

Images in Medicine

Tracheo-oesophageal fistula by ingestion of a lithium battery



FIG 1. Chest X-ray showing a double ring sign in the oesophagus



FIG 2. Upper gastrointestinal contrast imaging indicated an opening between the oesophagus and the trachea

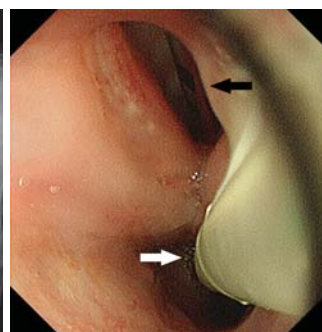


FIG 3. Upper gastrointestinal endoscopy showed a tracheo-oesophageal fistula. The intubation tube (black arrow) and the feeding tube (white arrow) were visible through the fistula

A 1-year-old boy presented to the paediatric emergency department due to vomiting for 2 hours. His mother noticed that a lithium button battery in the drawer was missing 1 hour before the presentation. X-ray revealed a double ring sign in the oesophagus (Fig. 1). It was removed by forceps fluoroscopically under general anaesthesia 5 hours after onset. On day 7, perforation was not detected by upper gastrointestinal endoscopy; however, his respiratory condition worsened by enteral feeding on day 9. On day 11, upper gastrointestinal imaging visualized the respiratory tract (Fig. 2). Hence, a nasoduodenal tube was placed fluoroscopically to improve his respiratory condition. Upper gastrointestinal endoscopy revealed a tracheo-oesophageal fistula on days 35 and 52 (Fig. 3). It finally resolved on day 73.

The incidence of accidental button battery ingestion is increasing in Japan. Eight cases occurred in the 1990s, and 23 in the 2010s.¹ A button battery located in the oesophagus must be removed within 2 hours to avoid serious and delayed complications, including death.² Therefore, the location of the button battery should be ascertained by X-ray if the patient is <12 years old.³

The likelihood of oesophageal perforation is low within 12 hours after ingestion, and perforation in two-thirds of patients was evident after 9 days.³ Tracheo-oesophageal fistula was found several days later because of worsening respiratory condition. Therefore, oesophageal perforation must be considered in patients who have ingested a button battery and show worsening respiratory condition.

Conflicts of interest. None declared

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