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Case Report

Accidental multiple magnet ingestion by an adult: a case report

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ABSTRACT

Accidental multiple magnetic foreign body ingestion although common in children is rare in adults. Multiple magnetic foreign body ingestion possess a definitive risk of causing intestinal perforation, volvulus or fistulas and requires early surgical intervention even in apparently asymptomatic individuals to prevent catastrophic complications. We report a case of an 18 year old male with a history of accidental simultaneous ingestion of two semi-circular shaped magnets along with a nail. The peculiarity of the case being that despite the magnets being simultaneously ingested, one was in the stomach and the other in the jejunum adhered to each other through the transverse colon mesentery causing pressure necrosis of the adjoining wall with the patient being asymptomatic.

Keywords: Multiple magnets, Adult, Ingestion

INTRODUCTION

Foreign body ingestion is a common health problem in children, especially between the ages of 6 months and 3 years, however ingestion of multiple magnets in adults is rare.[1] Multiple magnet ingestion is more common in children with psychological conditions such as autism, attention-deficit hyperactivity disorder and psychosis.[2]

The vast majority of the ingested foreign bodies leave the digestive system naturally without the need for any interference and a wait and watch approach is generally indicated at least initially or till the patient develops any ominous symptoms. However, ingestion of multiple magnets or a magnet with a ferromagnetic substance poses a unique set of possible complication that may require a different approach to manage such patients.[3]

The attractive force of these magnets is formidable. After swallowing more than one magnet or a magnet with another piece of ferromagnetic substance, the attractive force allows the objects in the intestine to find each other despite being at different regions of the bowel.[4] The magnets can therefore cause two regions of bowel to adhere together with great strength and do not separate. The resulting ischemia and pressure can cause bowel perforations, volvulus and fistulas.[5,6]

CASE REPORT

An 18 year old male presented to the OPD with a history of accidental simultaneous ingestion of two magnets five days ago with no history of pain abdomen or any history suggestive of intestinal obstruction. The patient was admitted for evaluation.

Abdominal examination was unremarkable. An erect and supine abdominal radiograph revealed a radio opaque semi-circular object with an adherent nail which appeared to change positions on the supine and erect films. There were no dilated bowel loops or air fluid levels. Ultrasound abdomen revealed no abnormality. The patient was managed expectantly.

On account of non-passage of the magnetic object along with a slightly elevated total leukocyte count an exploratory laparotomy was performed.

Intraoperatively, it was seen that one of the magnets was in the posterior wall of the stomach and the other in the

proximal jejunum that were adherent to each other sandwiching the transverse mesocolon. After separation pressure necrotic patches having the shape of the magnets were seen on both the stomach and the jujenum, with the jejunal wall being perforated. Both the magnets were retrieved, stomach and jejunal walls freshened and primarily closed.

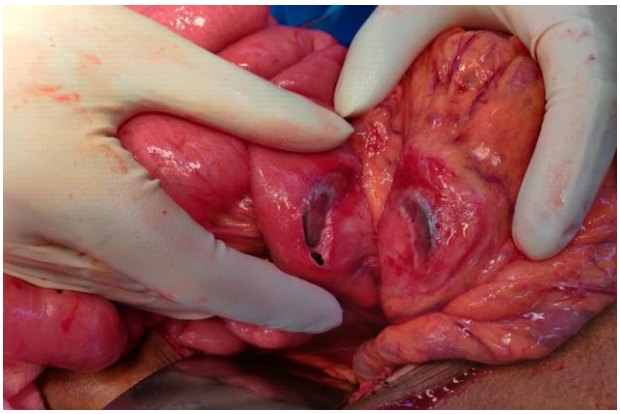

Figure 1: Pressure necrotic patches over the posterior stomach wall and proximal jejunum through the transverse mesocolon.

Figure 2: The magnet with an attached nail being extracted from the jejunum.

Figure 3: The two semi-circular shaped magnets extracted.

DISCUSSION

Accidental ingestion of multiple magnets in adults is a rare entity. Solitary magnets can pass the gastrointestinal tract without any complications and may require only serial radiographic monitoring. Multiple magnets or magnets with ferromagnetic substances have a high likelihood of causing bowel complications such as obstruction, perforations and fistulas. Ingested magnets can become aligned and can attract one another through multiple bowel walls from a distance of up to 5 centimetres. One of the most common complications to occur is perforation.[7]

CONCLUSION

Unlike in single magnetic/multiple non-magnetic foreign body ingestion where a conservative approach is an acceptable method of management, ingestion of multiple magnets with or without other ferromagnetic substances pose a unique set of complications that requires an early intervention even in the absence of any symptoms. Initial diagnosis is best obtained by history and by an abdominal radiograph and often is the only investigation that may be required for diagnosis.

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REFERENCES

1. Lee SK, Beck NS, Kim HH. Mischievous magnets: Unexpected health hazard in children. J Pediatr Surg. 1996;31:1694-5.
2. Oestreich AE. Worldwide survey of damage from swallowing multiple magnets. Pediatr Radiol. 2009;39:142-7.
3. Hussain SZ, Bousvaros A, Gilger M. Management of ingested magnets in children. J Pediatr Gastroenterol Nutr. 2012;55:239-42.
4. Oestreich AE. Danger of multiple magnets beyond the stomach in children. J Natl Med Assoc. 2006;98:277-9.
5. Tay ET, Weinberg G, Levin TL. Ingested magnets: the force within. Pediatr Emerg Care. 2004;20(13):466-7.
6. Hernandez AE, Gutierrez SRC, Barrios JE. Intestinal perforation caused by magnetic toys. J Pediatr Surg. 2007;42:13-6.
7. Centers for Disease Control and Prevention (CDC). Gastrointestinal injuries from magnet ingestion in children - United States, 2003-2006. MMWR Morb Mortal Wkly Rep. 2006;55:1296-300.

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