CASE REPORT

Bilateral Pulmonary Aspiration of Teeth and the Migration of a Foreign Body from One Main Bronchus to Another

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ABSTRACT

Introduction: Foreign body aspiration in the adult airway is very rare. A neglected foreign body can occur when the patient is mentally challenged or is in an unconscious condition such as following trauma. The diagnosis can be delayed because there is no typical history of choking or breathing difficulty.

Objective: To report a case of bilateral pulmonary aspiration of avulsed teeth. One tooth migrated from the main bronchus on one side to the opposite side before removal.

Case summary: An unconscious, intubated elderly man was managed in ICU for one week before tracheostomy was performed. Bilateral pulmonary aspiration of teeth was diagnosed accidentally on routine chest radiographs two weeks later. Removal was done with rigid bronchoscopy. Extraction of the remaining loose teeth was performed.

Conclusion: It is important to check for loose teeth in unconscious patients, especially those who warrant prolonged ventilation and oral toilet.

KEY WORDS:
Avulsed tooth, pulmonary aspiration, bilateral, migration

INTRODUCTION

Foreign bodies in the airway always present a challenge to otorhinolaryngologists. The clinical presentation varies widely. Most of the patients present with choking or difficulty in breathing. Some patients present with chronic cough and asthma like-symptoms. The incidence of foreign body aspiration is greatest in children under three years. On the other hand, foreign body aspiration in adults may occur in those who have impairment of protective airway mechanisms like in primary neurological disorders or impaired level of consciousness. In these cases, the diagnosis can be difficult and may be missed even by experienced doctors because the initial choking episode is not witnessed.

CASE SUMMARY

A 65 year old man was found unconscious by the roadside and was brought to casualty. He was intubated in casualty and sent to the radiology department for urgent computed tomograph scan. Intracerebral haemorrhage was diagnosed based on radiological findings. The patient was admitted to the intensive care unit (ICU) for further management. A week later, he was referred to the Otorhinolaryngology (ORL) team for tracheostomy in view of prolonged ventilation. The operation was uneventful.

Two weeks later, the ORL team was called again by the ICU doctors because of possible foreign bodies in the patient's bronchi. Chest radiograph revealed two radio-opaque shadows, one in each main bronchus. After a repeat chest radiograph, the patient was taken to the operation theatre (OT) for rigid bronchoscopy.

Intraoperatively, two teeth were removed from the right bronchus with the crowns facing each other. There was minimal secretion and mucosal oedema adjacent to the foreign bodies. Examination of the left bronchus revealed normal findings. A repeat chest radiograph taken in the OT confirmed the foreign body in the left bronchus had migrated to the right bronchus.

Examination of the oral cavity showed that the patient had multiple loose teeth. Dental officer was consulted for extraction of the teeth.

DISCUSSION

Foreign body aspiration is more common in children. The majority of cases occur in children between the ages of 6 months and 3 years. When it occurs in an adult, the patient will usually give a history of choking and the type of foreign body aspirated. A neglected foreign body in the airway of an adult can occur in a mentally challenged patient. Unconsciousness, neurological impairment of laryngeal control and maxillofacial injury can predispose to a higher risk of foreign body aspiration in an adult.

In our case, the tooth may have been avulsed during routine oral toilet in the ICU. The avulsed teeth may have remained in the oropharynx for some time. In this position, it would not have been visible on routine chest radiographs taken in ICU. The procedure of changing from endotracheal intubation to trachesotomy may have caused the teeth to be lodged more distally.

Aspirated material will usually be directed into the right main bronchus because of its anatomical configuration. More than 70% of inhaled foreign bodies in adults were found in the right bronchus.[1] This preference is more marked in adults compared to children.[2]

Aspiration of extracted teeth or dental-related materials such as restoration and impression materials has been reported. However, aspiration of avulsed teeth is extremely uncommon. Bilateral pulmonary aspiration of two avulsed teeth is another rare phenomenon. There was a reported case of two teeth aspirated with one entering each lung.[3] Xiao WL *et al* reported

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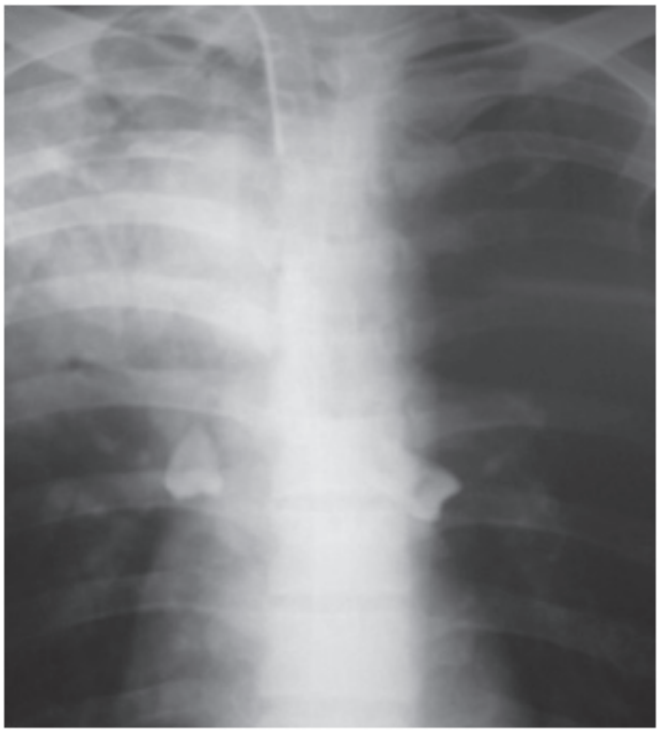

Figure 1: Initial chest radiograph showed one tooth in each main bronchus

Figure 2: Subsequent radiograph showed both teeth were in the right bronchus

a similar case of two teeth aspiration but in that case, one of the teeth was expectorated by the patient himself. Only one tooth was left to be removed via flexible bronchoscopy.[4]

The migration or displacement of a tooth from one main bronchus to the other has, to our knowledge, never been reported before.

Chest radiograph is a good modality to detect suspected aspirated teeth. It remains the initial imaging modality for patients with clinically suspected tracheobronchial aspiration of a foreign body.[5] In our case, it was more of an incidental finding. When the diagnosis is established, the tooth can be removed using either a rigid or flexible bronchoscope.

REFERENCES

1. Chen CH, Lai CL, Tsai TT, Lee YC, Perng RP. Foreign body aspiration into the lower airway in Chinese adults. Chest 1997;112:129-33.
2. Tahir N, Ramsden WH, Stringer MD. Tracheobronchial anatomy and the distribuation of inhaled foreign bodies in children. Eur Pediatr 2009;168:289-95.
3. Delap TG, Dowling PA, Mcgiligan T, Vijaya-Sekaran S. Bilateral pulmonary aspiration of intact teeth following maxillofacial trauma. Endod Dent Traumatol 1999;15:190-2.
4. Xiau WL, Zhang DZ, Wang YH. Aspiration of two permanent teeth during maxillofacial injuries. Craniofac Surg 2009;20:558-60.
5. Pinto A, Scaqlione M, Pinto F, Guidi G, Pepe M, Del Prato B *et al*. Tracheobronchial aspiration of foreign bodies: current indications for emergency plain chest radiography. Radiol Med 2006;111:497-506.