



Bowel obstruction in entero-colic fistula associated with magnet ingestion in children at the Amazonas countryside

Douglas Dallas Muniz Dias¹, Wolfram W. S. Amorim², Juan E. R. Rodriguez³, Júlia F. Cauduro³, Samuel P. Pena³, Darlla S. Dias⁴, Didney I. Dias⁴, David L. Dias⁴, Cinira S. C. Lima⁵, Tiago M. Cardoso¹

¹College of Medicine of Ribeirão Preto, University of São Paulo, Ribeirão Preto, Brazil; ²General Surgery Service at Getúlio Vargas Teaching Hospital (HUGV), Manaus, Amazonas, Brazil; ³Medical School of Federal University of Amazonas (UFAM), Manaus, Amazonas, Brazil; ⁴Nilton Lins University (UNL), Manaus, Amazonas, Brazil; ⁵Pediatric Surgery Service of Institute of Children's Health of Amazonas (ICAM)-Avenina Codajás, Manaus, Amazonas, Brazil

Correspondence to: Douglas Dallas Muniz Dias. College of Medicine of Ribeirão Preto, University of São Paulo, Ribeirão Preto, Brazil. Email: dias_douglas@hotmail.com.

Abstract: Ingestion of small objects by children became worrisome as the number of cases increased over the years. Consequences such as intestinal obstruction or even infection of the gastrointestinal tract are becoming more frequent since even in majority cases there is having only an expectant conduct, complications can occur. Also, the combination of two elements such as punctiform metallic materials and imams cause fistula formation in loops with greater ease, granulomas in the intestines, perforation, and can progress to peritonitis or abscesses, as well as having considerable morbidity.

Keywords: Sharp; magneto (or magnet); ingestion; granuloma and fistula

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Introduction

The ingestion of objects by children has been a concern in the modern population, since there is an increase in the use of instruments with use of batteries of minimum size or toys with small pieces (1). The clinical course varies, but the pattern of acute inflammatory or obstructive abdomen is associated with nausea, vomiting, hyporexia and fever, depending on the level of severity and the type of injury caused (2). The following case aims to evaluate a complex situation in the treatment of metallic object and consequent magnet impacted in the gastrointestinal tract.

Case presentation

A 10-year-old child presented episodes of diffuse abdominal pain that increased after gluten and dairy ingestion, school physical activities and a light soccer closed trauma without hematochezia or melena. Due this occurrence parent went to the emergency department for evaluation and an

abdominal X-ray was requested. The exam showed presence of a foreign body in a non-specific location (*Figure 1*). Medications and guidance were given once expected the body could be expelled in the feces. After 2 days the mother reported the discovery of accidentally ingested material that would be an earring.

After 15 days, the abdominal symptoms persisted without any improvement and the child were admitted to the Children's Health Institute of Amazonas in Manaus. The patient had good general condition also normal cardio-respiratory rhythms, discreet abdominal pain in the deep palpation of the lower left quadrant without peritonitis. Ultrasonography of the entire abdomen and colonoscopic evaluation were requested. Although ultrasonography did not present alterations, colonoscopy showed a polypoid lesion below the splenic angle, granulated, measuring 5 mm.

An attempt of extraction was made on polypectomy with cold biopsy forceps, unsuccessful. However, after analysis of the residual material the presence of metallic fragments was observed throughout the piece. Therefore, it must be



Figure 1 Radiological image of abdomen with presence of foreign body.



Figure 2 Radiography of abdomen with presence of colonoscope and foreign body fibers.

