20 mm lithium button battery causing an oesophageal perforation in a toddler: lessons in diagnosis and treatment

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ABSTRACT

Swallowed button batteries (BB) which remain lodged in the oesophagus are at risk of serious complications, particularly in young children. The authors report a 3-year-old child, who rapidly developed an oesophageal perforation, following the ingestion of a 20-mm lithium BB which was initially mistaken for a coin. A thoracotomy and T-tube management of the perforation led to a positive outcome. BBs (20 mm) in children should be removed quickly and close observation is required as the damage initiated by the battery can lead to a significant injury within a few hours.

INTRODUCTION

Button battery (BB) ingestion is a common complaint in toddlers. Increased use of lithium BB that are 20 mm in diameter has brought new challenges since they appear more dangerous than earlier types of batteries.¹

CASE REPORT

A 3-year-old boy, with an ingested BB, whose radiographic appearance was presumed to be a coin lodged in the oesophagus, was transferred to our institution for further management after overnight observation (figure 1). A BB impacted in the

distal oesophagus was retrieved by an oesophagoscopy 20 h after ingestion: moderate damage to the mucosa was noted. This eventually perforated and became clinically evident on the following day (figure 2). Management was right thoracotomy and latex rubber T-tube insertion into the perforation to create a controlled oesophago-pleura-cutaneous fistula for secondary intention healing.² A mini-laparotomy allowed gastro-jejunal tube insertion. Two weeks postoperatively the child went home with the T-tube in situ. Three weeks later, the T-tube was removed by flexible oesophagoscopy, and the internal opening of the fistula was filled with Tissel.³ Three days later, a swallow contrast study showed a normal oesophagus with no leak and stricture. The child is on normal oral diet at 6 months follow-up.

DISCUSSION

Signs of BB should be carefully checked on the antero-posterior (AP) (double-rim) and lateral (step off) x-ray.⁴ To prevent morbidity and mortality, in case of an unwitnessed ingestion, coin-like foreign bodies should be assumed BB until proven otherwise. T-tube insertion is a simple and effective method and avoids the postoperative complications associated with primary closure of severely inflamed oesophageal perforations.

Figure 1 The chest radiograph revealed the button battery (BB) as a circular radio-opaque shadow with a peripheral double rim (pathognomonic of BB).

Figure 2 One day after the button battery retrieval, the child developed respiratory distress. The chest radiograph revealed a large hydro-pneumothorax, a sign of oesophageal perforation.

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