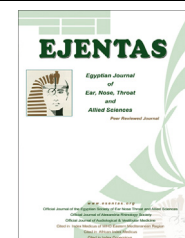




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CASE REPORT

An unusual long standing tracheal foreign body – A rare incidence



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Abstract Foreign body (FB) inhalation is often encountered by emergent otolaryngology services. A long standing undiagnosed FB in trachea is very rare and lethal. Inhalation of betel nut and presenting at the proximal trachea is rarer. As often in the airway FB gravitate to bronchi, long standing tracheal FB is a rare presentation and also rare in the literature. Children who are not given proper individual attention at an early age are more liable to inhale FB. FB aspiration is associated with significant morbidity.

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1. Introduction

Foreign body (FB) inhalation is an extremely serious and life threatening condition in children. It is the most common cause of accidental death among the children under the age one year.¹ The risk of FB inhalation is very high up to the age of

3 years. It is also a common cause of accidental death at home in children under the age of 6 years.² Prevention and early diagnosis can be lifesaving.³ Complications of airway FB depend on the site, size, shape, nature and duration of foreign body.⁴ Even though inhalation of FBs in the airway has been recognized for many years, undiagnosed and unsuspected FBs still occur in the airway, causing severe complications and threatening to life due to the delay in diagnosis. Longstanding retained FB in the proximal trachea is extremely rare and may be seen in cases of young children where an adequate history is often not obtained.⁵ Delayed diagnosis will cause a significant morbidity and mortality. Here we are presenting a case of an overlooked and longstanding tracheal FB.

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2. Case report

A 2 year old male child was referred to the outpatient department of ENT with the complaint of breathing difficulty and whistling sound at the time of exertion and crying. The child was suffering from chronic cough with expectoration since 6 months, which was treated on and off by a local medical practitioner. The child was relieved from symptoms for sometimes but repeated attacks of cough and fever occurred, which subsided after taking medical treatment. He did not respond to medical treatment. There were no symptoms of upper respiratory tract infection like nasal discharge, sneezing and nasal obstruction. There was no history of inhalation of FB from parents. X-ray of chest and neck appears normal. But CT scan of the neck with chest revealed the opacity at proximal part of trachea with normal lungs (Figs. 1 and 2). Laboratory investigations were within normal limit.

Even though there was no history of FB inhalation, clinical features and radiological tests (CT scan) gave strong possibility of FB in tracheal airway. The child was planned for rigid bronchoscopy under general anesthesia. The rigid ventilating type of bronchoscope with a venture connection was used. A black colored FB covered with slough was seen around 1 cm below the subglottis. With the help of optical forceps the FB was removed. The FB was 0.3 cm of half of betel nut (Fig. 3). The immediate postoperative period was uneventful and the child was discharged on the third postoperative day.

3. Discussion

Inhalation of the airway FB is a potentially life threatening condition. Before the introduction of bronchoscopy, there was high mortality and morbidity. After the advent of

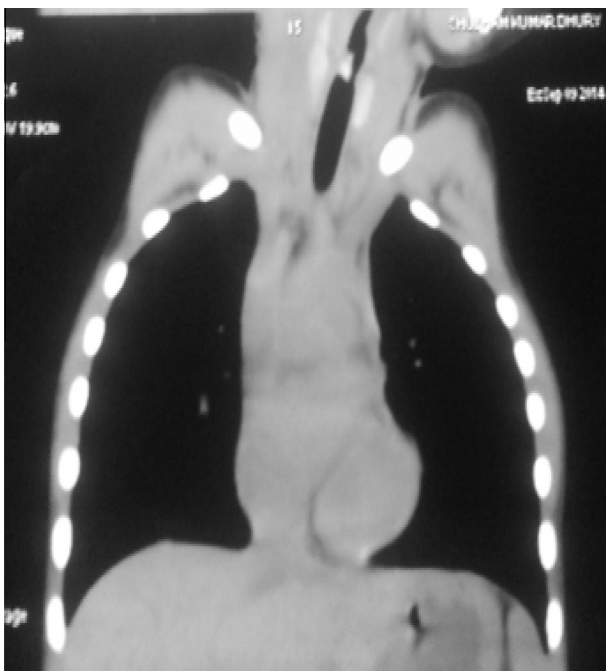


Figure 1 CT scan of the neck and chest (coronal view) showing FB in upper third of the trachea.

