

Management of aspirated tooth in an adult head injury patient: Report of two cases

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ABSTRACT

Aspiration of foreign bodies is common in a pediatric age group but adults can also be at risk. We describe management of two adult trauma victims with aspirated tooth. In the first case, foreign body went missing for sometime by intensive care physician and detected by radiologist while it was obvious in the second case. Both the patients were managed with the help of rigid bronchoscopy. Tooth should be removed as soon as possible or it may result in complete airway obstruction or lung collapse.

Key words: *Aspiration, bronchoscopy, head injury, foreign body, tooth*

INTRODUCTION

Foreign-body (FB) aspiration is often a serious medical condition and needs early detection and intervention.^[1] It can be a life-threatening situation in case an aspirated solid or semisolid object lodges in the larynx or trachea leading to complete or incomplete obstruction. Aspiration of FBs is common in a pediatric age group but adults with loss of airway protection are also at risk of aspiration; rarely is it reported in fully conscious adults. In adults however, FB aspiration can be tolerated and remain undetected for a long time, as the routine radiology screening may fail to depict it to common eyes. We describe management of an adult trauma victim with aspirated tooth. In the first case, a FB went missing for sometime by an intensive care physician and detected by a radiologist. In the second case, an intensive care physician was able to detect a FB.

CASE REPORT

Case 1

Semiconscious, 40-year-old motorist presented to our hospital after a road traffic accident. Vitals upon arrival were: Heart rate -115 beats per minute, blood pressure-157/88 mmHg, respiratory rate- 12 breaths per minute and O₂ saturation- 95% on room air. He had numerous facial abrasions and loose right upper incisors and canines. There were no open lacerations or obvious fractures. Neurologic examination did not reveal any focal deficits and the patient was moving all four limbs spontaneously. The patient was intubated in the emergency department in view of poor Glasgow Coma Scale (GCS). Physical examination was non-contributory except for showing slightly decreased air entry into his right lung. Laboratory findings were within normal limits. The patient was then transferred to neuro-intensive care unit for mechanical ventilation and sedated with midazolam and fentanyl infusion. The chest X-ray was grossly normal as appreciated by an attending physician, but a radiologist confirmed the presence of radioopaque shadow in right bronchus (likely to a tooth). Fiberoptic bronchoscopy was done to confirm it. Via fiberoptic flexible bronchoscope tooth extraction was attempted but failed following which the patient was shifted to operation room and tooth extraction was done with the

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help of a rigid bronchoscope. He continued to do well and had no evidence of airway stenosis on bronchoscopic examination later on.

Case 2

A 56-year-old man with an unknown medical and surgical history presented to our hospital in emergency department after fall from height of approximately 10 feet. The patient was intubated because of threatened airway and poor GCS. Initial vital signs on arrival were: Heart rate-115 beats per minute, blood pressure-157/88 mmHg; respiratory rate-12 breaths per minute and O₂ saturation 99% on FiO₂ 0.4. He had numerous facial abrasions and loose right upper incisors and canines but no open lacerations or obvious fractures. His lungs were clear and his cardiovascular exam was unremarkable. Baseline investigations were within normal limits. Cerebral computed tomography revealed CSM with Ossified posterior longitudinal ligament with cord contusion. The patient was then transferred to neuro-intensive care unit and attached to ventilator for mechanical ventilation. The chest X-ray [Figure 1] revealed a tooth in right main bronchus (patient might have aspirated prior to or during intubation). Tooth extraction was tried in intensive care unit via fiberoptic flexible bronchoscope but failed as grip of the biopsy forceps was not adequate. The patient taken to operation room and tooth was extracted via rigid bronchoscope. The post-procedural chest X-ray was normal. He continued to do well and had no evidence of airway stenosis on bronchoscopic examination later on.

DISCUSSION

Any solid object aspirated below the level of vocal cords is known as tracheobroncheal FB. FB aspiration is uncommon in adults. Precipitating factors for such aspiration include altered consciousness, intoxication,

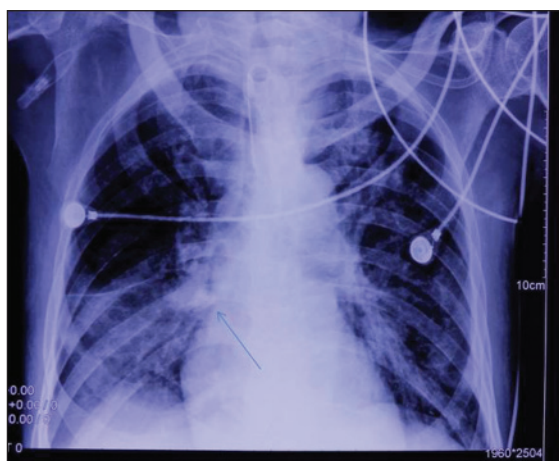


Figure 1: Chest X-ray showing tooth in right bronchus (arrow)

seizures, dental procedures, facial trauma and intubation. In the current case, possible risk factors include maxillofacial trauma, intoxicated state, altered consciousness and intubation in emergency settings. The aspirated tooth may be undiagnosed for weeks or months especially in persons with severe trauma.^[2] The symptoms of FB aspiration may range from asymptomatic state to coughing, wheezing, dyspnea, hemoptysis, and choking. Nonspecific findings like localized wheezing with or without reduced breath sounds on the effected side are the only clue to such aspirations in patients undergoing elective ventilation. In this case, slightly decreased air entry on the right side was the only finding. However, in a trauma victim there may be multiple reasons for such findings. A chest X-ray is a reasonable investigation for coming to a definitive diagnosis. But sometimes FBs may be missed on a routine chest X-ray; as in our case, FB in the right main stem bronchus was misinterpreted as an artifact and its true nature was missed.^[3] Sometimes computed tomography of the chest may be required in identifying small aspirated objects or when associated chest disease is suspected. The combination of history, signs and radiological abnormalities is more useful than any one separately and a high index of suspicion is essential. Flexible bronchoscope is very good bedside test to diagnose in such cases. Both rigid and flexible bronchoscopes are recommended for the diagnosis and removal of FBs in adults.^[4] A flexible bronchoscope is more suitable for grasping small and far reaching FBs, whereas larger aspirates may be approached using a rigid bronchoscope. In most instances, flexible and rigid bronchoscopes are complementary tools. Round and wedge-shaped objects with smooth and hard surface FB located in peripheries of bronchial tree are difficult to remove with either of these devices. Due to similar characteristics, dental FBs are difficult to extract even with a rigid bronchoscope. Rarely an open thoracotomy may be required for successful removal of a dental FB.^[5] This case highlights the importance of the review of chest radiographs by radiologists and clinicians with detailed knowledge of the clinical course.

CONCLUSION

Tooth aspiration is a rare event in the adult population but victims of trauma may have it more often than others. Such aspirations are likely to be missed especially in ventilated patients. A chest X-ray needs to be reviewed with great precaution to diagnose it in suspicious cases. Attempt should be made to extract it using either a flexible or rigid bronchoscope as it may dislodge any time and may result in complete airway obstruction or lung collapse.

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