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NEWS

RSNA Press Release

Swallowing Multiple Magnets Poses Danger to Children

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At A Glance

- Children who swallow multiple magnets need immediate medical attention.
- When two magnets lie in adjacent bowel loops, they may attract each other across the intestinal walls.
- If left unchecked, multiple magnets in the intestines can cause obstruction, necrosis and perforation of the intestinal walls.
- If the possibility of magnets in the abdomen exists, magnetic resonance imaging (MRI) must be avoided.

OAK BROOK, Ill. - Children who swallow more than one magnet need immediate medical care, according to Alan E. Oestreich, M.D., pediatric radiologist at Cincinnati Children's Hospital Medical Center (CCHMC). Dr. Oestreich expressed his concern in a letter to the editor published in the November issue of the journal *Radiology*.

"Any time more than one magnet passes beyond the stomach of a child, urgent surgical consideration is required," Dr. Oestreich said.

If the magnets are allowed to pass beyond the stomach, they can attract each other through opposing intestinal walls, which can lead to obstruction, necrosis (cell or tissue death) and perforation of the intestines.

Swallowing foreign objects is a common occurrence among children, primarily between the ages of 6 months and 3 years. Approximately 80 percent of the objects that reach the stomach will pass through the gastrointestinal tract on their own. However, up to 20 percent will need to be removed surgically. While a single swallowed magnet may pass, in many instances, multiple magnets will become lodged in the intestines.

Dr. Oestreich provided commentary for the pediatric radiology chapter of the soon-to-be-released *2004 Year Book of Diagnostic Radiology*, which contains two case studies of multiple magnet ingestion.

In one case, a 10-month-old boy had swallowed two magnetic beads of a necklace used to treat muscle stiffness. His symptoms included vomiting, mild fever and abdominal pain. An abdominal x-ray showed two foreign bodies arranged in a line in the small intestine, as well as excess fluid. Doctors performed emergency surgery to remove the beads and repair a perforation in the intestinal wall.

In the second case, a 22-month-old boy swallowed seven small, tablet-shaped magnets. They had separated into two groups that attracted each other through the intestinal wall, causing two perforations requiring surgery.

Dr. Oestreich wrote the letter to *Radiology* after a 12-year-old autistic boy was admitted to CCHMC with abdominal pain. Abdominal x-rays revealed multiple objects with metallic density throughout the small intestine and possibly the large intestine. The next day, surgeons removed a large number of small magnets that had been part of a toy. The magnets caused several areas of small bowel necrosis and local perforation.

While swallowing magnets is not nearly as common as swallowing coins, jewelry or toy parts, there have been a number of reported cases of multiple magnet ingestion over the past five years, including nine incidents in the United Kingdom involving children who swallowed industrial-strength magnets worn to resemble body piercings.

"Parents and physicians should be on the alert," Dr. Oestreich said. "Moreover, if the possibility of magnets in the abdomen exists, magnetic resonance imaging is to be strictly avoided."

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Oestreich, A.E., Pediatric Radiology. In: Osborn, A.G., ed. *2004 Year Book of Diagnostic Radiology*, Philadelphia, Pa.: Mosby. In press.

PDF: 2004 Year Book of Diagnostic Radiology case studies >>

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