CASE REPORT

A Long Standing Foreign Body in Bronchus in An Adult:A Diagnostic Dilemma

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Abstract

Foreign body in bronchus is a surgical emergency requiring prompt action. In adults, it usually is associated with specific history or risk factors. We here present a case of 57 years old otherwise healthy male who presented with productive cough of 6 months duration before foreign body (vegetative) was visualized by fibreoptic bronchoscopy. Modalities of diagnosis, management and outcome are discussed.

Key Words

Foreign body, Bronchus, Vegetative, Bronchoscopy

Introduction

Foreign bodies in air passages are challenging clinical problems among ENT emergencies. Many sudden deaths attributed to heart attacks were found to be due to obstruction of the airway caused by food bolus (1). Foreign body aspiration is more common in children than in adults. The peak incidence in children is during the second year of life and during the sixth decade in adults. Review of the literature shows that the majority of foreign bodies occur in the right bronchus compared to the left, and the incidence in the larynx and trachea is lower (2).

In adults, foreign body aspiration is more common in the setting of advanced age, underlying neurological disorder, poor dentition, alcohol consumption and sedative use (3). In the absence of these predisposing factors, a high index of suspicion is necessary for diagnosing tracheo-bronchial foreign body especially when it is radiolucent.

Case Report

A 57 years old otherwise healthy male, engaged in sedentary profession, presented with chief complaints of chronic productive cough of 6 months duration. It was persistent, accompanied by mucopurulent expectoration and 2 episodes of hemoptysis. At the start of ailment CXR (PA view) was done and was normal. Repeated courses of antibiotics were given but with partial relief. There was no history of fever, breathlessness, pain chest or loss of weight/appetite. Past history and family history was not significant. Patient was married, vegetarian, non-smoker, non-alcoholic with no predisposing risk factors for foreign body aspiration.

On examination of respiratory system, percussion note was impaired in right infrascapular region and on auscultation, intensity of breadth sounds slightly decreased and crepitations heard in the same region. Rest of the general physical examination and systemic examination was unremarkable.Investigations : Routine hemogram-WNL; Sputum for AFB-negative(3 samples); Mantoux-no induration; CXR (PA view) was repeated-showed right paracardiac opacity in lower zone with slight elevation of right diaphragm (*Fig.1a*); USG chest-no abnormality.

Patient was given amoxicillin+clavulanic acid (1000 mg BD) × 10 days with minimal improvement, so fibreoptic bronchoscopy (FOB) was planned. FOB showed a pinkish grey mass in the right intermediate bronchus (*Fig. 2a*). Biopsy was taken but as last punch was taken the mass got pulled out and it was realized that the mass was a foreign body. Patient was immediately taken for rigid bronchoscopy under anaesthesia general. Regarding anaesthetic approach, inhalational induction was done with O2 and sevoflurane, followed by IV propofol + fentanyl, then IV succinylcholine and IV lignocaine. Maintenance was with oxygen, sevoflurane and intermittent boluses of propofol with IPPV. Foreign body was removed (*Fig.3*) and was sent for histopathological analysis which revealed the foreign body as vegetable matter with bacterial colonies on the surface. Postoperative course was uneventful. Follow up bronchoscopy next day showed airway cleared of the foreign body but with granulation tissue and inflamed mucosa in right intermediate bronchus due to chronic

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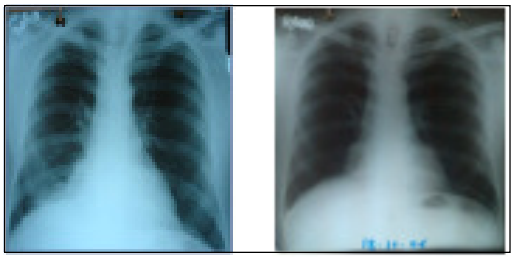

Fig.1a &b CXR (PA view) Showing Paracardiac Opacity in Right Lower Zone with Slight Slevation Elevation of Right Diaphragm & of 2 Weeks Postoperative Showing Marked

irritation caused by the foreign body over months (*Fig. 2b*). Patient showed significant clinical improvement postoperatively and serial CXR (PA view) done after 2 weeks showed marked clearance of right paracardiac opacity (*Fig. 1b*).

Discussion

Tracheobronchial foreign body may be defined as any solid object aspirated below the level of vocal cords (4). Foreign body aspiration is frequently suspected in children with acute or recurrent pulmonary symptoms. However, it is rarely considered in adults with subacute or chronic respiratory symptoms, unless the patient gives a clear history of an aspiration event. The most common symptoms are choking followed by a protracted cough (5).Some of the materials retrieved from the bronchial tree have been organic materials, metal remnants, bone fragments, vegetables, broncholiths, dental prosthesis, endotontic needle, tracheostomy tube, nails, bean seeds and fruit stones. Most of the foreign bodies are organic in nature, the common ones being nuts and seeds in children and food and bones in adults. Inorganic materials are uncommon; some such materials retrieved have been beads, coins, pills, beverage can tops and caps of pens (6).Forgotten episode of a foreign body aspiration in adults may remain undetected for years. These cases are usually diagnosed as chronic pneumonia, bronchiectasis and lung abscess or rarely as malignancy (7). The longest bronchial foreign body retention in an adult recorded in medical literature is 40 years4. Chest roentgenogram has poor sensitivity in diagnosing foreign body as most of the foreign bodies in adults are not radiopaque. However, it can show secondary findings like repeated pneumonia of a particular lobe, atelectasis, compensatory emphysematous changes, and bronchiectasis. This is what happened in our case. On computed tomography, endobronchial foreign bodies appear as dense structures/soft tissue lesions within the bronchial lumen. Associated findings are volume loss, hyperlucency with air trapping, and bronchiectasis in the affected lobe (8). Broncoscopy is the gold standard for diagnosing tracheo-bronchial foreign body. Bronchoscopic findings are classified into three groups: a) foreign body in the bronchial tree without granulation tissue; b) foreign

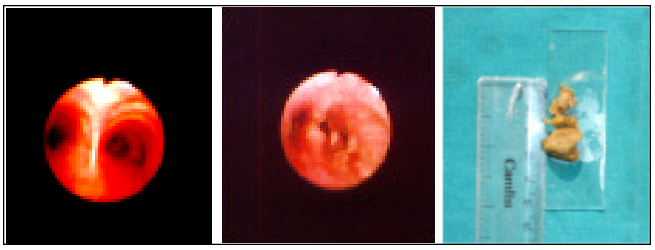

Fig.2a &b. FOB Picture Showing Pinkish Grey Mass in Right Intermediate Bronchus & 1st Postoperative Day Showing Granulation Tissue and Inflamed Mucosa in Right Intermediate Bronchus. Fig 3. Vegetative Foreign Body After Removal

body in the bronchial tree with marked granulation tissue; c) foreign body embedded in the granulation tissue (9). Now a days virtual bronchoscopy can be done by reconstruction of data acquired for chest CT. Virtual broncoscopy helps in diagnosing the site of foreign body, especially in major bronchi, with an intraluminal view of the foreign body. It also helps in better patient management as it helps in targeting the therapeutic bronchoscopy to the suspected bronchus and thus reducing the time for the procedure (10).

Conclusion

It is important for clinicians to maintain a high level of suspicion for diagnosing tracheo-bronchial foreign body because once diagnosed and removed, the improvement in symptoms is usually dramatic and rewarding.

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