

Introduction

Foreign body ingestion among young children is common, majority happening in children aged 6 months to 3 years and may even occur in older children due to developmental or behavioural problems.

Most of the foreign bodies are of low risk and can be managed with conservative approach. However certain scenarios raise red flags such as ingestion of button batteries, magnets, large objects and lead-based materials.

Case report

A healthy 2 years 11 months old boy was brought to emergency department by his anxious mother for alleged magnets ingestion.

She was holding sample of the remaining magnet beads each sizing 3x3x3mm. The child looked calm and cooperative. He nods to his mother when asked if he had ingested the magnets. Mother claims no one witnessed the event and it was the child that related to the mother that he had swallowed those magnets in the first place.

Physical examination was unremarkable and child had no signs of distress. An abdominal radiograph revealed the presence of nine small round opacities arranged in linear pattern next to each other located at the central of the abdomen, likely in the small bowel (Figure 1). It has similar configuration to the magnetic beads held by mother confirming the story of the child.

The child was admitted to the paediatric surgical ward for observation. He received enema as the initial radiograph (Figure 1) showed fecal loading. Serial abdominal radiograph showed progressive movement of the magnets to the right lower quadrant of the abdomen at 18 hours post-ingestion (Figure 2).

On the second day of admission, the child had bowel output with all the nine beads safely out in stool (Figure 3). The child was allowed home.

Discussion

Magnets ingestion have been treated like any other foreign bodies historically. However with evolvement of magnet component, caution need to be observed. Traditional ferrite magnets are large and has weak magnetic force. However with latest neodymium-iron-boron technology, magnets have become smaller in size and have stronger magnetic force. There is surge in magnet-based consumer products such as toys, jewellery and children's construction sets.

Ingestion of single magnet is generally not harmful, however ingestion of multiple, especially when swallowed at different times can be detrimental. Magnetic attraction clump them together and may sandwich through loops of gastrointestinal walls. The force exerted can impede on blood supply causing pressure necrosis and eventually perforation allowing intestinal content to leak, which can make the child extremely sick and potentially fatal. Other known complications are intestinal obstruction, bowel perforation, fistula and pressure necrosis.

To reduce the likelihood of problems, a practical and time-saving management approach has been suggested by Tariq Altokhais in 2021 (Figure 4). Laxative may be tried in single magnet ingestion that has passed the stomach and confirmed passage with serial radiographs, to aid in its expulsion (4). However, it is not suggested in multiple magnet ingestion. In our case, enema was used due to fecal loaded bowel to aid the progressive movement of foreign body. Should there be any change clinically suggestive of complication, surgical management is mandatory.



Figure 1: Radiograph (anteroposterior supine view), showing magnets in the small bowel on the day of admission. Noted that there is no bowel dilatation or free air.



Figure 2: Radiograph (anteroposterior supine view), showing magnets in the right lower quadrant of abdomen. 18 hours post ingestion. Noted that there is no bowel dilatation or free air.



Figure 3: Magnets beads retrieve in the child's bowel output

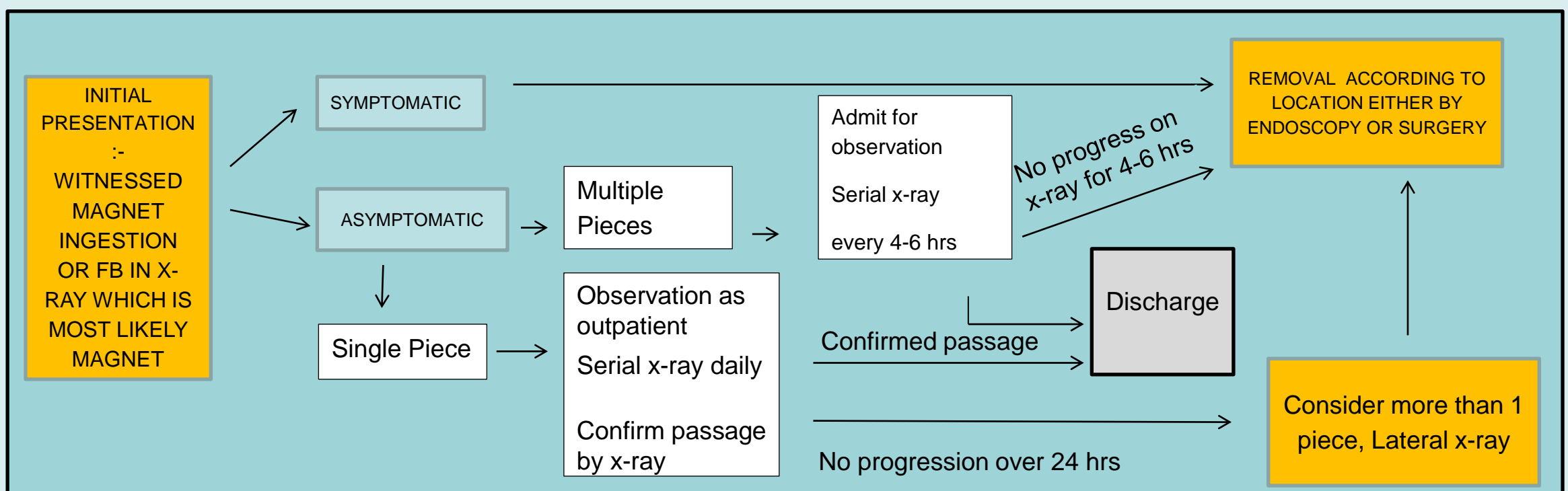


Figure 4: Suggested approach in magnet foreign body ingestion (3)

References

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Acknowledgement

The authors would like to acknowledge HRPB for providing study facilities and access to the case.