

Epiglottitis

Synonym: supraglottitis

What is epiglottitis?

Epiglottitis is a life-threatening condition and a high index of suspicion is required. Any patients, of any age, with a severe sore throat, not tolerating oral fluids, **should be referred for urgent assessment**.

Acute epiglottitis is a condition in which there is inflammation of the epiglottis. It may also affect the soft tissues surrounding the epiglottis, particularly in affected adults - hence the term supraglottitis^[1]. It is potentially life-threatening if complete obstruction of the airway occurs.

Epidemiology

- Epiglottitis is rare, affecting 1-4/100,000 population^[1].
- Since the widespread introduction of *Haemophilus Influenza*, acute epiglottitis is now extremely rare in children^[2].
- Some studies suggest an increased prevalence in adults, thought to be related to miscellaneous pathogenic bacteria^[3],
- The usual age of presentation in children is 2-5 years. Adults present in their 40s and 50s and it affects more men than women^[4].
- Adults who develop epiglottitis are more likely to have other underlying medical conditions that affect their immunity either systemically or locally^[5].

Epiglottitis causes (aetiology)^[4]

- In a series of 308 epiglottitis patients, the causative organism in the majority of cases was *Streptococcus* spp.^[5].

- Other bacterial causes include *Staphylococcus aureus*, *Haemophilus influenzae* type b (Hib), *Pseudomonas spp.*, *Moraxella catarrhalis* and *Mycobacterium tuberculosis*.
- Viruses include herpes simplex virus, with bacterial superinfection.
- *Candida spp.* and *Aspergillus spp.* in immunocompromised patients.
- Non-infectious causes of epiglottitis reported include thermal causes (eg, steam, crack cocaine smoking), caustic insults (eg, dishwasher pellets), foreign bodies and trauma, including traditional Chinese *gua sha* therapy^[6] .
- Reactive epiglottitis may also occur as a reaction to head and neck chemotherapy.

Epiglottitis symptoms

Many of the signs and symptoms associated with acute epiglottitis are common and may occur in many less serious disorders. Patients with epiglottitis may present with any of the following and the symptoms may evolve very quickly over a period of a few hours^[7] .

The most common epiglottitis symptoms

- Sore throat.
- Odynophagia (painful swallowing).
- Inability to swallow secretions (drooling in children).
- Muffled voice - 'hot potato' voice.
- Fever.

Other epiglottitis symptoms

- High temperature.
- Tachycardia.
- Anterior neck tenderness over the hyoid bone^[8] .
- Ear pain.
- Cervical lymphadenopathy.

- The 'tripod sign' – the patient leans forward on outstretched arms to move inflamed structures forward, thereby easing the upper airway obstruction^[9] .

With more severe epiglottitis

- Dyspnoea.
- Dysphagia.
- Dysphonia.
- Respiratory distress.
- Stridor – is a sign of upper airways obstruction and is a surgical emergency.

Diagnosis in adults can be difficult, as they may not have signs of respiratory distress (stridor). Patients with a significant sore throat with no obvious aetiology should be referred to ENT for direct visualisation of their larynx by flexible laryngoscopy. More than 90% of epiglottitis patients will have a normal oropharyngeal cavity and the diagnosis should be suspected when the severity of the epiglottitis symptoms does not correlate with the findings on examination^[4] .

Children with epiglottitis rarely have a cough, which may help to distinguish it from laryngotracheobronchitis or 'croup'^[4] .

Differential diagnosis

The differential diagnosis will depend on the presenting epiglottitis symptoms and age of the patient; however, generally included are:

- Pharyngitis
- Laryngitis
- Inhaled foreign body
- Croup
- Retropharyngeal abscess

Investigations

Patients who are suspected of having acute epiglottitis should not have their throat examined with the aid of a tongue depressor, due to the risk of laryngeal obstruction; rather, they **should be urgently referred** for laryngoscopy.

- Fibre-optic laryngoscopy remains the 'gold standard' for diagnosing epiglottitis, as the epiglottis can be seen directly. Laryngoscopy in these patients should only be performed in areas such as operating theatres which are prepared for intubation or tracheostomy in the event of upper airway obstruction.
- Lateral neck X-ray may be useful if laryngoscopy is not possible. Soft-tissue radiograph of the neck may show the 'thumbprint sign'^[10].
- Throat swabs may be taken when the airway is secure, or when intubation/tracheostomy facilities are at hand.
- Blood cultures may be taken if the patient is systemically unwell.
- CT or MRI scans may be performed if abscess formation is suspected.

Epiglottitis treatment and management

- Initial presentation may resemble a viral sore throat, so a high index of suspicion is needed. Emergency referral is required if signs of airway obstruction are present (stridor). Deterioration in symptoms may be rapid, especially in children.
- Management is usually conservative with intravenous or oral antibiotics but intubation may be needed.
- Surgical tracheostomy may be required in patients with severe airway obstruction in whom intubation has not been possible.
- Abscess formation is increasing in incidence. This may partly be explained by advances in imaging (CT and MRI)^[11]. Drainage may be required in some patients.

Complications

Epiglottitis, if not adequately treated, may occasionally result in:

- Abscess formation: 25% in one series ^[1] .
- Meningitis.
- Sepsis.
- Pneumothorax.
- Pneumo-mediastinitis (very rare).

Prognosis

The great majority of patients with epiglottitis will make a complete recovery with no sequelae. Early diagnosis appears to reduce the need for intubation which, in a series of over 300 cases, was required in only 15% ^[5] . Outcomes are generally good for adults, with fewer cases needing intubation than among children ^[12] . However, death may occur rapidly if the condition is not recognised and complete airway obstruction occurs.

Epiglottitis prevention

Hib vaccination has dramatically reduced the incidence of acute epiglottitis in children in those countries in which the vaccination is included in the routine vaccination protocol for children.

Further reading

- [Revised recommendations for the prevention of secondary Haemophilus influenzae type b \(Hib\) disease](#); Public Health England, 2013

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<p>Last updated by: Dr Laurence Knott 14/12/2021</p>	
<p>Peer reviewed by: Dr Hayley Willacy, FRCGP 14/12/2021</p>	<p>Next review date: 13/12/2026</p>

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