A RARE CASE REPORT OF SPROUTED COWPEA IN BRONCHUS OF A 2-YEAR-OLD

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ABSTRACT

BACKGROUND
Foreign body inhalation is often encountered in emergency otolaryngology services. Inhalation of foreign objects is most common in children under 3 years and is very rare in adults. Its diagnosis has always been a challenge for the paediatricians as the initial choking episodes are not generally witnessed and delayed residual symptoms tend to mimic other common childhood respiratory illnesses. The larynx performs a very efficient sphincteric function to protect the lower respiratory tract and it is unusual for a foreign body to be inhaled as opposed to being swallowed especially in adults. A foreign body which impacts in the larynx may stimulate spasm and cause complete respiratory obstruction resulting in rapidly fatal outcome. Fortunately, most aspirated objects pass into the bronchi. Food nuts (especially peanuts) being the most common. We are presenting a case that was detected with unusual type of foreign body in the respiratory tract of a 2-year-old child.

KEYWORDS
Sprouted Cowpea in Bronchus.


BACKGROUND
Foreign body 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 of one year.[1] 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. Complications depend on the site, size, shape, nature and duration of foreign body in the airway.[3] Longstanding foreign body in the proximal trachea is extremely rare and may be seen in cases of young children where an adequate history is often not obtained. Delayed diagnosis results in significant morbidity and mortality.

CASE REPORT
A 2-year-old male child was referred to the Otorhinology Department of Government Medical College, Kota with the complaint of breathing difficulty and whistling sound at the time of exertion and crying. The child was suffering from cough with expectoration since 10 days, which was treated by IV antibiotics and nebulisation by paediatrics. The child was relieved from symptoms for sometimes, but repeated attacks of cough and fever occurred. There were no symptoms of common cold. On examination, the baby was tachypnoeic and restless. He was found to have chest retraction, tracheal shift to the right and decreased air entry on the right side of chest. On room air, oxygen saturation of patient was 87%.

Figure 1. X-ray Chest PA View before Bronchoscopy

An urgent chest x-ray was taken, which showed mediastinal shift to the right side with hyperinflation of the left side of the chest (Fig. 1).

Foreign body aspiration of right bronchus was suspected. CT scan of the neck and chest revealed the opacity at right bronchus with hyperinflated left lobe of lung (Figure 1 and Figure 2).

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The child was taken to the operating room for emergency bronchoscopy. Rigid bronchoscopy was done under general anaesthesia. A black coloured foreign body covered with slough was seen in right bronchus. With the help of forceps, the foreign body was removed in second attempt. The FB was 0.3 cm of sprouted cowpea (Fig. 3). The immediate postoperative period was uneventful and the child was discharged on the 4th postoperative day.

DISCUSSION

The peak incidence of inhaled foreign bodies is between the ages of one and three years, with a male: female ratio of 2:1(5,6). Only 12 percent will impact in the larynx with most passing through the cords into the tracheobronchial tree. In contrast to adults, where objects tend to lodge in the distal bronchi or right main bronchus, in children they tend to lie more centrally within the trachea (53 percent) or just distal to the carina (47 percent).(6,7) The typical history is of a choking episode while the child feeds or while he is playing with a toy or small object. The parents then find to their alarm that the object has disappeared. This can be followed by a relatively symptom-free period as the object lodges in the lower airway. Partial obstruction of one of the main stem bronchi causes the characteristic wheeze over one side of the chest on auscultation and the hyperinflation of one lung evident on chest x-ray, although these classical findings are by no means universal. The hyperinflation occurs due to a ‘ball-valve’ effect where the negative intrathoracic pressure on inspiration dilates the bronchial lumen around the foreign body. Upon expiration, the positive pulmonary pressure compresses the main bronchi, occluding the airway around the offending object preventing expulsion of the air. Although most patients present with a history of wheeze or cough, up to 20 percent may present after several days due to secondary respiratory complications. A high index of suspicion and early consideration of bronchoscopy are essential.

Plain chest x-ray may show the characteristic changes of ‘obstructive emphysema’ as air is trapped beyond a partly occluded bronchus. The use of CT to aid diagnosis of tracheobronchial foreign bodies has not been a great advantage. Peanuts do not show up well (sensitivity of 35 percent), although objects such as legumes can be detected easily with a sensitivity and specificity in excess of 90 percent.[6] Better public awareness of the dangers of small objects and legislation to control their use in toys and household objects has meant that in western communities even highly specialised otolaryngologists in large tertiary institutions such as John Hopkins Hospital may only see an average of 5.9 cases per year. After the advent of bronchoscopy, mortality and morbidity 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.[7]

A careful history and clinical examination are strong indicators of the diagnosis for Foreign Body inhalation and raises the index of suspicion of an aspirated foreign body. Regardless of the management strategy, close cooperation between a skilled surgical and anaesthetic team is essential to avoid potential hazards of foreign body aspiration. The aim of treating foreign body inhalation in children should be prevention.[8] This should be facilitated by educating parents of children to avoid keeping seeds, nuts or dried fruits in the home.

CONCLUSION

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

REFERENCES