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Acute appendicitis with unusual dual pathology

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ABSTRACT

INTRODUCTION: Meckel's diverticulum is a rare congenital abnormality arising due to the persistence of the vitelline duct in 1–3% of the population. Clinical presentation is varied and includes rectal bleeding, intestinal obstruction, diverticulitis and ulceration; therefore diagnosis can be difficult.
PRESENTATION OF CASE: We report a case of acute appendicitis complicated by persistent post operative small bowel obstruction. Further surgical examination of the bowel revealed an non-inflamed, inverted Meckel's diverticulum causing intussusception.
DISCUSSION: Intestinal obstruction in patients with Meckel's diverticulum may be caused by volvulus, intussusception or incarceration of the diverticulum into a hernia. Obstruction secondary to intussusception is relatively uncommon and frequently leads to a confusing and complicated clinical picture.
CONCLUSION: Consideration of Meckel's diverticulum although a rare diagnosis is imperative and this case raises the question "should surgeons routinely examine the bowel for Meckel's diverticulum at laparoscopy?"

1. Introduction

Meckel's diverticulum (MD) is an unusual cause of acute surgical admission occurring due to the persistence of the vitelline duct. Usually found on the anti-mesenteric border of the small bowel 45–90 cm from the ileocaecal valve; they are present in 1–3% of the population and vary from 1 to 56 cm in length.[1] The most common documented clinical presentations include haemorrhage resulting in rectal bleeding, intestinal obstruction, diverticulitis and ulceration.[2] We describe a case in which a young girl developed small bowel obstruction secondary to intussusception caused by an inverted MD following laparoscopic appendicectomy for acute appendicitis.

2. Presentation of case

A previously healthy 14-year-old girl presented with a three-day history of central abdominal pain which radiated to the right iliac fossa, associated with diarrhoea. Abdominal examination revealed tenderness and guarding in the right iliac fossa. Investigations demonstrated a leukocytosis ($12.6 \times 10^9\,L^{-1}$), raised C-reactive protein (40 mg/L), negative pregnancy test and normal urinalysis. Abdominal ultrasound established a short thick-walled tubular structure in the right iliac fossa with a small fluid collection (see Fig. 1). Laparoscopy confirmed the presence of an inflamed, perforated retrocaecal appendix consistent with acute appendicitis, which was resected. The patient failed to make a typical recovery and developed increasing abdominal pain and distension, bilious vomiting and constipation over a five day period. Auscultation of the abdomen revealed infrequent bowel sounds. Repeat abdominal ultrasound confirmed multiple dilated fluid-filled small bowel loops with no collection. A plain abdominal radiograph demonstrated dilated small bowel with a cut-off point and no gas in the large bowel (see Fig. 2).

Differential diagnosis included paralytic ileus or small bowel obstruction caused by postoperative adhesions, intussusception or incarcerated hernia.

Initial laparoscopy gave poor views due to limited intra-abdominal space from distended small bowel. Therefore

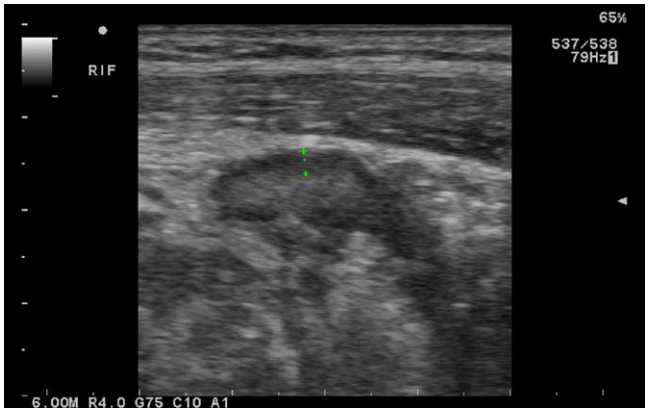

Fig. 1. Abdominal ultrasound of the right iliac fossa demonstrating a thick walled tubular structure.

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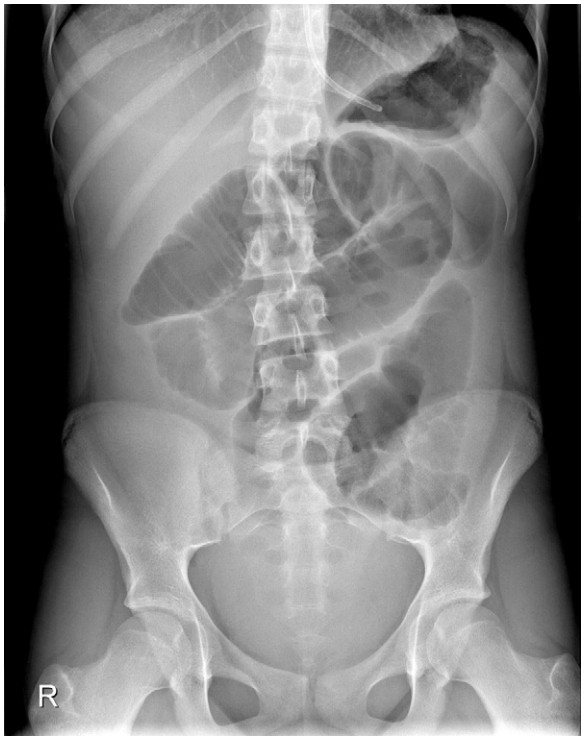

Fig. 2. Abdominal radiograph 5 days post laparoscopic appendicectomy.

laparotomy was performed which demonstrated small bowel obstruction due to intussusception with an inverted MD acting as the lead point. This was resected and an end-to-end small bowel anastomosis was performed. The patient subsequently made an uncomplicated recovery. Histology of the appendix demonstrated acute transmural inflammation and ectopic pancreas without inflammation in the MD.

3. Discussion

Intestinal obstruction in patients with MD may be caused by volvulus of the small bowel around a diverticulum attached to the anterior abdominal wall, intussusception or incarceration of the diverticulum into a hernia (Littre's hernia). Obstruction secondary to intussusception is relatively uncommon[3] and frequently leads to a confusing and complicated clinical picture.[4] Following the operative finding of acute appendicitis, complete peritoneoscopy was not performed; this is in keeping with current guidelines which suggest searching for an MD is not indicated following the operative finding of acute appendicitis.[1] Although laparoscopy is recognised as an appropriate mode of identification and management for MD[1] this patient underwent urgent laparotomy due to limited intra-abdominal space from distended small bowel.

4. Conclusion

This case highlights the presence of dual pathology during a single emergency admission and emphasises the importance of being adaptable and open minded in our approach to complex cases where it may be necessary to think outside the box in order to successfully diagnose and subsequently treat patients.

Conflict of interest

There are no competing interests to declare.

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Consent

From parents.

Author contributions

Georgina Riddiough, Imran Bhatti and David Ratliff all joint authors.

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