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CASE REPORT | COLON

Endometriosis of the Colon and Pericolic Lymph Nodes Presenting as Cecal Volvulus

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ABSTRACT

Endometriosis, characterized by the ectopic implantation of endometrial tissue, typically involves pelvic structures but infrequently extends to extrapelvic sites such as the gastrointestinal tract. In this report, we present a case of a 44-year-old woman with diffuse abdominal discomfort and constipation. Computed tomography imaging revealed a mass in the cecum, leading to diagnostic colonoscopy and subsequent magnetic resonance imaging. Ultimately, laparoscopy revealed a puckered cecal mass suspected to be invasive malignancy but pathologically confirmed as extensive endometriosis involving the colonic wall and pericolic lymph nodes. Cecal volvulus secondary to endometriosis is exceedingly rare, with surgical intervention being the primary treatment modality. Endometriosis-associated gastrointestinal involvement often masquerades as irritable bowel syndrome, highlighting the importance of considering atypical presentations in young women. This case underscores the need to maintain a high index of suspicion for unusual etiologies in patients with gastrointestinal symptoms and atypical imaging findings to facilitate timely diagnosis and management.

KEYWORDS: abdominal pain; cecum; colon; volvulus; endometriosis; colonoscopy; laparoscopy

INTRODUCTION

Endometriosis is the ectopic implantation of endometrial tissue in other sites. Ectopic tissue can be commonly endopelvic but rarely is also located extrapelvic. Gastrointestinal endometriosis usually presents with altered bowel habits, rectal bleeding, or dyschezia and most commonly involves the rectosigmoid colon. Involvement of the cecum is rare. Gastrointestinal manifestations of endometriosis can often be disguised as irritable bowel syndrome (IBS), colitis, and diverticulosis with similar symptoms including abdominal bloating, alternating periods of constipation and diarrhea, and dyschezia.[1] We present a young woman with an abnormal computed tomography (CT) scan, revealing cecal volvulus on colonoscopy, who underwent a right hemicolectomy identifying endometriosis.

CASE REPORT

A 44-year-old woman with a medical history of IBS-constipation on linaclotide 145 mcg, obesity, and renal cysts presented with abdominal pain. This started a year before presentation and was described as diffuse, gnawing abdominal pain worse on the days she did not have a bowel movement. She did have bloating but denied any signs of bleeding, weight loss, dyspareunia, menstrual abnormalities, or family history of colon cancer. At baseline, she had a bowel movement once or twice a week. She recently had a CT scan to follow-up on her previously noted renal cysts and was referred to our clinic because of abnormal results showing a filling defect with concern for a mass in the cecum. It also showed a small, stable renal cyst. She had a colonoscopy 2 years before presenting for constipation, which was normal.

The patient subsequently underwent a repeat colonoscopy that revealed a malrotated and twisted cecum with a possible underlying submucosal lesion and granular tissue. The appendiceal orifice, normally visualized on colonoscopy at the cecum's pole, was unable

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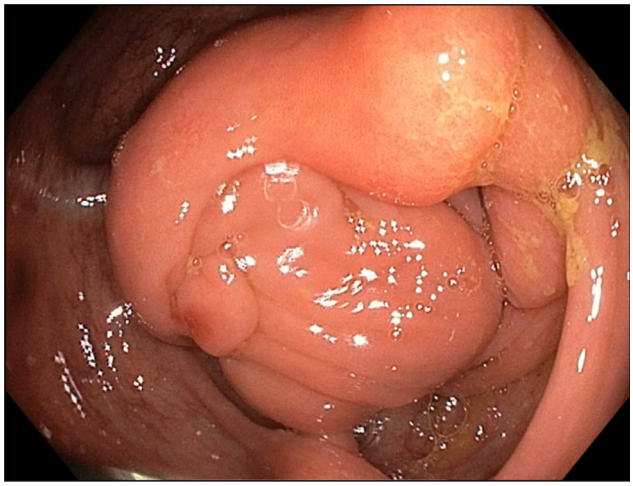

Figure 1. Cecal volvulus seen on colonoscopy.

to be visualized due to the presence of the volvulus (Figure 1). Biopsies of the submucosal lesion were obtained. The pathology report described mild focal colitis without evidence of dysplasia or malignancy.

