Intestinal knot in acute Meckel's diverticulitis

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DESCRIPTION

A 47-year-old man, with no past surgical history presented to the emergency department with colicky abdominal pain since 2 days prior to the admission. It was associated with abdominal distension, vomiting and no bowel output. The pain became worsened which resulted in his immediate hospital visit. On examination, the abdomen was peritonitic. The blood investigations showed marked leucocytosis. There were signs of small bowel obstruction on abdominal radiograph but no free gas on erect chest radiograph. He was immediately rushed to the emergency operation theatre and exploratory laparotomy was performed. Upon entry, there was gangrenous small bowel caused by an ileo-ileal knot with Meckel's diverticulitis, which was adjacent to the caecum (figures 1 and 2). We had to proceed with limited right hemicolectomy and functional end-to-end anastomosis using linear stapler. The recovery process was uneventful. Patient was discharged home after a week. On follow-up at 3 months, he was well with no complications. The histopathological examination was consistent with ischaemic bowel.

Acute abdomen is the most common surgical emergency leading to a high visit rate to the emergency department. It includes gastrointestinal perforation, ischaemia, inflammation and obstruction. Small bowel obstruction is a typical surgical condition requiring urgent intervention. Among the most usual aetiologies of strangulated intestinal obstruction include abdominal wall hernia, adhesion, congenital band, intussusception and volvulus.¹ Volvulus or intestinal knot can lead to a closed loop phenomenon, strangulation, ischaemia and subsequent perforation. There are several types of intestinal knot namely appendico-ileal, ileo-caecal, ceco-sigmoid, ileo-sigmoid and ileo-ileal.^{2,3} Among them, the ileo-ileal knot is a very rare entity.² Intestinal knot was first described as

Figure 2 Internal herniation through the intestinal knot.

early as in the 16th century and later in the 18th century.⁴ Typically, patients will present with acute abdomen either due to strangulation, obstruction and even as late as septic shock secondary to bowel perforation. It is postulated that the causative factors for intestinal knot are anatomical variation and dietary habit.^{3,5} Our patient had another incidental finding of Meckel's diverticulum in which the possibility of Meckel's diverticulitis and meso-diverticular obstruction causing acute abdomen needed to be considered.^{6,7} CT scan is required for a preoperative diagnosis but not in a case of peritonitis which requires immediate surgical intervention. During surgery, it is advisable to untie the knot

Patient's perspective

I am happy with the result after the operation. The pain in my abdomen has resolved. I am honoured that my case can be contributed medically to the society.

Learning points

- ▶ Intestinal knot should be considered as a differential diagnosis of an acute abdomen.
- ▶ Acute abdomen in Meckel's diverticulum can either be diverticulitis, mesodiverticular obstruction or perforation.
- ▶ A viable bowel segments are advisable to untie the knot but bowel resection is for a gangrenous intestine.
- ▶ A controlled decompression before untying a gangrenous knot is recommended to avoid reperfusion injury.

Figure 1 A gangrenous loop of small bowel with Meckel's diverticulitis.

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if the bowel segments are viable. For a gangrenous intestine, bowel resection is warranted. If irreversible ischaemic segment is found, controlled decompression by enterotomy before untying a gangrenous knot is recommended besides to be cautious on reperfusion injury.⁴ Short bowel syndrome should be considered after surgery depending on the length of the remaining small bowel.

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