Magnet Ingestion: A Case Report and Review of Literature

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ABSTRACT

Foreign-body ingestion is relatively common in the pediatric population and most objects pass through the gastrointestinal tract with minimal complications. Swallowing more than one magnet is not uncommon worldwide and it frequently leads to serious consequences. We report a case of a 4-year-old boy who had accidentally swallowed two magnets which were passed spontaneously without any sequelae.

KEYWORDS: Magnetic ingestion, multiple magnets

INTRODUCTION

Foreign body ingestion in children is a common condition as they experiment throughout their development. Magnetic object ingestion is, however, very rare, but does occur and it is very important that the hazards of ingesting magnetic bodies are well known to the physician. In isolation, a single magnet is typically innocuous and is expected to behave much like other foreign bodies, however, several reports in literature proclaim the danger in children whenever more than one swallowed magnet travels beyond the stomach[1]. When the magnets attract each other they might hold the intestinal wall in between them resulting in ischemia, pressure necrosis, perforation, fistula formation and / or intestinal obstruction[2].

Herein, we report a case of ingestion of two magnets in a four-year-old boy who was fortunate enough to have passed them spontaneously without complications. Management of children with magnetic ingestion is discussed to familiarize clinicians who are dealing with such cases.

CASE REPORT

A four-year-old male child presented to our emergency room with non-bilious vomiting and epigastric pain four hours after accidentally ingesting two magnets half an hour apart. He was hemodynamaically stable and had soft abdomen without any tenderness or guarding. Abdominal radiograph revealed two oval shaped radio-opaque foreign bodies stuck to each other (Fig.1). Parents had witnessed him playing with a set of oval shaped magnets before he developed symptoms. He was taken for upper gastrointestinal endoscopy in emergency when two magnets were seen in the duodenum. While an attempt was made to remove them endoscopically the magnets got dislodged and were pushed distally. The child was kept under close observation because of the fear of perforation and obstruction. He remained stable without any more symptoms and had soft abdomen on repeated clinical examinations. He was allowed to have normal diet and was monitored closely for any signs of bowel perforation or obstruction. Parents were counseled and consent was obtained for emergency surgery at any time. A progressive movement of the magnets was observed on serial X-rays and on 3rd day after ingestion he spontaneously passed two identical, oval shaped, smooth magnets each one measuring 4.0 x 1.5 x 1.5 cm (Fig. 2). The child was discharged on full oral feeds with instructions to report back if he had any pain, fever or vomiting. Upper gastrointestinal contrast follow-through study done after two weeks ruled out any stricture or fistula between the bowel loops. He was symptom free on his follow-up visit after six months.

DISCUSSION

Foreign body ingestion is a common clinical problem in pediatrics with 80% of cases involving children between the ages of six months and three years[3]. In 80 - 90% of cases, spontaneous passage through the gastrointestinal tract occurs once the

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foreign body has entered the small bowel, so that surgical intervention is not usually necessary. Upper gastrointestinal foreign bodies are amenable to retrieval by endoscopy or Foley balloon catheter extraction. The ingestion of only one magnet does not cause a problem but when more than one or multiple magnets are ingested, the individual magnets tend to interact through the bowel wall leading to pressure necrosis of intestinal wall. A review of the published literature revealed previous cases of children aged 2 - 3 years in whom obstruction, perforation, fistula formation, and adhesions occurred after multiple magnetic foreign body ingestion. When a case of magnet ingestion is encountered, one must differentiate between ingestion of a single magnet or multiple magnets by taking a thorough history and obtaining adequate radiographic images. Ingestion of a single magnet can be managed in a similar way as in ingestion of other foreign bodies, with a trial of conservative management, expecting uneventful passage through the gastrointestinal tract but when more than one magnet has been ingested; endoscopic removal must be performed without delay unless the magnets have travelled beyond pylorus. Once magnets have passed the pylorus, some authors prefer prompt surgical intervention even if the patient is asymptomatic. On the other hand, others think that close observation must be made, and only if there are signs of complications or unchanged location of ingested magnets on serial plain X-ray (showing two magnets stuck together), would surgical intervention be necessary. Our patient had no signs of perforation or obstruction and position of the magnets changed on serial abdominal X-rays. Therefore, no surgical intervention was necessary.

Clinicians who care for children should be aware of the risks associated with multiple magnet ingestion. If magnets stay in the same location shown by repeated X-rays, surgical intervention should not be delayed.

REFERENCES