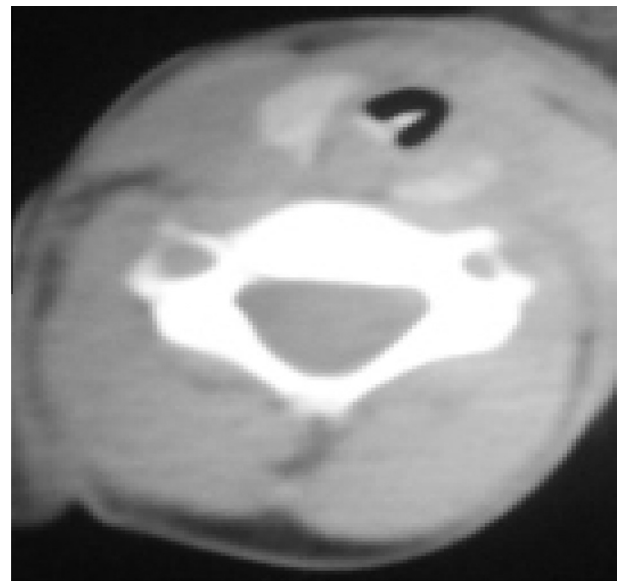


Figure 2 CT scan of the neck (axial view) showing FB in upper part of the trachea.



Figure 3 FB (betel nut) after removal by rigid bronchoscopy.

bronchoscopy, that was drastically reduced. The first demonstration of the feasibility of bronchoscopy was the removal of FB from a bronchus by Gustav Killian, a German Otolaryngologist in 1897.⁶ Mostly FB inhalation occurs in children between 1 and 3 years of age. The reasons are; they lack molar teeth necessary for proper grinding of food, they have minimal controlled coordination of swallowing and immaturity in laryngeal elevation with glottis closure; they have tendency to explore the environment by keeping the objects in the mouth; they are usually running and playing at the time of ingestion.^{7,8}

Sudden onset of cough, dyspnea and wheezing are the major symptoms of FB in the airway.⁹ Unresolved or recurrent lower respiratory tract infections despite intense medical treatment should raise the suspicion of FB inhalation. Most of the airway foreign bodies can be easily diagnosed, if history of FB inhalation is available, but in some patients, the diagnosis is doubtful in the absence of history of aspiration. In our case, there was no history of FB aspiration. All made the child to keep tracheal FB for long standing. Delayed diagnosis was attributed to misdiagnosis by the local doctor, fail to seek early medical advice, late referral and family members may not be

present at the time of FB inhalation. Complications depend on the site, size, shape, nature and duration of the airway foreign body. The presentation of delayed foreign bodies may mimic bronchial asthma, croup, pneumonia¹⁰ and even gastro esophageal reflux.¹¹

Most airway foreign bodies (80–90%) are lodged in the bronchi because their size and configuration allow passage through the larynx and trachea.¹² Larger FB becomes impacted in the larynx and trachea. Tracheal foreign bodies account for only 4% of aspirated foreign bodies.⁷ In our case, betel nut is large enough, unable to pass below the tracheal level. Due to granulation formation and mucopurulent surrounding of FB caused repeated attacks of chronic cough and fever, which was subsided on taking medical treatment. In such type of cases, one should be careful as long standing neglected FB leads to tracheal inflammation, pulmonary infection, lung collapse, lung abscess and malignant transformation.¹³ The longer the FB remains in situ, the greater the chance of granulation tissue formation, resulting in a smaller lumen and the symptoms usually become more pronounced.¹⁴ If the FB is situated in the trachea, the child is at risk for complete airway obstruction and should be taken seriously and immediately shifted to the operating room for FB removal. The time since the inhalation should be established because airway edema, granulation tissue and infection may make retrieval more difficult with delayed presentations.

A careful history and clinical examination are strong indicators of the diagnosis for FB inhalation and raised the index of suspicion of an aspirated foreign body. Regardless of the management strategy, close cooperation between a skilled surgical and anesthetic team is essential to avoid potential hazards of FB aspiration. The aim of treating FB inhalation in children should be prevention.¹⁵ This should be facilitated by educating parents of children to avoid keeping seeds, nuts or dried fruits in the home.

4. Conclusion

Inhalation of a FB is a potentially lethal event. A long standing tracheal FB is uncommon and can be overlooked for longer period as in this case. The importance of early diagnosis and rarity of long standing tracheal FB are stressed here. In pediatric patient's careful history, meticulous examination and imaging are essential for early diagnosis for airway foreign body. Timely intervention with the experienced surgical team would minimize the complication rate and mortality rate. Prevention and public education are needed for this lethal problem.

Conflict of interest

None of the authors has any conflict of interest, financial or otherwise.

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