

CASE REPORT

# Uncommon cause for ileocolic fistulation and caecal perforation following multiple magnet ingestion in an adult

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## Abstract

Non-accidental ingestion of foreign bodies rarely occurs in adults. We report a case of multiple magnet ingestion in an adult with learning difficulties to highlight the associated abdominal complications. Multiple magnets may not pass through the gastrointestinal tract spontaneously and approach considerations should differ from those who had ingested an isolated magnet or other foreign bodies.

## INTRODUCTION

Non-accidental ingestion of foreign bodies rarely occurs in adults but should be recognized as a risk factor in those with psychiatric illnesses or learning difficulties. We report a case of multiple magnet ingestion in an adult with learning difficulties, to highlight the associated abdominal complications.

## CASE REPORT

### Case presentation

A 28-year-old man with learning difficulties presented with a 5-day history of abdominal pain and loss of appetite. There has been associated vomiting and diarrhoea. There was no history of recent foreign travel, antibiotic use or ill contacts. Abdominal examination revealed peritonism in the right iliac fossa. He lives with his mother, who is partially sighted and is his main carer. On admission, his white cell count was  $14 \times 10^9/l$  and c-reactive protein was 231. He was commenced on intravenous antibiotics and was planned for a diagnostic laparoscopy with the working diagnosis of appendicitis.

### Treatment

He underwent a diagnostic laparoscopy following initial resuscitation and antibiotic therapy. Frank pus was encountered from the umbilical laparoscopic port and prompted conversion to a midline laparotomy. A very tiny caecal perforation with inter-loop abscesses was seen. On further examination, a fistula tract was noted between ileum and hepatic flexure with a magnetic stick bridging the fistula. Five magnetic sticks and one magnetic ball from the GEOMAG toy were retrieved (Fig. 1). The fistula tract was detached and the bowel was stapled with TLC 75 linear stapler. The caecal pole perforation was also dealt with TLC 75 linear stapler, without compromising the ileocaecal valve. A normal appendix was demonstrated but was removed to avoid future diagnostic difficulty considering the background of learning difficulties in this patient. The appendicular orifice was used to retrieve the magnetic sticks and balls. On-table X-ray screening revealed a further smooth circular magnet; however, this was irretrievable. We left the single magnet in situ assuming that it would pass because of its smooth surface and that there were no other magnetic foreign bodies seen with the on-table screening.

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Figure 1: Ingested magnetic foreign bodies that were retrieved intraoperatively.

### Outcome

The patient made an uneventful recovery and passed the remaining magnet *per rectum* on the fifth postoperative day. He was discharged from hospital on the eighth postoperative day.

### DISCUSSION

Foreign body ingestion is an uncommon problem in adults and without the relevant clinical history, a preoperative diagnosis may be difficult. However, psychiatric illness remains a significant risk factor for foreign body ingestion and clinicians should have a high index of suspicion for this even in the adult age group [1]. Abdominal X-ray was not performed in view of the potential clinical diagnosis of appendicitis. In hindsight, this would have helped in making the diagnosis of foreign body but would not have changed the management pathway in terms of surgical intervention due to raised inflammatory markers and peritonism.

In our case, the patient has ingested multiple magnetic components of a children's toy set branded GEOMAG. The two opposite poles of the magnetic sticks were attracted to each other causing pressure necrosis and fistula formation between colon and small bowel. The same mechanism should have been

the reason for the perforation of the caecum with subsequent migration of the magnets due to peristalsis. Whilst multiple magnets can lead to complications such as intestinal obstruction, fistulation and perforation, we have also demonstrated that a single magnet can pass through the gastrointestinal tract without sequelae [2].

In conclusion, multiple magnets within the gastrointestinal tract are shown to be associated with significant complications and approach considerations should differ to ingestions of other foreign bodies. In younger patients, we may perform magnetic resonance imaging of the abdomen instead of computerized tomography scan owing to the radiation risk. However, a magnetic resonance imaging scan would have been a disastrous investigation if we are not aware of these magnetic foreign bodies. This case highlights the routine need for abdominal X-ray in those with learning difficulties.

### LEARNING POINTS

- (i) Multiple magnets may not pass spontaneously through the gastrointestinal tract and approach considerations should differ to ingestions of an isolated magnet or other foreign bodies.
- (ii) Psychiatric illness and learning difficulties are risk factors for foreign body ingestion and preoperative diagnosis requires high index of suspicion.
- (iii) Routine abdominal X-rays are required if the clinicians are planning an magnetic resonance imaging scan in this group of patients.

### ACKNOWLEDGEMENT

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### CONFLICT OF INTEREST STATEMENT

None declared.

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