

Abstract

Swallowing foreign bodies is common in young kids, especially those aged 6 months to 6 years. ⁽¹⁾ Magnet ingestion is a hazardous health issue which extremely jeopardizes the most vulnerable group, children, to risks of intestinal obstruction and worse, perforation. ⁽²⁾ We, hereby, report an incidence of magnet ingestion in a toddler of 3 years old of age who had multiple beaded magnets stuck inside of his GI tract over a period of 10 months prior to his presentation to the Emergency Department.

Introduction

Ingestion of foreign bodies of variant shapes and structures is a commonly encountered clinical matter, particularly in children. ⁽³⁾ An approximate portion of 80% of ingested FB, pass smoothly through the alimentary tract causing no obstructive damages or necessity to surgical intervention. ⁽⁴⁾ However, magnet ingestion is of a unique nature as in the case of multiple magnets swallowed, they usually attract each other across the intestinal wall leading to potential insult in the form of intestinal obstruction, ischemia and perforation. ⁽⁵⁾ Globally, a description of magnet ingestion per say is extremely uncommon, as it only surfaced through case reports until the year 2000, yet the number was increasing significantly throughout the last 20 years ^(6,7). Hence, we remark this case report of ours to enrich the literature.

Case Series

•CASE REPORT 1

We are reporting a case of a previously healthy 3-year-old boy who was brought by his parents to the ED with complaints of vomiting and abdominal pain. His parents didn't have any idea if he had ingested any foreign body supported by his unremarkable physical examination. Abdominal radiograph showed an intra-abdominal foreign subject with mild dilatation of the proximal bowel loops demonstrating multiple air-fluid levels suggesting partial lower intestinal obstruction.

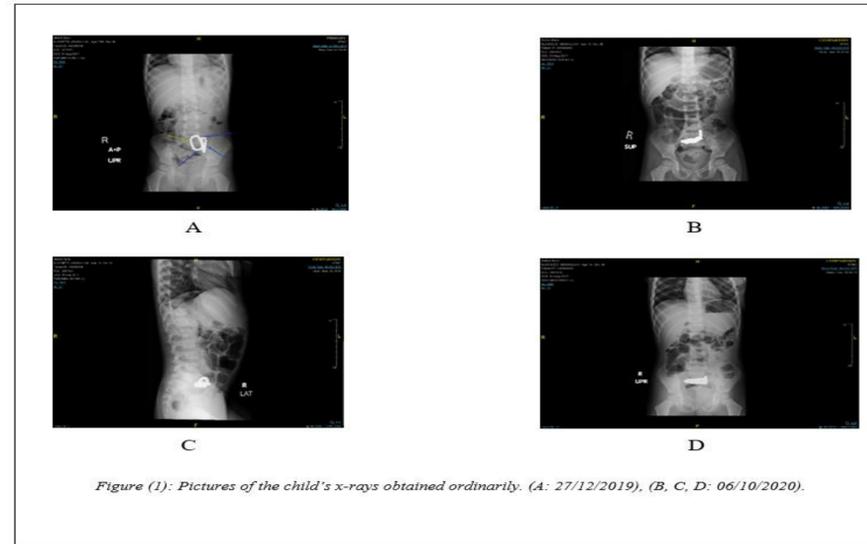
Interestingly there was a previous abdominal radiograph dated one year prior to this presentation, where the patient reported to ED with a similar symptomatology, complaining of vomiting and abdominal pain. The abdominal radiograph at that time depicted no signs of intestinal obstruction, yet a radiopaque foreign body was present (probably representing an external artifact).

In between the two occasions, and over a period of 10 months, there were no interval symptoms and the child was thriving well with no issues until he presented to the hospital for the second time. He was then admitted for surgical intervention as he underwent an Open Laparotomy, enterotomy and magnets removal.

He was doing well afterwards and discharged home in a stable condition. A follow-up encounter at the surgical clinic was of no concerns.

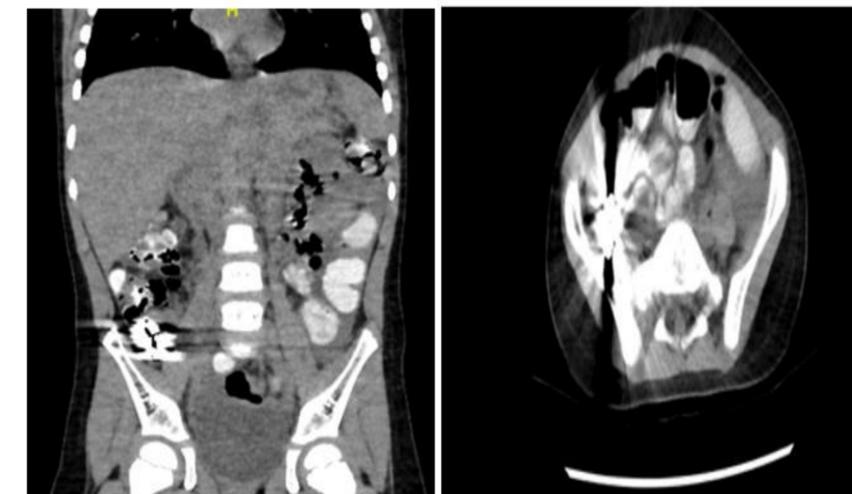
Table (1): Relevant Labs and imaging studies.

