Singing Magnets Ingestion: A Rare Cause of Intestinal Obstruction in Children

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ABSTRACT
Foreign body ingestion is a common problem in children. Ingested foreign bodies include coins, needles, pins and button batteries. Ingestion of multiple magnets is very rare and poses a unique hazard of intestinal obstruction in children. The ingested magnets may reside in different loops of intestine and attract each other causing necrosis of the intervening wall of intestine. We present the case of a 7-year old child who presented with acute intestinal obstruction due to ingestion of multiple magnets. Patient underwent laparotomy. The loops of small intestine with necrotic walls were found to contain three oblong shaped magnets. Removal of magnets along with resection and anastomosis of affected segment of intestine was performed.

Key Words: Foreign body ingestion. Intestinal obstruction. Singing magnets. Chatter stones.

INTRODUCTION
Ingestion of foreign objects is a common problem in children, including ingestion of coins, pins and button batteries.1 On the other hand, the reports describing ingestion of magnets and their significant gastrointestinal complications are sparse despite the increased accessibility of small magnets implanted in toys within the reach of young children.2 We are reporting an unusual case where a child ingested multiple magnets and developed intestinal obstruction and necrosis.

CASE REPORT
A 7-year old female child presented with history of pain in abdomen, bilious vomiting and non-passage of stools for 4 days. The pain was crampy and severe. Physical examination revealed a mildly anaemic and dehydrated child. The examination of abdomen showed soft and non-tender abdomen and no visceromegaly. Bowel sounds were audible with exaggerated character and intensity. X-ray of abdomen revealed a radio-opaque oblong shaped objects on the right side of lower abdomen (Figure 1). Blood chemistry was normal. On enquiry, neither the parents knew about ingestion of magnets nor the patient admitted to it.

After correction of anaemia and dehydration, patient underwent laparotomy where two loops of ileum were found attached with each other, proximal loop containing one and distal loop containing two oblong shaped “buzz” magnet and a small tinkling bell (Figure 2); each measuring 45 x 16 mm, smoke-gray coloured, smooth and shiny. The intervening walls of both loops were necrotic. The magnets were removed; the damaged segment were resected and primary anastomosis was performed. The postoperative period was uneventful and patient was discharged home on the 7th postoperative day.

DISCUSSION
Foreign body ingestion is a common problem among children. Although exact figures are unavailable but more than 125,000 ingestions of foreign bodies by people aged younger than 19 years were reported to American poison control centers in 2007.3 International data are scant on foreign body ingestion. In Victoria (Australia), the annual admission rate for foreign body ingestion was 31.7 per 100,000. A great variety of ingested foreign bodies are reported from different cultural and geographical backgrounds. Among the common foreign bodies are coins, needles and pins, fish bones and button batteries. The ingested magnets are known as the buzz magnets or singing magnets. When thrown into air, they attract each other and make “ZZZZ"
singing magnets ingestion sounds, like a rattle snake. That is why these magnets are also known as rattle snake eggs.\textsuperscript{4} Most foreign bodies pass spontaneously through the GIT.\textsuperscript{1} About 10 - 20\% of the patients may be subjected to endoscopic retrieval of foreign bodies from esophagus or the stomach. Surgical intervention is required in only 1\% of patients for complications such as obstruction, perforation or fistula formation.\textsuperscript{5} A single small magnet like any other foreign body will most likely pass through the gut without complications. On the other hand, multiple magnets or a combination of magnets and metallic objects, pose a unique hazard due to their propensity to attract each other while residing in different loops of bowel.\textsuperscript{6} As ingested magnets proceed through adjacent loops of bowel, they attract each other and compress the intervening bowel wall. This compression ultimately leads to pressure necrosis with resultant volvulus, perforation and fistula formation with significant morbidity and rarely mortality.\textsuperscript{7} In this patient, three ingested magnets and one small tinkling bell were found as previously reported in literature.\textsuperscript{8} It was also found in this patient that the two magnets were lying in the distal loop and one in the proximal loop attracting each other, as a result of which the intervening wall of loop was necrotic and was about to perforate, also confirming previous reports.\textsuperscript{9}

Toys with magnetic pieces have become popular among children. They are easily accessible to the children because the parents and other care takers are not aware of their potential risks. This case is unique in that the patient ingested three magnets of the chatter stone or singing magnets type, each being 45 x 16 mm long. In the other reported cases the magnets ingested were of smaller size and discoid shaped.\textsuperscript{6,9,10} None of the cases reported so far in literature ingested such a big sized magnets.

\textbf{REFERENCES}