

CASE REPORT

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An unusual case of bowel obstruction secondary to endometriosis

Yi-Che (Albert) Chen, TY Chuang, J Chen, JY Cheong

ABSTRACT

Introduction: Endometriosis is a common disease of women of childbearing age. It can affect the intestines in a portion of patients, although it is generally asymptomatic.

Case Report: Here we present an unusual case of a large bowel obstruction due to intestinal endometriosis.

Conclusion: In the absence of signs or risk factors for colorectal malignancy, endometriosis should be considered in the differential diagnosis for large bowel obstructions occurring in women of fertile age.

Keywords: Bowel, Endometriosis, Obstruction

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INTRODUCTION

Endometriosis is a common disease affecting 4–17% of women of childbearing age [1, 2]. It is the extra-uterine deposition of endometrial tissue and affects the intestine in 3–37% of all patients with pelvic endometriosis but it is generally asymptomatic in nature [3]. In intestinal endometriosis, the endometrial tissue infiltrates the bowel wall through the subserosal fat and usually into the muscularis propria [4]. This is termed Deep Infiltrative Endometriosis (DIE) which is defined as either >5 mm of invasion of endometrial tissue through the peritoneum or endometrial tissue invading below the peritoneum regardless of depth [5]. The recto-sigmoid colon is the most commonly affected site and accounts for 70% of cases and this is followed by the terminal ileum in 5–10% of cases and the appendix in 5% [2, 6]. They can present with symptoms of abdominal pain, rectal pain, tenesmus and rectal bleeding, constipation, and nausea and vomiting which tend to be worse during menses and can often be mistaken as menstrual pain [1]. Only in very rare circumstances does intestinal endometriosis cause acute bowel obstruction requiring urgent surgical resection [1].

Here we report a rare case of acute large bowel obstruction (LBO) secondary to endometriosis requiring surgical resection, with the diagnosis being made only on histopathology postoperatively.

CASE REPORT

A female in her 30s presented to the Emergency Department (ED) with a one week history of severe central abdominal pain and a single episode of feculent vomiting on the morning of presentation. Prior to this she had a 5-week history of severe abdominal discomfort which she attributed toward her irritable bowel syndrome (IBS) flare up. During this 5-week period she also reported only opening her bowels three times. She denied any urinary or constitutional symptoms. She did not have any significant alcohol usage history and was a non-smoker. Her past medical history otherwise included attention-deficit hyperactivity disorder, anxiety, irritable bowel syndrome (IBS), and polycystic ovarian syndrome (PCOS). She did not have any previous abdominal surgical history or any

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history of inflammatory bowel disease (IBD) or personal or family history of bowel cancer.

Prior to presentation, she presented to her General Practitioner (GP) and had a computed tomography (CT) abdomen and pelvis which showed significant fecal loading but no evidence of bowel obstruction (Figure 1). She had two fleet enemas and stimulant laxatives after this with no effect and subsequently attempted bowel preparation at home. She was unable to tolerate this and presented to the ED the following morning.

She was admitted under the local General Surgical team and a nasogastric tube (NGT) was inserted and bowel preparation was administered via this. She then proceeded to have an abdominal X-ray (AXR) with rectal contrast to minimize radiation exposure in this patient given she has had a recent CT. The AXR showed prominent small bowel loops and dilated large bowel without any rectal contrast progressing through the recto-sigmoid junction raising the concern for bowel obstruction (Figure 2).

On day 3 of admission, she developed worsening abdominal pain and had a 1.5 L vomit despite the NGT being still in situ and on free drainage. An urgent CT abdomen and pelvis with intravenous (IV) contrast was performed which showed mid-rectal stricture of 40 mm in length 20 cm from anal verge, with proximal dilatation and an incompetent ileocecal valve (Figure 3).

Flexible sigmoidoscopy confirmed narrowing of the large bowel at 20 cm from the anal verge with significantly inflamed mucosa, and a narrow opening less than 5 mm in diameter which did not allow passage of the scope. The patient underwent an emergency Hartmann's procedure (Figures 4 and 5).

The postoperative recovery was complicated by a parastomal hernia on postoperative day (POD) 4 (Figure 6), which required take back to theater and refashioning the stoma trephine. On POD10, she developed a small parastomal abscess collection which was managed nonoperatively with intravenous antibiotics.

