

Epiglottic abscess and the management of a 'precious airway': A case study

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Abstract

An epiglottic abscess is a rare, life-threatening cause of acute airway obstruction with a mortality of 30%, requiring immediate management with a multidisciplinary specialist team. Since HiB immunisation was introduced epiglottitis and epiglottic abscess incidence has dramatically reduced, though it has risen again in recent times due to other pathogens.

We present a case of a 45-year-old gentleman who presented with odynophagia, throat pain and reduced oral intake. He was diagnosed using CT imaging with contrast and flexible nasolaryngoscopy and commenced on IV antibiotics and steroids. Definitive management of the airway was achieved with an awake fiberoptic intubation (AFOI) with tracheostomy set on standby. He underwent a second washout in theatres day 6 and was extubated day 7. Prior to discharge, he experienced postextubation dysphagia that fully recovered prior to his discharge day 13. This paper explores the need for prompt securing of the airway, the advantages of AFOI and the post-operative course of epiglottic abscesses.

Introduction

An epiglottic abscess is a collection of pus in the supraglottic region in the oropharynx and is a life-threatening, time critical cause of upper airway obstruction. It is often an infrequent sequela of epiglottitis, occurring in 4% of cases [1], however, rarer causes such as radiotherapy, thermal injuries and caustic trauma have also been described [2]. Since Haemophilus influenzae type B (HiB) immunization was introduced in Australia in 1993 the incidence of both epiglottitis has reduced dramatically from 20-30 episodes per 100 000 population to 3.3 cases per 100 000 in children under 5 years old with a concurrence decrease in epiglottic abscess [3]. However, the occurrence in adults remained unchanged, and has in fact increased significantly since, a rise not related to HiB infection but to other pathogenic bacteria [4]. Mortality from this condition is 30% [5], from asphyxiation by obstruction, abscess rupture or hemorrhage [6], and therefore requires a high level of suspicion, despite its rarity. Management of this condition involves securing the airway, broad-spectrum IV antibiotics, corticosteroids and surgical drainage.

Case study

We present a case of a previously well 45-year-old male who presented with worsening odynophagia, throat pain and reduced oral intake for 2 days to the emergency department of a private hospital. His vital signs were normal with a 'hot potato voice', trismus and tenderness on his anterior neck. He had no respiratory distress or stridor but was unable to lie flat. His white cell count (WCC) was $22.0 \times 10^9/L$ on admission and his C reactive protein (CRP) was 152 mg/L. He has no significant medical conditions, no regular medications and was fully vaccinated.

He underwent a CT neck with contrast that showed aryepiglottic fold swelling and paralaryngeal and left subtonsillar abscess (Figure 1). However, the initial hospital did not have the skills or resources to manage him. Fortunately, he was deemed safe to transfer by the

emergency physician and anesthetist and was moved to a major metropolitan hospital with specialist ENT cover. On arrival, a multidisciplinary team assessed the degree of obstruction with a flexible nasolaryngoscopy and planned his treatment. IV dexamethasone 8mg and tazocin 4.5 mg were started immediately and he was admitted under the ENT team. A successful awake fiber optic intubation (AFOI) was performed under topical anesthesia and a nasal endotracheal tube (ETT) was inserted with a tracheostomy set on standby. A general anesthetic was administered and rigid laryngoscopy revealed a swollen, obstructed epiglottis (Figure 2) that was incised and drained with swabs taken for microbiology. He was transferred to Intensive Care Unit (ICU) intubated.

The following day his epiglottitis was observed to be inflamed and continued to have purulent discharge during an ETT change. A CT neck with contrast was performed day 3 of his admission which showed retained secretions in the pharynx and residual abscess formation on the left side, the epiglottis was not seen, however, as the nasogastric tube obstructed the view.

In response to these findings, he was taken back to theatre day 6 of his admission and underwent an exploration under anesthesia and washout which revealed reduced epiglottic swelling and no reaccumulation of pus or oedema of laryngeal structures.

He was extubated day 7 of admission after a 'cuff leak test'. He developed a mild dysphagia and after review by speech pathology was

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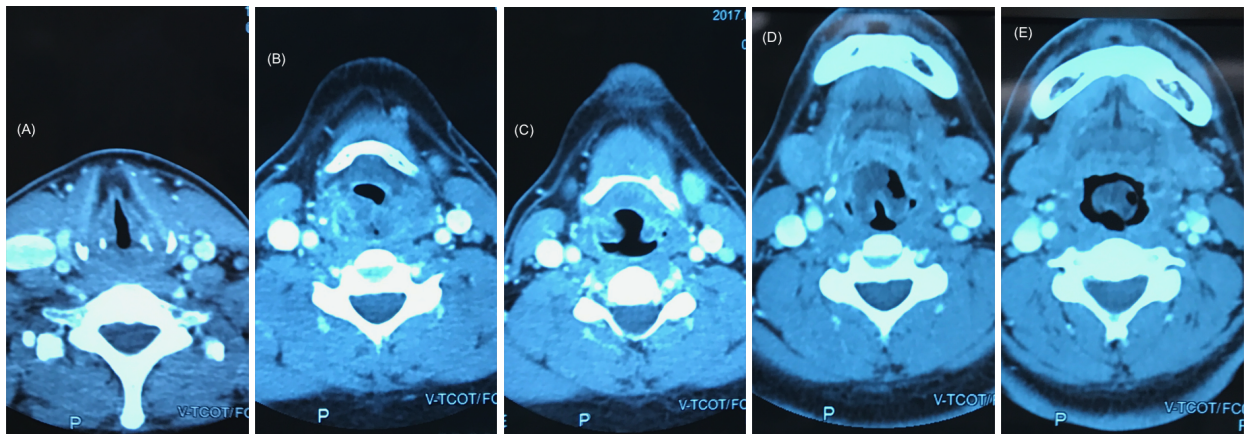


Figure 1. Diagnostic CT neck with contrast – performed after primary survey. A) Level of glottis - not involved. B) E seen on lingual surface. C-E) Abscess extending to the body of the epiglottis.

