

Full Length Research Paper

Endometriosis induced acute intestinal obstruction: A case report and literature review

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Intestinal obstruction caused by the invasion of endometriosis on intestinal walls is rarely reported, and it is difficult to make timely and accurate diagnosis in clinical practice. Herein, we report a rare case of acute intestinal obstruction caused by endometriosis and make a review on related literature. Digestive tract endometriosis should be considered if the patient had a long history of constipation, abdominal distension or incomplete intestinal obstruction, especially when these symptoms were closely related with the menstrual cycle.

Key words: Endometriosis, invasion, intestinal obstruction.

INTRODUCTION

Endometriosis (EMT) is a gynecological medical condition in which endometrial-like cells appear and flourish in areas outside the uterine cavity, most commonly on the ovaries. Ectopic endometrium may invade any part of the body, frequently in ovaries, uterosacral ligament, etc. However, intestinal obstruction caused by the invasion of endometriosis on intestinal walls is rare in clinical practice, and it is easily misdiagnosed or missed diagnosed. Now, we report a rare case of acute intestinal obstruction due to endometriosis.

CLINICAL DATA

A 22-year-old married female, G0P0, was hospitalized because of hypogastralgia for 1 month, abdominal distension, no defecation, and fever for 3 days. The menstrual cycle of the patient used to be regular, and she had an 8-year history of dysmenorrhea. One year before hospitalization, B-type ultrasonography showed right sactosalpinx and left ovarian cystic mass (3.1 × 2.6 cm in size), but she did not receive any treatment. Four months earlier, she received artificial insemination because of infertility for 2 years. One month ago, she was

hospitalized again because of hypogastralgia, and B-type ultrasonography showed a 7.8 × 6.3 × 6.4 cm cystic mass in the right attachment area and a 5.9 × 5.6 × 5.8 cm cystic mass in the left ovary, and there were many septations within cystic masses and blood flow in septations, with a resistance index of 0.54. The primary diagnosis was bilateral ovarian endometriosis cyst accompanied with infection and bilateral hydrosalpinx. After two weeks of anti-infection treatment, abdominal pain obviously alleviated, and B-type ultrasonography revealed that the cystic masses were slightly smaller. Then, the patient discharged and prepared to receive tyelectomy at the end of the next menstrual cycle. Three days ago, the patient suffered from lower abdominal distension and the symptoms gradually aggravated, and subsequently there was nausea and vomiting with gastric contents for several times, followed by no defecation, less and less fart and lower fever near 38.0 °C. Urine acetone bodies were “+++”. Plain abdominal radiography revealed that the ascending colon and splenic flexure of the colon were significantly expanded, so she was hospitalized on October 12, 2009 with the initial diagnosis of incomplete intestinal obstruction.

Gynecologic examination showed anteversion of uterus; the size was normal, without tenderness and less activity; there was a cystic mass 6 ~ 8 cm in diameter in left and right attachment area, with high tension and less activity and obvious tenderness. B-type ultrasonography showed that: there was unclear boundary between uterus

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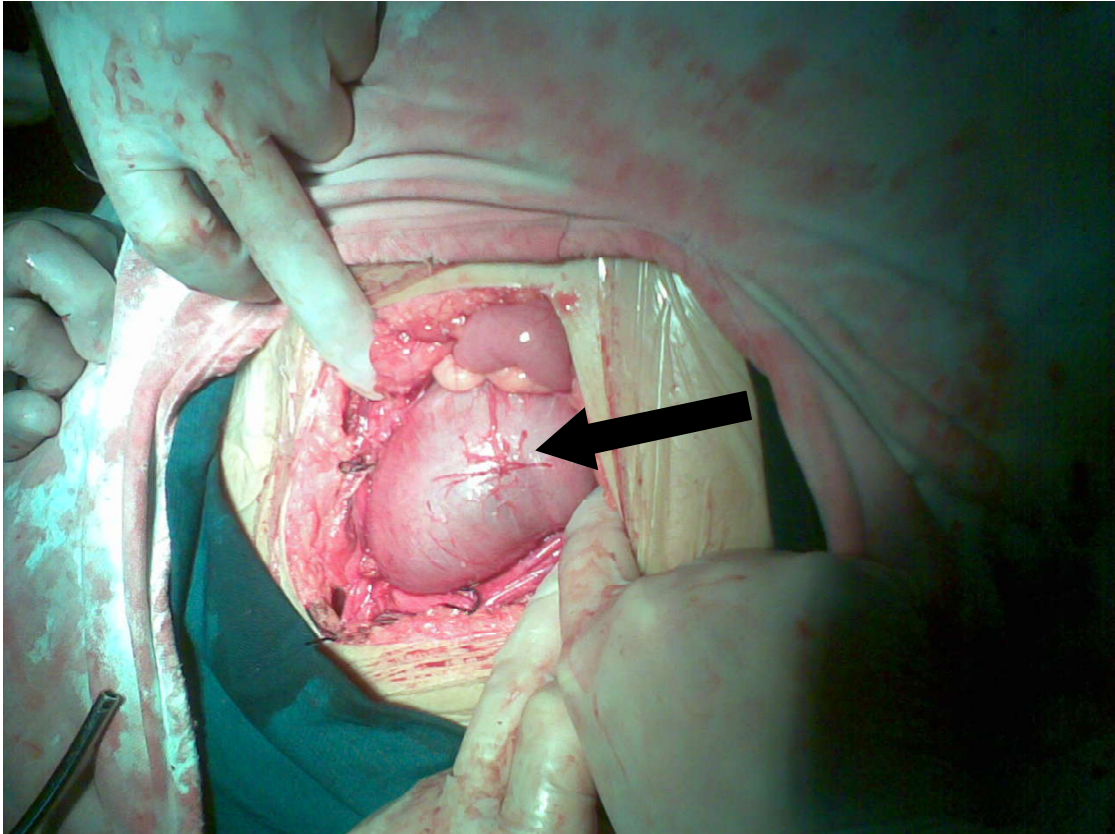


