CASE REPORT

Bowel endometriosis

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SUMMARY

Bowel obstruction accounts for 20% of hospital admissions due to acute abdominal pain. We report a case of acute bowel obstruction in a 31-year-old woman with a history of endometriosis diagnosed on laparoscopy a year before this presentation. Her clinical and biochemical picture suggested peritonitis and CT revealed an irregular soft tissue mass compressing a dilated rectosigmoid. Pockets of intraperitoneal gas were also documented and presumed to be secondary to bowel perforation at the level of the mass. Exploratory laparotomy was performed and the affected bowel was resected. Histology revealed extensive stricturing and fibrosis secondary to intestinal endometriosis. General practitioners, gastroenterologists and general surgeons are likely to encounter endometriosis, need to be competent in its diagnosis and management and collaborate promptly with the gynaecologist. Endometriosis should be considered in the differential diagnosis of every woman of childbearing age who presents with any gastrointestinal or abdominal symptom.

BACKGROUND

Bowel obstruction accounts for 20% of hospital admissions due to acute abdominal pain.¹ Of these, approximately 20% have large bowel obstruction (LBO).¹ Colorectal cancer, volvulus and strictures (eg, secondary to inflammatory bowel disease, diverticulitis or radiation) account for most cases of LBO.¹ Endometriosis is the presence of extrauterine benign endometrial tissue affecting 6–10% of women of childbearing age.² Deposits are commonly found on the ovaries (endometriomas), the uterosacral ligaments, the pouch of Douglas, the rectosigmoid colon, and the bladder and distal ureter.²

Symptoms vary and depend on the extent of the disease. Classically, endometriosis presents with dysmenorrhoea, dyspareunia and cyclical pelvic pain. In addition, endometriosis may present with non-specific urinary symptoms, alternating bowel habit and sacral backache.³

Intestinal endometriosis is a rare but well-described entity. Various case reports have been published with patients presenting with symptoms of intestinal obstruction which were subsequently diagnosed as intestinal endometriosis during surgical exploration or histologically.^{4–7} Clinical diagnosis of endometriosis is extremely challenging as the patient presents with non-specific symptoms of bowel obstruction (constipation, vomiting and abdominal pain), occasionally associated with a palpable pelvic or low abdominal mass.⁴ We present a case of large bowel endometriosis presenting as

acute abdomen secondary to bowel obstruction and perforation. For reasons that will be discussed, this case is unique and serves as a valuable reminder of the clinical, anatomical and histological variation by which intestinal endometriosis can present.

CASE PRESENTATION

A 31-year-old nulliparous Afro-Caribbean woman presented to A+E with acute left iliac fossa (LIF) pain radiating to her left groin and suprapubic region. She reported a history of abdominal distension, bloating and nausea for a month. She denied any recent change in bowel habit or weight loss.

The patient was previously diagnosed with endometriosis and underwent laparoscopic adhesiolysis, bilateral ovarian cystectomy and excision of umbilical endometriotic nodule a year before this admission. She was subsequently put on gonadotropin-releasing hormone analogues for 6 months. Drug, social and family histories were unremarkable. On examination, she was tachycardic and had a distended, tense abdomen associated with rebound tenderness particularly in the LIF and no audible bowel sounds. Per rectum examination revealed an empty rectum. The most likely diagnosis at that point was adhesional bowel obstruction with potential perforation and peritonitis.

INVESTIGATIONS

Urine dipstick was negative for hHCG, nitrites, leucocytes and glucose but positive (+++) for ketones. Bloods on admission revealed elevated leucocytosis (17.6) with neutrophilia (15.8), haemoglobin of 96 g/L, low albumin (18 g/L), raised C reactive protein (137 mg/L) and fibrinogen (538 mg/dL).

Abdominal X-ray showed several dilated large bowel loops (figure 1) with no evidence of pneumoperitoneum. Subsequent CT of abdomen/pelvis

Figure 1 Dilated large bowel loops.

