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CLINICAL VIGNETTE

Intestinal Endometriosis: An Unusual Cause of a Rectal Mass

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Case

A 33-year-old woman with altered bowel habits for 5 months presented for a gastroenterology evaluation. She also reported pain in her lower back and sacrum. Other symptoms included constipation with less frequent loose stools with urgency and sensation of incomplete emptying. She stopped caffeine and tried a “squatting potty” with no improvement in symptoms. There was no rectal bleeding, but some intermittent abdominal cramping pain, without specific aggravating factors. The pain did not respond to over-the-counter medications.

Past medical history included acne vulgaris. She was on topical benzoyl peroxide-erythromycin and clindamycin swabs. She did not smoke, use drugs or drink significant amounts of alcohol. She had no personal or family history of gastrointestinal malignancies or other gastrointestinal disorders.

Laboratory evaluation included normal complete blood count, comprehensive metabolic panel and TSH. Celiac panel was also negative.

Colonoscopy revealed a 15 mm nodular sessile lesion in the distal rectum with active oozing (Figure 1). Multiple biopsies revealed histology consistent with endometriosis (Figure 2).

MRI was performed with endometriosis protocol, which involves intrarectal and intravaginal contrast. Findings included T1 hyperintense/T2 hypointense thickening along the left pelvic sidewall in the region of the left ureteral sacral ligament and 2.9 cm T2 hypointense/T1 isointense lesion with scattered internal areas of T1 hyperintensity within the upper rectum approximately 7 cm from the anal verge with heterogeneous arterial enhancement. There were apparent adhesions of the adjacent mesorectal fascia and posterior vagina.

Discussion

Endometriosis defined as endometrium tissue found outside the uterus. The organs involved are typically in the pelvic cavity. Less commonly, endometriosis can occur in the abdominal cavity or other distant sites. The prevalence of endometriosis is unknown with varying estimates published. Five to 12% of patients have endometriosis lesions in the intestine.¹ Ectopic endometrial tissue can also involve other organs including liver, gallbladder and pancreas. Endometriosis lesions in the bowel can infiltrate the serosa, the sub-serosa and the muscular layer of the bowel wall. Endometriosis is found more commonly in

the left colon than the right. Left colon lesions can involve the rectosigmoid junction or the middle to proximal sigmoid. Infiltration in the right colon is reported with involvement of the cecum and terminal ileum. The appendix can also be involved. Isolated small bowel involvement aside from the terminal ileum is rare. When proximal rectal lesions are found they are often part of a larger complex in the deep portion of the Douglas pouch and can infiltrate the posterior vaginal fornix and anterior rectal wall.² Intestinal endometriosis can cause various symptoms including diarrhea, constipation, bloating or rectal bleeding.² Endometriosis located in the rectum can be associated with cyclic dyschezia, or pain with defecation, and tenesmus. In most women endometriosis is not obstructive.²

There are three distinct histologic components to endometriotic bowel lesions including ectopic endometrial-like mucosa, smooth muscle fibers and fibrous connective tissue. Etiology of intestinal endometriosis is not completely understood, with menstrual reflux theory the most widely accepted hypothesis. If some menstrual blood flows backward through the fallopian tubes into the abdominal cavity, endometrial tissue can enter the outer uterus. Endometrial tissue can then infiltrate other areas with peritoneal fluid flow and metaplasia. In the bowel the rectosigmoid site is the most common (65.7%).³ Peritoneal fluid can carry ectopic endometrial cells anywhere in the cavity, but upright posture enables fluid flow to deeper areas of the pelvis.

Evidence suggests women with endometriosis have altered immune cell function, with elevated T cell populations in endometriosis tissue. There is increase in regulatory T cells (Tregs) that express Forkhead Box P3 (Foxp3). Tregs promote persistence of endometriotic tissue. Macrophages have aberrant behavior in endometriosis with increased secretion of certain cytokines including IL-6, IL-10, IL-12 and TGFβ1. Various macrophage phenotypes in endometriosis tissue promote fibrosis, proliferation and migration. NK cells in the peritoneal fluid of women with endometriosis have diminished activity, which allows immune escape of free endometrial cells transferring into peritoneal fluid.³

Intestinal endometriosis symptoms can be nonspecific leading to diagnostic difficulties. Intestinal endometriosis can be noted on imaging including transvaginal ultrasound, rectal endoscopic sonography (EUS), helicoidal computed tomography (CT) scan and magnetic resonance imaging (MRI).¹ MRI for

intestinal endometriosis should follow a specific protocol. For rectosigmoid endometriosis, MRI has sensitivity of 63 to 98% and specificity of 89 to 100%. MR enterography can be considered for lesions proximal to the rectosigmoid. MRI protocol for intestinal endometriosis recommends a partially filled bladder, supine position, abdominal strapping, use of anti-peristaltic agent (such as glucagon), rectal opacification with contrast as well as vaginal opacification with contrast.¹

