CASE REPORT

From tooth extraction to fatal airway complication in a child – A case report

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Abstract Exogenous foreign body (FB) in the tracheobronchial tree is not uncommon especially in infants and children often present with respiratory obstruction that can lead to death if not removed in time. Despite public awareness and education, prevention of FB aspiration continues to be a problem among children. FB inhalation is quite uncommon during conducting a surgical procedure in the oral cavity. This situation is a life threatening condition, affecting the patient and also may create a legal issue to the concerned care givers. We report a case of an endogenous bronchial foreign body in an 8 year old boy who had accidentally aspirated a tooth which occurred during tooth extraction done by a medical quack. The FB was removed successfully without any complications.

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1. Introduction

Accidental inhalation of a foreign body (FB) in the airway is a common emergency in Otolaryngology. Accidental inhalation of FBs to the airway continues to be a cause of childhood morbidity and mortality and needs prompt identification and early treatment of the potentially serious and sometimes fatal outcome. Inhaled FBs are common in infants and small children and can occur at any age. Those patients who undergo oral cavity or oropharyngeal procedures, have oral appliances or poor dentition, who become intoxicated, those receiving sedatives, and those who have neurological or psychiatric diseases or are mentally challenged are at high risk of inhalation of FB into the airway.1

In airway FB, the most common symptoms and findings are cough, dyspnea, decreased breath sounds, radio-opaque FB, air trapping and atelectasis.2 Delayed diagnosis of FB may mimic conditions such as asthma, croup, pneumonia and even gastroesophageal reflux.3 Various types of FBs have been reported in the air passage, organic and inorganic, metallic and non-metallic. A tooth in the airway is an extremely rare endogenous FB in the air passage. Here we have reported a tooth in the bronchus, especially which occurs accidentally
during extraction of the tooth by a quack. The aim of this clinical report is to present an unusual FB in the bronchus during tooth extraction which will create awareness among care givers or the person concerned doing the procedure in the oral cavity or oropharynx in awake stages particularly in children.

2. Case report

An 8 year old child referred to the Outpatient Department of Otorhinolaryngology for a sudden onset of cough and dyspnea with complaints of aspiration of FB. There was a history of accidental inhalation of a tooth during dental extraction and slippage of the tooth into the airway the same day. On clinical examination, child was presenting with breathlessness and coughing. On chest auscultation, there was reduced air entry into the left lungs. On examination, nose, ear, oral cavity, oropharynx and neck were within normal limits. Immediately X-ray of the neck and chest was done, and showed a radiopaque foreign body at the lower left bronchus conforming a tooth (Fig. 1). Since the child was dyspneic, bronchodilators were started and he was immediately taken to the operation theater for rigid bronchoscopy under general anesthesia. The foreign body was successfully removed out by rigid ventilating bronchoscopy and optical forceps from the left bronchus without any complications. The patient was given antibiotics and nebulisation with bronchodilators. The child was discharged after 48 h.

3. Discussion

FB is a substance foreign to the site where it is normally found. FB in the airway is not an uncommon clinical situation. But undiagnosed airway FBs may result in asphyxia, pneumonia, bronchiectasis, atelectasis and even death. The severity of airway FB depends upon the age of the patient, site of lodgment, size, composition of the FB and duration for which it has been lodged. Most of the FB inhalation occurs in children between 1 and 3 years of age. This is because (1) they don’t have molars, necessary for grinding of food (2) they have less controlled coordinated swallowing and immaturity in laryngeal elevation and glottis closure (3) they have a tendency to explore the environment by placing the objects in the mouth (4) they often run and play at the time of ingestion.4

A variety of FBs in the airway have been reported. Food or food products are the majority among all, the reported incidence being as high as 70% of all FBs.5 Unusual types of FBs like broken tracheostomy, leech, broomstick, bubble gums etc. also have been reported. A tooth inhaled into the airway during tooth extraction is extremely rare and creates a dangerous situation. A child with a history of sudden onset of cough, wheezy sounds in the chest especially in the absence of any known pulmonary diseases like bronchial asthma or chronic pulmonary infection should be suspected of having an airway FB.6 The important issue in the air way FB is accurate diagnosis and speedy safe removal procedure. History taking and clinical examination can provide diagnostic clues, but a doubtful history of FB inhalation may delay the diagnosis.7 Sometimes, FB inhalation may escape the diagnosis, particularly if there is no recollection of the episode. So, it is necessary to screen and X-ray every patient who is coming to the outpatient department with a history of swallowed FB presenting with sudden cough or dyspnea.8 In the case of inhaled FB into the airway, X-ray chest shows significant findings such as atelectasis or air trapping. Even chest X-ray is generally the first imaging modality used for the diagnosis; it may yield negative results up to 30% of children who aspirate FBs as most are non-radiopaque.9 Since in our case, the patient had come immediately after aspiration of the FB, no significant changes in chest X-ray were seen except FB in the left bronchus. Negative imaging studies however, do not exclude the presence of FB in the airway. Definitive diagnostic modality was often made by rigid bronchoscopy but this is an invasive procedure, which needs anesthesia.10 Alternate to bronchoscopic evaluation, patient with suspected airway FB is computed tomography (CT) scan. CT scan is strengthened by the use of multislice CT scan with realistic 3-dimensional reconstruction and virtual bronchoscopy.11

If a FB is inhaled, it can be removed with the help of rigid or flexible bronchoscope. Rigid bronchoscopy is the main technique, permitting removal of the tracheobronchial FBs.11 Early identification and removal of FB is always better for a successful outcome. After FB lodgement, local inflammation, edema and granulation tissue formation may lead to further airway obstruction and making a bronchoscopic identification and removal of object will be more difficult.12 In our case, negligence and carelessness during tooth extraction caused this type of unwanted incidence faced by the child. So optimum care should be provided during dental extraction particularly in children so that it will prevent this type of life threatening condition. Prevention is the most important element in reducing morbidity. As prevention is the key behind FB inhalation, more efforts should be given to educate the care givers and parents. Small spherical shaped food items like seeds and nuts may cause airway obstruction and asphyxia. All these types of food should be avoided until the child is able to chew them adequately while sitting. In our case, the situation gives a

![Figure 1](image.png)  
**Figure 1** Chest X-ray PA view showing a tooth (arrow mark) in the left bronchus.
lesson to the doctors doing any procedure in the oral cavity or oropharynx particularly in awake children that negligence can lead to FB inhalation.

4. Conclusion

FB aspiration is a preventable mishap. It can be prevented by giving proper education to parents, care givers and public at large. High index of suspicion, careful history taking, meticulous clinical examination and neck and chest radiograph are essential for the early diagnosis of airway FB. Aspiration of a tooth during dental extraction is a rare but potentially lethal condition. Carefulness and alertness during tooth extraction can help to prevent slippage of the tooth into the airway just after extraction. Education of medical fraternity is essential for the things for which one does not have expertise.

References