Epiglottitis & Laryngotracheobronchitis (Croup)

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These are two important acute airway diseases of children that are often co-managed by ENT with Paediatricians.

Laryngotracheobronchitis

This is the commonest cause of non-congenital stridor in children. The peak age of incidence is between 6 months and 2 years. Some children will suffer it recurrently while young and grow out of it when their airway and immunity are more mature.

It is viral in origin and, as the name suggests, causes a combination of laryngitis, tracheitis and bronchitis. Influenza and parainfluenza viruses are common causes although bacteria can cause it as well.

It causes mild systemic upset, usually, but it may be severe in 1% of children. Mild fever, runny nose, barking cough, and hoarse voice are the usual symptoms.

The video clip shows a patient with croup. Note the biphasic stridor (present during both phases of breathing) and the barking cough. The patient also shows physical signs of respiratory distress.

Before vaccination diphtheria was a common cause but this is very rare now in vaccinated communities.

https://www.youtube.com/watch?v=Qbn1Zw5CTbA

Treatment.

The child is kept as calm as possible. Oxygen is delivered by a mask or tube placed close to the child so as not to alarm them. Steroids are given orally if possible but nebulised has effect.

Nebulised epinephrine is useful. It will ease stridor within 10 to 20 minutes and will last for a few hours.

The disease usually settles within two days.

Epiglottitis

This is an acute infective disease of quick onset that causes marked systemic upset.
It strikes children between 2 and 7 years and can affect adults at any age. Historically children were more affected but Hib vaccination is reducing the frequency of disease in children who are vaccinated against it.

The patient is toxic, flushed, and has a high fever. There is a sore throat and drooling. The patient prefers to sit upright and leaning forwards. Stridor and cyanosis may be present and the voice may be somewhat muffled in sound.

Treatment is by careful airway management and intravenous antibiotics e.g. cephalosporin. Intubation or a surgical airway may be required.

Emergency management of stridor

The overriding principle is to manage the airway first so as to ensure adequate oxygenation and then to diagnose the cause of the problem second.

- Quickly gather an experienced team: ENT and Anaesthetic
- Try to keep everyone calm - anxiety will only add to the patient's distress
- Intensive monitoring – get the patient to resus
- High flow oxygen, preferably humidified, or Heliox
- Adrenaline Nebulised (1ml of 1:1000 adrenaline made up to 5ml with normal saline) PRN
- Secure good IV access if it is safe to do so (children may find this distressing)
- High dose steroids. Nebulised budesonide for children or 8mg IV Dexamethasone for adults
- Take a brief history if possible, probably from friends or relatives
- Complete only a basic ENT examination, wait for senior review of the airway (keep patient in resus!). Do not examine a child's mouth by putting a tongue depressor into it!
- Adult patients will undergo fibreoptic nasoendoscopy to visualise the airway and further management will depend on the underlying pathology
- Children will not usually have this
- In cases of deterioration intubation will be attempted and if this fails emergency airway access by cricothyrotomy or tracheostomy

For more information on airway management please consult the tutorial on this topic.