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Figure 2 Soft tissue mass pressing the rectosigmoid (arrow).

revealed an irregular soft tissue pelvic mass measuring 3.3 cm × 4.7 cm situated adjacent to the rectosigmoid (arrow, figure 2). There was associated diffuse large bowel wall thickening, dilated large and small bowel loops (maximal diameter 12.3 cm) (arrow, figure 3) and free gas at the porta hepatis and upper retroperitoneum (arrow, figure 4). Bowel perforation was presumed to have arisen at the level of the rectosigmoid. There was no evidence of ischaemia, herniae or significant lymphadenopathy and the rest of the abdominal organs were unremarkable.

DIFFERENTIAL DIAGNOSIS

Technically, the differential diagnosis can include all causes of bowel obstruction and peritonitis. Below, we discuss briefly the three most likely in our case

1. Malignancy: the irregular soft tissue mass compressing the rectosigmoid (figure 2) posed serious suspicions of a large bowel malignancy. Colorectal cancer is not an extremely rare occurrence even for a patient in their early 30s. Colorectal cancer can commonly present acutely with bowel obstruction and perforation on a background of abdominal distension and bloatedness. However, there was no recent history of change in bowel habit or weight loss.

Figure 3 Diffuse large bowel wall thickening and grossly dilated large (arrow) and small bowel loops.

Figure 4 Pockets of free air in the porta hepatis (arrow).

2. Adhesional bowel obstruction: the patient underwent a laparoscopy the year before this presentation where endometriosis was diagnosed. Adhesions were also identified and divided during the laparoscopy. The patient was thus at high risk to have further adhesional disease; previous adhesions and laparoscopy and known endometriosis. Adhesion formation most commonly affects the small bowel rather than causing LBO and there was no explanation on the nature of the soft tissue mass seen on the CT scan (figure 2).
3. Gynaecological cause: the most likely causes in this category include torsion of an ovarian cyst and endometriosis. The CT scan could not define the origin of the pelvic mass compressing the rectosigmoid. Furthermore, it is very unlikely for an ovarian cyst of moderate size (3–5 cm) to undergo torsion and cause a mass effect to compress the large bowel leading to such an acute presentation. This symptomatology could also be caused by endometriosis. Although common, endometriosis will very rarely present so acutely and aggressively with clinical, biochemical and radiological signs of peritonitis.

Regardless of the aetiology, the initial management remains the same.

TREATMENT

Following initial resuscitation with hydration, nasogastric decompression, analgesia and intravenous antibiotics (coamoxiclav and metronidazole), exploratory laparotomy was performed. A stricturing sigmoid lesion was identified and a left hemicolectomy with colostomy was performed. There was no evidence of active endometriosis, peritoneal or liver deposits during the laparotomy (figure 5). Histology showed dense fibrosis and extensive foci of bowel endometriosis involving the muscularis propria (arrows, figure 6).

OUTCOME AND FOLLOW-UP

The patient was admitted to the intensive care unit for observation and was put on the enhanced recovery programme. She was fit for discharge on the fourth postoperative day. The patient was discharged with analgesics and microgynon 30 (combined oral contraceptive). Three months later, the patient had an uncomplicated reversal of her colostomy.

DISCUSSION

Intestinal endometriosis poses a major diagnostic challenge for the general practitioner (GP), gynaecologist, gastroenterologist or general surgeon who is likely to encounter it in their practice.

Figure 5 Exploratory laparotomy: dilated large (long arrow) and small (short arrow) bowel secondary to sigmoid stricture.

This is because of the non-specific clinical and radiological presentation. About 20–30% of women suspected or confirmed of suffering from endometriosis will report one or more gastrointestinal (GI) symptoms regardless of genuine intestinal involvement.⁸

In fact, there is a considerable overlap in symptomatology of endometriosis and irritable bowel syndrome (IBS) and women are often diagnosed with IBS or 'spastic colon' inappropriately.⁹ Delayed diagnosis of endometriosis leads to considerable distress for the patient. In addition, women with endometriosis are found to have increased incidence of IBS when compared to healthy controls, and referral to gastroenterology may result in improvement of their symptoms.^{10 11} For the above reasons, the GP and gastroenterologist need to have a good knowledge of endometriosis in order to treat and/or refer to the gynaecologist effectively. Collaboration between the three specialties is also very crucial.

