

Adult supraglottitis:

a potential airway emergency that can present in primary care

INTRODUCTION

Adult supraglottitis is a serious and potentially life-threatening condition, characterised by inflammation of the supraglottic structures of the larynx, namely the arytenoids, the false vocal cords, the laryngeal ventricles, the aryepiglottic folds and the epiglottis. This condition presents a diagnostic challenge owing to the non-specific nature of the clinical presentation. Patients with supraglottitis can rapidly develop airway compromise due to swelling of the supraglottic structures, potentially leading to respiratory arrest. In infective cases of supraglottitis, the infection can spread to adjacent structures, resulting in parapharyngeal abscess, epiglottic abscess or Lemierre Syndrome (thrombosis of the internal jugular vein).

Although the incidence of supraglottitis has decreased in children since the introduction of the *Haemophilus influenzae* type B (HiB) vaccine, most epidemiological studies suggest the incidence in adults has stayed the same¹ or increased,² with figures for the annual incidence varying from 1.1 to 4.7 per 100 000.^{2,3} When an infectious agent is isolated, the most commonly described pathogen is *Streptococcus pneumoniae*,³ although other bacteria including *Staphylococcus aureus*⁴ and *Neisseria meningitidis*⁵ have been implicated. Less commonly seen are non-bacterial causes, which include viruses, trauma, thermal injury, irritant chemicals, recreational drugs, chemotherapy, and radiotherapy.

PRESENTATION

The presenting features and clinical course of adult supraglottitis are distinct to epiglottitis in children. Adult supraglottitis is characterised by a slower onset, fewer severe respiratory symptoms, and more pharyngeal symptoms. Patients with adult supraglottitis commonly present with a sore throat, odynophagia, and dysphagia to the extent that they are unable to swallow their own saliva. Less common

presenting complaints include dysphonia and inspiratory stridor.

Given the relative frequency with which patients are seen in both general practice and accident and emergency departments with a sore throat, odynophagia, and dysphagia, it is important to maintain a high index of clinical suspicion if supraglottitis is not to be missed. Unlike the more commonly seen tonsillitis and pharyngitis, patients with adult supraglottitis often exhibit a discrepancy between the severity of their symptoms and the normal or near normal oropharyngeal examination.⁶ These findings suggest that the problem is lower in the aerodigestive tract.

Signs associated with supraglottitis include pyrexia, increased respiratory rate, and cervical lymphadenopathy, but these are not always present, especially in the early stages. On clinical examination, anterior neck tenderness, especially over the hyoid bone is an important sign which is suggestive of supraglottitis.³ Oedema of the palatine arches and uvula may also be seen.

Patients presenting with features of supraglottitis should be assessed by an ear, nose, and throat (ENT) specialist to facilitate examination of the larynx.

DIAGNOSIS

Diagnosis of supraglottitis is made by flexible nasolaryngoscopy, revealing an erythematous, swollen supraglottis. Many journal or textbook articles on supraglottitis are illustrated with a lateral neck soft tissue radiograph showing characteristic signs of thickening of the epiglottis (thumb sign), a pencil-thin airway, and prevertebral soft tissue swelling. Using such plain radiology does not improve the diagnosis and puts a patient with a compromised airway potentially at risk by being further from resuscitation personnel and facilities while undergoing the X-ray. Where radiology does have a role is when one of the sequelae of supraglottitis such as a parapharyngeal

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abscess is suspected in which case CT scanning is helpful.

MANAGEMENT

Management of adult supraglottitis should be undertaken in hospital, preferably in a high dependency setting and involves using supplementary oxygen, nebulised adrenaline (1:1000 dilution), and intravenous steroids. Blood cultures should be done as well as a culture swab taken gently from the oropharynx. No attempt should be made to obtain a supraglottic swab unless the airway has already been secured by intubation. Initial empirical intravenous antibiotic therapy should cover the commonly implicated bacteria, taking advice from the local microbiology team. If a herpetic aetiology is suspected, antivirals can be added. Rapid initiation of treatment generally prevents progression of the disease but if the patient's airway deteriorates, endotracheal intubation or tracheostomy may become necessary.

CONCLUSION

Adult supraglottitis is difficult to diagnose owing to the common, non-specific symptoms on clinical presentation. Clinicians should suspect patients with a history of severe odynophagia, sore throat, and dysphagia, but a normal oropharynx on examination, as potentially having supraglottitis. Such patients should be immediately referred to an emergency ENT team for flexible nasolaryngoscopy and subsequent management.

Provenance

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Competing interests

The authors have declared no competing interests.

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