She was followed up in the clinic again and because of the findings of colitis and unclear findings on CT and colonoscopy, she underwent a magnetic resonance enterography showing a solid enhancing mass at the cecal tip measuring 3.4 × 2.5 × 3.4 cm (Figure 2). Her case was discussed with colorectal surgery, and a decision was made to undergo laparoscopy for definitive diagnosis, which revealed a puckered mass of the cecum near the base of the appendix concerning for invasive malignancy (Figure 3). Because of the suspicion for malignancy, the surgeon decided to perform a right hemicolectomy with lymph node dissection. The surgical pathology report showed extensive endometriosis of the colonic wall and 2 pericolic lymph nodes, highlighted by PAX8, CK7, and absent CK20 expression (Figure 4). She was referred to a gynecologist and started on oral contraceptive pills for the management of endometriosis. At a follow-up visit, she reported improvement in her constipation and abdominal pain.

DISCUSSION

Cecal volvulus occurs when the cecum, terminal ileum, or ascending colon twists around its own mesenteric axis.[2] The incidence of cecal volvulus due to endometriosis is extremely rare, with only one other reported case in the literature that was managed with ileocecal resection.[3] In our patient, a right hemicolectomy was performed instead of an ileocecal resection due to the suspicion of colon cancer from the puckering seen during laparoscopy.

Endometriosis with gastrointestinal involvement may be asymptomatic in a small proportion of women, but in the majority, it typically presents with alterations in bowel habits including constipation, dyschezia, or diarrhea, which can

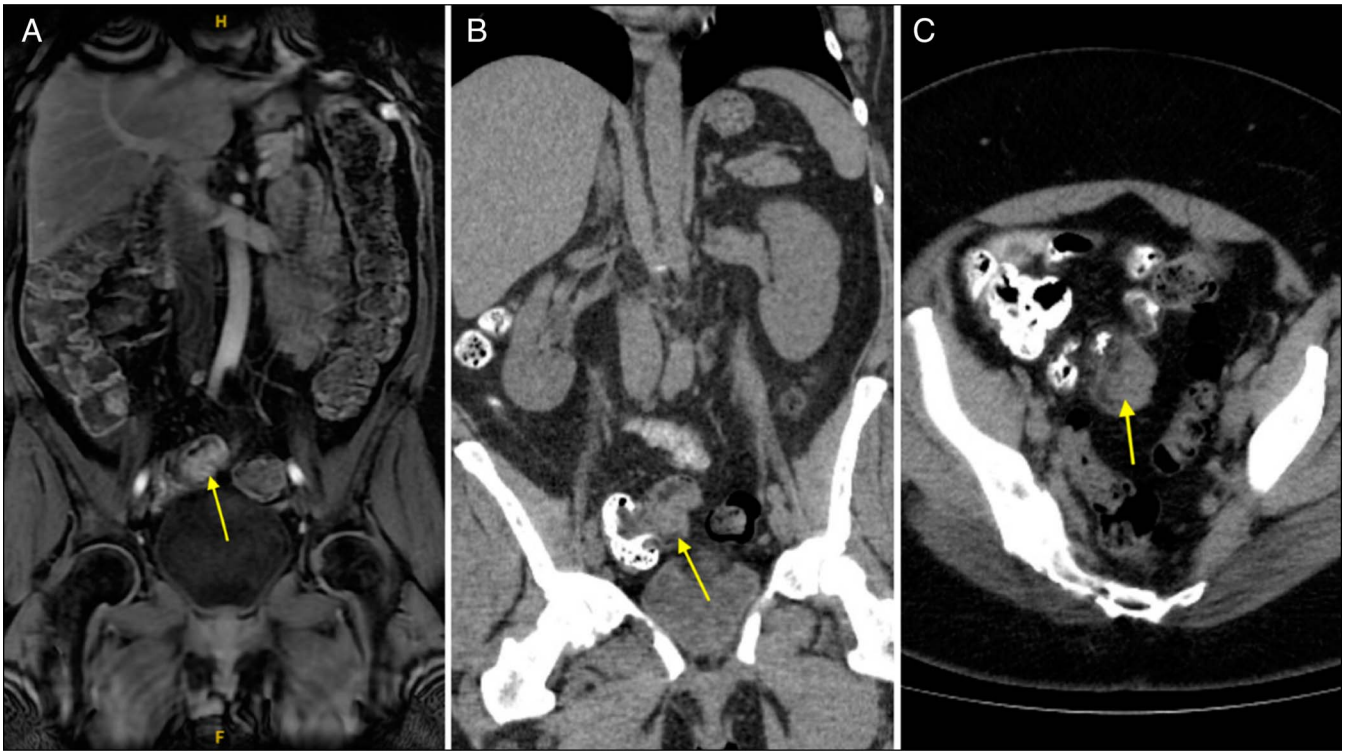

Figure 2. Magnetic resonance enterography (A) and abdominal computed tomography with contrast (B, C) revealing a solid enhancing mass with filling defect at the cecal tip measuring 3.4 × 2.5 × 3.4 cm with proximity to the appendiceal orifice.