Figure 1. Intraoperative findings showed that the proximal end of the junction of sigmoid colon and rectum was significantly enlarged, and the intestine was thin-walled and high-tensioned, and closely adhered to neighboring tissues.

and neighboring tissues; the size of right ovary was normal; a 8.0 × 5.7 × 6.7 cm sausage-shaped thick-walled cystic mass was found near the right ovary, and a 4.5 × 4.3 × 3.1 cm cystic mass was found in the left ovary, presenting flocculent echo, and a 3.3 × 3.3 × 1.7 cm sausage-shaped thick-walled cystic mass was found near the left ovary. Preoperative diagnosis was endometriosis of bilateral ovaries and adhesive intestinal obstruction secondary to pelvic inflammatory disease.

The patient received anti-infection treatment with cefoperazone sodium, sulbactam sodium and ornidazole for 2 days, but symptoms above-mentioned were not improved. Abdominal distention aggravated, and bowel sounds were decreased. The patient underwent exploratory laparotomy on October 14, 2009, and it was found that there was about 200 ml yellow inflammatory exudate in the abdominal and pelvic cavities, and the proximal end of junction of sigmoid colon and rectum was significantly enlarged (Figure 1), and the mass was 10 cm in diameter, thin-walled and high-tensioned, and the intestinal wall was congestive and edematous, closely adhered to anterior and posterior walls of uterus, left attachment, left pelvic wall and gastrocolic omentum. Uterus rectum lacunae were completely closed. The size

of left ovary was normal, and left fallopian tube was enlarged to 3 cm in diameter due to inflammation and closely adhered to neighboring tissues. The right attachment was enlarged to 10 cm in diameter due to the cystis, and it also closely adhered to neighboring tissues, and there were some septations in the cystic mass. There was thick liquid in one cavity and brown thin liquid in another cavity. Frozen section examination of the right attachment revealed right chronic salpingitis, right hydrosalpinx, and endometriosis of serosal muscle. Adhesions were isolated to restore normal anatomic structure, but the sigmoid colon was still inflated. The colorectal junction was narrowed and intestinal walls were rigid, and thus it was recognized as the site of incomplete intestinal obstruction, but it could not be excluded that obstruction caused by tumors. Narrowed rectum 3 cm and sigmoid colon 12 cm near colorectal obstruction ring were removed, and sigmoid colostomy in the left lower abdominal wall was performed.

