Accidental Ingestion of Magnetic Spheres in Children

Abstract:
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Magnetic foreign body ingestion can have a very serious sequelae if multiple or combined with another metal object inside the abdomen. We report 2 cases of ingestion of rare-earth magnets with a very different consequences. This adds to the world’s literature on this topic.

Introduction
Magnetic foreign body ingestion has been reported worldwide in case reports and case series reaching up to 30 patients. There is a paucity of exploration of this problem in the Irish literature.

Case Report
We report two children who attended a university affiliated children’s hospital in Ireland. First is a 3-year old boy who was transferred from his regional medical centre due to history of ingestion of unknown number of magnetic round objects he gathered from his elder sibling’s toy. Some of them were passed in the stool and collected by mother. At presentation to our institution patient had some abdominal pain and discomfort as well as history of vomiting. Two plain abdominal radiographs were taken 48h apart (Figure 1 and 2). They revealed stationary position of foreign bodies just above the right of L3 vertebral body. Laparotomy was undertaken that showed one magnet in the transverse colon with the other one in the first loop of jejunum. Second loop of jejunum was interpositioned between them. Magnets created enough force to erode all involved walls of bowel (4 perforations altogether). They were found eventually in the sigmoid colon. Bowel perforations were repaired and patient made an uneventful recovery and was discharged on the 9th post-operative day.

Second patient was a 9-year old female who ingested 2 similar magnetetic spheres while attempting to see how would she look like with a lower lip piercing. She was asymptomatic on presentation and serial radiographs (48h apart) showed good progress of foreign bodies through gastrointestinal tract. They were retrieved from the stool 5 days after ingestion.

Discussion
Ingestion of non-food objects is common in young children. Unless objects are large or sharp they usually pass through digestive system without consequences. Several exceptions include powerful rare-earth magnets and button batteries. A single foreign object would not cause any harm on its own. In combination with a second magnet or other metallic object it can cause severe damage inside the abdominal cavity including perforations, obstruction and strangulation. Death has been reported in the US after a 20-month old child was brought to a hospital in irreversible shock. All patients with suspected or known magnetic foreign body ingestion should have an antero-posterior and a lateral abdominal radiographs. In case of any doubt as to the number or position of the foreign bodies and in case of all symptomatic patients a contact with local paediatric surgery department is advised.

The danger of magnetic object ingestion is not widely known among medical professionals in Ireland. This paper draws attention to this rare but morbid and potentially lethal condition. This adds to international literature on the matter. In doubt a clinician should consult their local paediatric surgery department. Toys containing strong rare-earth magnets should have a clear and visible warnings regarding the dangers associated with their ingestion. Young children should not be allowed to play with such toys or have an unsupervised access to them.

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References