

Thumbtack Embedded in Bronchus

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Introduction

A foreign body aspiration in the tracheobronchial tree can be a fatal medical emergency. We present a case report of a unique way to retrieve a chronically embedded foreign body in tracheobronchial tree.

Case Report

14-year-old, 94 kg male with developmental delay presented with worsening cough and shortness of breath after admitting to aspiration of a staple pin. CT scan illustrated a 13mm long foreign body (FB) within the right main bronchus with its tip extending into the right upper lobe bronchus. Patient was scheduled for FB removal via bronchoscopy under general anesthesia. A 7.5mm endotracheal tube (ET) was successfully placed following intravenous induction with propofol and fentanyl. While maintaining spontaneous respiration with propofol drip, a 4.2mm flexible bronchoscope was inserted via ET.

Visualization of right main bronchus revealed granulation tissue covering FB. (Fig 1.) With forceps through bronchoscope, mucus was dissected over the FB and it was identified as a thumbtack. FB was grasped with forceps but it did not move with traction as it was firmly embedded in the bronchus. The blunt end of the thumbtack was plugging the right upper lobe airway and the pin was penetrating the right main stem bronchus.

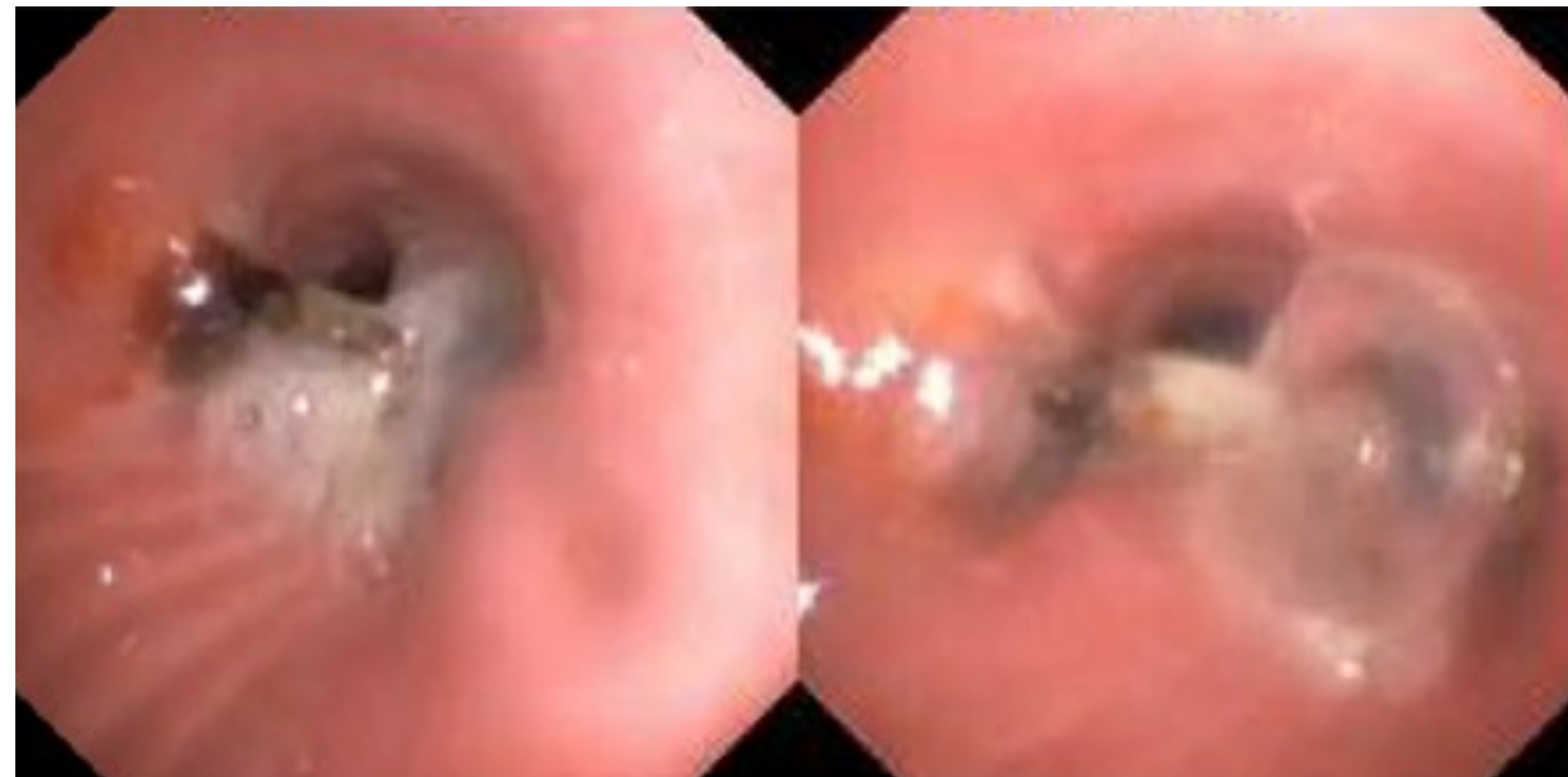


Figure 1: Foreign Body, Thumbtack Embedded in Airway.

