

Perforation of Meckel's diverticulum by foreign body

Mehmet Hanifi Okur,¹ Mehmet Serif Arslan,² Bahattin Aydogdu,³ Ibrahim Uygun,⁴ Cemil Goya,⁵ Orhan Tokgöz,⁶ Selcuk Otcu⁷

Abstract

Meckel's diverticulum (MD) is a congenital disorder of the gastrointestinal tract that is usually asymptomatic. Perforation of an MD by foreign bodies is an extremely rare cause of acute abdomen in children. We present a rare case of perforation of an MD in a child after eating melon seeds. The patient was treated successfully with segmental resection and primary anastomosis and had an uneventful postoperative recovery.

Keywords: Child, perforated Meckel's diverticulum, foreign body.

Introduction

Small bowel perforation is common in the child population, can occur due to various reasons such as, acute appendicitis, nonHodgkin's lymphoma, Hirschsprung's disease, or Meckel's diverticulum.^{1,2} Perforation of a Meckel diverticulum (MD) is a rare cause of small bowel perforation and it is often confused with pathologies in the gastrointestinal tract.³

Perforation of an MD by a swallowed foreign body (chicken bones, fishbones or toothpicks) is a rare and unusual complication.²⁻⁴ Perforation of MD by melon seed is unusual and, to the best of our knowledge, has not been reported in the English-language literature.

Case Report

Informed consent was obtained from the parents for presenting this case report. An 8-year-old boy was admitted to our hospital in December 2012 with a history of abdominal pain and vomiting for the last 6 days. He had a history of eating melon seeds with mantle a week ago (In our region, children generally eat melon seeds with its mantle due to the social-cultural habits). Abdominal tenderness at the right and left lower quadrants was present on examination and in the lower middle quadrant a palpable mass was felt. On rectal examination a mass was felt. There were air-fluid levels in the upright plain

films. Laboratory findings showed the following: white blood cell count 17,300mm³, haemoglobin 14g/dl and haematocrit 41.4%. Intraperitoneal fluid accumulation was moderate on ultrasonography. Computerised tomography (CT) scanning was performed specifically to evaluate a palpable mass. An abdominal CT scan showed a medium level of fluid in all segments of the abdomen.

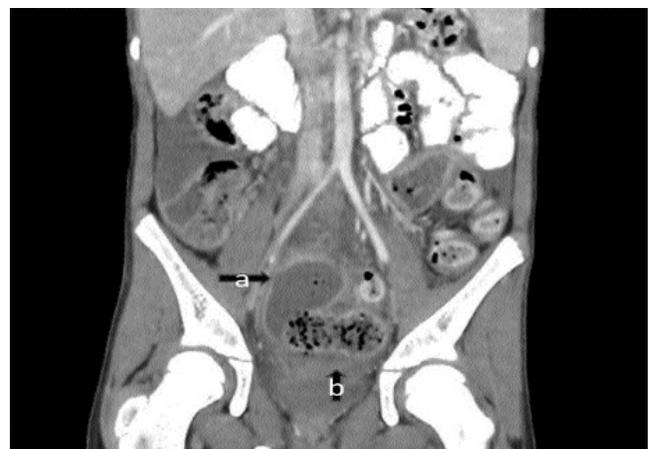


Figure-1: a) abscess. b) meckel (vertical CT image).



Figure-2: Intraoperative image.

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^{1-4,7}Department of Paediatric Surgery, ⁵Department of Radiology, ⁶Department of Anaesthesiology, Dicle University, Faculty of Medicine, Diyarbakir, Turkey.

Correspondence: Mehmet Hanifi Okur. Email: m.hanifi-okur@hotmail.com

An image similar to an abscess about 5×6 cm in diameter was observed in the lower middle region of the abdomen, in addition to oedematous thickening in the bowel wall in the lower region (Figure-1). An emergency laparotomy was performed. During the operation, an MD was seen approximately 60 cm proximal to the ileocaecal valve. It was perforated by melon seeds and melon seeds were not found in other part of bowel (Figure-2).

Segmental resection and end-to-end ileoileal anastomosis were performed. The patient began to take oral food on the third postoperative day and was discharged with an uneventful recovery on the seventh day.

Discussion

German anatomist Johann Freidrich Meckel first identified the anatomic abnormality known as MD.⁵ It is a common congenital abnormality of the gastrointestinal tract, classically thought to affect about 2% of the population. Despite the fact that this condition is relatively common, only about 4-16% cases develop complications.¹ It is more common in men than in women, and only one in five tend to be symptomatic.^{6,7} Routine laboratory studies, are helpful in the general work-up and will show evidence of acute infection. Computed tomography and ultrasonography have been used for the diagnosis of MD. The sensitivity of technetium-99m pertechnetate for the detection of MD containing gastric mucosa approaches 85%. However, false-positive values have been described (such as enteric duplication cysts and heterotopic gastric cysts).⁸

There are several case reports in the literature regarding perforations caused by a foreign body such as toothpicks, fishbones, batteries and needles.^{2,9,10} However, perforation of an MD caused by a melon seed has not been reported so far. In our region, depending on the social-cultural habits, children generally eat melon seeds with its mantle. The presentation of a perforated MD is the same as with a perforation in any other area of the small

bowel, and it should be treated with the appropriate surgical approach.

Conclusion

The diagnosis of a complicated MD has a number of challenges because of its various presentations. Melon seed could cause perforation of MD. These should be taken into consideration during the differential diagnosis of gastrointestinal pathologies.

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