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Case Report OMICS International

Inverted Meckel Diverticulum Presenting as the Lead Point of Small Intestinal Intussusception in Adulthood

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Abstract

We present a case of inverted Meckel's diverticulum causing small bowel intussusception in an adult patient. We discuss the importance of assessing the source of intussusception in adult patients, the most appropriate management and potential complications of Meckel's diverticulum.

Keywords: Meckel's diverticulum; Intussusception

Introduction

Small intestinal obstruction in the adult is most commonly due to adhesions, herniae, or cancer. Small intestinal intussusception is rare accounting for 0.13% of all abdominal CT scans performed [1]. Meckel's diverticula are the most common congenital abnormalities of the gastrointestinal tract [2]. Meckel's diverticula can be complicated, with intestinal obstruction the most common complication. Here we present a case of small intestinal intussusception due to Meckel's diverticulum.

Case Report

A 39-year-old man presented with a 36 h history of cramping central abdominal pain. This presentation was associated with absolute constipation. There was no clear history of the passage of 'jelly stools'. The patient had 1 episode of bilious vomiting. The patient had a soft abdomen with no evidence of peritionism and there were no signs of abdominal distension. Initial laboratory tests including Haemoglobin, white blood cell count, platelets and urea and electrolytes were all within normal limits. A CT scan was performed with intravenous and oral contrast that revealed an ileal intussusception and dilated proximal small bowel (Figure 1).

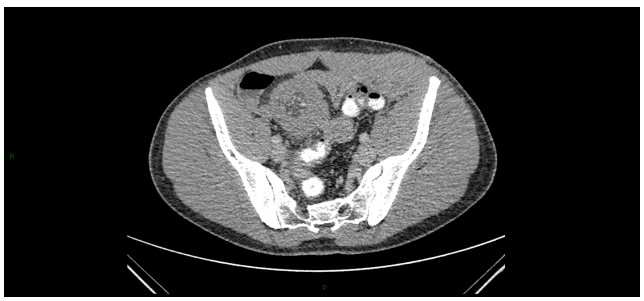

Figure 1: Cross-sectional CT axial image of the pelvis revealing intussuscepted ileum (arrow).

The patient was taken to theatre for laparoscopic management of his intussusception. During this operation a band adhesion was divided and thought to be the source of presentation. The intussusception was reduced without recognition of the Meckel's diverticulum as the lead point of intussusception. The patient's symptoms relapsed within 24 h and he was taken for laparotomy. This revealed an ileal intussusception. The intussusception was reduced to find a Meckel's diverticulum at the lead point (Figure 2).

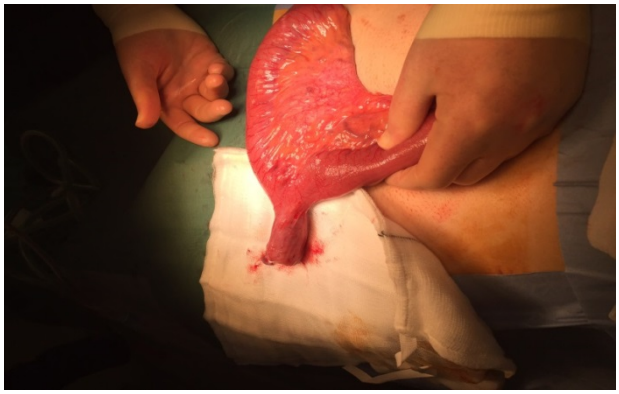

Figure 2: Inverted Meckel's diverticulum at laparotomy.

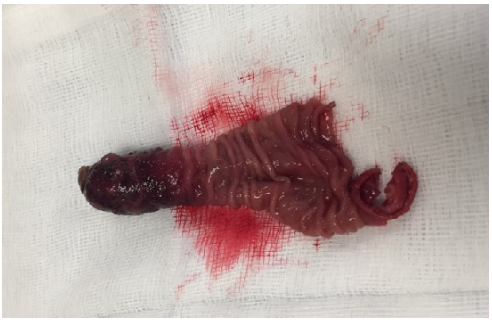

Figure 3: Resected Meckel's diverticulum.

A linear stapling device was used to perform a diverticulectomy (Figure 3). The patient recovered well post-operatively, his bowels opened spontaneously and he was discharged 2 days later.

Discussion

A Meckel's diverticulum is a vestigial remnant of the omphalomesenteric/vitellointestinal duct and appears as a true diverticulum on the antimesenteric border of the ileum. Classical teaching tells us that it exists in 2% of the population, is 2 inches (5 cm) in length, and lies 2 feet (60 cm) from the ileocaecal valve. Furthermore it is said that 2% develop symptoms and 2/3 have ectopic mucosa. The most common forms of ectopic mucosa are gastric and pancreatic [3].

Ulceration, diverticulitis, perforation, and haemorrhage may all accompany Meckel's diverticula [2]. Malignant transformation has been highlighted as a rare possibility [4]. Complications requiring surgery have been observed in 6.4% of patients [5]. Small bowel obstruction accounts for 20% to 25% of complications from Meckel's diverticulum [5]. There may be a band adhesion between the diverticulum to the abdominal wall due to the remnant of the vitellointestinal duct and cases of volvulus around such a band have been seen, as have Littre's herniae containing Meckel's diverticula [6]. Here we present a rarely seen complication of Meckel's diverticulum with intussusception causing small bowel obstruction. Small bowel intussusception is often transient and when it does occur usually has a polyp or lipoma as the lead point. Among the complications of Meckel's diverticulum intussusception is reported to be present in 13.7% with inversion of the diverticulum as in our case as rare as 4% of all small intestinal intussusceptions [7]. Other complications may arise from Meckel's diverticula in adulthood. Yamaguchi et al. [5] showed in their series of 600 patients that total small bowel obstruction rate in 287 symptomatic patients was 36.5%.

Inflammation/diverticulitis occurred in 12.7% of patients, with perforation in 7.3% [8]. This presentation is difficult clinically to distinguish from acute appendicitis and is seen more commonly in patients with inflammatory bowel disease. Perforation can occur in the absence of inflammation in the presence of foreign objects. Bleeding was a complication of 11.8% of cases that tends to present as melena. The rate of heterotropic mucosa observed in cases of bleeding is very high, most commonly gastric mucosa [9].

Observational studies have shown that asymptomatic Meckel's diverticula are safe to leave in situ without the need for surgery [4,6]. However, this case illustrates that in the case of small intestinal intussusception in the adult you should consider all possibilities of causation including Meckel's diverticulum. CT remains the most sensitive imaging modality for detection of the cause of adult intussusception [10]. Operative management is mandatory and can feasibly be performed laparoscopically [11], though this is not the accepted standard of care, or via an open operation. Recognition of the likelihood of a lead point in intussusception in the adult in our opinion necessitates exteriorisation of bowel for inspection and palpation even if the operation is performed laparoscopically. Surgical excision is indicated in adult patients with intussusception in contrast to paediatric cases dealt with by air enema. In the case of Meckel's diverticula bowel must be examined for ischemia and any signs of this usually determine the need for bowel resection versus diverticulectomy as was performed in this case.

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