There are four different anatomical variants of endometriosis which can give rise to GI symptoms; pelvic (extraintestinal) endometriosis, superficial/serosal endometriosis, intestinal/subserosal endometriosis and endometriotic mass (endometrioma or endometriotic pelvic mass). The symptoms are brought about via two mechanisms. First, the mass effect can give rise to bowel obstruction leading to constipation and/or overflow diarrhoea, abdominal distension and pain. Second, the endometriotic tissue (whether

intestinal or extraintestinal) releases inflammatory mediators (like tumour necrosis factor α , prostaglandins, cytokines and interleukins) to the surrounding tissues including the GI tract.^{12 13} This increases blood flow to the area which causes aggregation of fibroblasts causing an intense localised fibrotic reaction leading to adhesion formation (in extraintestinal and superficial/serosal endometriosis) or stricture formation (in subserosal endometriosis) both of which leading to bowel obstruction.^{12 13}

A woman with endometriosis may not experience dyspareunia if there is no extensive adnexal involvement.¹¹ About 70% of chronic pelvic or low abdominal pain is secondary to endometriosis.¹⁴ This, in combination with adhesion formation secondary to endometriosis, may mask the cyclical abdominal pain, a classic symptom of the condition.

Laparoscopy and laparotomy often considered as the gold standard for diagnosing pelvic endometriosis may be insufficient in cases where the pelvic extension of the disease has gone into convalescence or is inactive. This was indeed the case in our patient where no active endometriosis was seen during laparotomy. Definitive diagnosis is thus reached only by the histological evidence of endometriotic tissue of the resected bowel.

Our case is different from previously published cases of bowel endometriosis.^{4–7} Vahdat *et al*, describe a similar case of a patient with a history of endometriosis presenting with symptoms of bowel obstruction and severe abdominal tenderness. A mass at the level of the ileocaecal junction and gross small bowel dilation was seen during laparotomy.⁵ Unlike our case, a CT scan was not reported and if performed, an ileocaecal mass would be considerably less suspicious of being malignant compared with the rectosigmoid mass seen in our case.

Varras *et al*⁷ report a case of sigmoid colon obstruction (diagnosed on Barium enema) secondary to endometriosis. Subsequent laparotomy showed the sigmoid colon surrounded by fibrous tissue, leading to its angulation and extensive lumen obstruction. Our case is different, as laparotomy did not reveal any fibrosis or endometriosis and diagnosis was only reached after histological assessment.

Our case is unique in the way it has presented with acute abdomen and clinical peritonism due to probable bowel perforation. Intestinal bowel mucosal loops usually remain intact and bowel perforation secondary to endometriosis is an extremely rare occurrence. This seems to be more common in pregnant women where the intense decidualisation and enlargement of endometrioid tissue during the first trimester and the subsequent shrinkage occurring during the third trimester cause fibrosis and weakening of the affected tissue.¹⁵

Our case serves as a reminder of a rare but important differential diagnosis of acute abdomen. Intestinal endometriosis should be considered in patients who are posing a diagnostic challenge or failing to respond to initial treatments for alternative gastrointestinal diagnoses (such as IBS), especially in those with a history or risk factors (early menarche, nulliparity, history of haematocolpos or retrograde menstruation or positive family history). These patients may benefit from gynaecology input or trial of treatment for endometriosis which is likely to improve patient outcomes and minimise patient distress. Furthermore, endometriosis should be considered a GI pathology as much as a gynaecological one, and GI physicians and surgeons need to be aware of its presentation. The diagnosis and management of intestinal endometriosis is a challenging frontier for the gynaecologist who is faced in a non-familial anatomy, physiology and pathology. A multidisciplinary collaboration with the radiologist, gastroenterologist and general surgeon is essential for optimum patient outcomes.

Figure 6 Fibrosis and extensive foci of bowel endometriosis involving the muscularis propria.

Learning points

- ▶ Endometriosis can cause any abdominal or gastrointestinal symptoms.
- ▶ Consider endometriosis in women of reproductive age with a history of non-specific abdominal symptoms non-responding to treatment.
- ▶ Endometriosis affecting more than one organ system is best managed in a multidisciplinary team.
- ▶ Consider endometriosis as a rare cause of acute abdomen.

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