



CASE REPORT

Intestinal endometriosis-A rare cause of colonic perforation

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Abstract

Endometriosis is the ectopic growth of viable endometrium outside the uterus, affecting approximately 7% of females. It commonly affects pelvic structures including the bowel. Perforation of the colon by endometriosis is very rare and the patients generally present with an asymptomatic or painful pelvic mass, often in the left iliac fossa. Our patient presented acutely unwell and her symptoms were more suggestive of pyelonephritis or diverticulitis. We therefore report an unusual cause of acute abdomen. The purpose of the following case report is to elucidate certain diagnostic and therapeutic problems of the disease, concerning both surgeons and gynaecologists. In summary, intestinal endometriosis should be considered in the differential diagnosis of all post-menarche women with episodic gastrointestinal symptoms. A past history of endometriosis or co-existent gynaecological symptoms should increase the index of suspicion, and laparoscopy prior to formal laparotomy should be considered. Our patient, in retrospect, had a history of mild endometriosis, but we feel that this case serves as a reminder of a rare, but important, differential diagnosis of acute abdomen in females.

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Key words: Endometriosis; Colonic perforation; Intestinal endometriosis; Sigmoid colectomy; Sigmoid perforation

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INTRODUCTION

Endometriosis is the ectopic growth of viable endometrium outside the uterus, affecting approximately 7% of females. It commonly affects pelvic structures including the bowel. Perforation of the colon by endometriosis is very rare and the patients generally present with an asymptomatic or painful pelvic mass, often in the left iliac fossa. Our patient presented acutely unwell and her symptoms were more suggestive of pyelonephritis or diverticulitis. We therefore report an unusual cause of acute abdomen. The purpose of the following case report is to elucidate certain diagnostic and therapeutic problems of the disease, concerning both surgeons and gynaecologists.

CASE REPORT

The patient, a previously fit and well 44 years old female, presented with a 10 d history of worsening colicky pain in the left flank and iliac fossa. She had suffered from mild endometriosis in the past. On examination, she was pyrexial (39°C) with guarding over a mass in the left iliac fossa. Initial investigations revealed a white blood cell count of 22000 per mm³ and a urine dipstick weakly positive for blood, proteins, ketones and negative for beta-human chorionic gonadotropin. An urgent ultrasound suggested mild pelvic/colic dilation on the left but a subsequent intravenous pyelography (IVP) was normal. A provisional diagnosis of a diverticular abscess was made and an emergency laparotomy was performed.

At surgery, a large endometriotic mass arising from the left fallopian tube and ovary, which had adhered to the sigmoid colon and then perforated it, was found. A left hemicolectomy with a proximal colostomy was performed and the endometriotic mass resected. The distal lumen of the bowel was closed with staples. Due to the large amount of peritoneal contamination, the wound was initially left open and underwent a delayed primary closure 9 d later. Postoperatively, the patient

made a steady recovery, initially requiring total parenteral nutrition. The distal part of her wound broke down and was allowed to heal by secondary intention. Colostomy was closed after three months and was referred to the gynaecologists for further management.

Following review by the gynaecologists, the patient was placed on the gonadotrophin releasing hormone agonist nafarelin, which is administered as a nasal spray, and placed on hormone replacement therapy with Premique [conjugated oestrogens (equine) 625 mg and medroxyprogesterone acetate 10 mg]. A combined procedure of hysterectomy and bilateral salpingo-oophorectomy (BSO) was planned for definitive management.

PATHOLOGY

The segment of excised sigmoid colon measured about 22 cm in length and up to 5 cm in external diameter. The colonic mucosa was oedematous with haemorrhagic mottling. An elongated fusiform cystic lesion or abscess was noted in the pericolic fat, measuring approximately 12.5 cm in length and 4 cm in transverse diameter, with a haemorrhagic lining. Approximately 6 cm away from this area was another cystic space, about 0.6 cm in diameter, which appeared to extend from the serosal surface of the specimen into at least the submucosa of the colon. Mucinous material was present within the latter area.

