

Small bowel perforation secondary to accidental magnetic objects ingestion (Two pediatric cases report)

Amine Ksia^{1*}

Meriem Braiki¹

Nahla Kechiche¹

Lassaad Sahnoun¹

Sabrina Ben Youssef¹

Mongi Mekki¹

Abdellatif Nouri¹

¹Pediatric Surgery Department Fattouma Bourguiba Hospital Monastir Medical School Tunisia, Research Laboratory LR12SP13, Tunisia

***Address for Corresponder:** Dr Amine Ksia, Pediatric Surgery Department Fattouma Bourguiba Hospital, Monastir Medical School Tunisia, Research Laboratory LR12SP13 (email: amineks@yahoo.fr)

How to cite this article:

Ksia A, Braiki M, Kechiche N, Sahnoun L, Ben Youssef S, Mekki M, Nouri A. Small bowel perforation secondary to accidental magnetic objects ingestion (Two pediatric cases report) . Iranian Journal of Pediatric Surgery 2017; 3(2): 100-103.

DOI: <http://dx.doi.org/10.22037/irjps.v3i2.14064>

Abstract

Foreign bodies ingestion is considered as a common pediatric problem, it is mostly encountered in infants between 6 months and 2 years. Ingestion of magnets was documented in only few reports. We report two uncommon cases of bowel perforations owing to magnets ingestion. Patients were respectively aged of 10 months and 20 months. They were successfully managed. Once ingested, magnetic objects would attach each other through intestinal wall leading subsequently to intestinal necrosis. Thus their surgical removal is unavoidable.

Keywords

- Emergency
- Ingestion
- Intestinal perforation
- Magnet

Case presentation 1

A 10-months-old female child presented with bilious vomiting and abdominal pain associated with non passage of stool for two days. She had fever (38°C), her abdomen was distended and tender. A plain abdominal X-ray showed air-fluid levels in the small intestine and a radio opaque foreign body. **Figure 1** The child was referred to the pediatric surgery department .Emergency

exploratory laparotomy was performed. There were two small bowel perforations, located at 40cm and 130cm distal to duodeno-jejunal junction. Two magnetic pieces were attracting each other through the intestinal wall. Perforations were primarily repaired and magnetic bodies were extracted. The child was discharged after 10 days of hospital stay with a good recovery.



Figure 1: Plain X-ray shows the radio-opaque foreign body with multiple air-fluid levels.

Case presentation 2

A 20-months-old female child was referred to our surgical team with a history of acute generalised abdominal pain, fever and bilious vomiting. Physical examination revealed generalized abdominal tenderness. Initial blood tests were all within normal limits. Subsequent plain abdominal showed a pneumoperitoneum.

The child was operated by a laparotomy .A generalised stercoral peritonitis due to two bowel perforations were found.

we identified two magnetic foreign bodies which were attracting each other through the intestinal wall. Peritoneal toilet was performed, Perforations were repaired and magnetic bodies were removed. The patient's post operative recovery was good and was discharged on the fifth post operative day .