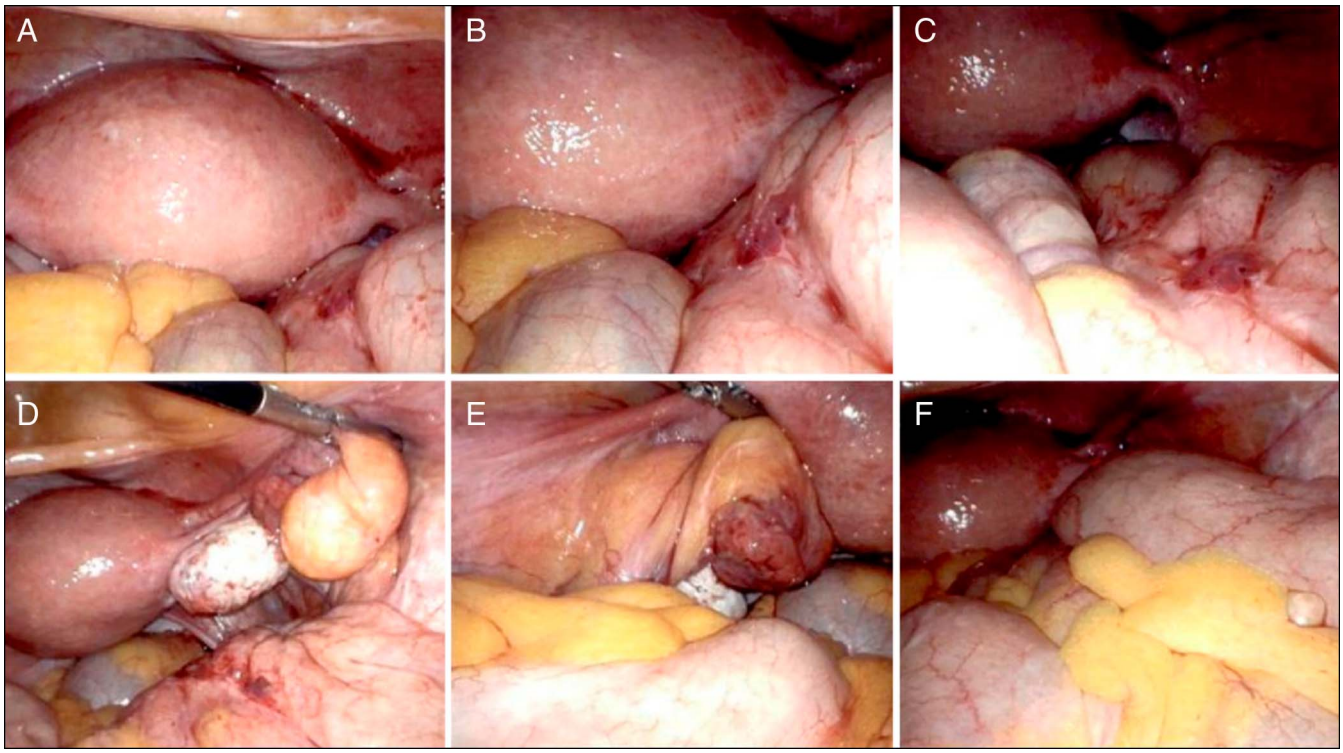

Figure 3. Laparoscopic visualization of a puckered mass of the cecum with concern for infiltrative malignancy (A–F). The region of the cecum can be seen near the uterus and right ovary (D).

mimic IBS. Other mimickers of bowel endometriosis include inflammatory bowel disease, diverticulitis, and malignancy.[4] Bowel involvement accounts for 5%–12% of women presenting with the disease, with the rectum and sigmoid involved in up to 90% of all intestinal lesions.[5] The most frequent location for bowel involvement with endometriosis is the sigmoid colon, followed by the rectum, ileum, appendix, and cecum.[6] The predisposition for the rectum and sigmoid colon can be explained by the predilection for endometriosis deposits to be found on the peritoneum within the posterior pelvic compartment in close proximity to the terminal large bowel, such that local prostaglandin release and inflammation of lesions may explain any altered bowel function.[7] Cases of endometriosis involving the ileum can result in crampy right lower quadrant abdominal pain, and in extreme cases complete bowel obstruction and malnutrition.[6] Bowel obstruction due to endometriosis is nearly always due to ileal obstruction with occasional involvement of the ileocecal valve; however, limited cases of acute large bowel obstruction have been reported from rectosigmoid involvement, with an overall incidence between 0.1% and 0.7%.[8,9] Involvement of the cecum is exceedingly rare and generally never causes obstruction given the large diameter of the cecum, thus explaining why our patient with cecal volvulus did not present with large bowel obstruction.[8]

