An unusual cause of caecal perforation in a child

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ABSTRACT

Faecolith impaction leading to caecal perforation is a rare cause of acute abdominal pain in children. We present a case of an 11-year-old boy who was admitted to our department with a perforated caecum caused by faecolith impaction. Histology demonstrated a normal appendix with ganglion cells present. No mechanism of action could be detected for the faecolith impaction. This is a previously unreported cause of caecal perforation in children.

Key words: Caecal perforation, faecolith, paediatric

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INTRODUCTION

Faecolith impaction leading to caecal perforation is a rare cause of acute abdominal pain in children. Caecal perforation is more common in the adult population following, trauma (for example, colonoscopy), inflammatory bowel disease, malignancy, or diverticular disease.[1-4] In the younger age group, it is most likely caused by acute appendicitis, nonHodgkin's lymphoma, Meckel's diverticulum, or Hirschsprung's disease.[5-7] It may pose a diagnostic challenge as it closely mimics the pain of acute appendicitis. The diagnosis is usually made at surgical exploration.[8] We describe a case of an otherwise well 11-year-old boy with caecal perforation, clinically diagnosed as acute appendicitis, caused by an impacted faecolith with a normal appendix.

CASE REPORT

An 11-year-old boy was admitted to our hospital via accident and emergency unit with a history of right iliac fossa pain of five hours duration, which was intermittent in character. There was no history suggestive of vomiting or diarrhoea, and no urinary symptoms were observed. Also, no history of constipation was reported. He had a recent upper respiratory tract infection (URTI) with a cough for the past week. He was mildly pyrexial (37.8) and tachycardic with a heart rate of 107 beats per minute. On examination, the right iliac fossa was tender with guarding but no abdominal distension. Laboratory results only revealed leucocytosis with no other abnormalities detected. Urinalysis showed no abnormalities. A clinical diagnosis of acute appendicitis was made.

Laparascopic appendicectomy was performed which was converted to an open laparotomy following the finding of omental cake, and a perforated mass on the caecum. The appendix appeared normal. Intraoperatively, the caecal mass was suggestive of a malignancy. The caecal mass was excised and a right hemicolectomy with primary ileocolic anastomosis was performed [Figure 1]. He was commenced on IV antibiotics for five days. His postoperative course was uneventful and he was well at 12 months follow-up.

Pathology

Microscopically, no transmural inflammation of the appendix was seen. Acute transmural inflammation with abscess formation in the caecum was seen where the faecolith was identified macroscopically [Figure 2]. Acute inflammation extended through the muscle and onto the serosal surface, most probably, representing the site where the omentum was stuck onto the perforated bowel wall. Ganglion cells were present in the appendix and in the specimen.

DISCUSSION

We describe an unusual cause of caecal perforation, not previously reported. At histological examination no mechanism was reported other than faecolith impaction. No diverticulae were identified and the appendix was normal, with ganglion cells present. While there are several causes of caecal perforation in children including acute appendicitis, trauma, and Meckel's diverticulum, none were identified in this case.[5-7] After evaluation of the clinical picture, investigations and intraoperative and histological findings, we classify this as a caecal perforation caused by faecal impaction. Laplace's law of physics states that the pressure required to stretch the walls of a hollow

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Figure 1: Caecal mass with perforation

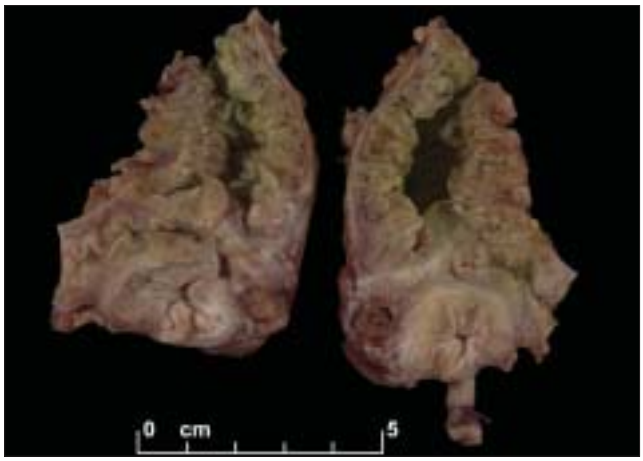


Figure 2: Caecal mass with faecolith *in situ*

viscus, decreases in inverse proportion to its radius of curvature.[9] The caecum has the largest diametre of the colon and, therefore, requires the least amount of pressure to distend and perforate.[9] However, there is no mechanism identified, as to why the faecolith impacted at this point. One case report of idiopathic perforation of the bowel was found but this was in a neonate.[10]

CONCLUSION

Histology confirmed the finding of an impacted faecolith, leading to acute inflammation and perforation of the caecum with no other underlying pathology. Faecolith impaction leading to caecal perforation was found in this child. The aetiology is unknown and is currently not reported in children.

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