Gross observation of specimen showed that: the length of colorectal obstruction segment was 1 cm, and intestinal wall was fibrous ring-like thickened, with smooth mucous membrane, and only little fingertip could pass through the lumen of colorectal obstruction ring. Frozen

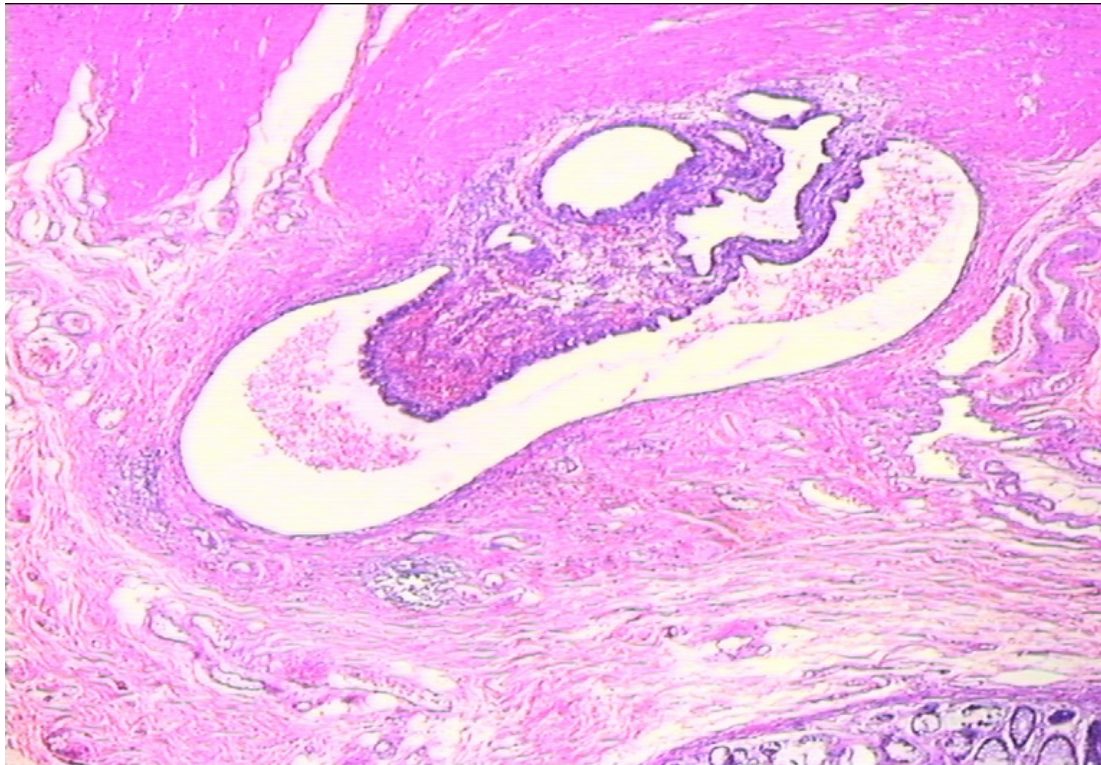


Figure 2. Postoperative pathological findings. There was endometrial gland and interstitial substance accompanied with hemorrhage in the smooth muscle layer of rectum, and no intestinal mucosa was invaded (H&E \times 100).

section examination showed rectosigmoid endometriosis, which was consistent with the postoperative pathological diagnosis (Figure 2). Postoperative diagnoses were pelvic endometriosis (IV period), incomplete intestinal obstruction and acute exacerbation of chronic pelvic inflammation. Good postoperative recovery was obtained in this patient, and intestinal anastomosis was performed 3 months later. Defecation function of the patient recovered well. Treatment for endometriosis with gonadotropin-releasing hormone agonist (GnRH-a) was performed for 6 months.

DISCUSSION

EMT is a common disease of reproductive women, but the pathological factors are still now unknown. Uterosacral ligament, rectouterine pouch and lower posterior wall of uterus locate at the lower part of pelvic cavity, and endometrial debris in endometrial debris usually pollutes these places, and thus these sites are the predilection sites of EMT. Digestive tract EMT accounts for 5% of all, and rectum and colon are the predilection sites of digestive tract EMT, accounting for 70%. But, small intestine EMT almost is confined to the terminal ileum (1 - 7%) and that in the proximal ileum and jejunum is rarely reported, but no EMT in stomach has

been reported. The exact incidence of intestinal obstruction caused by digestive tract EMT is unknown, and complete intestinal obstruction is less than 1%. Distal ileal obstruction caused by EMT is rare and only accounts for 7 - 23% of EMT intestinal obstruction. Due to intestinal obstruction, about 0.7% patients with endometriosis in abdominal and pelvic cavities receive enterectomy (Riaz and Khurshaidi, 2007; Sun et al., 2006). Jubanyik et al. (1997) reviewed about 1000 patients who once received gynecological operations, and there were 181(18%) digestive tract EMT, but only one patient had small intestine lesion. It is also reported that pelvic cavity, paracolic lymph nodes and para-aortic lymph nodes can be invaded by EMT. Lymph node EMT usually co-existed with EMT of intestinal walls, and lymph node EMT may result from the lymphatic metastasis of EMT of intestinal walls (Cameron et al., 1995).

