

CASE REPORT

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Endotracheal dental foreign body during emergency intubation in organophosphate poisoning: successful retrieval without extubation

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Abstract

Emergency endotracheal intubation is a critical intervention in unstable patients but is associated with an increased risk of dental trauma, particularly in time-sensitive and technically challenging situations. While dental fractures and avulsions are relatively common, tracheal displacement of a tooth is exceedingly rare and may result in airway obstruction or distal aspiration if not promptly recognized. In addition, Organophosphate poisoning patients presents with distinct airway challenges due to profuse secretions, neuromuscular fasciculation, impaired consciousness, and respiratory muscle weakness.

We report a rare case of accidental displacement of an incisor tooth into trachea during emergency intubation in a patient with organophosphate poisoning. The foreign body was identified post intubation and successfully retrieved at the bedside using direct laryngoscopy and Magill forceps without extubation or bronchoscopic intervention. This case emphasizes the importance of systematic post intubation airway assessment and demonstrates a safe, minimally invasive management strategy for selected patients, potentially preventing life threatening complications.

Keywords: Airway foreign body; Dental injury; Endotracheal intubation; Organophosphate poisoning

INTRODUCTION

Dental trauma during endotracheal intubation is a well-recognized adverse event in both elective and emergency airway management.¹ Emergency situations are particularly high risk because limited visualization, the need for rapid intervention, and patient related factors, such as altered consciousness, poor cooperation, and pre-existing dental disease further increase the likelihood of dental injury.² Airway management in organophosphate poisoning presents additional challenges. Excessive secretions, cholinergic respiratory compromise, and muscle fasciculation make intubation technically difficult, increasing the risk of iatrogenic trauma.³

Although rare, tracheal displacement of a tooth during intubation is a potentially serious complication. If unrecognized, it can migrate distally and cause bronchial obstruction, atelectasis, infection, or hypoxia.⁴ Prompt identification is essential, and management decisions depend on the location of the foreign body, patient stability, and available expertise.⁵

CASE REPORT

A middle-aged man was brought to the emergency department with suspected acute organophosphate poisoning. No prior medical or dental history was immediately available. On initial assessment, the patient was in respiratory distress with copious oral and bronchial secretions, bradycardia, and a reduced level of consciousness, consistent with cholinergic toxicity. Due to his mental status, evaluation for pre-existing dental disease, loose teeth, or prosthetic devices could not be performed at presentation.

The patient's neurological condition deteriorated rapidly, with loss of protective airway reflexes and impending respiratory failure. Emergency endotracheal intubation was therefore undertaken. The airway was secured successfully, and ventilation and oxygenation were stabilized.

Routine post intubation portable radiography to confirm endotracheal tube placement revealed a radiopaque foreign body within the trachea, just inferior to the cricoid cartilage, suggestive of a displaced tooth. Subsequent

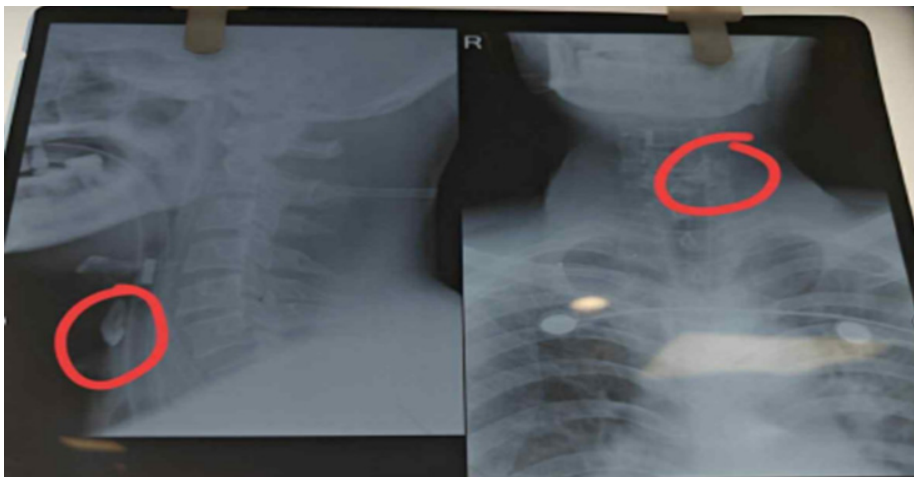


Figure 1. Neck and chest radiograph demonstrating a radiopaque foreign body consistent with a tooth within the trachea

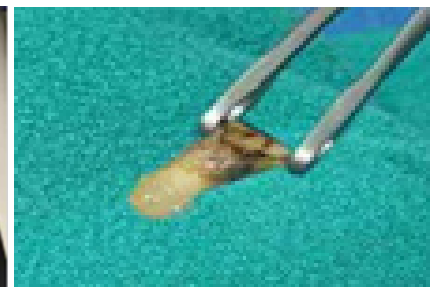


Figure 2. Photograph of the extracted incisor tooth following removal

oral cavity examination confirmed the absence of an upper incisor correlating with the radiographic findings. Direct airway inspection further identified the tooth near the distal end of the endotracheal tube. Based on the clinical context and temporal sequence, the tooth was presumed to have been dislodged during the intubation procedure.

