

Unusual Foreign Bodies in the Respiratory Tract of Children

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Background: Diagnosis of a foreign body without history of aspiration has always been a challenge to pediatricians. **Case Characteristics:** Four cases presented with non-relieving acute or chronic history of respiratory symptoms. **Observations:** All of them had unusual types of foreign bodies – plastic flower toy, button, sticker or stone in their respiratory tract. **Outcome:** All four patients improved after removal of the foreign body. **Message:** A differential diagnosis of foreign body should always be made in an acute or chronic presentation of respiratory cases.

Keywords: *Bronchoscopy, Foreign body aspiration, Respiratory tract.*

Foreign body aspiration (FBA) is frequently encountered and is a life-threatening condition in children. Its diagnosis has always been a challenge for the pediatricians, as the initial choking episodes are not generally witnessed and delayed residual symptoms tend to mimic other common childhood respiratory illnesses [1]. The spectrum of airway foreign bodies varies across different cultures, regions and feeding habits [2]. Food nuts (especially peanuts) being the most common and toys account for 90% of foreign bodies found in FBA cases [2,3]. We are presenting 4 FBA cases that were detected with unusual types of foreign bodies in the respiratory tract of children.

CASE REPORTS

Case 1: A 10-month-old boy presented with hoarseness of voice, drooling of saliva and excessive irritability for 2 days. On examination, the child had respiratory distress along with inspiratory stridor. The pulse oximeter showed a saturation of 90%. X-ray neck antero-posterior and lateral view showed a prevertebral soft tissue swelling of 20 mm at the level of C4-C6 vertebrae with narrowing of the airway. The infant was managed on the lines of croup for two days. As there were no signs of improvement, patient was taken up for videolaryngoscopy. The vocal cords were totally obstructed by a plastic flower toy, and the infant was breathing only through a hole in the toy (**Fig. 1a** and **1b**). The infant improved following the removal of foreign body.

Case 2: An 18-month-old boy having cough for 10 days and bilateral rhonchi was not responding to inhalational and oral medications. Chest X-ray posteroanterior and

lateral views showed a radio-opaque foreign body in the trachea (**Fig. 2a**). A button having multiple holes was removed by rigid bronchoscopy, and the child improved. The child had not developed respiratory distress probably due to multiple holes in the button through which he was able to breath.

Case 3: A 29-month-old toddler presented with cough, irritability and refusal to feed for 6 hours. Child had respiratory distress with saturation of 86% on pulse oximetry at 6 L/min of oxygen. Emergency neck radiograph showed the presence of a radio opaque striker in trachea at the level of C7 vertebrae (**Fig. 2b**). The foreign body (**Fig. 1c**) was removed from the trachea by rigid bronchoscopy following which the toddler improved. In this case, the sudden emergence of respiratory distress indicated the diagnosis of FBA.

Case 4: A 34-month-old boy presented with a history of cough and fever of 1½ month duration. The child had been treated with intravenous antibiotics in the referral hospital. On examination, the child was having bilateral crepitations. The radiograph showed right upper and middle zone and left middle and lower zone heterogenous opacities (**Fig. 2c**). The diagnostic bronchoscopy showed presence of a stone at the carina (**Fig. 1d**). Child improved after removal of the foreign body. The boy had probably developed secondary pneumonia following FBA.

DISCUSSION

FBA is a frequently encountered and life-threatening condition in young children. Early complications are asphyxia, cardiac arrest, obstructive dyspnea, laryngeal/glottis edema and loss of consciousness, which can lead to

