

Large Bowel Obstruction and Endometriosis

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Colonic obstruction most commonly occurs secondary to cancer, diverticulitis, or volvulus. These 3 conditions together account for approximately 90% of cases of bowel obstruction.¹ Adhesions, ulcerative colitis, radiation enteritis, fecal impaction, foreign bodies, endometriosis, and other rare conditions account for the remaining 10% of cases.

Although statistics vary, it has been estimated that approximately 8% to 15% of actively menstruating women have some degree of endometriosis.^{2,3} Ectopic endometrial tissue has been found in the skin, umbilicus, lymph nodes, round ligament, surgical scars, bladder, kidney, pleura, lung, spinal canal, and bowel.^{4,5} The incidence of bowel involvement with endometriosis is 3% to 34%.^{6,7} In 1960, Macafee and Greer⁶ reviewed 7177 cases of endometriosis and found intestinal implants in 12% of those patients. The most frequent location of those implants was the rectosigmoid (72%), followed by the small intestine (7%), cecum (3.6%), and appendix (3%). However, because many patients with intestinal endometriosis are either asymptomatic or have nonspecific gastrointestinal symptoms,⁸ these figures may, in fact, underestimate the true incidence of this condition. The reports of bowel obstruction secondary to endometriosis are rare, especially in the colon, because of its larger intraluminal diameter. This article reports the first known case of cecal perforation and fecal peritonitis secondary to severe endometriosis, with extensive pelvic adhesions and a large fibroid uterus leading to complete large bowel obstruction.

CASE PRESENTATION

Patient Presentation and History

A 42-year-old nulliparous woman came to the emergency department with a 4-day history of bloating, abdominal pain, and increased abdominal distension. She saw her primary care physician several days prior because of an uneasy feeling in her stomach. She was diagnosed with gastroenteritis and was started on bismuth. Early on the day of presentation to the hospi-

tal, she had begun having severe cramps, but the cramps gradually lessened and disappeared. She had no pain on arrival to the hospital. Review of systems was significant for anorexia and no recent bowel movement. She had felt constipated at home and had taken an enema that morning, which produced only mucoid material per rectum. She reported no vomiting and had not passed flatus since early that morning.

The patient's medical history was significant for hypertension, infertility, and endometriosis, which had been previously diagnosed by laparoscopy. Her medications included antiemetics and an antihypertensive.

Physical Examination and Laboratory Evaluation

Physical examination revealed a woman in moderate distress, with a pulse of 127 bpm and a respiratory rate of 24 breaths/min. She was afebrile, despite feeling cold and clammy and being diaphoretic. The remainder of the physical examination was significant only for a grossly distended and diffusely tender abdomen with rebound.

The patient's laboratory results revealed a leukocyte count of $35.8 \times 10^3/\text{mm}^3$, with 11% band forms and 79% segmented neutrophils. Serum electrolyte levels were as follows: sodium, 128 mEq/L; chloride, 89 mEq/L; potassium, 3.6 mEq/L; bicarbonate, 26 mEq/L; and anion gap, 13 mEq/L. Abdominal radiographs showed dilated loops of small bowel, pneumoperitoneum, an elevated diaphragm, and intraperitoneal fluid; the renal and psoas shadows were obscured (**Figure 1**). Upright chest radiographs showed pneumoperitoneum (**Figures 2 and 3**).

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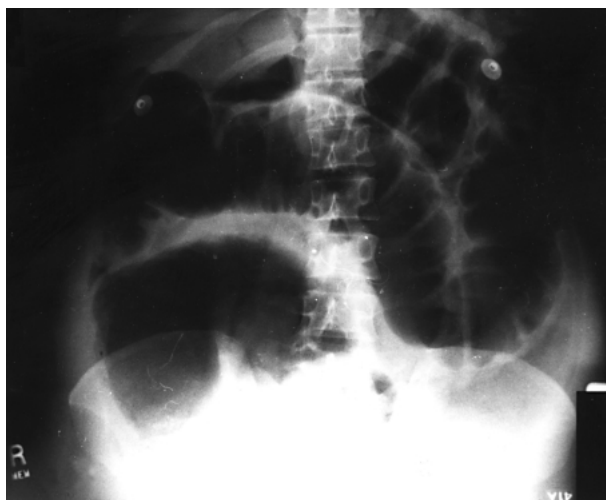


Figure 1. Supine abdominal radiograph of the case patient showing dilated loops of small bowel, pneumoperitoneum, an elevated diaphragm, intraperitoneal fluid, and obscured renal and psoas shadows.



