

Harmful twins: the saddest small magnets force side

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Introduction

Accidental ingestion of magnetic foreign bodies has become more common due to increased availability of objects and toys with magnetic elements. Frequently, they pass through the gastrointestinal system without complication. However, ingestion of multiple magnets may require surgical resolution.

Observation

An 18-months-old child was admitted for febrile occlusion evolving for 48 hours. The physical examination revealed a fever at 38°C, dehydration stage II and a distended with sensitive abdomen. Radiography showed metallic sphere of 5 millimeters in the upper abdomen without pneumoperitoneum flank (Figure 1). After conditioning and resuscitation, a transverse laparotomy revealed generalized peritonitis with two perforations of the ileum at 60 and 80 centimeters from the Treitz angle (Figure 2). It was related to a necrosis of the intestinal wall between two magnets. A peritoneal toilet with a terminal ileostomy was made. The clinical evolution was favorable. Closure of the stoma was performed after one month and follow-up is about 3 years.



Figure 1 Radiography: Metallic sphere of 5mm in the upper abdomen with pneumoperitoneum flank.



Figure 2 Peroperative aspect: Two perforations of the ileum at 60 and 80cm from the Treitz angle.

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Discussion

In most cases, a single magnet ingested, will pass through the gastrointestinal tract and get defecated. However, when multiple magnets are ingested, they could cross at different rates and, therefore, lie in several adjacent bowel loops. Magnets attract each other. This leads to pressure ischemia and necrosis, volvulus, entero-enteric fistula and perforations.^{1,2} The increase of magnet ingestions requested the revision of the current pediatric algorithm.³ A careful physical examination should include an assessment for signs of symptoms of obstructions and perforations. A plain abdominal radiograph is recommended as the first-line study. Nevertheless, abdominal X-Ray and computed tomography lack the sensitivity to determine the number of magnetic objects.⁴ If the ingestion of a single magnet can be confirmed and the size of the magnet is smaller than 5cm, it may be managed by observation only.³⁻⁵ However, if multiple objects are ingested or if the actual number cannot be determined, intervention is required.

If the object remains in the stomach or esophagus, it should be removed by endoscopy.⁶ Once multiple magnets pass beyond the pylorus, surgical intervention, either by laparoscopy or laparotomy, is required to avoid further complications.⁷ Most symptoms appeared between 1 and 7 days after ingestion.^{7,8} The American Academy of Pediatrics National Conference and Exhibition Survey showed that 52% of patients who had ingested magnets, needed endoscopic intervention alone, 20% required endoscopy and surgery, while 8% required surgical removal of the magnets. Only 15% of ingestions were managed by observation alone.

Conclusion

Magnet ingestion may result in serious injuries of the gastrointestinal tract. Surgeons must look for multiple magnets and remove them either by endoscopic or surgical means as soon as they are discovered.

We believe that public awareness about this risk can decrease the incident of magnet ingestion.

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Conflict of interest

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