Case Report

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Multiple Foreign Bodies in Tracheobronchial Tree: A Rare Case

Katarkar Ashish U., MS ENT; Shrivastav Ajit, MD (Pediatrics); Modh Datt S., MBBS; Shah Pankaj R., MS ENT

Abstract

The aspiration of a foreign body represents an important cause of morbidity and mortality during childhood. Its consequences depend crucially on the degree of obstruction. Usually there is one or maximum two foreign body aspiration in a child at same time reported in literature. Here we present a rare case of multiple foreign bodies' aspiration in one year old child with a normal radiograph of chest which was saved due prompt and emergency intervention. Foreign body aspiration must always be considered in the differential diagnoses of a child presenting with acute onset of rapid respiration and wheezing without any other obvious systemic cause.

Keywords: Multiple foreign bodies; Trachea; Bronchus; Aspiration; Bronchoscopy.

Introduction

The aspiration of a foreign body represents an important cause of morbidity and mortality during childhood. It is a medical emergency which must be diagnosed and intervened promptly. Because it can result in the death of child. Its consequences depend crucially on the degree of obstruction. Thus, some of them are resolved spontaneously after a coughing episode or through assisted manoeuvres that favour expulsion, and the rest arrive at the emergency services of hospitals with varying degrees of suspicion among relatives and clinical signs. In these cases, enquiries from the relatives, an exhaustive examination and a series of additional tests will determine the indication of a bronchoscopy.

In children, foreign body aspiration is associated with the failure in the laryngeal closure reflex, inadequate swallowing reflex and the habit of putting objects in the mouth. Parental negligence and lack of information regarding certain objects that might be aspirated, such as small toys and certain types of food, are predisposing factors.[1,4] Early diagnosis of Foreign body Aspiration is essential, since the delay in its recognition and treatment can result in permanent side effects or fatal damage.[2]

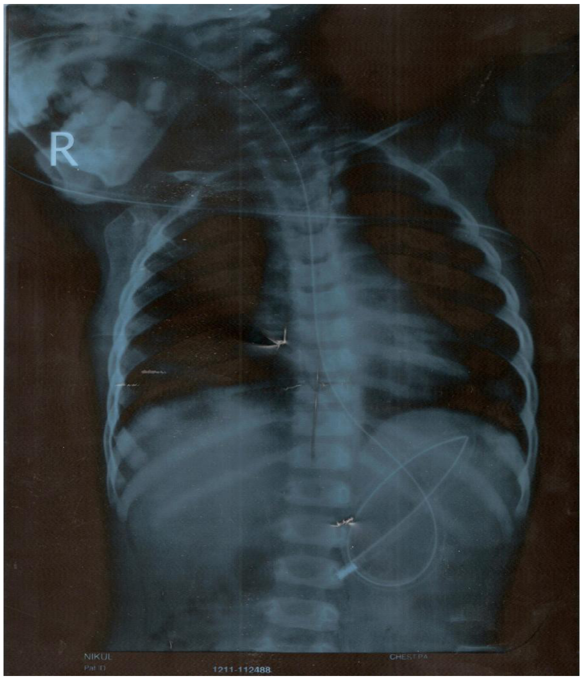
Case Report

A one year old child presented to the paediatric emergency department with complains of sudden onset of breathlessness. His relatives gave history of ingestion of few berry and seeds of it noticed by his elder sister at home when unattended by parents. There was no h/o cough, cold, fever, lethargy, convulsion or unconsciousness. He had been well before an hour of presenting to emergency. On physical examination, the child was tachypnoeic with suprasternal and subcostal recession and noisy respiration. He was otherwise afebrile and acyanotic. His vital signs were: pulse - 124/min and spO_2 - 65% without O_2 and rapidly falling. On examination, extensive rhonchi were present on both sides. Other blood investigations were within normal limits. Portable chest x-ray done showed normal study. Under Direct laryngoscopy, suctioning done and 5-6 seeds

Author Affilation: *Professor, Department of ENT, **Associate Professor, Department of Pediatrics, ***Second Year Resident, Department of ENT, ****Professor and Head, Department of ENT, CU Shah Medical College Surendranagar.

Reprint request: Dr Ashish Katarkar, B-10, Doctor's Quarters, CU Shah Medical College Surendranagar, Gujarat, India.