Figure 2. Upright posterior-to-anterior chest radiograph of the case patient showing elevated bilateral hemidiaphragms and pneumoperitoneum.

Treatment and Outcome

The patient was immediately transported to the operating room and underwent an exploratory laparotomy. The intraoperative findings consisted of fecal peritonitis secondary to a perforated cecum and extensive endometriosis, with dense adhesions between the bladder, uterus, small bowel, and sigmoid colon. A large fibroid uterus occupied the majority of the true pelvis. The sigmoid colon was adherent to the uterus, and the remainder of the colon was dilated proximal to this point of obstruction. Additionally, several loops of small bowel were involved in the adhesions; the small bowel was dilated proximal to this point of obstruction. The terminal ileum was uninvolved. Intraoperative gynecology consultation confirmed our finding of endometriosis and uterine fibroids. Although the left fallopian tube and ovary were adherent to the inflammatory mass, both ovaries and fallopian tubes were grossly uninvolved with the endometriosis. The patient underwent stapled closure of the cecal perforation and temporary diversion by means of a transverse loop colostomy. She did well postoperatively and was discharged to home 7 days after surgery.

As an outpatient, she was treated with leuprolide for her endometriosis. Although her gynecologist strongly recommended a hysterectomy, the patient refused. She was instructed to undergo a barium enema prior to colostomy takedown, to demonstrate patency of her sigmoid colon. Six months after her initial surgery, the patient underwent an uncomplicated colostomy takedown.

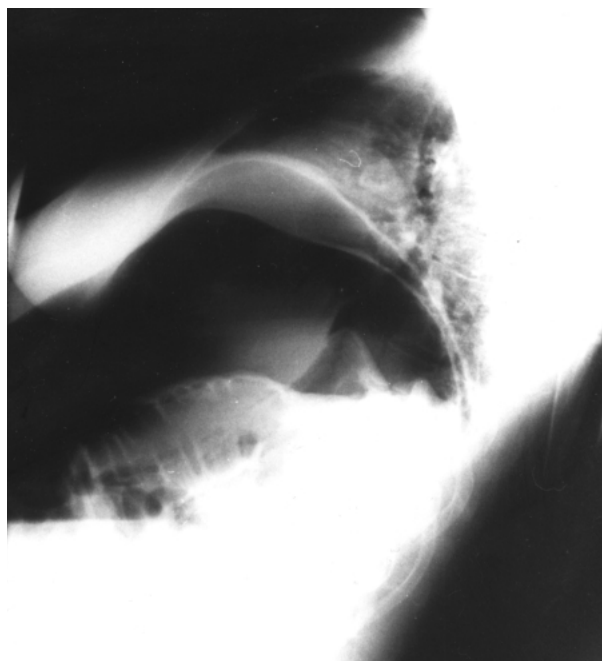


Figure 3. Upright lateral chest radiograph of the case patient showing pneumoperitoneum.

DISCUSSION

This patient represents the first reported case of cecal perforation secondary to complete sigmoid obstruction from a combination of endometrial adhesions and a large fibroid uterus. This case also demonstrates the incidental finding of a partial small bowel obstruction caused by adhesions from endometriosis.

The rectosigmoid is the colonic segment most commonly involved with pelvic endometriosis, presumably because of its proximity to the female reproductive tract. Despite the fact that endometrial implants are more frequently found in the rectosigmoid than in other colonic segments, intestinal involvement is usually only serosal. Therefore, intestinal symptoms are infrequent, and complete obstruction, although reported, is rare.⁹ The hypothesized mechanism of obstruction is an endometrioma that responds to hormonal influence, causing inflammation, fibrosis, and hyperplasia of intestinal smooth muscle. This leads to the formation of adhesions or fibrotic strictures or the development of a volvulus or intussusception.¹⁰

Small bowel obstruction is more common than complete bowel obstruction and usually presents with chronic, cyclic symptoms associated with the menstrual cycle¹¹; however, this patient was asymptomatic. A few documented cases of large bowel obstruction from endometriosis exist,^{12–15} and a single case of a 1-cm perforation of the sigmoid colon adjacent to an endometrioma has been reported.¹⁶ To our knowledge, there are no reported cases of colonic endometriosis presenting with frank perforation of the cecum and diffuse peritonitis.

HP

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