Because digestive tract EMT usually has no typical symptoms of gynecological EMT, it is difficult to make timely and accurate diagnosis of EMT. The symptoms include recurrent abdominal pain, abdominal distension, tenesmus, constipation, diarrhea, hemafecia and defecation pain, but these symptoms are not EMT-specific. Digestive tract EMT should be identified with irritable bowel syndrome, infectious diarrhea, ischemic bowel disease, inflammatory bowel disease and tumor. Patient history still plays important roles in diagnosis, and

the symptoms of some patients may be closely associated with menstrual cycle (Scarmato et al., 2000). 50% of digestive tract EMT usually is accompanied with pelvic EMT, and small intestine EMT should be considered in young infertile women with abdominal pain and intestinal obstruction. Mussa et al. (2001) once reported a case of small intestine EMT accompanied with intestinal obstruction who mainly presented hypoproteinemia and anasarca. Although colonoscopy can diagnose colon EMT, it is observed by colonoscopy that colonic mucosa usually is normal or mildly chronic inflammatory, and EMT lesions and fibrous stenosis mainly locate in placenta percreta and muscular layer of intestinal canal. There is no history of rectal bleeding in this patient, and repeated stool examinations are normal, and digital rectal examination shows that intestinal mucosa is smooth. Rectal bleeding may result from enlarged EMT lesions in intestinal walls and more narrow of intestinal canal during menstruation, and stool injures congestive mucosa when stool passes through narrow intestinal canal. Interestingly, colon mucosa rapidly restores normal after menstruation, and no abnormalities are found under coloscope. EMT generally only invades deep layers of intestinal walls, and there are no special changes in intestinal mucosa. However, the pathological examinations by colonoscopy are usually negative because the specimen tissues are not enough deep. Double contrast barium enema shows mass due to external pressure and serrated plicae. Although CT can clearly detect colorectal tumors, CT is not the first choice of intestinal tract EMT (Takeuchi et al., 2005). Magnetic resonance image (MRI) has a high sensitivity (77 - 93%) in the diagnosis of intestinal canal EMT (Takeuchi et al., 2005), but it is difficult to determine the invasion depth of rectum wall EMT. Recently, the combination of MRI and endoscopic ultrasound can increase the accuracy rate of diagnosis. Serum markers have poor accuracy in the diagnosis of digestive tract EMT, but tumor marker CA-125 can indicate the progress of EMT. CA19-9 has lower sensitivity than CA-125, but cytokine interleukin-6 has higher sensitivity and specificity than CA-125 (Mounsey et al., 2006).

Most EMT patients with intestinal obstruction must receive surgical treatments, but occasional EMT patients without intestinal obstruction can take hormones such as danazol and GnRH-a, and they must receive surgical treatments if they suffered from the change of bowel habits, abdominal pain, hemafecia, or even intestinal obstruction. If the lesion is located in small intestine, drug treatment is only temporary, and EMT segments of small intestine must be resected to obtain good prognosis. Intestinal EMT is still active after menostasis, so intestinal EMT should also be considered if these patients experienced intestinal obstruction and can not be neglected (De Ceglie et al., 2008). After operation, this patient received anti-endometriosis treatment with gonadotropin-releasing hormone agonist (GnRH-a) for 6

months, and intestinal anastomosis was performed 3 months later, good bowel function was obtained, and up to now (1 year) no evidence of EMT recurrence was found.

This paper reports a rare case of digestive tract EMT with sudden intestinal obstruction. EMT lesion in the muscular layer of colon resulted in fibrous ring constriction and oppressed intestinal canal, and then the patient presented the symptoms of intestinal obstruction. Preoperative auxiliary examinations and intraoperative frozen pathological section are conducive to final diagnosis, which can effectively decrease surgical area and corresponding adverse complications. In clinical practice, it is difficult to diagnose digestive tract EMT whose symptoms are independent with menstrual cycle. For patients with menorrhagia and chocolate cyst of ovary, digestive tract EMT should be considered if there is a hard mass around rectum and colon and incomplete intestinal obstruction. These patients should receive surgical treatment as early as possible, and EMT tissues invading intestinal canal should be removed. After operation, the patients must receive anti-EMT treatments to decrease the recurrence rate. The long history of constipation in this patient indicates that digestive tract EMT should be considered if patients have a long history of constipation, abdominal distension and incomplete intestinal obstruction, especially when these symptoms are closely related with the menstrual cycle.

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