

# Laws of attraction: management of magnetic foreign body ingestion

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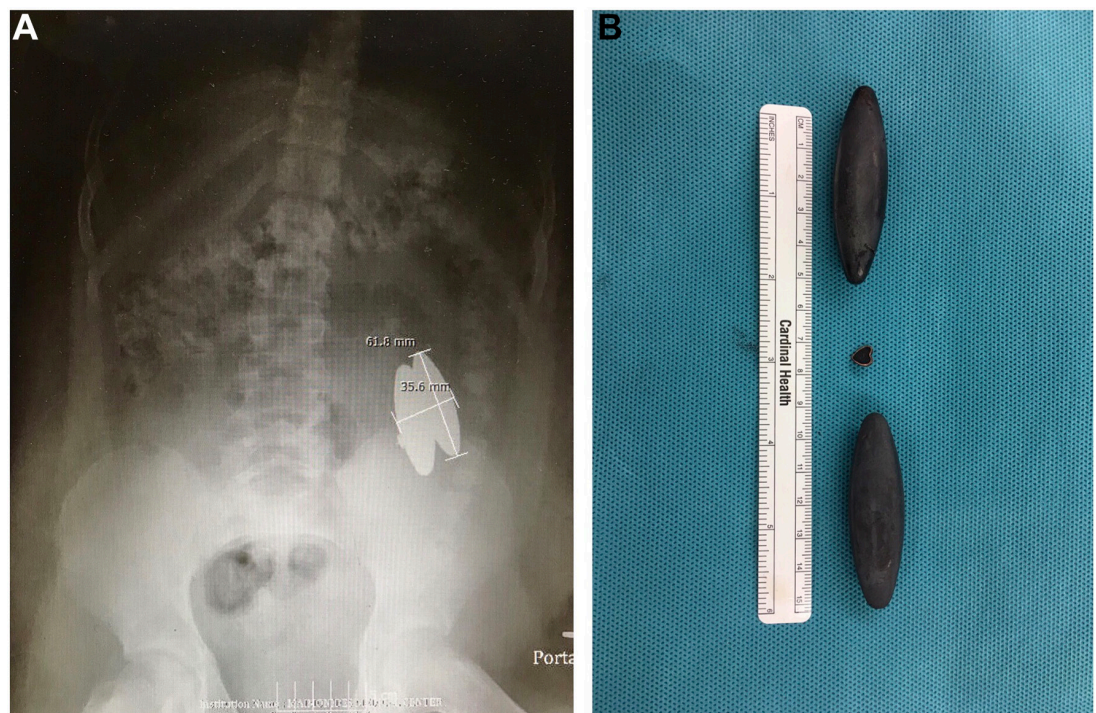
## DESCRIPTION

An 11-year-old girl with global developmental delay presents with a 4-day history of nausea, vomiting and abdominal pain after the ingestion of multiple foreign bodies. She was haemodynamically stable with no gross abnormalities on laboratory tests. An abdominal X-ray was obtained which demonstrated two radio-opaque foreign bodies in the left lower quadrant without free air (figure 1A). On physical examination the patient had significant point tenderness in the left lower quadrant with guarding. The decision was made to proceed to the operating room where a diagnostic laparoscopy was performed. On entering the abdomen, there was no significant free fluid or gross contamination. After running the bowel, two magnets were identified in adjacent loops of small intestine with evidence of bowel wall ischaemia in-between. Approximately 15 cm of jejunum was inspected and the foreign bodies which included two magnets and an earring (figure 1B) were safely delivered with primary anastomosis. The patient was discharged home on post-operative day 2 after regaining bowel function and tolerating diet.

In the USA, over 100 000 cases of foreign body ingestion are reported yearly, with 80% of them

occurring in children.<sup>1</sup> Most foreign bodies pass spontaneously. However, about 15% of cases will require endoscopic intervention and <1% require surgical intervention. Commonly ingested foreign bodies include coins, toys, bones, pins and magnets. Toys and other appliances containing high-powered magnets made of neodymium are becoming more common in the household. Patients who have ingested these items are often asymptomatic but may present with pain or an acute abdomen if perforation has ensued.

Management of foreign bodies in a symptomatic patient requires prompt exploration and removal. This can be performed endoscopically or surgically depending on the level of involvement and extent of contamination. If the objects are present in the oesophagus, stomach or proximal small bowel, endoscopy should be performed to retrieve the objects and examine the organ structures for injury. In asymptomatic patients with objects beyond the proximal small bowel, expectant management may be performed with serial imaging to evaluate the transit of the foreign body.<sup>2</sup> The ingestion of multiple magnets presents a unique situation in which foreign objects are not able to pass with normal motility due to tethering between loops of bowel, which in turn



**Figure 1** (A) Abdominal X-ray demonstrating multiple foreign objects in the small bowel without free air. (B) Gross specimen with two magnetic foreign bodies and an earring removed from the small bowel.



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may become ischaemic and perforate.<sup>3</sup> Surgical exploration may be performed laparoscopically or by an open approach depending on the situation and operator's experience.

### Learning points

- ▶ In an asymptomatic patient, foreign object ingestion may be treated with expectant management and serial imaging.
- ▶ Magnetic foreign bodies may cause tissue ischaemia and perforation if adjacent loops of bowel are involved.
- ▶ Intervention can be pursued endoscopically or surgically depending on the level of involvement and extent of contamination.

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