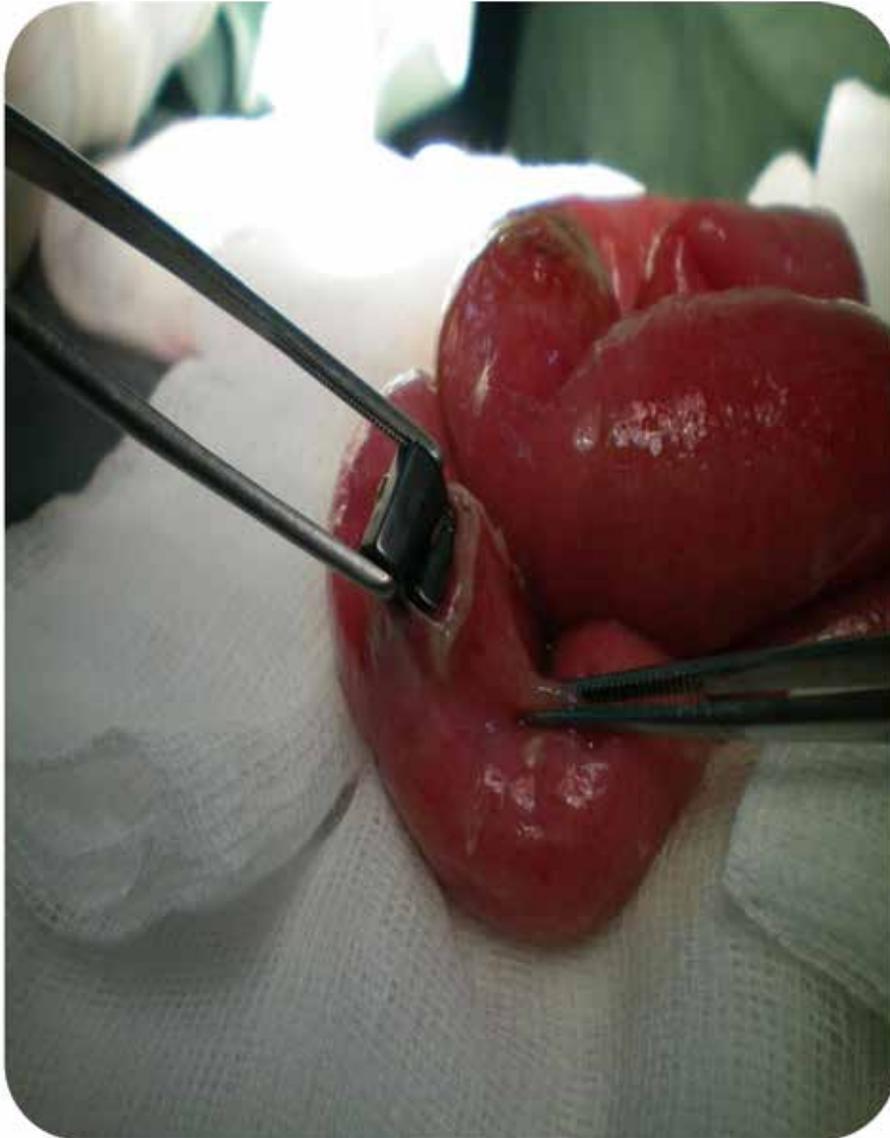


Figure 2: Extraction of the foreign body from the perforation

Discussion

Young children are curious by nature and learn by exploration, which can lead to the unintentional swallowing of foreign objects. The most common accidental ingestants in children are metal objects (coins, pins, paper clips, and button batteries). The majority of ingested foreign bodies will pass spontaneously through the gastrointestinal tract without causing injury. However, 10–20% will

require non-operative intervention and less than 1% will require surgery ¹.

Magnetic objects must be considered very carefully. In fact, magnets are composed of iron, boron, neodymium, and samarium-cobalt, with a 10-fold greater power of attraction and strengths of up to 1,300 G capable of attracting through 6 layers of intestine ². Therefore, if more than one magnet is ingested, they may attract each other

through the bowel wall and cause pressure necrosis, and eventually bowel obstruction and subsequent intestinal perforation.

The clinical presentation of complicated foreign body ingestion is variable and includes bowel obstruction, abscess formation, recurrent sepsis and bowel perforation with generalised peritonitis³. In our experience, the first infant presented with an intestinal obstruction while the second one developed signs of peritonitis.

When magnet ingestion is suspected and no change is found by follow-up plane radiography, the necessity for early surgical removal before

complications occur must be considered, sometimes, multiple magnets look like one foreign body when they are attached⁴.

Radiographs are still the predominant initial imaging modality in the investigation of foreign body ingestion¹. Its nature is initially predicted based on its silhouette, size, contour, and radiopacity. Otherwise, if a fine gap is observed between FBs and no migration is observed by follow-up radiography, it should be suspected strongly that they are magnetic⁵. In the current cases report, we noted on the plain X-ray a fine gap between the two magnets that appeared initially like a single foreign body.

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