CASE REPORT

A rare presentation of complication arising from Meckel's diverticulum in the form of diverticulotransverse colonic fistula in an adult

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SUMMARY

Meckel's diverticulum is a common congenital malformation of the gastrointestinal tract, reported to be present in 2–4% of the population. Although most patients with Meckel's diverticulum remain asymptomatic throughout life, reports of acute inflammation, perforation, haemorrhage, intussusception, intestinal obstruction, vesicodiverticular fistulae and primary tumours are described. We present a rare diagnosis of diverticulotransverse colonic fistula and its management.

BACKGROUND

Meckel's diverticulum is the most common congenital malformation of gastrointestinal tract, and is found to be present in 2–4% of the population. It represents an embryonic connection between the small intestine and Yolk sac that has failed to obliterate during development. As such, it is a true diverticulum and contains all three layers of bowel wall. Related to its origin, Meckel's diverticula are commonly lined by heterotopic tissues such as gastric, pancreatic or duodenal mucosae.

While the majority of people with Meckel's diverticulum remain asymptomatic throughout life, reports of acute inflammation, perforation, haemorrhage, intussusception, intestinal obstruction, vesicodiverticular fistulae¹ and primary tumours are described. We describe a rare diagnosis of diverticulotransverse colonic fistula and its management.

CASE PRESENTATION

We report the case of a 57-year-old Caucasian man who presented to the outpatient clinic with epigastric pain, nausea and weight loss in the preceding 2 months. His medical history included a laparotomy at the age of 15 months for malrotation and a spigelian hernia repair. Examination revealed a soft and non-tender abdomen.

INVESTIGATIONS

Plain films and ultrasound were unremarkable. As part of the investigations, CT scan demonstrated a small focus of localised bowel wall thickening in the transverse colon.

Subsequent colonoscopy revealed a large diverticulum just distal to the hepatic flexure in the proximal transverse colon.

DIFFERENTIAL DIAGNOSIS

Owing to persisting symptoms, the multidisciplinary team's decision on laparoscopy with the

intention to proceed to right hemicolectomy was offered to the patient.

TREATMENT

During laparoscopy, an enterocolic fistula was confirmed and the procedure was converted to midline laparotomy due to adhesions.

There was a fistula between a Meckel's diverticulum (50 cm from the ileocaecal valve) to the mid point of the transverse colon. A right hemicolectomy was performed including distal small bowels incorporating the fistula tract. The patient recovered uneventfully and was discharged 5 days postoperatively.

OUTCOME AND FOLLOW-UP

Histology from the resected specimen confirmed a fistula tract between the terminal ileum to transverse colon, with evidence of active inflammation at the junction, with a focus of non-specialised gastric type mucosa. The appearances were consistent with a Meckel's diverticulum forming an enterocolic fistula.

DISCUSSION

Meckel's diverticulum was first described by Fabricius Hildanus in 1598. The German anatomist Johann Friedrich Meckel described the embryonic origin of the abnormality in 1809. Meckel's early cadaveric work suggested the incidence of the complications due to Meckel's diverticulum was 25%. However, supported by advances in imaging, estimates in the recent literature range between 4% and 16%.¹ Its occurrence in males and females is equal, but incidence of complications is three to four times greater in males.²

The most frequent complications in adults are: obstruction due to intussusceptions or adhesive band (14–53%); ulceration (54%); diverticulitis; and perforation. In children, diverticulitis is the most common presentation, especially in those younger than 2 years of age.³

The preoperative diagnosis of Meckel's diverticulum is still an outstanding challenge. Utilising the frequent heterotopic gastric mucosa (approximately 60% of cases), a technetium-99 is the investigation of choice to diagnose Meckel's diverticulum in children. While the scan is highly sensitive and specific in children, it is less useful in adulthood.⁴ Where the mucosa is compromised, bleeding and ulceration may occur. This highlights a use for endoscopy and angiography. In acute situations, cross sectional imaging (CT or MRI) has the potential to

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identify an inflamed blind ended and inflamed structure in the mid-abdominal cavity, anatomically remote from the caecum. Meckel's diverticulum is most often appreciated in the context of laparotomy or laparoscopy for unrelated pathology.

Our case study describes a rare presentation of complication arising from Meckel's diverticulum in the form of diverticulo-transverse colonic fistula in an adult. This has not been reported yet in the English literature. The majority of diagnostic investigations were utilised, but the definitive diagnosis was only confirmed on histology postoperatively.

Learning points

- ▶ Meckel's diverticulum in the form of diverticula-transverse colonic fistula is a rare clinical entity.
- ▶ The preoperative diagnosis of Meckel's diverticulum is still an outstanding challenge.
- ▶ Complications secondary to Meckel's diverticulum should always be considered as one of the differential diagnoses.

Although the operative management of intestinal malrotation is well described in the surgical literature, the aetiology of diverticulotransverse colonic fistula involving the Meckel's diverticulum has not been described in patients with malrotation. The complexity of the case warranted a number of diagnostic investigations before diagnostic laparoscopy was performed. We strongly feel that in such intricate cases, complications secondary to Meckel's diverticulum should always be considered as part of our differential diagnoses.

Contributors TL wrote the case report. JS and JT supervised the writing of the report. The patient is under the care of JT.

Competing interests None declared.

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