Symptomatic terminal ileal endometriosis presenting with cyclical gastrointestinal symptoms

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ABSTRACT

Background: Endometriosis affects approximately 10% of reproductive-age females worldwide, yet time to diagnosis remains substantially delayed due to the nonspecific nature of its clinical presentation. Deep endometriosis involving the bowel is uncommon, and terminal ileal involvement is particularly rare. The gold standard for diagnosis remains laparoscopy with histopathological confirmation. Patients with small bowel endometriosis are frequently misdiagnosed with other chronic pain conditions before endometriosis is considered.

Case presentation: A 27-year-old female presented with chronic pelvic pain, dysmenorrhea, and cyclical gastrointestinal symptoms. Transvaginal ultrasound demonstrated a superficial rectosigmoid nodule. Subsequent laparoscopy identified stage III endometriosis based on the revised American Society for Reproductive Medicine staging system involving multiple pelvic sites and an unexpected deep endometriotic nodule of the terminal ileum. Segmental ileal resection later confirmed partial-thickness involvement of endometriosis extending into the muscularis propria. Following the bowel resection, the patient reported improvement in pelvic pain and resolution of nausea, vomiting, diarrhea, and dyschezia.

Conclusion: Small bowel endometriosis is a rare condition that is challenging to diagnose. This case highlights the limitations of imaging modalities and the importance of maintaining clinical suspicion for endometriosis in females presenting with nonspecific gastrointestinal symptoms, even in the setting of non-diagnostic imaging. Multidisciplinary collaboration and greater reliance on integrated clinical assessment are essential to reduce diagnostic delays and improve patient outcomes.

Keywords: Endometriosis, surgery, chronic pelvic pain, small bowel, case report.

Type of Article: CASE REPORT **Specialty:** Gynecology, General surgery

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Background

Endometriosis is a common gynecological condition that affects approximately 10% of reproductive-age females worldwide [1]. Deep endometriosis (DE) is considered a severe form of endometriosis and is characterized by endometrium-like lesions infiltrating beyond the peritoneal surface, invading pelvic structures such as the uterosacral ligaments, vagina, bladder, ureters, and bowel [2]. Bowel endometriosis is a rare presentation of DE, predominantly involving the rectosigmoid colon (>90%) and, more rarely, the ileum (1%–7%).

Small bowel endometriosis presents variably, from asymptomatic to debilitating gastrointestinal symptoms. Often mistaken for irritable bowel syndrome (IBS) or inflammatory bowel disease, common symptoms include abdominal pain, bloating, nausea, vomiting, and bowel habit changes [3]. Here, we present a rare case of symptomatic ileal endometriosis.

Case Presentation

A 27-year-old nulligravid female presented to a center of excellence for chronic pelvic pain and endometriosis with long-standing dysmenorrhea and deep dyspareunia, as well as cyclical dyschezia, nausea, vomiting, and diarrhea. She endorsed a complex history of fibromyalgia, anxiety, depression, and failed trials of hormonal suppression. Additionally, she noted urinary symptoms consistent with painful bladder syndrome. On physical exam, she had trigger points in the subcostal region and suprapubic tenderness. Her transvaginal ultrasound revealed a normal anteverted uterus and ovaries with normal sliding signs. A superficial 9 × 10 mm hypoechoic nodule was seen on her rectosigmoid colon, just below the cervix.

We suspected a strong contribution of central sensitization to her pain presentation due to her complex history and high scores on relevant questionnaires administered by our clinic prior to her first visit. Specifically, she

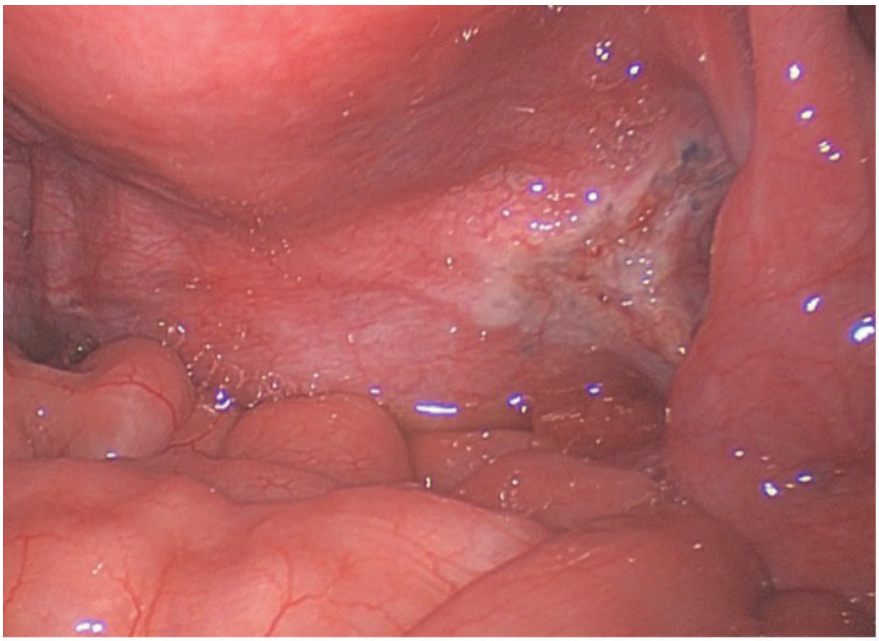


Figure 1. *Endometriosis lesion found on the right uterosacral ligament with extension to the right torus uterinus.*

