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BRIEF COMMUNICATION

Abdominal pain secondary to ileocecal fistulae by ingestion of multiple magnetic bodies. Clinical Case

Dolor abdominal secundario a fístula ileocecal por ingesta de múltiples cuerpos magnéticos. Caso Clínico

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Introduction

Abdominal pain in pediatric patients is one of the most common causes for consultation at the emergency[1] and primary care services[2]. The principal medical cause of gastrointestinal abdominal pain in pediatric patients is gastroenteritis whereas the surgical cause is appendicitis[3]. The diagnosis of patients with abdominal pain is based principally on the medical history, physical examination, and complementary studies[1]. In the case of complementary studies, a simple abdominal radiograph is useful when an obstruction or intestinal fistula is suspected[3]. The fistula of a part of the gastrointestinal tract secondary to foreign body intake occurs in 1% of the patients who ingest these bodies and can manifest as abdominal pain difficulting its diagnosis[4]. Our objective is to report a case of a 5-year-old child with ileocecal fistula secondary to magnetic foreign body ingestion.

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Clinical case

A 5-year-old male patient attended the Emergency Department after presenting a 1-day-history of intense epigastric pain. During physical exam he had axillary temperature of 37 °C and a soft, depressive, and tender abdomen to palpation at the epigastric level. Laboratory exams reported hematocrit 33%, hemoglobin 12.6 g/dl, leukocytes 12.4 x 103/ul, platelets 317 x 103/ul, AST 39 U / L, alkaline phosphatase 292 IU/L, amylase 34 UI/L, and lipase 56 UI/L. A simple x-ray of the abdomen was performed, where multiple rounded images of defined margins and high density (metal) in number of 6 at the right iliac fossa level, ileal airway levels, and preserved preperitoneal lines were visualized (figure 1).

At the directed anamnesis the mother reported that her son swallowed several metallic objects playing days ago. A re-evaluation was suggested at 24 hours waiting for these foreign bodies to continue the intestinal trajectory. The following day simple abdominal x-ray was repeated visualizing no migration of foreign bodies, surgical intervention was decided.

An exploratory laparotomy was performed where it was observed that the foreign bodies were at the level of the terminal ileum producing an ileocecal fistula. (figure 2) The fistula was released, a foreign body was removed from the cecum and repaired in two planes. The ileum orifice was extended to remove 5 foreign bodies, similar in appearance to the one in the cecum (figure 3). 3 cm of the ileum was resected 20 cm away from the ileocecal valve (fistula site) and a termino-terminal anastomosis was performed on two planes at separate points. The meso was closed and lavage was performed with abdominal cavity aspirate. Finally, the abdominal cavity was closed. The extracted foreign bodies were rounded, metallic and black (figure 4). We found that these bodies were magnetic and attracted each other.

It was concluded that it was an ileocecal fistula secondary to multiple magnetic bodies. The patient had a favorable postoperative period up to his hospital discharge 7 days after his surgical intervention.

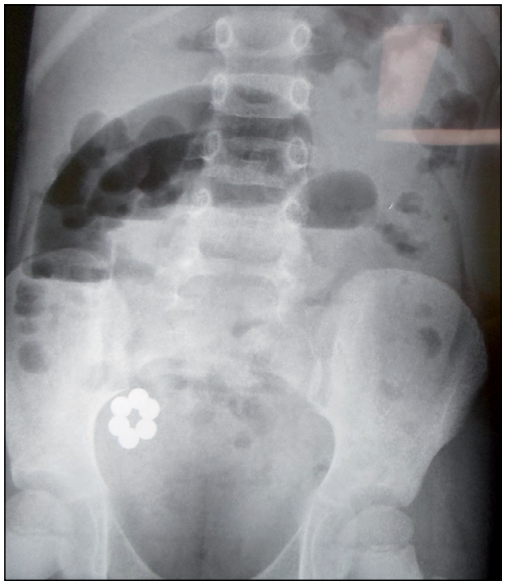

Figure 1. Plain abdominal X-ray were multiple rounded images of defined margins and high density (metal) in number of 6 at the right iliac fossa level are visualized.

Figure 2. Edematous ileum with apparent areas of necrosis that correspond to the trapted foreign bodies.

