Intestinal Magnetic Foreign Bodies: Alone I Succeed, Stuck in Group

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Abstract

A five year old male child came to pediatric surgical department with alleged history of ingestion of magnetic foreign body followed by development of clinical features of small bowel obstruction. Clinical examination and Radiological examination was consistent with small bowel obstruction. Laparotomy reveal adhered loop of jejunum and ileum by attraction force of one magnetic foreign in each loop with resultant pressure necrosis of intervening bowel wall. Retrieval of this foreign body with primary repair of jejunal and ileal perforation was done. Patient had uneventful recovery and in 2 month follow up he is well.

Keywords: Magnetic foreign body; Small bowel obstruction; Primary repair of bowel perforation

Introduction

Ingestion of foreign bodies is a usual presentation in pediatric emergency. Magnetic foreign bodies govern special attention, more so when ingested in multiple numbers or along with other metallic foreign bodies because attraction force produce by these leads to various gastrointestinal complications. They require close watch and early surgical intervention. This case highlights successful management of gastrointestinal complication arising from ingestion of two magnetic foreign body.

Case Report

A five years old male child presented to pediatric surgical department with complaint of distention and colicky pain in abdomen since 4 hours. There was history of one episode of bilious vomiting one hour ago. There was alleged history of ingestion of magnetic foreign body 2 days back but not sure of how many. There was no history of respiratory distress at time of ingestion. On physical examination, he had tachycardia with abdomen distension, tenderness in epigastrium and umbilical region of abdomen and increased bowel sound.

X ray of abdomen revealed dilated small bowel loops with a radiopaque shadow in central abdomen (Figure 1). Leukocyte count was 13000/mm³. Hemoglobin, urea creatinine and serum electrolytes were normal.

Patient underwent laparotomy which revealed dilated jejunal and ileal loops adhered to each other. On gentle handling both loops were seen to adhere with each other by some force and revealed magnetic foreign bodies in each loop, stuck to each other. Both magnetic foreign bodies had crushed intervening intestinal walls, causing pressure necrosis and perforations in both intestinal walls (Figure 2). Both magnetic foreign body retrieved through perforation (Figure 3). Margins of perforation debrided and primarily repaired. Patient had uneventful post-operative course and was discharged after 5 days. On 2 month follow up child is well.

Discussion

Foreign body (FB) ingestion is common presentation among pediatric age group. Most of them travel gastrointestinal tract without obstruction.
much difficulty and evacuate usually in a few days to weeks [1,2].
10-20% cases require endoscopic removal [1]. Surgical removal of
foreign body is rarely required [1,3]. Ingestion of single magnetic
foreign body usually does not produce any complication because like
other foreign body it would likely to get spontaneously evacuated but if
children has ingested multiple magnet or magnet with other metallic
foreign body then it impose risk of severe gastrointestinal
complication. Small bowel has relatively thin wall so attraction of
multiple magnets towards each other across the bowel loops lead to
pressure ischemia and necrosis of bowel wall and development of
various complication like obstruction, perforation, volvulus and
intraperitoneal hemorrhage due eroding of mesenteric vessel [1,3,4-6].
Absence of free air in Plain abdominal radiography may be explained
by fact that these produce local peritoneal reaction and inflammation
[4].

Figure 3: Retrieved two magnetic foreign body.

The duration between magnet ingestion and development of
gastrointestinal complication depends on number and strength of
magnetic foreign body [1].

Plain x- ray in two plain should be obtained to know the number of
foreign body and associated complication and if plain X ray is
inconclusive computed tomography should be considered for better
evaluation [6].

The management of single magnetic Foreign body ingestion is
controversial as some author advocate observation [1,6], only because
they believe that like other nonmagnetic foreign it get spontaneously
passed but on the other hand some believe that any magnet ingestion
should be treated as if multiple magnet has been ingested, author who
believe in second philosophy have proposed a magnet algorithm and
recommend any magnet should be removed by endoscopy and if it
beyond the limit of endoscopic retrieval, then in-patient observation
with serial abdominal radiography until foreign body get evacuate.
During this in patient observation surgical intervention should be
contemplated at first appearance of symptoms or signs of anticipated
gastrointestinal complication [3].

In case of more than one magnet or one magnet with other metallic
foreign body ingestion recommendation are that these should be
removed by endoscopy whether patient is symptomatic or not, in case
endoscopic retrieval failed or foreign body are beyond the limit of
endoscopic retrieval then elective surgical retrieval should be done. If
children has presented with complication then urgent surgical
intervention must be done [1,3,5,6].

This child had presented with alleged history of magnet ingestion,
bowel obstruction with absence of free peritoneal air and apparently
single foreign body in plain radiography, it was the bowel obstruction
that compelled us to contemplate urgent surgical exploration and
during surgery we found two magnetic foreign body and perforation of
intervening jejuno ileal wall.

This case highlights the fact that delays in treatment leads to serious
complication of multiple magnet ingestion. History narrated by
children may be unreliable and if parents or primary care giver found
that children has ingested magnetic foreign body whether single or
multiple children must be referred to pediatric surgical specialty for
further assessment and management.

References

1. Corduk N, Odabas SE, Sarioglu-Buke A (2014) Intestinal perforation
caued by multiple magnet ingestion. Afr J Paediatr Surg 11: 84-86.
2. Nandi P, Ong GB (1978) Foreign body in oesophagus: review of 2394
cases. Br J Surg 65: 5-9.
3. Butterworth J, Feltis B (2007) Toy magnet ingestion in children: revising
the algorithm. J Pediatr Surg 42: e3-e5.
4. Oestreich AE (2006) Danger of multiple magnets beyond the stomach in
children. J Natl Med Assoc 98: 277-279.
5. Tavarez MM, Saladino RA, Gaines BA, Manole MD (2013) Prevalence,
clinical features and management of pediatric magnetic foreign body
ingestions. J Emerg Med 44: 261-268.
6. Vijaysadan V, Perez M, Kuo D (2006) Revisiting swallowed troubles:
intestinal complications caused by two magnets--a case report, review
and proposed revision to the algorithm for the management of foreign
body ingestion. J Am Board Fam Med 19: 511-516.