When endometriosis does involve the terminal colon and cause symptoms, both medical and surgical interventions can be considered for management. For patients with endometriosis

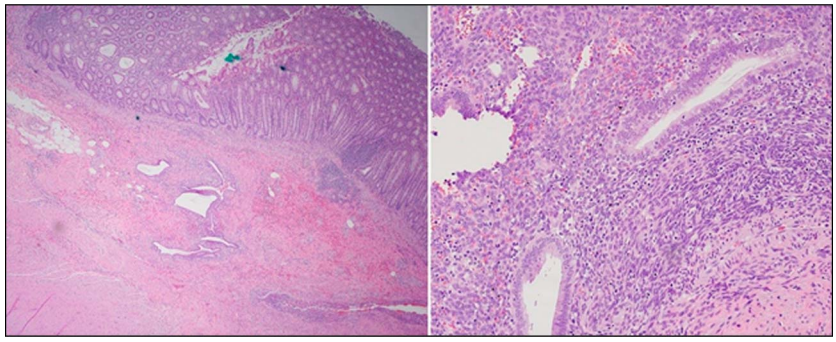

Figure 4. Benign colonic mucosa with submucosal endometriosis consisting of benign glands and stroma. Left slide, 5× magnification. Right slide, 20× magnification.

with rectal stenosis, conservative treatment with hormonal suppressive therapy including gonadotropin-releasing hormone agonists can be attempted to reduce the size of the endometriosis. If unresponsive to hormonal suppressive therapy, colorectal resection may be required to provide relief of digestive complaints.[5] The mainstay of therapy for cecal volvulus is surgical resection, with colonoscopic decompression serving as a temporizing measure to allow for surgical intervention.[10] The use of colonoscopic decompression is not recommended as initial or definitive treatment for cecal volvulus due to the high risk of colonic perforation and unsuccessful reduction with a high rate of recurrence.[10,11] The surgical management of cecal volvulus can be broadly divided into resective and nonresective procedures, with nonresective procedures being detorsion of cecal volvulus or cecopexy. These procedures are not frequently performed in the acute setting because of the high recurrence rates of volvulus, which are reported to be 22%–25% for detorsion of cecal volvulus and 20%–30% for cecopexy.[12,13]

The typical appearance of endometriosis during laparoscopy is described as superficial blue-brown lesions that appear as powder burns.[14] The peritoneal surface can be scarred or puckered and may rarely present as a polypoid mass, which may mimic the appearance of a malignant tumor. Our patient presented similarly with a puckered mass of the cecum that was initially suspected to be colon cancer, so hemicolectomy was pursued rather than an ileocecal resection.

The identification of endometriosis often involves using specific staining techniques like CK7 and PAX8, while also noting the absence of CK20 staining, which typically marks colorectal tissue. However, it is crucial to recognize that these staining patterns alone do not definitively establish benignity. Rather, they serve to confirm the gynecologic origin of the tissue under examination. To further substantiate diagnoses, histopathological examination through hematoxylin and eosin staining becomes essential. In the case of endometriosis, the presence of characteristic benign glands and stroma in hematoxylin and eosin micrographs offers confirmatory evidence, enhancing diagnostic accuracy and guiding appropriate clinical management. This integrated approach underscores the importance of combining staining techniques with histological analysis for a comprehensive understanding of gynecologic pathology. The images in Figure 3 reveal benign colonic mucosa with submucosal endometriosis consisting of benign glands and stroma.

Cecal endometriosis may be one of the causes of chronic abdominal pain in women and can rarely present as cecal volvulus. The condition can often be masqueraded by more common pathologies including IBS. Endometriosis-induced cecal volvulus is an uncommon condition that requires surgical intervention, typically in the form of an ileocecal resection or right hemicolectomy, to ensure accurate diagnosis and effective treatment. Maintaining a high index of suspicion for endometriosis in similar cases can lead to timely and appropriate management, improving patient outcomes.

DISCLOSURES

Author contributions: F. Lin: corresponding author, concept and design, acquisition, analysis, or interpretation of data, drafting of the manuscript, critical review of the manuscript for important intellectual content. J. Bahirwani and S. Kapoor: concept and design, acquisition, analysis, or interpretation of data, drafting of the manuscript, critical review of the manuscript for important intellectual content. L. Stoll: pathology slide and description. S. Kapoor is the article guarantor.

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Informed consent was obtained for this case report.

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