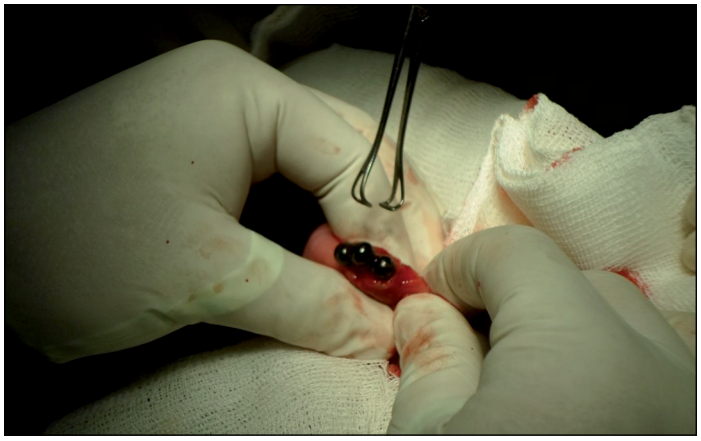

Figure 3. Extraction of magnetic foreign bodies at the ileum with Babcock forceps.

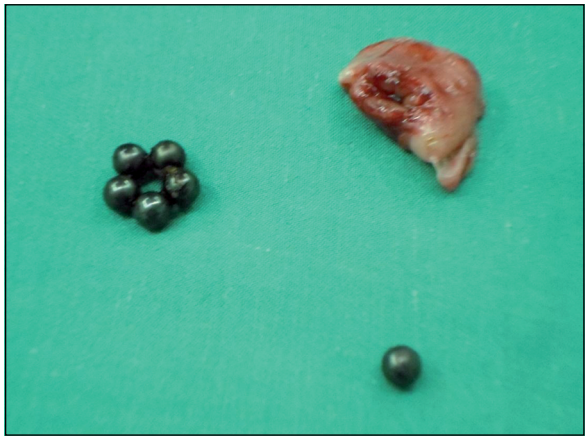

Figure 4. Magnetic foreign bodies extracted and resected portion of the ileum .

Discussion

The incidence of magnetic foreign body injuries in pediatric patients has increased in recent years[5], reporting more than 100 cases worldwide[6,7].

It usually occurs in patients between 6 months and 5 years of age[8]. Although most of the ingested objects passing through the stomach are expelled without injury[9,10], 20% are trapped at the anatomical narrowings of the esophagus, pylorus, or ileocecal valve[8].

Only 10-20% of patients who ingest foreign bodies will require endoscopic extraction[11] and about 1% surgical intervention due to complications such as fistulae[12,13]. Among the most common fistula sites we have the rectosigmoid colon and the terminal portion of the ileum. When it involves terminal ileum it can be confused with acute appendicitis[4]. The intestinal fistula does not depend on the amount of ingested magnetic bodies; intake of only one can produce it by attraction to metallic objects outside the intestine like a buckle belt[11]. The fistula due to intake of 2 or more magnetic bodies occurs because of the intestinal inter-

position produced by the attraction of these bodies to each other[6,14]. When intestinal walls are on intimate contact by the magnetic attraction, there is necrosis by pressure producing a fistula[15]. The intestinal interposition by attraction of the bodies between each other was the mechanism by which our patient suffered the fistula. When one of the 6 magnetic objects passed to the cecum, the attraction and interposition between the cecum and ileum occurred, producing a necrosis of its walls and subsequent perforation.

A simple abdominal x-ray is very useful because these objects are usually radiopaque and can be visualized[14]. It is recommended to perform at least 2 x-rays in different positions. The disadvantage of performing only one x-ray is that it cannot be differentiated if it is one or several foreign bodies. Observing the image in different planes facilitates the differentiation of the amount of foreign bodies ingested. Also, if a study of serial radiographs is performed and the image is observed to be steady, one may suspect that multiple magnetic bodies were ingested[10]. In patients whose foreign body passed the duodenum, it is accepted to perform a serial study of radiographs as initial management. Laparotomy is recommended in cases of worsening of abdominal pain or signs of perforation or obstruction[13]. In patients with suspected radiolucent foreign bodies, contrast radiography, computed tomography or endoscopy are highly supportive. Contrast-enhanced radiograph is recommended in patients who can swallow to avoid the risk of aspiration[11].

It is essential to include in the differential diagnosis of acute abdominal pain the ingestion of foreign bodies in pediatric patients due to the increased incidence of these cases which, if not treated on time, can produce death[16].

Ethical Responsibilities

Human Beings and animals protection: Disclosure the authors state that the procedures were followed according to the Declaration of Helsinki and the World Medical Association regarding human experimentation developed for the medical community.

Data confidentiality: The authors state that they have followed the protocols of their Center and Local regulations on the publication of patient data.

Rights to privacy and informed consent: The authors have obtained the informed consent of the patients and/or subjects referred to in the article. This document is in the possession of the correspondence author.

Conflicts of Interest

Authors state that any conflict of interest exists regards the present study.

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