

# A sticky situation: unusual foreign bodies found in an intubated patient

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## CASE BACKGROUND

- 66-year-old male with a past medical history of poorly controlled diabetes was admitted for new onset decompensated heart failure, nephrotic syndrome with severe hyponatremia.
- Patient was intubated after undergoing cardiac arrest with pulseless electrical activity and transferred to intensive care unit (ICU) after return of spontaneous circulation.
- ICU course was complicated by multiple episodes of hypoxia. Chest x-ray (CXR) initially showed bilateral infiltrates concerning for multifocal pneumonia, however there was no improvement with empiric broad-spectrum antibiotics.
- Bronchoscopy initially showed secretions in bilateral lower lobes which were suctioned, with improvement in ventilator requirements.
- Despite passing spontaneous breathing trials, the patient failed extubation and required reintubation within 1 hour.
- Patient eventually got tracheostomy.
- Repeat bronchoscopy showed an endobronchial lesion with acute inflammatory cells but otherwise benign pathology.
- CXR showed a foreign body, and bronchoscopy was once again performed, during which a tooth and piece of tape were found lodged in the right main bronchus.
- The tape was removed, but the tooth was unable to be retrieved through tracheostomy.
- Tooth was eventually retrieved bronchoscopically after stoma maturation.

## WORKUP & MANAGEMENT

- Timeline of events**
- DAY 0 – patient intubated during cardiac arrest
  - DAY 3 – fluctuating FiO<sub>2</sub> requirements. CXR showing bilateral infiltrates, concerning for multifocal pneumonia vs. ARDS vs aspiration with mucus plugging
  - DAY 4 – initial bronchoscopy finding secretions in bilateral lower lobes, suctioned. Patient continued on antibiotics and pulmonary toilet.
  - DAY 6 – improving respiratory status, passed spontaneous breathing trial, however failed extubation. Patient re-intubated within 1 hour.

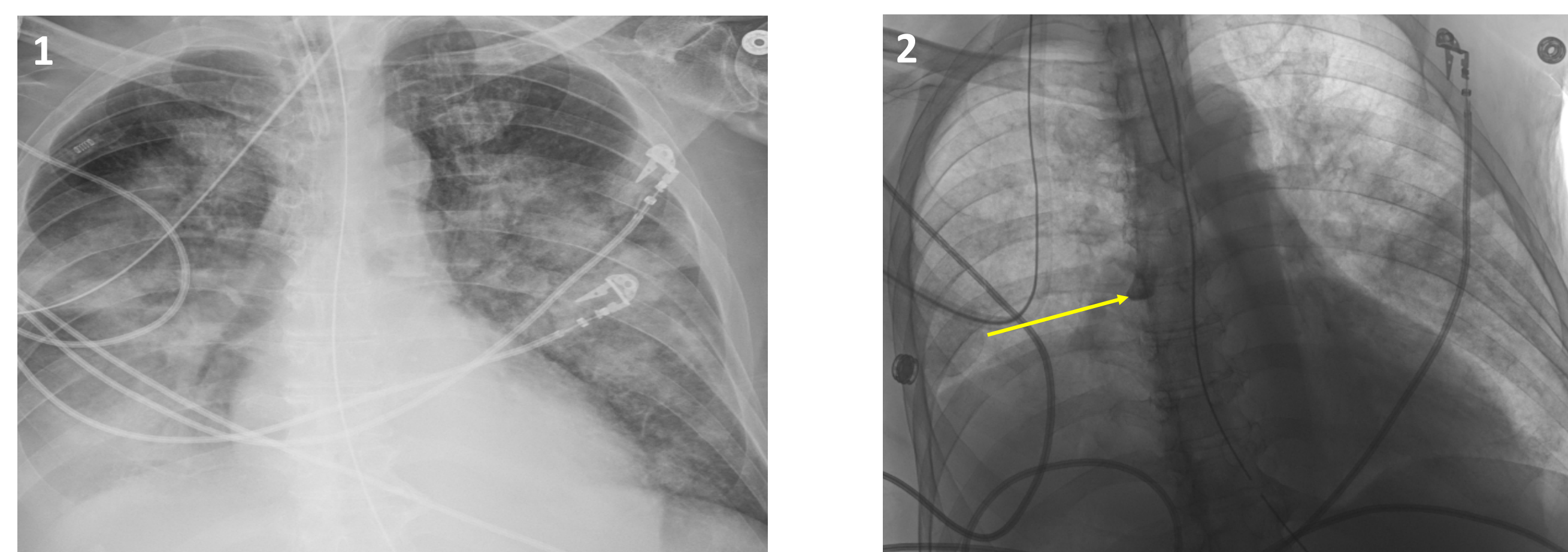


Fig 1: [1] CXR immediately after re-intubation. [2] Inverted view of same CXR showing tooth.