Considering the patient's stable hemodynamic status and the proximal, easily accessible position of the foreign body, removal was attempted without extubation. Under direct laryngoscopic visualization, the tooth was carefully grasped and extracted using Magill forceps at the bedside. The procedure was completed without oxygen desaturation, hemodynamic compromise, or additional airway trauma.

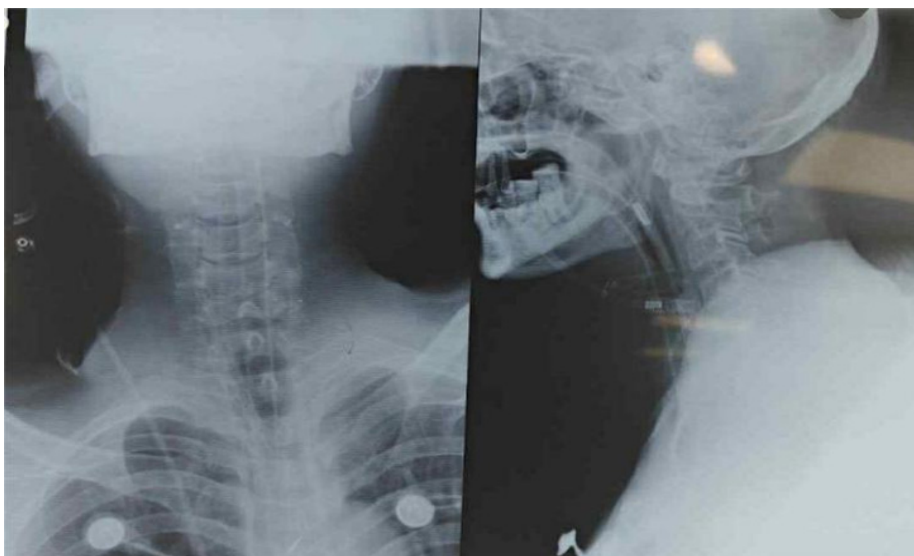


Figure 3. Post procedure chest radiograph confirming complete removal of the foreign body

Subsequent chest radiography confirmed complete removal of the foreign body, with no evidence of distal aspiration. The patient was admitted to the intensive care unit for ongoing management of organophosphate poisoning. His recovery was uncomplicated, and he was successfully extubated after neurological improvement. No respiratory complications or airway sequelae were noted during the remainder of his hospital stay.

DISCUSSION

Dental trauma during intubation continues to be reported, with risk factors including difficult laryngoscopy, emergency airway interventions, pre-existing dental conditions.⁶ In our Organophosphate poisoning case, the patient's specific factors, such as altered consciousness and profuse airway secretions contribute to respiratory compromise and airway management.³ Due to altered sensorium and emergent need for intubation left no opportunity for dental history or pre-intubation assessment of any loose tooth or other abnormalities. Besides, profuse secretions may impair visualization during laryngoscopy and necessitate repeated instrumentation while emergent intubation, raises the risk of dental injury. Prospective clinical studies have also demonstrated that dental injuries can occur with notable incidence in patients undergoing orotracheal intubation, especially in emergency intubation.⁷

Though tracheal displacement of a tooth is uncommon but carries significant potential morbidity as delayed recognition can result in distal migration, bronchial obstruction, atelectasis, recurrent infection, or hypoxia.⁴ Imaging, including CT, may aid in precise localization of the foreign body.

The literature supports bronchoscopic retrieval as the standard of care for airway foreign bodies, with both flexible and rigid bronchoscopy showing high success rates.⁸ However, in selected cases with proximally lodged teeth, direct laryngoscopy with Magill forceps may be safely performed.⁹ This approach avoids extubation and more invasive interventions, reducing procedural risk and morbidity. Our case demonstrates the importance of individualized management based on foreign body location, patient stability, and available expertise.

CONCLUSION

This case report highlights the importance of careful oral and airway examination following emergency endotracheal intubation, particularly in high risk clinical scenarios such as organophosphate poisoning. Immediate recognition and bedside removal of a tracheal tooth using direct laryngoscopy and Magill forceps can be safe and effective in appropriately selected patients, potentially preventing serious airway complications.

DECLARATIONS

Conflict of Interest

No any conflicts of Interest

Funding

No external funding was received for this study.

Author Contributions

All authors were responsible for clinical management of the patient, data acquisition, manuscript preparation, and approval of the final version.

Informed Consent

Written informed consent was obtained from the patient's legal guardian for publication of this anonymized case report and the associated images.

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