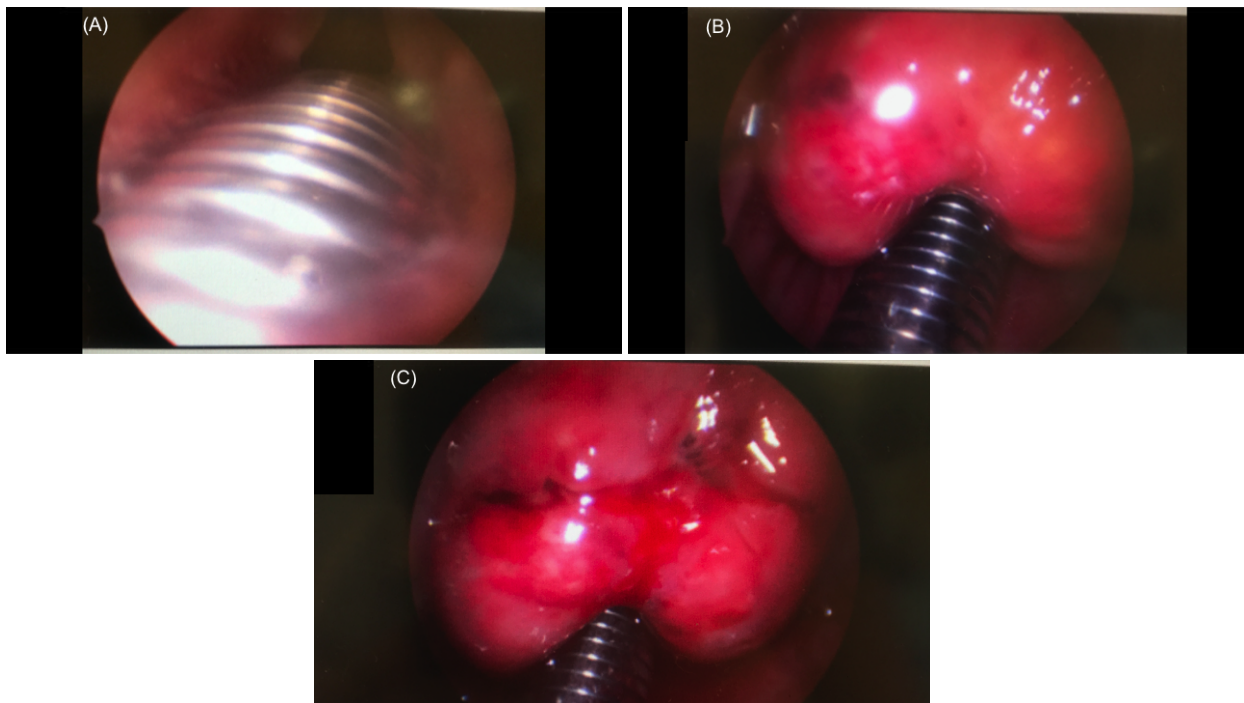


Figure 2. Endoscopic images. A) Normal glottis after AFOI. B) Epiglottic abscess. C) Abscess with a transverse incision along superior surface of body of epiglottis.

placed on a minced diet. He progressed to full diet before his discharge on day 13 with oral antibiotics. Microbiology revealed a growth of mixed anaerobes sensitive to metronidazole.

Discussion

Prompt, secure airway management is a key feature of the treatment of epiglottic abscess. A good clinical evaluation with flexible nasolaryngoscopy and CT imaging of patients that present with odynophagia and throat pain is recommended to achieved early recognition of this condition [6]. Ideally, tracheostomy or AFOI under local anaesthesia should be performed to provide immediate, safe airway management [7]. This is unlike epiglottitis where the management dictated by the degree of airway obstruction and is due to epiglottic abscess's higher mortality. In our case, awake nasotracheal intubation under direct visualization was preferable to tracheostomy due to the treating team's confidence with the technique, the lower

morbidity and the shorter hospital stay that is associated with it [8]. However, all laryngoscopy should be performed in a safe environment with all airway options considered, particularly if there is a need for an emergency tracheostomy [9].

Long-term outcomes are good if this condition is recognized and treated promptly. There are no reported complications of laryngeal erosion or epiglottic failure in those patients that survived the initial airway obstruction. However, this patient's laryngeal inflammation and length of intubation did increase his risk of postextubation dysphagia (PED) [10] which was adequately screened for and monitored in his postextubation period.

Authorship and contributions

RS reviewed the patient's notes and the literature and drafted the manuscript. PL conceived the case report, collected the clinical and radiological images and reviewed the manuscript. MS was the admitting

specialist, gave advice on management throughout and reviewed the manuscript. All authors have read and approved the final manuscript

Consent

Informed consent was obtained from the patient in this case report for its publication.

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