The final pathology showed no evidence of colorectal malignancy. Histopathology showed extensive endometriosis with deep implants of endometrial glands within the mesentery, serosal surface, and muscularis propria. On immunohistochemistry the stromal and epithelial cells were estrogen receptor (ER) positive and the stromal cells were positive for CD10. This confirmed the diagnosis of DIE which caused external compression of the rectum leading to large bowel obstruction.

Retrospectively, the patient noted that the start of her discomfort had coincided with her cessation of her oral contraceptive pill (OCP) which she had been taking since her teenage years for management of her painful periods. An inpatient gynecological consultation was sought for ongoing management of her endometriosis and she was referred to the Specialist Endometriosis clinic at a tertiary hospital.

She was discharged after 19 days of admission and followed up in the outpatient clinic.



Figure 1: Non-contrast computed tomography abdomen and pelvis organized by the General Practitioner prior to presentation which showed significant fecal loading throughout the colon with a collapsed rectum.



Figure 2: Abdominal X-ray after injection of 250 mL of rectal contrast. The X-ray shows dilated loops of large and small bowel with no progression of rectal contrast beyond the recto-sigmoid junction which is concerning for bowel obstruction at the recto-sigmoid junction.

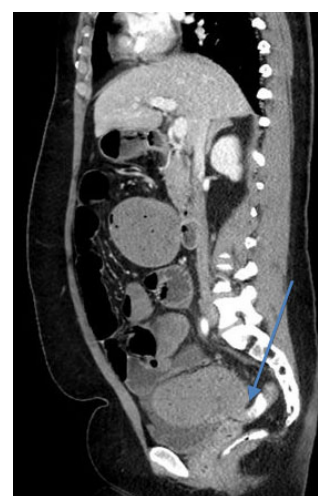


Figure 3: Repeat computed tomography scan with intravenous and rectal contrast on day 3 of admission showing an irregular thickened 4 cm segment of large bowel (as indicated by the arrow). This appeared to be strictureing the lumen and preventing progression of the rectal contrast proximally which gives concern for large bowel obstruction.



Figure 4: Intraoperative photograph showing the causative lesion indicated by the forceps.

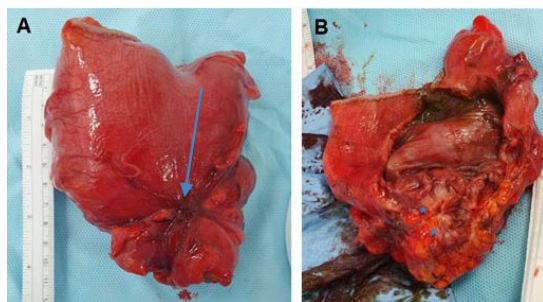


Figure 5: Resection specimen post-Hartmann's procedure. (A) Externally there appears to be a cicatrizing lesion (arrow) causing stenosis and narrowing of the lumen and there also appears to be multiple dark spots which may be deposits of endometriosis. (B) On opening of the specimen, the segment of bowel thickening resulting in stenosis is appreciated (star).

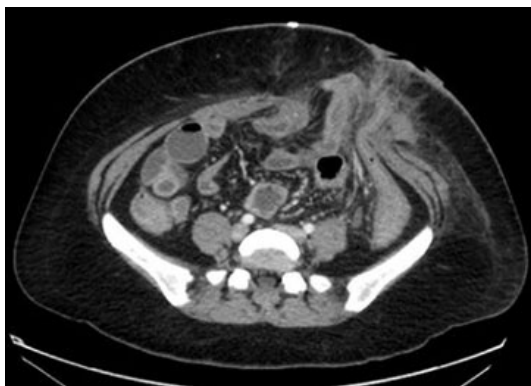


Figure 6: Repeat computed tomography scan at day 4 post-Hartmann's procedure showing the development of a parastomal hernia.

DISCUSSION

Endometriosis is a benign gynecological disease affecting up to 17% of menstruating women which involves the extra-uterine deposition of endometrial tissue [7–9]. There are three main forms of pelvic endometriosis including peritoneal, ovarian, and DIE which encompasses the most common sites of deposition including the ovaries, pouch of Douglas, uterosacral ligaments, and the fallopian tubes [5, 7–9]. In Australia, around 11% of women are diagnosed with endometriosis by the age of 44 and it has been shown to affect around

70% of women with chronic pelvic pain [10, 11]. Endometriosis is one of the leading causes of primary and secondary infertility in up to 30% of women [12].

