

Retained bronchial foreign body diagnosed after 29 years of penetrating chest trauma – A case report.

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Abstract

This is a case of retained bronchial foreign body identified by Computed tomography (CT) scan after 29 years of initial chest trauma in a patient with long standing history of shortness of breath and recurrent pulmonary infections eliciting the importance of CT scan in identifying such foreign bodies.

Introduction

Occurrences of long standing retained foreign body post trauma within the tracheobronchial tree presenting as a chronic lung disease is relatively rare.

Organic foreign bodies are difficult to diagnose as they may mimic air or appear isodense to the surrounding soft tissues or may even calcify in chronic setting. According to studies overall 38% of foreign bodies were misdiagnosed initially.^[1] Proper clinical history in cases with high suspicion index & relevant imaging modalities is essential for early diagnosis & prevention of serious complications.

Case Report

A 41-year-old from rural part of the country presented to the emergency department with severe respiratory distress, fever, productive purulent sputum & left sided chest pain. The patient gave history of long-standing recurrent chest infections extensively treated with antibiotics. A remote history of chest trauma following a fall was obtained. No previous X-rays were available for comparison. At the time of admission her respiratory rate was 42 breaths per minute, blood pressure of 108/65 mm of Hg and a pulse rate of 128 beats per minute. She was immediately admitted in ICU and underwent intubation. Total count at the time of presentation was 14,200 per cc which elevated to 27,100 per cc on 2nd day. Streptococcus pyogenes was isolated from sputum.

Chest X-ray showed volume loss & complete opacification of left lung with interspersed cystic areas indicating bronchiectasis with a dense obliquely oriented fibrotic band in right lung upper lobe, as evident on CT tomogram image (Figure 1).

High resolution computerized tomography (HRCT) of the chest revealed a dense thick walled tubular fluid filled structure traversing the carina extending to the left main bronchus with marked volume loss with multiple fluid filled cystic bronchiectasis suggestive of superadded infection (? abscess) (Figures 2A and 2B) A thick walled air-filled fibrotic tract in right lung upper lobe appearing contiguous with the foreign body and extending to axillary soft tissue (Figures 3A & 3B). 3-D images show the orientation of tubular foreign body within the chest (Figure 4). No pneumothorax was noted. Bronchoscopy was planned but the patient couldn't tolerate the procedure.

Despite aggressive treatment her condition deteriorated quickly and she developed acute renal failure. Within 48 hours of presentation she succumbed to septic shock and multiorgan failure.

Discussion

A large proportion of retained foreign bodies following trauma are organic foreign bodies ^[1]. Detection of these organic foreign bodies is particularly important as it may serve as a nidus for superimposed infections. ^[2] If these foreign bodies are left undetected, they may cause serious complications like, abscess, fistula and obstructive bronchiectasis resulting in recurrent chest infections.^[3]

Despite advances in imaging, they remain quite difficult to detect & diagnose.

Radiographs have been reported to reveal wooden foreign bodies in about only 15% of the cases.^[1] CT scans are helpful in evaluation & detection of wooden & bamboo foreign bodies.^[4,5] However, the attenuation largely depends on its porosity, water & air content. Bodne et al. ^[6] cited cases of wooden foreign bodies exhibiting different attenuation values ranging from very low (close to air) in acute to high (close to calcium) in chronic cases. Another study has also concluded that all dry and wet wooden & bamboo foreign bodies mimicked air in linear shape which may cause difficulty in detected within air filled spaces, such as nasal cavity, sinuses & tracheobronchial tree.^[7]

In our case attenuation value measured within the foreign body & walls were 11 HU & 545 HU respectively indicating fluid filled lumen & calcified walls. Since the patient didn't survive till the surgical extraction, the exact nature of the foreign body was not found. However, coupled with the patient's past history of trauma & the appearance of foreign body which was cylindrical, fluid filled structure with dense walls it was assumed to be bamboo. According to Nakata et el. ^[8] bamboo often presented as cylindrical structures with high density and unlike many wooden foreign bodies, bamboo appears to maintain its cylindrical structure for many years.

Conclusion

Not all foreign bodies are created equal, however interpretation & diagnosis of organic foreign bodies though difficult must be done promptly & accurately to prevent complications that can be serious & potentially life-threatening.

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None

Declaration of competing interest

All authors declare no conflict of interest

Consent

Written informed consent was taken from the patient party.

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