An acute abdomen secondary to ingestion of multiple magnets

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DESCRIPTION

A 10-year-old boy presented with a 1-day history of recurrent vomiting and intermittent lower abdominal pain. Examination revealed lower abdominal tenderness. Inflammatory markers were normal with a negative urine dipstick. The initial working diagnosis was gastroenteritis and supportive treatment was started.

However, the child's pain worsened and he developed rebound tenderness and guarding. Abdominal ultrasound findings were suggestive of appendicitis. Anteroposterior and lateral abdominal radiographs revealed a radio-opaque, 'beaded' foreign body (figure 1).

Surgical exploration revealed a macroscopically normal appendix that was resected. The foreign body was found to be 16 separate magnets from a Magnicube puzzle (figure 2A). Magnetic attraction through the bowel wall resulted in multiple perforations, seven fistulae and further areas of pressure necrosis (figure 2B). Four perforations were sutured following removal of magnets and a 10 cm segment of ileum containing three fistulae was resected and an end-to-end anastomosis performed. A 2-week postoperative hospital stay was complicated by ileus and wound infection.

The incidence of magnet ingestion is estimated to be 3.06 cases per 100 000 children per year. This figure has increased fivefold over the last decade largely due to the increasing popularity of magnetic toys.^{1 2} Despite case and press reports detailing similar cases, there is poor public awareness and insufficient warnings on product packaging of the rare but potentially fatal consequences of magnet ingestion.³ This case highlights the high

Figure 2 (A) Magnetic beads postoperatively. (B) Small bowel fistula secondary to magnet attraction.

index of suspicion needed to correctly identify this rare cause of an acute abdomen in children.

Learning points

- ▶ Magnetic toys are increasingly (mis)used by children and thus the incidence of ingestion is increasing.
- ▶ Severe bowel pressure necrosis can result from multiple magnet ingestion with potentially lethal consequences.
- ▶ In children, particularly when history is limited, a high index of suspicion is required to promptly diagnose and treat injuries secondary to ingestion.

Figure 1 Anteroposterior abdominal radiograph showing a central, radio-opaque, 'beaded' foreign body.

Contributors All authors were responsible for the inpatient care at West Middlesex University Hospital of the patient described in the case report. The case report was conceptualised by JR. Parental/patient informed consent for the case report was obtained by RLH. The article was drafted by RLH and then revised with significant contributions from KS and JR. No other persons contributed to the article. All authors approved the final submission.

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