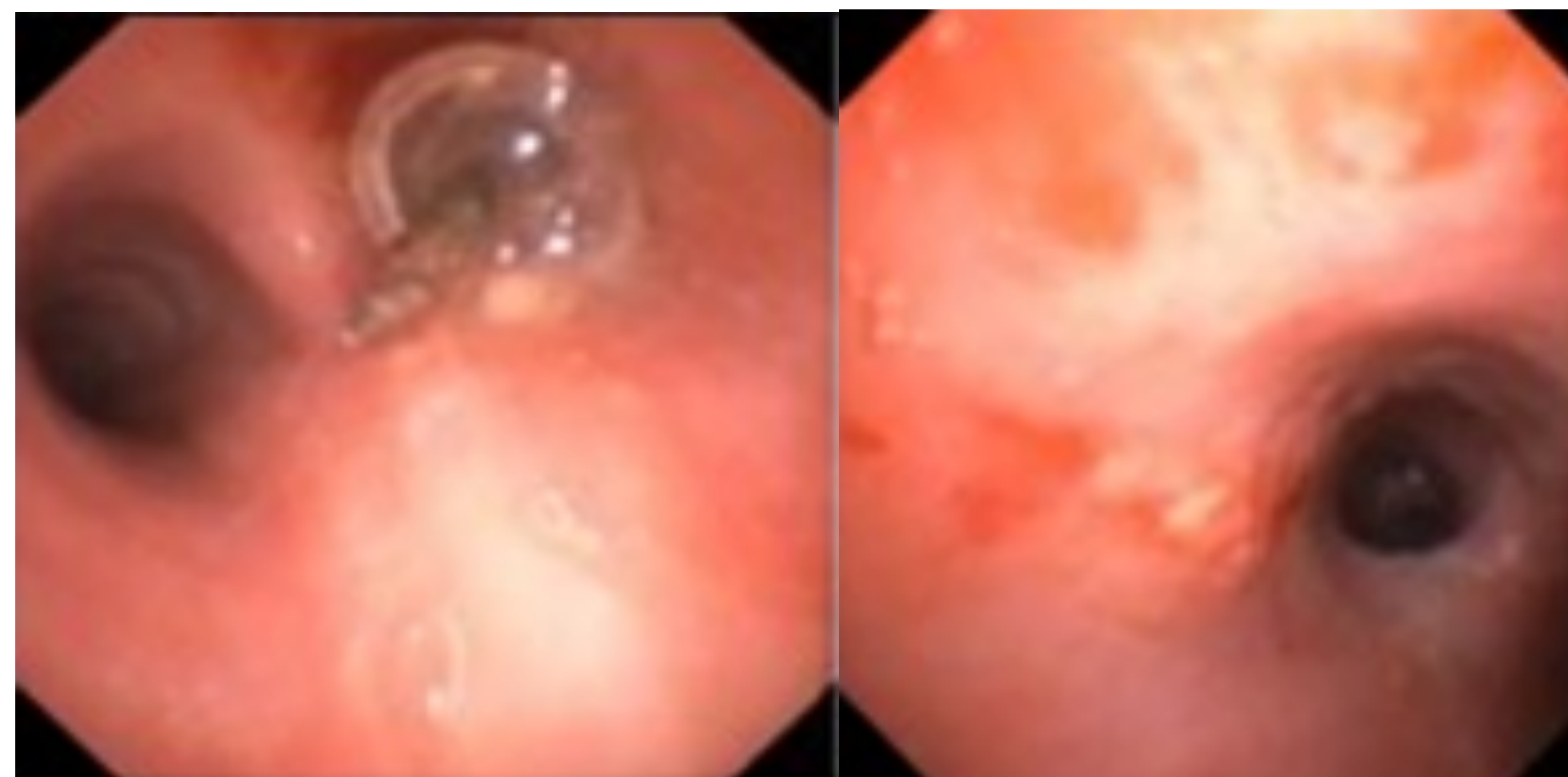


Figure 2: FB Released

Figure 3: Airway Wall Where Sharp End of the FB was Initially Lodged.



Figure 4: Airway FB

Case Report Continued...

FB had been embedded in bronchus for some time and use of force to extract it could lead to a bronchial injury. Decision was made to grasp the plastic side of thumbtack with forceps and push FB out distally towards the right main bronchus. This maneuver successfully dislodged the sharp end of the tack from bronchus.

Upon dislodging FB, it fell into the right main bronchus, blunt end facing distally. With forceps the needle end of the tack was grasped and thumbtack was successfully removed with ET. Patient was stable throughout the procedure & chest x-ray was performed to rule out pneumothorax or pneumomediastinum.

Discussion

Removing thumbtack from an airway can be a challenge if it has been embedded for some time. Misaligned traction on the tack could have lead to an airway injury. Here we describe an effective technique to remove an embedded thumbtack by pulling it out in opposite direction of the needle insertion, even if this pushes FB further distally out. Flexible bronchoscopy extraction of pediatric tracheobronchial FBs can be performed but we recommend that provisions be made to provide immediate rigid bronchoscopy, should the attempts at flexible bronchoscopy extraction fail.

References: 1) Thornton CS et al. Rigid bronchoscopy and balloon dilation for removal of aspirated thumbtacks: case series and literature review. *Int J Pediatr Otorhinolaryngol* 2015;79:1541-3
2) Martinot A et al. Indications for flexible versus rigid bronchoscopy in children with suspected foreign-body aspiration. *Am J Respir Crit Care Med*. 1997;155:1676-9