## **Case Report**

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# Impacted denture in the left bronchus: aspiration in an awake state

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#### **ABSTRACT**

Tracheobronchial foreign body aspiration is rare in adults. In adults it usually happens in a state of impaired alertness. We report a case of aspiration of a partial denture in an alert patient who presented with minimal symptoms. She was successfully treated with removal of the impacted denture from the left lower lobe bronchus by rigid bronchoscopy.

Keywords: Denture, Aspiration, Bronchus foreign body, Rigid bronchoscopy

#### INTRODUCTION

Although aspiration of a foreign body (FB) into trachea and bronchus can occur in all age groups, it is often found in infants and little children.<sup>1,2</sup> Aspiration of a foreign body in an adult is usually associated with impaired cognition or alertness as in drug and alcohol intoxication.3,4 This could occur during an epileptic episode or possibly when under general anesthesia or in a drunken state. Most common foreign body aspirations in a healthy and alert adult are food particles such as bone chips, nut shells, and food boluses. Broken teeth and dentures may be aspirated under anesthesia or during dental procedures. Since foreign body aspiration in adults is rare and can remain unrecognised at times, a high index of suspicion needs to be maintained. 4-6 This case describes aspiration of a loose partial denture into the bronchus by an adult in an awake state.

#### **CASE REPORT**

A 53-year-old lady was reffered to our hospital as a suspected case of FB in the oesophagus. She gave history of swallowing a partial denture while drinking water 8 days ago. She complained of mild discomfort in the chest and intermittent bouts of unproductive cough. She had

mild discomfort while during meals. There was no history of choking sensation at the time of aspiration, breathing difficulty, fever or haemoptysis. On examination, the respiratory rate was 18/min and oxygen saturation were between 95-98% in room air. The general physical, systemic examinations and examination of the chest were unremarkable. ECG was normal. The x-ray chest that was done at the previous hospital showed a linear radio-opaque shadow suggestive of a mettalic FB, overlapping the cardiac shadow to the left of the midline well below the level of carina (Figure 1). Computed tomography (CT) scan of chest (Figure 2) was performed which showed metallic FB approximately 7.5x5 mm in the distal end of left main bronchus close to the lingual segment bronchus leading to patchy consolidation in the inferior lingual segment.

FB was removed using rigid bronchoscopy under general anaethesia. On bronchoscopy, the presenting part of the foreign body was non-mettallic and was found abutting against the lingular bronchus. Rest of the denture was impacted in the left lower lobe bronchus with some granulations around it. Using bronchoscopic alligator forceps, the presenting part of the FB was grasped firmly, disengaged from the impaction gently and the bronchoscope was withdrawn with the foreign body

trailing behind the denture measured 2.3 cm x 1.5 cm and had a metallic hook and single tooth attached to it (Figure 3). Check bronchoscopy was done again to rule out any remnants, bleeding or injury. Mild bleeding from the granulations was controlled by application of adrenaline-soaked cotton pledgelets.



Figure 1: Pre-operative chest Xray showing metallic FB.



Figure 2: Computed tomography (CT) scan of chest showing metallic FB approximately 7.5x5 mm in the distal end of left main bronchus close to the lingual segment.

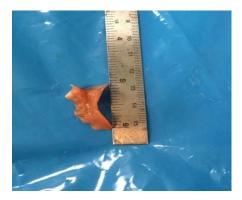


Figure 3: Denture with a single tooth and a metallic hook attached to it.

During the post-operative period cough and all other symptoms subsided. Patient was treated with antibiotics and steroid nebulisation for one week and had an uneventful recovery.