Treatment of intestinal endometriosis according to the 2022 European Society for Human Reproduction and Embryology guidelines includes hormone therapy and surgery. Both can be effective to reduce pain. Hormonal therapy includes combined hormonal contraceptives, gonadotropin-releasing hormone antagonists or gonadotropin-releasing hormone agonists.³ Two thirds of patients with rectosigmoid endometriosis can be successfully managed with hormonal therapy. Intermittent imaging should be performed to monitor for lesion progression.²

Surgical approaches with best reported outcomes involve complete laparoscopic eradication of endometriotic tissue. A multidisciplinary team is recommended to make individual decisions based on symptoms, risks, recurrence rates, surgeon's expertise and potential complications.² Surgical approaches for rectal endometriosis include superficial resection (shaving), discoid resection and segmental resection. Superficial resection or "shaving" can be considered if there is no involvement of the bowel beyond the muscularis propria. Superficial resection is a more commonly used technique with lower complication risk but is limited to infiltration up to 5mm in depth. Discoid resection is full thickness resection restricted to the anterior rectal wall. It can be considered if there is involvement of the bowel beyond the muscularis propria with individual lesions less than 3cm and infiltration less than 50% of the lumen. Segmental resection is recommended if there are multiple nodules, lesions larger than 3 cm or infiltration more than 50% of the bowel lumen.⁴

Conclusion

Intestinal endometriosis is the uncommon involvement of the gastrointestinal tract by endometriosis. Most lesions affect the rectosigmoid. MRI with endometriosis protocol has high sensitivity and specificity. Treatment options include hormonal therapy and surgical interventions. Multidisciplinary approach to treatment is recommended.

Figures

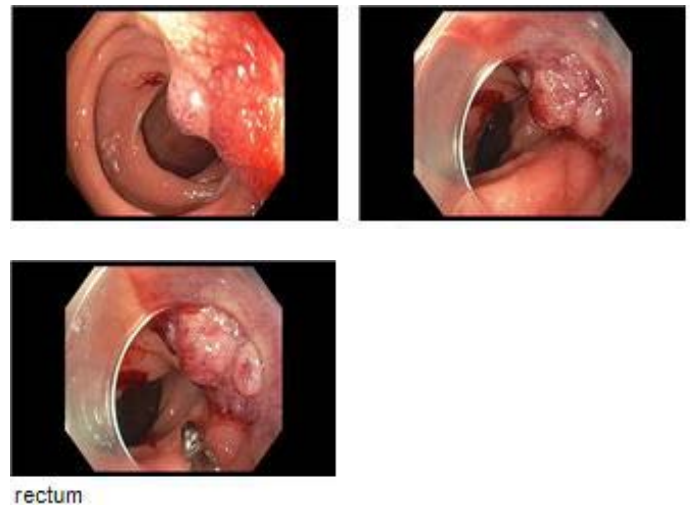


Figure 1. Rectal mass seen from 11 o'clock to 4 o'clock positions.

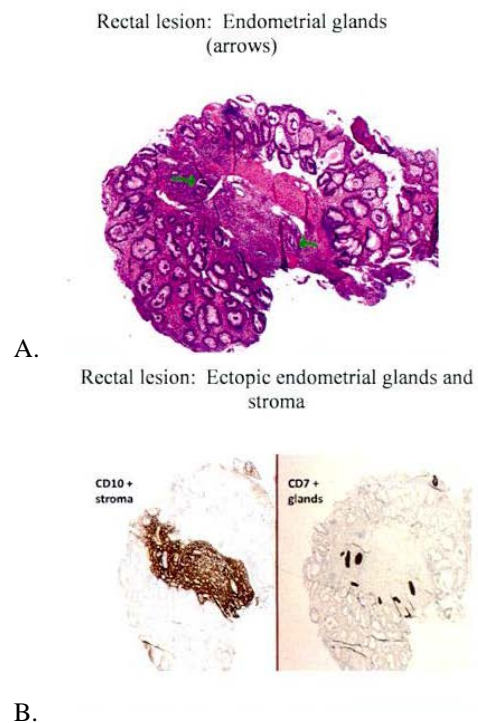


Figure 2. Histology of rectal mass showing endometrial glands. A. Hematoxylin and eosin stain. B. Immunohistochemistry stains for endometrial glands and stroma right panel.

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