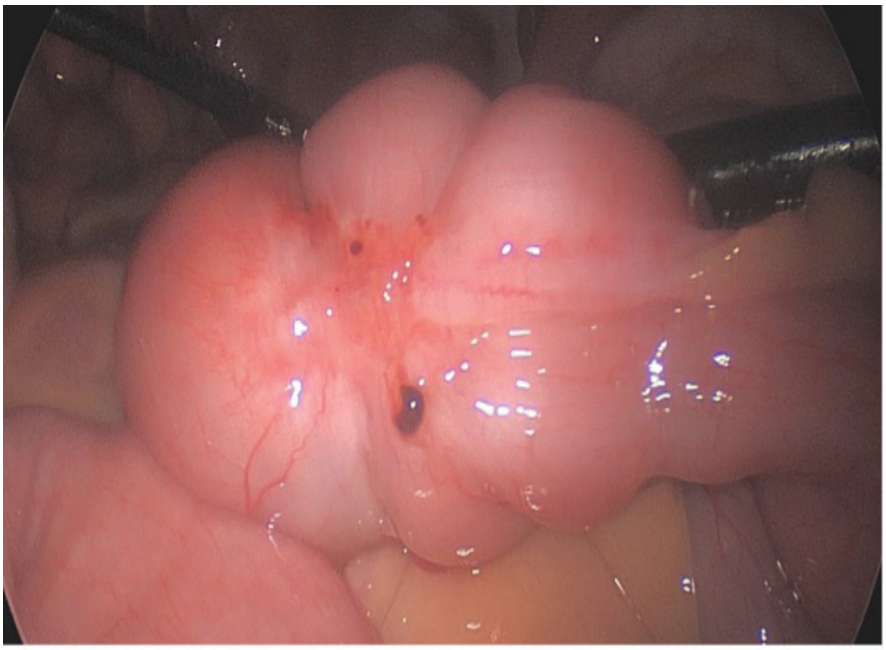


Figure 2. *Endometriosis nodule found in the terminal ileum.*

had elevated scores for several validated questionnaires for quality of life including the Endometriosis Health Profile (EHP)-30, Patient Health Quality (PHQ)-9, and Pain Catastrophizing Scale (PCS) as described in previous studies from our center [4]. While hormonal therapy was discussed, she declined this option due to a history of intolerance to hormones. After discussion of all options, she was consented for a laparoscopic excision of endometriosis, possible ovarian suspension, and possible appendectomy.

Her initial laparoscopy revealed stage III (moderate) endometriosis, according to the revised American Society for Reproductive Medicine staging system [5]. Endometriosis involved the appendix, bladder peritoneum, rectovaginal septum, right uterosacral ligament with extension to the right torus uterinus (Figure 1), ovaries, and bilateral pelvic sidewalls. A laparoscopic excision of endometriosis, right ureterolysis, and appendectomy were performed with endometriosis confirmed at all sites on histopathology. A suspected DE nodule was identified at the terminal ileum (Figure 2). The patient was

Table 1. *Summary of patient's clinical course.*

CHRONOLOGICAL TIMELINE	CLINICAL COURSE
Several months-years before presentation	Onset of dysmenorrhea, chronic pelvic pain, deep dyspareunia, cyclical dyschezia, nausea, vomiting and diarrhea. History of failed hormonal suppression.
Initial gynecology assessment	Patient had elevated scores for several validated questionnaires for quality of life including the Endometriosis Health Profile (EHP)-30, Patient Health Quality (PHQ)-9, and Pain Catastrophizing Scale (PCS). Physical exam findings: trigger points in the subcostal region and suprapubic tenderness.
Pre-operative imaging	Her transvaginal ultrasound revealed a normal anteverted uterus and ovaries with normal sliding signs. A superficial 9 x 10 mm hypoechoic nodule was seen on her rectosigmoid colon, just below the cervix.
First surgery	Initial laparoscopy revealed stage III endometriosis involving the appendix, bladder peritoneum, rectovaginal septum, right uterosacral ligament with extension to the right torus uterinus, ovaries and bilateral pelvic sidewalls. A laparoscopic excision of endometriosis, right ureterolysis, and appendectomy were performed with endometriosis confirmed at all sites on histopathology. A suspected DE nodule was identified at the terminal ileum.
Second surgery	Patient was referred to a general surgeon for management of nodule identified at the terminal ileum. Patient subsequently underwent a second surgery, during which approximately 2.5 cm of the ileum was resected and anastomosed without complications.
Follow-up	After her initial procedure, her pain had partially improved, but her nausea, vomiting, and dsychezia persisted. Three months following the second surgery, the patient reported further pain reduction and resolution of her gastrointestinal symptoms.

subsequently referred to general surgery for evaluation and consideration of further surgical management.

