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AN OVERLOOKED TRACHEOBRONCHIAL FOREIGN BODY IN AN IMMUNOCOMPROMISED UNRESPONSIVE PATIENT

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Abstract

Tracheobronchial foreign body (TFB) aspiration is a rare but serious event in adults, often missed due to atypical or nonspecific presentations. We report the case of a 67-year-old male with multiple comorbidities including HIV, hepatitis B, type 2 diabetes mellitus (DM-2), and hypertension (HTN), who was brought to the emergency room in an unconscious state and found to have severe hypoglycaemia. Despite prompt correction, his Glasgow Coma Scale (GCS) did not improve, requiring endotracheal intubation and mechanical ventilation. During his ICU stay, he developed a right-sided pneumothorax on day 3, presumed to be barotrauma-related and managed with an intercostal drain (ICD). Subsequently, the patient developed left lung collapse, prompting flexible bronchoscopy, which revealed a large, previously overlooked intrabronchial foreign body. This foreign body, likely aspirated during his initial unconscious state, was the actual underlying cause of both the right pneumothorax—due to a ball-valve mechanism—and the later left lung collapse following its migration. This case underscores the importance of early suspicion of TFB aspiration in critically ill, neurologically compromised adults, especially in the absence of clear history.

Keywords:- **Foreign body aspiration, Hypoglycaemia, HIV, Pneumothorax, Atelectasis, Tracheobronchial obstruction.**

INTRODUCTION

Tracheobronchial foreign body aspiration is uncommon in adults and even more challenging to diagnose when occurring in the absence of witnessed aspiration or overt symptoms. Elderly individuals and patients with altered consciousness, impaired protective airway reflexes, or immunocompromised states are particularly vulnerable. In such populations, subtle or nonspecific signs—like unexplained hypoxia or persistent ventilator dependence—can mask the underlying pathology.

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Herein, we describe an immunocompromised patient who presented with hypoglycaemic coma and subsequently developed respiratory complications due to an overlooked tracheobronchial foreign body.

CASE REPORT

A 67-year-old male with known HIV, hepatitis B, DM-2, and HTN was brought to the emergency department in an unresponsive state. Initial assessment revealed profound hypoglycaemia (RBS: 22 mg/dL), which was promptly corrected with intravenous dextrose. However, the patient's GCS remained low (E2V2M3), necessitating intubation for airway protection and initiation of mechanical ventilation.

On day 3 of mechanical ventilation, he developed right-sided pneumothorax, which was managed with ICD placement. The event was initially attributed to barotrauma from ventilation. Due to anticipated prolonged mechanical ventilation, a tracheostomy was performed. On day 9 (post-tracheostomy day 2), he developed complete opacification of the left lung on imaging (Figure – 1a).

Figure – 1a : Chest radiograph showing left sided lung opacification.

Flexible bronchoscopy was performed, revealing a large foreign body (38 mm x 10 mm) lodged in the left main bronchus. Given its size and location, the patient had to be decannulated, and the foreign body was successfully retrieved using a controlled radial expansion (CRE) balloon catheter and artery forceps.

Post-removal imaging showed prompt re-expansion of the left lung (Image – 1b).

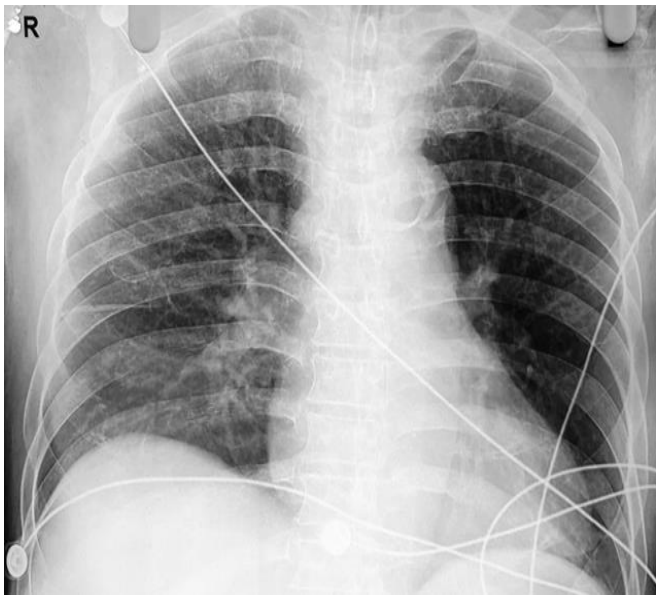

Figure 1b : Chest radiograph showing resolution of left lung atelectasis post foreign body removal.

The FB retrieved, was found to be an inorganic object (Image 2).

Figure -2: Retrieved inorganic tracheobronchial foreign body (38 mm x 10mm)

DISCUSSION

Tracheobronchial foreign body (TFB) aspiration, though most common in children, also poses serious morbidity and mortality risks in the elderly, especially those with impaired mental status or comorbidities. Its rarity in adults often leads to delayed diagnosis and management. In older adults, aspiration is frequently associated with altered consciousness due to sedation, trauma, or neurological conditions[1]. Medications such as antipsychotics, anticholinergics, and anxiolytics

may further impair airway protective reflexes, increasing aspiration risk[2].

Immunocompromised states, such as HIV and poorly controlled diabetes, exacerbate susceptibility due to weakened airway and immune defences. Additionally, tachypnoea from underlying cardiopulmonary conditions can disrupt swallowing-breathing coordination[3].

Symptoms of TFB aspiration are often nonspecific—cough, wheezing, dyspnoea, or fever—and may mimic COPD, pneumonia, or heart failure. In the absence of a clear aspiration history, particularly in elderly or intubated patients, diagnosis can be missed. In ventilated patients, complications like pneumothorax or lobar collapse may be misattributed to barotrauma or mucus plugging.

Chest X-rays are the first-line imaging but are limited, detecting TFBs in only 22.6% of emergency cases[4]. Radiolucent foreign bodies may go undetected, with only indirect signs such as air trapping or atelectasis observed. CT imaging improves detection, especially for subtle or radiolucent objects, but false negatives remain possible[5].

Flexible bronchoscopy remains the gold standard for diagnosis and removal[6–8]. It permits direct visualization and extraction using forceps, snares, or suction. Adjunctive tools like cryoprobes and Fogarty catheters enhance retrieval success[9–11]. Controlled radial expansion (CRE) balloons, though less frequently reported, have been used effectively for impacted or large TFBs.

CONCLUSION

A representative case involved an elderly patient with HIV and diabetes presenting with hypoglycaemia-induced coma. Following intubation, he developed unexplained pneumothorax and later left lung collapse. Initial imaging failed to identify the foreign body, which had likely entered during the period of unconsciousness. It initially caused ball-valve air trapping in the right bronchus, leading to pneumothorax, and later migrated to the left main

bronchus causing atelectasis. Bronchoscopy confirmed and retrieved the object using a CRE balloon, highlighting the utility of this technique in select cases. Early recognition and bronchoscopy removal are essential to prevent complications such as obstructive pneumonitis, bronchiectasis, empyema, or pneumothorax. Clinicians must maintain a high index of suspicion in elderly or immunocompromised patients with nonspecific respiratory symptoms, especially in the absence of a clear aspiration event.

Conflict of interest

None

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