#### **DISCUSSION**

Adult aspiration of FB into the tracheo- bronchial tree is usually assossiated with impairment of consciousness, choking sensation, breathing and swallowing difficulty and severe cough.<sup>7,8</sup> Rarely, as in the present case, aspiration may produce minimal or no symptoms.3 Cough is a very common symptom in patients with an aspirated FB.<sup>3</sup> Inorganic materials such as those in a denture cause little tissue inflammation. On the contrary organic aspirated materials present with symptoms due to the inflammatory reaction around them.2 Infective complications secondary to FB aspiration may cause associated symptoms such as fever, hemoptysis, foulsmelling sputum and pain in the chest. Breathelessness may not always be a prominent feature. FB lodged in the tracheo- bronchial tree for a few days can lead to the formation of granulation tissue, which can make its identification and removal difficult during bronchoscopy. Such patients can develop post-obstructive complications such as pneumonia and lung abscess.9 Although FB aspiration is more common on the right bronchus, it was lodged in the left bronchus in the present case .It can be attributed to the position of head during aspiration or to the shifting of the FB during cough.

Initial radiological investigations include anteroposterior and lateral radiographs of the chest which can reveal radio-opaque foreign bodies like the mettalic hook of the denture as in the current case. Compared to chest radiographs, chest computed tomography gives more definitive information like the site of impaction, presence of non-radio opaque part and evidence of other complications like pneumothorax, consolidation, atelectasis, and pleural effusion.<sup>3</sup>

Although flexible bronchoscopic removal is also recommended in adults, rigid bronchoscopy is the most definitive method for foreign body removal from the pulmonary tree.1 The rigid ventilating bronchoscope can maintain ventilation and provide stable airway control during the procedure. Difficulties can often be encountered during retrieval of denture like difficulty in identifying its presenting edge since its colour is often similar to the bronchial mucosa. Disengagement of the denture also needs to be done carefully especially when it has a metal hook in the distal part that can traumatise the bronchial wall. During retrieval, loss of grip over the foreign body at the level of subglottis and vocal cords can lead to its distal migration. Another complication that can happen during removal of a large FB is its impaction of at the level of sub glottis leading to total airway obstruction and asphyxia. In such an event the foreign body should be pushed down to one of the bronchus and ventilation should be continued through the other. Treatment of choice of an impacted foreign body is rigid bronchoscopy.<sup>10</sup>

The current case highlights the fact that trachea-bronchial FB may not always have acute symptoms at the time of

aspiration and can happen even in an alert state. CT scan provides more definitive information of the pathology and is of value in the evaluation and management of the case.

#### **CONCLUSION**

Tracheo bronchial aspiration of inorganic foreign bodies may present with minimal or no symptoms. The most frequent compliant is cough. Removal of the foreign body at the earliest using rigid bronchoscopic techniques is the treatment of choice.

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#### **REFERENCES**

- Jamshed N , Madan K, Ekka M, Guleria R. Successful flexible bronchoscopic management of a large-sized aspirated partial denture. Briti Medic J Case Rep. 2014;2014
- 2. Köse A, Kostak D, Aramagan E, Durak A, Seçkin NS, Dönmez SS, et al. Tracheobronchial foreign body aspiration: dental prosthesis. Cas Repor Pulmono. 2014;2014.
- 3. Panigrahi B, Sahay N, Samaddar DP, Chatterjee A. Migrating foreign body in an adult bronchus: An

- aspirated denture. J Dent Anesthe Pain Medici 2018;18(4):267-70.
- 4. Limper AH, Prakash UB. Tracheobronchial foreign bodies in adults. Ann Intern Med 1990; 112:604-9.
- 5. Yilmaz A, Akkaya E, Damadoglu E, Gungor S. Occult bronchial foreign body aspiration in adults: analysis of four cases. Respirol. 2004;9(4):561-3.
- 6. Hussain A. Neglected foreign body in the right bronchial tree. Int Surg 1976;61:366-7.
- 7. Abrol BM, Chattopadhyay AK. Forgotten bronchial foreign body. J Indian Med Assoc 1973;61:224.
- 8. Franquet T, Giménez A, Rosón N, Torrubia S, Sabaté JM, Pérez C. Aspiration diseases: findings, pitfalls, and differential diagnosis. Radiograp. 2000;20(3):673-85.
- 9. Chen CH, Lai CL, Tsai TT, Lee YC, Perng RP. Foreign body aspiration into the lower airway in Chinese adults. Che. 1997;112(1):129-33.
- 10. Rafanan AL, Mehta AC. Adult airway foreign body removal. What's new? Clin Chest Med. 2001; 22:319.

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