Following consultation with the general surgeon, the patient consented to a segmental resection of the previously identified nodule at the terminal ileum. Additional preoperative imaging was not indicated. Intraoperatively, the suspected endometriotic nodule was identified approximately 6 cm proximal to the ileocecal valve and was noted to have focal retraction of the adjacent ileal wall, causing partial narrowing of the bowel lumen. Notably, the patient had no clinical features suggestive of bowel obstruction. Approximately 2.5 cm of the ileum was resected and anastomosed without complications. Histopathological examination of the resected ileal segment confirmed endometriotic tissue involving the serosa and muscularis propria.

Seven weeks following the initial procedure, the patient reported improvement in daily pelvic pain and dysmenorrhea, although nausea, vomiting, and dyschezia persisted. Three months after the second surgery, she reported further pain reduction and complete resolution of nausea, vomiting, diarrhea, and previously described pain with bowel movements. Although these improvements occurred following bowel resection, pain management is often multifactorial, and thus, caution is required when inferring a causal relationship between symptom resolution and specific surgical interventions. The patient's clinical course is summarized in Table 1.

Discussion

The present case showcases the challenges faced by clinicians in diagnosing endometriosis. The non-specific symptomology of small bowel endometriosis overlaps with several chronic pain conditions, including IBS, inflammatory bowel disease, and painful bladder syndrome, often leading to misdiagnosis, late referrals and delayed diagnosis ranging between 4 and 11 years [3,6]. There are increasing calls advocating for a clinical diagnosis of endometriosis to allow for early initiation of appropriate treatment and thus prevention of such negative sequelae [7]. Standardization of imaging through initiatives such as the International Deep Endometriosis Analysis group and use of magnetic resonance imaging (MRI) in diagnosing endometriosis have been proposed as ways to address diagnostic delays and sequelae of endometriosis.

Small bowel endometriosis, as seen in our patient, is particularly difficult to identify by imaging due to its highly mobile nature, anatomical positioning, and subtlety of lesions. Reported cases of ileal endometriosis describe recurrent pelvic pain with nausea, vomiting, diarrhea, dysmenorrhea, and, infrequently, hematochezia [8]. Imaging findings range from peri-enteric thickening on MRI to bowel wall thickening, luminal narrowing, proximal dilatation, and inflammatory changes on computed tomography [8,9]. On ultrasound, findings are often subtle or initially non-diagnostic, as endometriosis is largely ill-defined but may appear hypoechoic with bowel wall thickening and luminal narrowing when visualized [6,10]. While transvaginal ultrasound and MRI are highly accurate for rectosigmoid involvement, its performance remains limited for small bowel endometriosis due to overlying bowel loops, peristalsis, and poor lesion conspicuity [10]. These limitations underscore the importance of clinical suspicion and multidisciplinary evaluation when bowel involvement is suspected despite non-diagnostic imaging.

Conclusion

Our patient represents a rare case of symptomatic DE involving the terminal ileum, which was diagnosed at the time of laparoscopy for endometriosis and successfully managed with a bowel resection. This case serves as a reminder to clinicians to consider endometriosis in

the differential diagnosis of reproductive-age females with chronic pelvic pain, especially in conjunction with cyclical gastrointestinal symptoms. Additionally, negative or inconclusive imaging should not preclude further evaluation when clinical suspicion remains. Early referral, multidisciplinary collaboration and greater reliance on integrated clinical assessment are essential to reduce diagnostic delays and improve outcomes for patients with DE.

What is new?

The authors describe a rare case of ileal endometriosis in a patient presenting with chronic pelvic pain, dysmenorrhea, and cyclical gastrointestinal symptoms. The case highlights the diagnostic challenges, the importance of integrated clinical assessment and multidisciplinary collaboration in improving diagnostic delays and outcomes for patient with small bowel endometriosis.

List of Abbreviations

DE	Deep endometriosis
EHP	Endometriosis Health Profile
IBS	Irritable bowel syndrome
MRI	Magnetic resonance imaging
PCS	Pain Catastrophizing Scale
PHQ	Patient Health Quality

Conflict of interests

The authors declare that there is no conflict of interest regarding the publication of this article.

Funding

None.

Informed consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

Patient perspective

The patient reported significant relief of symptoms following surgery and was satisfied with the outcomes.

Ethical approval

Ethical approval is not required at our institution to publish an anonymous case report.

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Summary of the case

1	Patient (gender, age)	Female, 27
2	Final diagnosis	Stage III endometriosis
3	Symptoms	Chronic pelvic pain, dysmenorrhea, deep dyspareunia, cyclical dyschezia, nausea, vomiting, and diarrhea. Urinary symptoms consistent with painful bladder syndrome.
4	Medications	None, managed surgically.
5	Clinical procedure	Laparoscopic excision of endometriosis and segmental ileal resection.
6	Specialty	Gynecology and General surgery.