On histological examination, the smaller of the pericolic cavities was found to be an abscess communicating with the colonic lumen *via* a narrow channel. This was lined mainly by oedematous and acutely inflamed granulation tissue and degenerated endometrioid type epithelium, together with macrophages filled with brown pigment, consistent with haemosiderin, scattered along the wall. Further areas of endometriotic glands and stroma were present in the adjacent pericolic fat. These features confirmed the clinical suspicion of a colonic perforation caused by endometriosis (Figure 1).

The section of the much larger pericolic abscess showed only acutely inflamed granulation tissue lining its cavity. Endometriotic tissue was not identifiable in the wall of this abscess, although, based on the features of the other abscess cavity, it is likely that also this larger abscess was the result of endometriosis. The overlying colonic submucosa and mucosa were markedly oedematous and acutely inflamed. Extensive endometriosis was also present within the muscularis propria at the site of, and adjacent to, one of the colonic mucosal resection margins.

DISCUSSION

Endometriosis refers to extrauterine location and growth of endometrial tissue. Intestinal endometriosis occurs in 12% to 15% of cases, most often affecting those segments located within the pelvis, such as the terminal ileum, the appendix, the sigmoid colon and the rectum, both above and below the peritoneal reflection. The most common sites are the rectosigmoid (up to 73% of

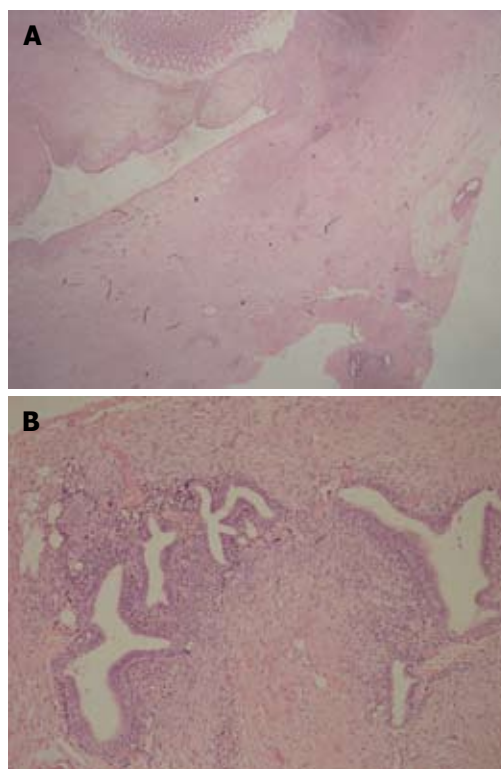


Figure 1 Histology findings. A: A low-power image of the colonic wall, with a few endometrial glands and stroma embedded in the muscular layer; B: A high-power view of the colonic wall, with endometrial glands and stroma embedded in the smooth muscle of the colon.

cases) and rectovaginal septum (13%). It predominantly involves the extra mucosal layers^[1].

Intestinal endometriosis usually takes the form of asymptomatic, small and superficial serosal implants. However, under cyclical hormonal influences, these implants may proliferate and infiltrate the bowel wall. Cyclical haemorrhage from the endometrioma causes an intense localised fibrotic reaction in the bowel wall and the formation of strictures. Serosal involvement results in the formation of adhesions to neighbouring pelvic structures and bowel loops. This may result in intestinal obstruction with recurrent abdominal pain and alteration in bowel habits.

Endometriosis has also been reported in more distant locations, such as lungs, pleura and the umbilicus. Although the aetiology is uncertain, several hypotheses have been proposed concerning how the ectopic tissue reaches these locations, the most widely accepted being retrograde menstruation, although metaplastic change or metastatic spread may also occur^[2].

Despite extensive serosal and intramural involvement, the intestinal mucosa usually remains intact and the endometrial perforation of the affected bowel is a very rare complication, which generally occurs in pregnant females. Haufler^[3] first reported it in 1931 and, overall, we could find only seven cases of bowel perforation due to intestinal endometriosis in the literature. Six of them concerned pregnant women and in three cases the perforation involved their sigmoid colon.