- DAY 9 – tracheostomy placed
- DAY 10 – bronchoscopy findings: tape in airway and tooth in right lower lobe, tape removed but tooth unable to be retrieved.

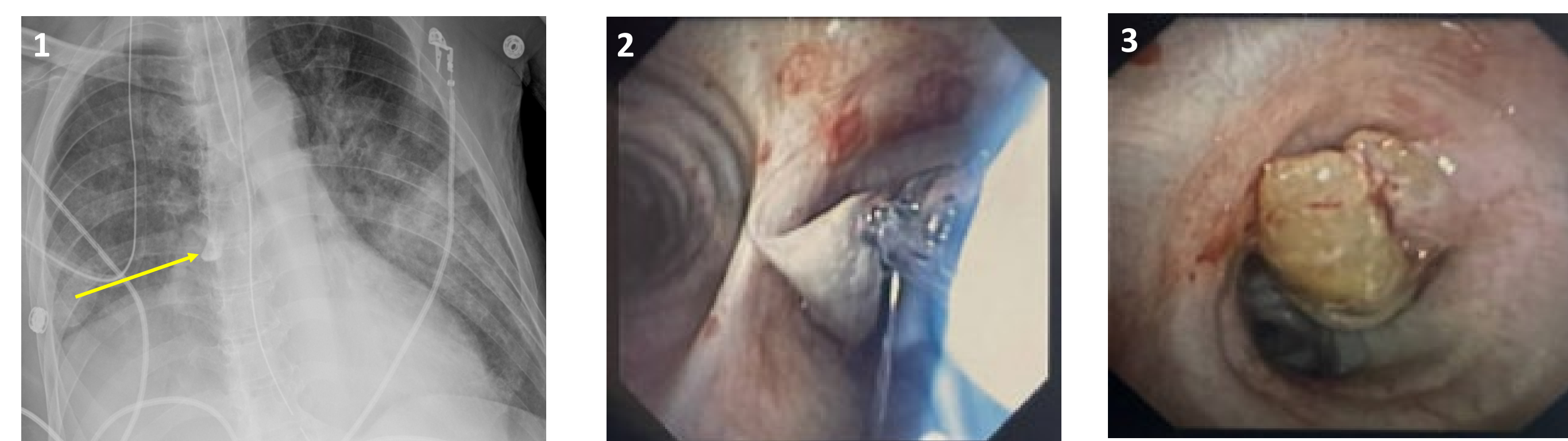


Fig 2: [1] CXR with better visualization of tooth as infiltrates clear. [2] Tape in airway. [3] RLL foreign body

- DAY 16 – interval bronchoscopic removal of tooth through tracheostomy site after stoma maturation



Fig 3: Retrieved tooth

## DISCUSSION

- Simultaneous aspiration of two foreign bodies, tape and tooth, highlights the multifactorial aspects of airway obstruction in an intubated patient.
- Foreign body aspiration in an adult is more common in patients who are sedated, unconscious or have neurologic impairment [1].
- Complications of foreign body aspiration in intubated patients include inadequate ventilation, decreased clearance of secretions, atelectasis, and infection.
- Tooth aspiration could be attributed to traumatic intubation, dental instability, or poor oral hygiene [1].
- Risk of dental injury during intubation ranges between 1.1% to 12.1% [1,2], with reported cases mostly in patients with head trauma or maxillofacial injuries [3,4], neither of which were the case in this patient.
- Chest x-rays are good for initial imaging and can pick up radiopaque foreign bodies, including teeth, but they may be obscured by ongoing lung pathology or surrounding medical equipment, or can be misinterpreted as artifact.
- Some foreign materials may not be seen on radiography, for example, the medical tape that was found in this case, in which case direct visualization with bronchoscopy and retrieval can be diagnostic and therapeutic.

## REFERENCES

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