The etiology of endometriosis is complex and multifactorial involving hormonal changes, genetic changes, and changes in the immune system [13–15]. Currently the most widely accepted pathogenesis of endometriosis is the theory of retrograde menstruation where endometrial tissues reflux through the fallopian tubes during menstruation to enter the abdominopelvic cavity to implant on the serosal surface of various organs [12]. It most commonly deposits in the pelvic peritoneum, ovaries, and rectovaginal septum but has been shown in very rare circumstances to involve the pleura, pericardium, small and large intestines, diaphragm, and other tissues [16]. Intestinal endometriosis is the most common extra-pelvic site of implantation and is found in 3–37% of all patients with pelvic endometriosis [9, 11, 17–19].

The classical presentation of patients with endometriosis is the triad of dyspareunia, dysmenorrhea, and infertility; however, it should also be considered in any female patients presenting with chronic pelvic pain, painful defecation, and/or urinary symptoms with menstruation [20]. In this case, retrospectively the patient did not describe any dyspareunia as she was previously on the OCP for dysmenorrhea and fertility was unclear as the patient was homosexual and had not desired or attempted to get pregnant.

Endometriosis is an estrogen-dependent inflammatory disease and as such medical treatment aims to attenuate this estrogen stimulation with medications such as the hormonal contraceptive pill, progestogen, and gonadotrophin-release hormone agonists [20]. However treatment is recommended only when there is a functional impact such as pain and/or infertility or if there is a systematic impact on the individual [20]. In this case, the patient's use of the OCP for menstrual regulation but it also controlled her endometriosis thereby masking some of her symptoms leading to a delayed diagnosis. This also leads to questioning of her IBS diagnosis and whether her abdominal pains were truly IBS or secondary to her intestinal endometriosis.

Surgical treatment for endometriosis is largely guided by the patient expectation, their response to medical therapy, the effect on their quality of life, their desire for pregnancy, and the location of the endometriosis [20]. Generally, a laparoscopic approach is favored and specifically for colorectal endometriosis, management includes rectal shaving of lesions, anterior discoid resection, and segmental resection of the affected bowel segment [20]. Conservative resection with rectal shaving and anterior discoid resections may reduce the risk of postoperative complications and improve gastrointestinal quality of life scores but comes with higher rates of recurrence [20]. For lesions infiltrating more than 20 mm of the rectum, rectal function is comparable between segmental resection and those that had rectal

shaving and/or anterior discoid resections [20]. However segmental resection is associated with postoperative symptomatic stenosis which may require further surgical or endoscopic management [20]. Resection of low rectal endometrial bowel deposits within 5 cm of the dentate line via either segmental or conservative resection is associated with higher risks of rectovaginal fistulas and consideration may be made for a diverting ileostomy or colostomy [20]. Complete resection of the endometrial deposits is recommended as partial resections with residual endometrial tissue is associated with an increased rates of pain recurrence postoperatively and a reduction in pregnancy rates postoperatively [20].

While bowel is the most common site of extra-pelvic endometriosis implantation, bowel obstruction as a result of this is rare and only occurs in 0.1–0.7% of all cases with intestinal endometriosis and there are only a few reported cases of LBO secondary to endometriosis in literature [7, 8, 21–23]. Large bowel obstruction is most commonly caused by colorectal malignancy, followed by diverticular disease and volvulus [4, 19, 24]. In the acute setting LBO requires early diagnosis and urgent management as upstream dilatation of the bowel and subsequent colonic ischemia can result in bowel perforation leading to peritonitis and sepsis [9]. Radiologically on CT scans it is difficult to differentiate obstruction from endometriosis from a malignant obstruction [4]. In the emergency the standard of care for large bowel obstruction is still resection of the disease segment with potential primary anastomosis with or without a covering ileostomy [4]. If primary anastomosis not possible then an end stoma would need to be formed and reversal can be considered in the future if appropriate [4]. However there have been two cases reported in literature where the LBO secondary to the endometrial deposits were treated initially with endoscopic stenting to allow for resolution of the bowel obstruction, with the patient then later undergoing an expedited laparoscopic resection with primary anastomosis [18, 25]. Both these cases were in young patients with prior diagnosis of endometriosis however without this prior diagnosis, colorectal cancer would be the top differential and stenting is not recommended in such a setting. This is due to the fact that stenting as a bridge to surgery in curable and resectable colorectal cancers is associated with a possible risk of higher local and overall recurrence rates and with no postoperative mortality or morbidity benefit compared to upfront surgery [26]. Additionally with stents there is also the risk of complication in the form of stent migration and bowel perforation and the rate of these complications is even higher in endoscopic stenting for benign disease compared to stenting in malignant diseases [25, 26].