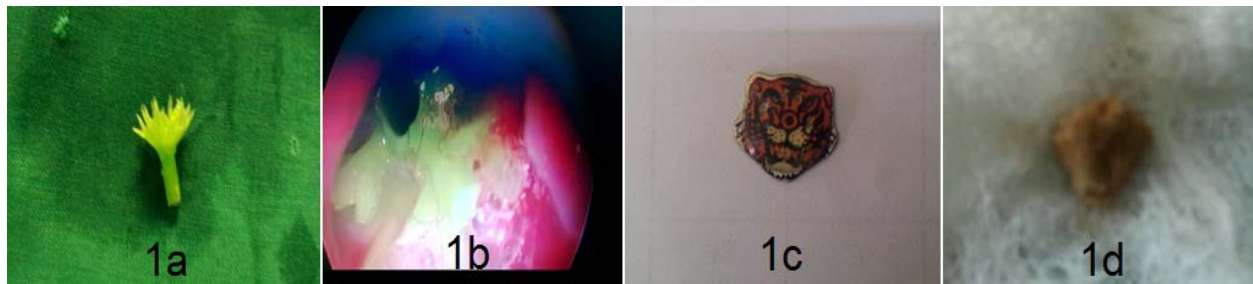


FIG.1 (a) Plastic flower toy (case 1) after removal, and (b) entrapped between vocal cords seen through videolaryngoscope; (c) sticker (case 3), and (d) stone (case 4) after removal.

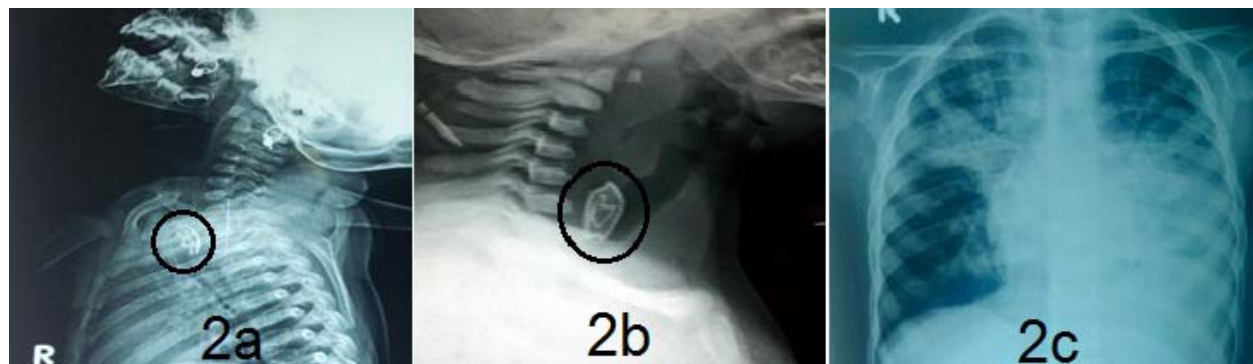


FIG. 2 (a) Lateral view chest radiograph (case 2) shows a button with multiple holes in trachea, (b) sticker (case 3) in airway in front of C7 vertebrae on X-ray neck lateral view, (c) multiple bilaterally heterogeneous opacities (case 4) on chest X-ray (PA view).

later complications like secondary infection and obstructive bronchiectasis [4]. In cases of nuts or vegetables aspiration, the parents may give a history of such consumption, which increases the suspicion of FBA. However, we have come across four cases of FBA, wherein objects were flower toy, sticker, stone and button, respectively. In these cases, the parents are generally unaware of such an intake by their kids, thus reducing the chances of being diagnosed as FBA.

Presence of associated conditions like asthma, pneumonia, reactive airway disease, croup and atelectasis may further lead to delayed diagnosis [5] of FBA, as seen in three of the cases presented. In their study, Mahyar, *et al.* [6] and Rajashekrana, *et al.* [7] found that a history of aspiration was witnessed in only 57.4% and 62% of the cases, respectively. So a high index of suspicion is required by the pediatricians for diagnosing FBA in children.

FBA should always be considered as a possibility in both an acute or chronic respiratory case, even in the absence of any history of foreign body intake. Bronchoscopic evaluation of bronchial tree is both diagnostic and therapeutic, and should be done with the slightest doubt of foreign body aspiration.

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