Labs/Imaging	Admission day	Reference Range
Day		
WBC	10.5 10e9/L	4.3 - 11.3 10e9/L
ANC	7.1 10e9/L	1.35 - 7.5 10e9/L
Hemoglobin	13 g/dl	11-15 g/dl
Platelets	369 10e9/L	155 - 435 10e9/L
Sodium	136 mmol/L	138 - 145 mmol/L
Potassium	4.4 mmol/L	3.4 - 4.7 mmol/L
Coagulation Profile	Normal	
Abdominal X-ray (A)	Nonspecific abdominal bowel gas pattern and distribution with no radiological signs of intestinal obstruction or free intraperitoneal air. Radiopaque dated foreign body projects over the region of the midline in the pelvis (probably represent an external artifact well as indicated by arrows on the image).	
Figure (1)		
Abdominal X-rays (B, C, D)	The previously noted beaded foreign object is again seen suggesting it is intra-abdominal. There is mild dilatation of the proximal bowel loops with multiple air-fluid levels suggesting partial lower intestinal obstruction. Air noted within the rectum. No pneumoperitoneum. Clinical correlation and follow up is advised.	
Figure (1)		
Intestinal biopsy	Small bowel focal perforation and transmural inflammation with necrosis that is negative for parasites, dysplasia or malignancy.	



•Case 2

Other well child, a 4 years old who was history of foreign body ingested about 4 months ago presented to hospital after a symptoms of flue about a week, when mother notice that he has snoring and not well and not improve after medication was given, she presented back to same hospital and found to have after examination of the nose that he has a magnetic object (bracelet) on his nostrils removed by ENT, post that presentation, about 1 and half months ago a child was complained of abdominal pain at night followed by morning vomiting, decreased activity and distended abdomen, parents seek medical advice at private hospital, the patient was admitted there Xray, ultrasound abdomen and CT were done. Abdominal ultrasound showed that there is suggestive of ileocecal intussusception for further urgent CT correlation Xray showed that there is right lower abdominal region foreign body with sub sequent few central air fluid levels with suspicion of bowel obstruction. CT scan finding was a foreign body at the cecum / terminal ileum with subsequent partial obstruction and moderate intraperitoneal free fluid. The patient was admitted for 5 days observed there and repeated x ray noted that a radio opaque F.B in pelvis with no air fluid level or gas collection, parents instructed to be seen after 1 weeks, repeated x ray done showed that F.B noticed at left iliac region. as per parents, the physician told them to follow up for child in other hospital. At our ER, the patient presented with history of abdominal pain, he directed admitted and underwent laparotomy.



CT of the child showed Impacted foreign body in the distal small bowel at the ileocecal junction with a Proximal mild to moderate small bowel loop dilatation. No signs of free intraperitoneal air.

•Case 3

22 months old Saudi baby girl, medically free Presented to ER complaining of vomiting of 1 day duration, started green then became coffee ground, not projectile, not related to food, more than 10 times since early morning. It was associated with abdominal pain, decreased oral intake and low activity. She gave history of URTI 2 days ago associated with fever, 39C. She presented to a private clinic and was treated conservatively using antipyretic and antibiotics. No history of Changes in bowel habit or bleeding per rectum, no urinary symptoms. On examination she looked well, vitally stable, but had distended abdomen with deep tenderness. She was admitted under General pediatrics to investigate for UGI bleeding. X-ray was done and showed multiple air fluid level and foreign body that looked like 6 magnetic balls. When the family were asked again the revealed that the noticed her swallowing the magnets 1 month ago, but as she had no complain at the time, they didn't do anything hoping it will pass spontaneous. Lab works revealed a WBC of 14.8 but otherwise was within normal range. She was started on Pantoprazole, cefotaxime, metronidazole and ampicillin. And was taken for Laparoscopic assisted removal of the magnets. On the 5th post operative day she was started orally and was discharged on the 7th day.



Discussion

Magnet swallowing is a pediatric emergency, that evolved to be more common over time. Single magnet ingestion, as any inert solo foreign body, not a critically serious condition that requires surgical intervention, on the other hand, ingestion of poly magnets can lead to danger-imposing complications such as obstruction and perforation in result of attraction of multiple pieces through the intestinal wall.

Surprisingly, over a period of 10 months, our indexed case contracted a prolonged symptomless course of multiple magnet ingestion, through which he maintained his well-being with no effect on his daily life activities, until his symptoms became evident. Such presentation has not been reported across the literature in terms of lengthy symptom-free sustainability.

We hereby, present a genuine example of how difficult it can be to identify such cases, especially when a good quality of life is maintained.

Conclusion

Owing to its variably serious complications lying through a wide range of spectrum exemplified by fistula formation, obstruction, ischemia and perforation, magnets impose a critical threat on children of explorative phase. Cases might evolve rapidly to life-threatening statuses that might eventually require a prompt surgical salvage if misdiagnosed or unnoticed early. We urge physicians to be enlightened about early recognition of such cases.

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