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Case Report

A case of hoarseness of voice

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Introduction

Foreign bodies in the respiratory tract of children are not very unusual and hence index of suspicion is always high in the event of unexpected progress or clinical findings. However the same occurring in an adult and presenting only with hoarseness of voice is rare. One such case where the foreign body looked like normal mucosa and where the voice was only slightly hoarse is being reported to bring out the complexities in the diagnosis and management.

Case report

A 36 years old male patient was climbing to a duty post when he slipped and fell from a height of about 10 ft. He did not

remember anything till brought to the hospital. The duty medical officer endorsed that the man had been on alcohol binge during his leave and on reporting back he was put on guard duty. From the circumstances and clinical findings he surmised that this was a case of alcohol withdrawal syndrome wherein he had probably had a seizure and thus fallen. Clinical finding mentioned the lacerations on his upper lip but no mention was made of the three missing upper teeth. There had been no attempt to intubate the patient or give a stomach wash. After being observed for two days in the medical ward he was transferred to the Psychiatrist for treatment of chronic alcoholism. It was on the third day that he reported hoarseness of voice and pain on swallowing. Evaluation revealed a comfortable patient who had taken his normal meal, had a mild hoarseness and no stridor. There was no swelling over the neck and no evidence of injury. Laryngeal crepitus was present. Indirect Laryngoscopy (IDL) showed a vertically aligned object between the vocal cords. It had the same colour as that of mucosa so it seemed as if a strip of soft tissue had torn off the lateral wall. There was no evidence of oedema, inflammation or haemorrhage in the surrounding area. CT scan of the larynx (Fig. 1) (axial, sagittal and coronal view) was reported as a foreign body having bone density, so probably a chicken bone. The patient confirmed that he had taken chicken on the night that he had fallen but gave no history of aspirating any piece. He was taken up for extraction of the foreign body. Local anaesthetic spray and laryngeal block was used along with intravenous Propofol. Tracheostomy set and rigid ventilating bronchoscope were kept at hand. No muscle relaxant was given. The foreign body was extracted using a split laryngoscope. The object removed was a dental plate

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Fig. 1 – Foreign body larynx (axial, sagittal and coronal views).

(Fig. 2). This came as a surprise as even after discovering that he had three teeth missing it was presumed that these were natural teeth and the patient did not volunteer any information on his own. To search for the missing teeth a fibre optic laryngoscope was passed through the endotracheal tube and this revealed another foreign body at the opening of the right bronchus. It was removed using a rigid ventilating bronchoscope and found to consist of two teeth with two vertical pins (Fig. 2). A repeat fibre optic bronchoscopy did not show any other foreign body or a gross injury. A nasogastric tube was passed. The patient was kept intubated and injection Hydrocortisone given for 48 h. After extubation IDL showed bunching of mucosa posteriorly and voice was hoarse. There was no oedema of the arytaenoids. Two days later the picture became clearer and showed that the mucosal stripping was subglottic. Vocal cords were normal. Voice had returned to normal in the next three days.

Fig. 2 – Retrieved denture pieces.

Discussion

Aspiration of foreign bodies usually occurs in adults when they are in a hurry, intoxicated or have a neurological problem or in co-ordination. Alcohol ingestion impairs glottic reflexes, and alcoholics are predisposed to pneumonias and lung abscesses from aspiration of oropharyngeal bacteria.¹ Heavy regular binge drinking increases the risk of alcohol induced psychiatric disorders.² The neurotoxic insults to the brain are due to very large amounts of glutamate being released on a repeated basis, which over-stimulates the brain after each binge finishes, resulting in excitotoxicity.³ This patient's last intake of alcohol was five days back and hence the effect of withdrawal lead to a possible convulsion and a fall. A screening for the missing teeth would have been appropriate on the first day itself as possibility of ingestion or inhalation was high. Fortunately the denture was aligned in the sub glottis region in such a way that it did not interfere much with breathing. Only when oedema set in to cause hoarseness that the patient became symptomatic. A sudden respiratory distress, cyanosis or loss of consciousness, due to the foreign body here could easily have been mistaken to be due to the convulsion and could have been disastrous. In one Austrian autopsy series foreign body airway obstruction was diagnosed correctly in fewer than 10% of cases where help was summoned.⁴ Also had the foreign body not been so easily visible and airway only partially obstructed the symptoms could have been confused with asthma, bronchitis or pneumonia.

Most dentures are radiolucent.⁵ In this patient bone density of the object was misleading and the fact that the patient had eaten chicken on the night of the fall made a chicken bone foreign body more plausible. On IDL also the colour of the plate being that of normal mucosa was confusing. Acrylic (radiolucent) dentures are more likely to be discernible by CT scan or magnetic resonance imaging as these modalities are more sensitive to small changes in the radiograph attenuation than plain radiography.^{6,7} The sensitivity of CT scan may be further improved with 3D reconstruction.⁸ Currently, almost all denture materials are radiolucent and concerns exist about the difficulty of removing fragments of fractured dentures aspirated during accidents. Addition of Bismuth (10–15%) or uranyl salts provides adequate radiodensity, but at the cost of increased transverse deflection and water sorption.⁹ In retrospect, the two radio dense dots seen below the main foreign body imply that it was a denture complex which broke during extraction resulting in separation of the dental acrylic plate from the two teeth with hooks and which were subsequently found lying at the opening of the right bronchus. Thus the present case is interesting in that the foreign body having

split in two parts, a timely intervention by a fibre optic bronchoscope helped to locate the broken part.

Anaesthesia in foreign body larynx can be very challenging. It is always debatable whether tracheostomy should be done or not. We chose to give a try without tracheostomy as the object was big, easily visible and accessible and being impacted less likely to slip even with movement of larynx and gagging. Propofol does not abolish reflexes hence local anaesthesia and laryngeal block was required. It is safer to avoid muscle relaxant when airway is compromised even though lack of muscle relaxant makes the endoscopists task harder and chances of tear and injury increase.

This case is being reported to highlight the importance of checking for missing teeth and dentures in cases of Alcohol intoxication or withdrawal, trauma and convulsions and that more than one foreign body could result if the primary body, about which little is known breaks unknowingly. Hence a check endoscopy should always be done.

Conflicts of interest

The authors have none to declare.

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