A case report: accidental removal of laryngeal foreign body along with the tracheal tube

INTRODUCTION
Most foreign body aspirations occur in patients younger than 15 years of age. The maximum incidence is between the ages of 1 to 3 years. It is due to the natural urge to explore and insert objects into the mouth or to chew on something during teething. It may occur whilst the child is crying, or playing whilst eating, and often when there is lack of parental supervision. Older patients may have an anatomic abnormality or neurological impairment. Foreign bodies lodge in the larynx if they are too large to pass through, are of irregular shape or have sharp edges, which may catch on the laryngeal mucosa. They consist of food...
An eight-year old male child was playing with a plastic toy, which he suddenly put in his mouth. According to the attendants, he was chewing on it. They gave a history of a violent cough at the time of incident. After that, the child was unable to speak, but there was no respiratory distress. On examination, vital signs were stable, and bilateral air entry was equal. Chest X-ray revealed no changes such as atelectasis or air trapping, and blood gas analysis (BGA) revealed a normal PaO₂. A probable diagnosis of foreign body aspiration was made and bronchoscopy was planned. After placing routine monitoring on the child, atropine 0.02mg/kg was given intravenously. The child was induced with propofol 2mg/kg⁻¹, fentanyl 2µg/kg⁻¹ and paralyzed with atracurium 5µg/kg⁻¹. Once the child was apneic, the surgeons introduced a size 4 bronchoscope. Anaesthesia was maintained with oxygen in sevoflurane. A thorough endoscopy of the trachea and bronchi did not reveal any foreign body. The bronchoscope was then removed, and the child intubated with a 6 mm cuffed endotracheal tube. Residual effects of the muscle relaxant were reversed with intravenous neostigmine and glycopyrrolate, and his trachea was extubated when he was fully awake. To our surprise, the foreign body came out encircling the tube at its lower end (Fig. 1). It was a broken part of a transparent red plastic toy, which was hollow and tubular in shape, and open on both sides.

**DISCUSSION**

Most foreign bodies in the airway become lodged in the bronchi because their size and configuration allows their passage through the larynx. Laryngeal impaction of a foreign body is very rare but is dangerous, in that it has potential for sudden airway obstruction. Foreign bodies can settle in the hypopharynx (5%), larynx (2-9%), trachea (12%) or bronchi (83%). Patients may present with hoarseness, cough, stridor, wheezing, cyanosis, aphonia or a subjective feeling of the foreign body. Aphonia may suggest total obstruction of the larynx. Our patient demonstrated aphonia, but no obstruction.

It is usually possible to diagnose the presence of a foreign body in the airway in the acute phase of entry because of a readily available history. It is remarkable that our patient did not have any respiratory distress, despite the presence of a large foreign body in the upper airway. Tracheobronchial foreign bodies can sometimes be very difficult to remove. This may be related to the location of the foreign body and the experience of the bronchoscopist. Foreign bodies have been removed in different ways in the literature, but we could not find any accidental removal as in our case. Kamara et al reported an unusual laryngeal foreign body (sticker) with a rare presentation of just loss of voice. A case has also been described in whom an impacted tooth could not be removed from the bronchus or a ventilated, critically ill patient using rigid and flexible bronchoscopy, and a radiological approach was used to remove it. Masood et al reported the unusual method of removal of an artificial denture accidental lodged in the trachea of an adult female after a caesarean section. Removal was done via a tracheostomy, using a rigid bronchoscope and forceps. Leffler reported the removal of a foreign body in a 6-year old child, by turning him upside-down by his feet, and used a laryngoscope.

**CASE REPORT**

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However, in their case the object was large and dense. Fung et al reported the removal of an aspirated prosthetic tooth by tracheal backflow of air. It had been difficult to remove with routine bronchoscopy, and was removed by deflating the endotracheal tube cuff and at the same time compressing the ambu bag. The foreign body was dislodged by an upward flow of air.

Irregular foreign bodies may produce only partial obstruction, allowing adequate air movement around the obstruction. In our patient, the toy was hollow and tubular in shape and lying vertically, so did not cause respiratory distress but hampered the patient's phonation. The open ends on both sides of the foreign body allowed free passage of both the bronchoscope and tracheal tube. The tube in the shaft allowed the passage of air, explaining the negative respiratory findings. It was missed by the surgeons as it was transparent, and its colour matched with that of the laryngeal mucosa. It was also abutting the internal circumference of the airway. It did not stick to the bronchoscope, but instead came out with the tracheal tube. This could be explained on the basis of the greater outer diameter of a size 6 mm tube (OD 6 mm) as compared with the size 4 bronchoscope (OD 4.7 mm).

It is suggested that a much closer direct laryngoscopic examination be done, so as not to miss these types of foreign bodies.

**References**