Wegener's

Anatomical

- Children
  - Enlarged adenoids and tonsils are the commonest
- Adults
  - Hypertrophied inferior turbinates, soft palatal collapse, large tonsils, enlarged base of tongue
  - Presents with snoring with or without sleep apnoea

Neoplastic

- Benign
  - Vocal cord polyps , laryngeal papillomas, thyroid goitre etc
- Malignant
  - Nasopharyngeal ca , laryngeal/hypopharyngeal ca, thyroid carcinoma etc
  - Rare in children

Congenital UAO

- Presents with congenital stridor
  - Laryngomalacia
  - Glottic webs
  - Subglottic haematomas

Management

- History
  - Age
    - Infants –congenital
    - Children- foreign bodies, respiratory papillomas
    - Adults –tumours
  - Other conditions eg PTB, HIV
  - Risk factors
    - Cigarette smoking, alcohol- tumours

- Physical examination
  - Assess for danger signs/severity
  - Complete Head/Neck/ chest exam

- Radiological investigations
  - Only when general condition allows
  - CXR, CT scans, MRI scans

- Airway support
  - Endotracheal intubation
  - Surgical airway
    - Tracheostomy
    - Cricothyrotomy