Haufler^[3] described a jejunal perforation due to

rupture of an endometriotic cyst during the sixth month of pregnancy in a 30-year old woman. In 1955, Henriksen^[4] briefly mentioned a case of sigmoid perforation in his series of 1000 cases of endometriosis. Clement^[5] in 1977, Rud^[6] in 1979, and, most recently, Schweitzer^[7] also reported similar cases of sigmoid colonic perforation secondary to endometriosis during pregnancy. Gini *et al*^[8] in 1981, reported a case of appendiceal rupture through endometriotic tissue during the 35th wk of gestation. Most recently, Floberg *et al*^[9] reported a 41-wk pregnant woman who perforated an endometriotic area of the sigmoid colon immediately postpartum.

A review of these reports reveals that most of the bowel wall, particularly the muscular layers, was replaced by endometriotic tissue. The most commonly reported symptom was intermittent crampy abdominal pain. These symptoms may not coincide with the menstrual cycle. McArthur and Ulfelder^[10] observed that the area of endometrium had become decidualized and enlarged during the first trimester, and had undergone decidual necrosis with contraction during the third trimester. After pregnancy, there usually was a continued reduction in the size of the endometriotic lesions. This shrinkage may weaken the affected tissues and lead to rupture, particularly in the third trimester. This corresponds to the time of rupture in most of the previously reported cases.

Our present case differs from the previous reports in that the perforation occurred in a nonpregnant woman.

The treatment of uncomplicated intestinal endometriosis depends on the patient's age and intention to conceive. Bowel resection is indicated if there are symptoms of obstruction or bleeding, and if malignancy cannot be excluded. In patients of child-bearing age, resection of the involved colon followed by hormonal

treatment may be sufficient; otherwise, hysterectomy and bilateral oophorectomy is the treatment of choice.

In summary, intestinal endometriosis should be considered in the differential diagnosis of all post-menarche women with episodic gastrointestinal symptoms. A past history of endometriosis or co-existent gynaecological symptoms should increase the index of suspicion, and laparoscopy prior to formal laparotomy should be considered. Our patient, in retrospect, had a history of mild endometriosis, but we feel this case serves as a reminder for a rare but important differential diagnosis of acute abdomen in females.

REFERENCES

- 1 Croom RD 3rd, Donovan ML, Schwesinger WH. Intestinal endometriosis. *Am J Surg* 1984; **148**: 660-667
- 2 Fagan CJ. Endometriosis: clinical and roentgenographic manifestations. *Radiol Clin North Am* 1974; **12**: 109-125
- 3 Haufler F. Ungewöhnliche Komplikation der Schwangerschaft infolge endometrioider Heterotopien am Dünndarm. *Virchows Arch* 1931; **280**: 822-828
- 4 Henriksen E. Endometriosis. *Am J Surg* 1955; **90**: 331-337
- 5 Clement PB. Perforation of the sigmoid colon during pregnancy: a rare complication of endometriosis. Case report. *Br J Obstet Gynaecol* 1977; **84**: 548-550
- 6 Rud B. Colonic endometriosis with perforation during pregnancy. *Ugeskr Laeger* 1979; **141**: 2831-2832
- 7 Schweitzer KJ, van Bekkum E, de Groot CJ. Endometriosis with intestinal perforation in term pregnancy. *Int J Gynaecol Obstet* 2006; **93**: 152-153
- 8 Gini PC, Chukudebelu WO, Onuigbo WI. Perforation of the appendix during pregnancy: a rare complication of endometriosis. Case report. *Br J Obstet Gynaecol* 1981; **88**: 456-458
- 9 Floberg J, Bäckdahl M, Silferswärd C, Thomassen PA. Postpartum perforation of the colon due to endometriosis. *Acta Obstet Gynecol Scand* 1984; **63**: 183-184
- 10 McArthur JW, Ulfelder H. The effect of pregnancy upon endometriosis. *Obstet Gynecol Surv* 1965; **20**: 709-733

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