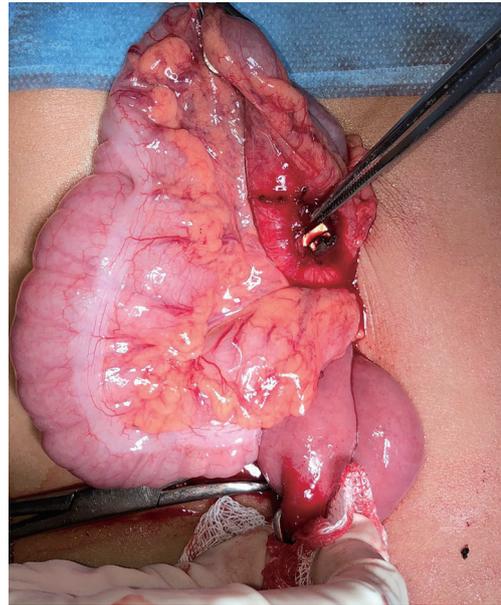


Figure 3 Exploratory laparotomy for foreign body removal.

considered a granuloma lesion formed by the existence of a foreign body (earring) on the colon wall. After the positioning of the device below the lesion, a radiograph of the abdomen was solicited, which confirmed the presence of a foreign body above the tip of the endoscopic apparatus (*Figure 2*). With the suggestion of surgical approach, after 9 days, the patient was submitted exploratory laparotomy, revealing a foreign body injury in a region of transverse colon (splenic angle) and ileum (*Figure 3*).

Foreign body excision was accomplished with transverse colorrhaphy and ileorrhaphy after removal of the sample. However, on the macroscopic examination of the piece was found another foreign body, two magnets in the jejunum associated with a fistula between this region and the splenic angle (*Figure 4*). This way was a surprise once until this moment, once were no reports of ingestion of any other objects except the earring by the child or by the parent. Patient progressed stable after surgery and was discharge on the 4th day, with normal vital signs, typical physiological functions and no abdominal complaints.

Discussion

Exist only a few reports of magnets associated with perforating



Figure 4 Foreign body removed after exploratory laparotomy.

objects, being more common to find ingestion of multiple magnets or objects with no punctiform characteristics (3). Due to the attractive capacity of the magnetic object with the perforating capacity of the second elements, cases with these factors tend to evolve to more accelerated and severe complications compared to the others (4).

Funeral enteric fistulas are the most common consequence in the literature, however, as in the case mentioned, being a pediatric patient had several communicative obstacles due to the frequent omission of relevant information by the child or even by the family, aiming to protect it from some problem, but that ends up delaying the treatment and diagnosis (5).

Complementary imaging tests and radiographs assistance in early diagnosis followed by endoscopic examination when the subject does not present progression in the gastrointestinal tract during radiological monitoring (6). The spontaneous expectation occurs in cases of single and isolated foreign bodies, different from the cases when happens formation of granuloma by adhesion or fistulas between loops (7). Failure in endoscopic removal leads to surgical treatment that is considered in severe and complicated cases. An example of this would be the case presented that was carefully analyzed the risks and beneficial involved (8,9).

Another factor that can make diagnosis difficult is the size of objects. A small earring next to a larger magnet can generate an overlap image of just one foreign body, making

periodic radiographs to check the progression of the object in the digestive tract indispensable (9). The importance of imaging exams is no longer a discussion however, in cases of objects with easy perforator factor and minimum size we must be more careful and have rapid conducts in order to avoid serious complications. It is noteworthy that the case quoted has another aggravating factor a magnet, which added with the fact that the patient home is outlying from reference center, something is common in the state of Amazonas, creates additional obstacles in the treatment of the patient (10).

Conclusions

Adherence to guidelines in the responsible institutions is a solution to avoid unintended ends and the best quality of care, aiming to act in different health levels and not only in the referral centers. Having a better doctor-patient relationship within pediatric care is extremely important especially in cases of possible evolution to serious complications. Also attempt to involve the patient in a safe area making viable he feels more confident and reveals the full history of the disease (1,11). The case presented, for example, could be streamlined with surgical treatment if the intake of other magnetic foreign bodies were recorded during the consultation. Despite this, there will always be difficulties in similar situations, with early diagnosis being a challenge for doctors of any specialty.

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None.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. Written informed consent was obtained from the patient for publication of this manuscript and any accompanying images.

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