CONCLUSION

When women of fertile age present to the emergency department with clinical and radiological signs of large

bowel obstruction, if there are no constitutional symptoms or risk factors for colorectal cancer, consideration should be made toward intestinal endometriosis as a causative factor. However management would still be focused on urgently alleviating the obstruction and if there are any concerns for a colorectal malignancy, upfront surgical resection is recommended over endoscopic stenting to relieve the obstruction.

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Author Contributions

Yi-Che (Albert) Chen – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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JY Cheong – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

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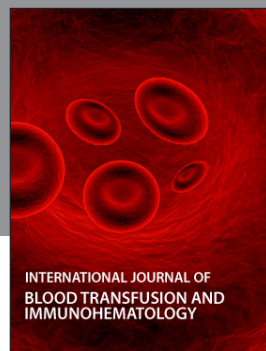
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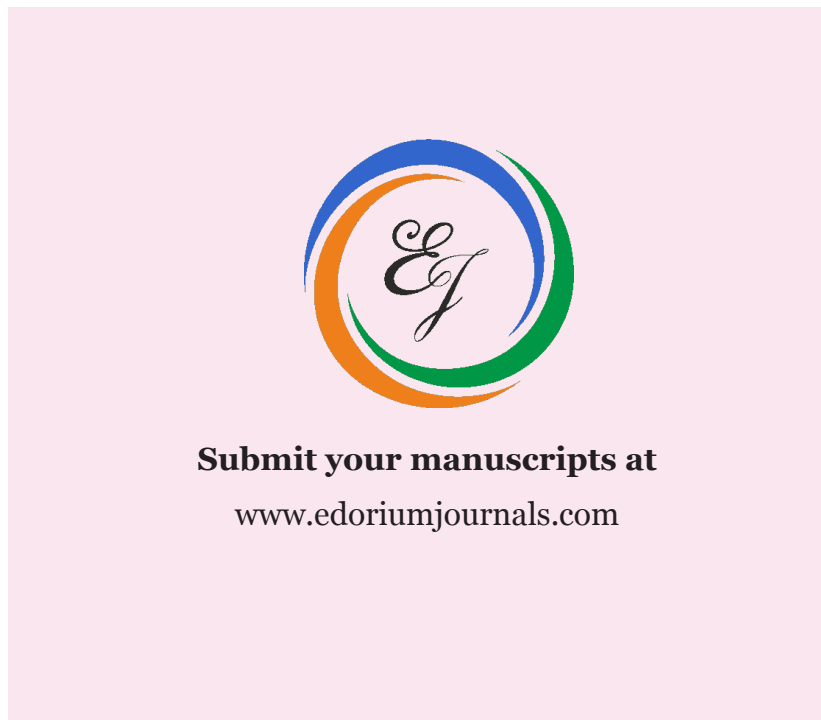
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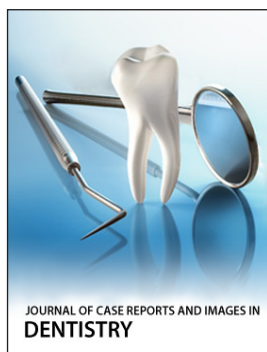
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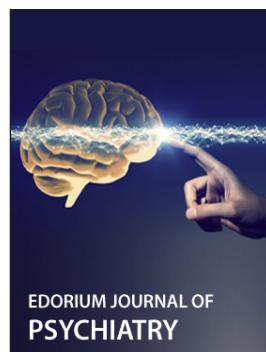
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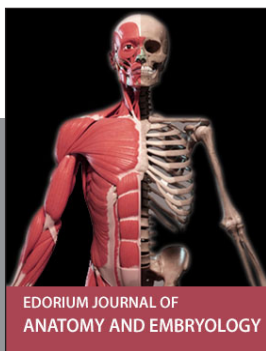
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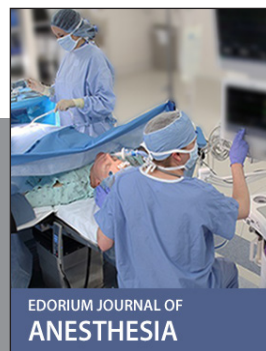
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