

Spontaneous Expulsion of Vegetative Foreign Body (Carrot Piece) from Right Main Bronchus: A Case Report

Bhushan Kathuria¹, Sharad Hernot², SPS Yadav³, Madhuri Kaintura⁴, Dheeraj S⁵

^{1,4,5}Junior Resident, Department of Otorhinolaryngology and Head and Neck Surgery, Pt. B D Sharma PGIMS, Rohtak-124001, Haryana (India)

²Senior Resident, Department of Otorhinolaryngology and Head and Neck Surgery, Pt. B D Sharma PGIMS, Rohtak-124001, Haryana (India)

³Senior Professor, Department of Otorhinolaryngology and Head and Neck Surgery, Pt. B D Sharma PGIMS, Rohtak-124001, Haryana (India)

Correspondence to Sharad Hernot, hernots@yahoo.com

Abstract: *Worldwide experiences of spontaneous expulsion of foreign body bronchus are unimaginable and quite rare. Literature has a few cases of spontaneous expulsion of “metallic” foreign body such as iron nail, sewing machine needle, cycle valve etc., but there is hardly any case reported on spontaneous expulsion of a “vegetative” foreign body which is difficult to diagnose. We report one such case experienced by us.*

Keywords: Spontaneous expulsion; vegetative foreign body; carrot piece

1. Introduction

The inhalation of foreign body into the tracheobronchial tree presents a life-threatening situation. ^[1] Foreign body aspiration is classically a paediatric problem with the highest incidence occurring in children younger than 5 years. Bronchial foreign body can occur in adults as well, albeit often with less acute symptoms. The classical signs of acute choking, wheezing, loss of unilateral breath sounds with corresponding volume loss, or hyperinflation due to air-trapping on the radiographs have a sensitivity of 70%. Other findings such as chronic cough, recurrent pneumonia in the same chest region, atelectasis, pneumothorax, or pneumomediastinum, are more common in adults. Rigid bronchoscopy has been the standard procedure for removal of airway foreign bodies, and remains so in the paediatric population.

Literature has a few cases of spontaneous expulsion of “metallic” foreign body such as iron nail, sewing machine needle, cycle valve etc., but there is hardly any case reported on spontaneous expulsion of a “vegetative” foreign body which is difficult to diagnose. We report one such case experienced by us.

2. Case Report

A 3 year-old female child presented to the emergency department at midnight with a history of breathing difficulty, weak cry and intermittent choking spells for the last three hours. She was brought by her parents who said that she developed difficulty in breathing after an episode of vomiting post meal. On examination, the baby was tachypnoeic and restless. She was found to have stridor, and decreased air entry with conductive sounds on the

right side of chest on auscultation. On basis of history and physical examination, foreign body aspiration was suspected and neck (AP and lateral view) and chest x-ray (PA and lateral view) were done. Chest X-ray revealed hyperinflation of the right lung (fig.1). The patient's routine investigations were sent which were within normal limits. The patient was kept nil per orally and a stat dose of intravenous steroids and antibiotics were given to the patient in the ward. She was immediately taken to the emergency operation theatre for rigid bronchoscopy, and it was when she was shifted to the operation table, that she had a severe bout of cough during which expelled the foreign body spontaneously. The foreign body was a small piece of carrot measuring 1 x 0.7 x 0.3 cms in size and was swollen and softened (fig.2). Thereafter, the patient had immediate relief in symptoms. On auscultation of chest, air entry had markedly improved on right side. The patient was monitored in the operation theatre which showed an improvement in her oxygen saturation. There was no post expulsion dyspnoea, haemoptysis, or chest pain. The patient was shifted to the ward and her intravenous antibiotics and steroids were continued. A repeat chest x-ray was done after 6 hours which revealed reversal of radiological changes in the right lung (fig.3). Patient had an uneventful recovery afterwards. In the ward, the patient was stable and had bilateral air entry in chest was equal. She had no respiratory difficulty, grunting sounds or wheeze. She was discharged the next day and was asked to come after 7 days for follow up. Patient was brought after 1 week and was asymptomatic on presentation.

3. Discussion

Worldwide experiences of spontaneous expulsion of foreign body from bronchus are unimaginable and quite rare, ranging between 2-4%. ^[2] Bronchial aspiration is

much rarer and potentially life-threatening, requiring immediate intervention for its extraction.^{[3], [4]} Gupta and Sood in 1967 reported two cases of spontaneous expulsion of foreign body from air passage. One was a 2 year old male child who spontaneously expelled out a cycle tube metallic valve 4 days after inhalation, and other was also a 2 year old male child who spontaneously coughed out a coin from trachea, few hours after inhalation.^[2] Gupta and Mundra in 2004 reported a case of a 2 and a half year old child who expelled iron nail while cough 1 month after inhalation.^[5] Swain and Mishra in 2014 reported a case of a 2 year old child who spontaneously expelled an iron nail while coughing 1 day after inhalation.^[6]

The diagnosis of foreign body inhalation should be made immediately depending on history, clinical signs, and investigations. But sometimes the diagnosis can be delayed for weeks or months especially when the history is not clear. X-rays are mandatory, and so are sometimes CT scans, in establishing the diagnosis and locating the site of the foreign body. They are also helpful in demonstrating the presence of respiratory complications such as emphysema, atelectasis, bronchiectasis, pneumonia, or lung abscess.^[7]

Subglottis is the narrowest part in the upper respiratory tract in children, hence there is always an obvious risk during spontaneous expulsion of foreign body from tracheobronchial tree, that it may lodge in the subglottic region, and may impose a life threatening emergency requiring urgent intervention.^[5]

It is imprudent, risky and unadvisable to wait for spontaneous expulsion in cases of vegetative foreign body bronchus. While preparing for bronchoscopy, a constant watch should be kept on the patient, as every forceful bout of cough carries a suspicion of spontaneous expulsion of foreign body. Danger of foreign body lodgement into subglottis during such bouts of cough is rare but its possible occurrence should be kept in mind.^{[4], [5], [8]}

Delay in performing bronchoscopy can complicate the picture and even make the subsequent removal of the foreign body difficult, as a long standing foreign body can lead to swelling of the surrounding mucosa of the airway. Removal of intrabronchial foreign bodies should be achieved either by bronchoscopy or thoracotomy, once the diagnosis is made. Rigid bronchoscopy is the gold standard for removal of foreign bodies from tracheobronchial tree irrespective of the size, shape, and nature of foreign body, but there is always a rare but existing possibility of spontaneous expulsion. On one hand, spontaneous expulsion saves the patient from the dangers of anaesthesia and endoscopic intervention for removal of foreign body, but it also may impose a great danger of subglottic lodgement of foreign body which can cause complications and even worse, death. Proper history taking, preoperative radiological assessment followed by early intervention results in a favourable outcome in foreign body inhalation cases. These incidences can be prevented by imparting proper education to the parents and public regarding choking hazards present in our day to day

life, and showing them the incidences of such cases preferably in an audio visual form of communication.

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Legend to Figures



Figure 1: X-ray chest (PA view) showing hyperinflation of right lung.



Figure 2: Spontaneously expelled foreign body (carrot piece) measuring 1cm x 0.7 cm x.0.3 cm in size



Figure 3: X-ray chest (PA view) showing reversal of radiological changes 6 hours after spontaneous expulsion