Jejunal diverticulitis in a child

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ABSTRACT

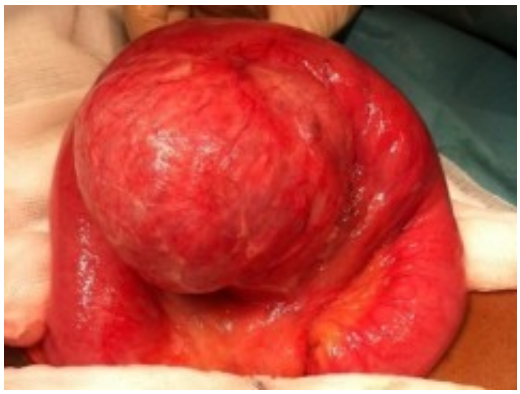
Jejunal diverticular disease is rare and few cases have been documented in the literature. Here we report the first case of a child presenting with a perforated congenital jejunal diverticulum.

INTRODUCTION

Jejunal diverticula are a rare entity. Adult studies have reported an incidence of 0.2-1.3% from autopsy studies and 0.5-2.3% from contrast studies (1). Jejunal diverticulosis is very uncommon in individuals less than 40 years of age and thus incidence of jejunal diverticular disease in childhood has not been reported to date. Certain diseases such as Marfan's syndrome, cystic fibrosis and other genetic disorders may however predispose patients to diverticular disease at a younger age (2,3,4). Two accounts of bowel obstruction secondary to jejunal diverticula in children have been stated previously in literature, however this is the first report of a child presenting with bowel perforation resultant of jejunal diverticulitis.

CASE REPORT

A previously fit and healthy 11-year-old boy of Somalian descent presented with an 11-day history of abdominal distension, left sided abdominal pain, anorexia and loss of weight. Ten days prior he presented to the Emergency department, with right-sided faecal loading on abdominal radiograph, and had been treated for constipation with movicol and discharged home. He had no significant past medical, family or social history. Drug history was unremarkable, no recent foreign travel, immunisations were up-to date and developmentally there were no concerns. On examination he was pyrexial, pale, tachycardic, with generalised peritonitis and a prolonged capillary refill time. Laboratory investigations revealed him to be anaemic, with a serum haemoglobin of 7.6g/dL, a raised white cell count (17.7 x109/L) and associated neutrophilia (14.37x109/L). The platelet count was elevated (750 x109/L) and CRP was 34mg/L. He was also coagulopathic with an INR of 2.0. Renal function, serum amylase and sickle cell screen were negative. Erect chest and abdominal radiographs demonstrated mildly dilated small bowel loops with air throughout the colon, but no evidence of pneumoperitoneum.



Initial management consisted of transfer to the Paediatric High Dependency Unit for fluid resuscitation, administration of broad spectrum antibiotics and fresh frozen plasma to correct his coagulopathy. Based upon the presence of sepsis and generalised peritonitis, perforated appendicitis was suspected and he was taken to theatre for a laparotomy. Midline laparotomy revealed generalised purulent free fluid and a large jejunal diverticulum measuring 140mm in diameter at the mesenteric border of jejunum, 30cm from the duodenal-jejunal flexure (Fig. 1). The remaining small bowel and colon (including appendix) were normal. The jejenal diverticulum was excised and an end-to-end anastomosis was performed followed by peritoneal lavage. Histological analysis confirmed a jejunal diverticulum with ulcerated mucosa and perforation and surrounding peritonitis. The patient made an uncomplicated recovery and was discharged home five days post-operatively.

DISCUSSION

Only two cases of jejunal diverticula in children have been reported in the literature. This is the first reported case of a giant jejunal diverticulum, presumed congenital, presenting with diverticulitis and perforation in a child.

Generally, patients are asymptomatic however numerous articles have reported a spectrum of complications that range from minor to potentially life-threatening(5). Less serious sequelae include chronic gastrointestinal problems such as abdominal pain, bloating and diarrhoea as well as symptoms of malabsorption. It is thought that the acidic, stagnant environment of these sacs encourage bacterial overgrowth and low-grade inflammation and thus give rise to these symptoms (1). Bowel obstruction may occur due to external compression from an adjacent loop of jejunum containing a large diverticulum, intussusception or volvulus (1,6). Serious complications include perforation and peritonitis or haemorrhage.

Given that jejunal diverticular disease is such a rare pathology in childhood, diagnosis would be extremely challenging. According to Fintelmann *et al* barium studies are superior to computerised tomography (CT) as one can more readily identify the number and extent of diverticulae when contrast studies are performed. On CT jejunal diverticulae are characterised by round / oval thin walled fluid or gas containing structures present outside the lumen of bowel. Abdominal radiography may show dilated small bowel loops if obstruction, ileus or

volvulus has occurred, whilst a radiograph of the chest may reveal pneumoperitoneum if perforation has taken place.

Management is dependent on presentation, severity of symptoms and the overall health of the child. Surgery is indicated in cases of perforation and peritonitis and severe haemorrhage, and may be indicated in cases of chronic abdominal pain that do not respond to antibiotics or recurrent episodes of bowel obstruction. When deciding what type of surgical procedure to perform the surgeon must weigh-up the risks and benefits of each option. Complete resection and end-to-end anastomosis of a large segment of small bowel may leave the patient with short bowel syndrome and simple diverticulectomy via wedge excision may narrow lumen of the bowel such that risk of future stricture formation and bowel obstruction is increased. If diverticulae are found extensively throughout the small bowel it may be sensible to simply repair the site of perforation or stem the site of haemorrhage.

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