E-mail: ashishkatarkar@gmail.com



removed which lead to improvement of spO_2 to 75%. Then after, patient was taken to operation theatre where bronchoscopy with manual jet ventilator under general anaesthesia performed. It was difficult procedure which resulted in removal of 5 seeds/seed pieces and remnants of berry coverings from trachea and right bronchus. Check bronchoscopy showed cleared tracheobronchial tree. Immediately patient was transferred to the intensive care unit for observation. Post-operatively the child was treated with intravenous amoxycillin-clavulanic acid, dexamethasone and nebulisation. Recovery was uneventful and next day, the child was active, and took active feeding. Patient was discharged with oral antibiotic and analgesic syrups from the ward after three days. At follow up two weeks later, he was asymptomatic and well.

Discussion

Most cases of foreign body aspiration occur in children less than 3 years of age.[3,5] Children tend to put objects impulsively into their mouth and run the risk of aspiration. Most aspirated foreign bodies cross the larynx and get lodged in the trachea or bronchus.

The symptoms and sign depend on the size and nature of the foreign bodies as well as the degree of obstruction. Children are more often affected, when they suddenly inspire during play or fight while having something in the mouth. Small & smooth metallic foreign bodies such as pin allow uninterrupted passage of air, while a large foreign body may cause a total occlusion of the airway.[6]

The initial response to aspiration is choking and coughing followed by stridor, suprasternal recession, coughing, and hoarseness. Majority of aspirated foreign bodies caught in the airways of children are spontaneously eliminated by coughing; and at times laryngospasm may cause a brief period of cyanosis and transient choking. Laryngeal foreign bodies with sharp edges cause not only dyspnoea but also odynophagia.[7] Foreign body can settle in hypopharynx (5%) larynx (2-9%), trachea (12%) or bronchus (83%). The airway obstruction may be partial or complete. Partial obstruction occurs when the upper airways are partially occluded or obstruction is distal to carina. Patient may present within hours after foreign body aspiration. Most foreign body lodge in periphery, distal to Larynx or Trachea. However foreign body having a sharp or irregular body gets lodged in larynx or Trachea.[8]

The foreign body can be classified into mainly two types i.e. 1. *Non irritating type:* e.g. Plastic pieces. It allows uninterrupted passage of air & may remain symptomless for a long time. 2. *Irritating type:* peanuts, seeds, etc. It initiates inflammatory reaction leading to congestion and oedema of the tracheobronchial mucosa while a large foreign body may cause a total occlusion of the airway. Vegetable foreign bodies like peas & beans produce severe pneumonitis & are also difficult to remove. If the foreign body gets arrested in the larynx it obstructs both phases of respiration & rapidly produces laryngeal oedema. In the trachea, if the foreign body is large, there is danger of total respiratory obstruction. Presenting symptoms include dyspnoea, vomiting, choking, neck pain, dysphagia, refusal to take foods, drooling, coughing, or stridor[6]. Binder *et al*[9] reported the correlation between foreign-body ingestion and high-risk social situations, such as poor maternal care or child abuse. In our case, parents of the child were uneducated and not mentally or physically handicapped. On further questioning, mother was working and child was unattended by any elder individual when he aspirated. Direct laryngoscopy helped in diagnosis and prompt treatment. Respiratory support is of utmost importance in the immediate management of upper airway obstruction. The patient must be kept under close observation and oxygenation must be adequate.[10] Tracheotomy or intubation should be performed if there is suspicion of deteriorating airway function. Definitive treatment involves correction of the underlying cause of obstruction.

A child with a positive history of foreign body ingestion such as plastic or other radiolucent material may have no features in plain radiographs. In such situation, Upper GI study using thin barium may be done to identify the object in oesophagus before endoscopy. In conclusion, foreign body aspiration must always be considered in the differential diagnoses of a child presenting with acute onset of rapid respiration and wheezing. Any child who has unexplained respiratory or upper GI symptoms, foreign body ingestion or aspiration, should be suspected.

Conclusion

The aspiration of foreign body is a medical emergency which must be diagnosed as soon as possible and intervened promptly. Also there is need of spreading awareness among the poor and illiterate population for not to leave their children unattended.

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