



Case Report

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Postoperative Ileal Perforation after a Cesarean Section: A New Presentation of Crohn's Disease

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ABSTRACT

Postoperative ileus is a common complication after abdominal surgery. In cases of prolonged postoperative ileus lasting more than three days, underlying inflammatory bowel disease (IBD) should be considered. We present a 35-year-old woman who developed prolonged ileus after cesarean section, complicated by multiple ileal perforations that led to the diagnosis of Crohn's disease. This case illustrates small-bowel perforation as the first clinical presentation of Crohn's disease in the postpartum period.

Introduction

Cesarean section is the most common surgery in women, continuing to rise over recent decades [1]. Postoperative ileus (POI), a syndrome characterized by impaired motility of the intestine and signs of bowel obstruction in the absence of a mechanical cause, can complicate 10% to 30% of abdominal surgeries [2]. Its incidence after cesarean section is 0.6%, and the most common risk factors

are maternal age, use of topical hemostatic agents, multifetal pregnancy, general anesthesia, and blood loss of more than one liter [3]. Uncomplicated POI almost resolves spontaneously in two to three days, but if it lasts more than three days, it is called prolonged POI. A risk factor for prolonged POI is an increase in perioperative systemic inflammatory response in patients with inflammatory bowel diseases [4]. In this case study, we present a patient who was diagnosed with Crohn's disease after having multiple intestinal perforations following prolonged post-cesarean ileus.

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Case Presentation

A 35-year-old pregnant woman, gravida 2, para 1, with a history of preterm cesarean section, was admitted to a high-risk pregnancy referral center of our hospital. Her gestational age was 32 weeks and one day according to preterm labor contractions. The patient had a history of bilateral corneal graft surgery due to Stevens-Johnson syndrome, which had been diagnosed in 2013, following the use of lamotrigine. A skin biopsy revealed the syndrome, and except for supportive eye care, she did not have any remarkable signs or symptoms from then on.

In 2014, her previous pregnancy had resulted in preterm cesarean section at 31 weeks due to preterm premature rupture of membranes and breech presentation. In her current pregnancy, she had abdominal discomfort in the epigastric area without any remarkable work-up during the few weeks before her admission.

On the admission day, her laboratory test results were WBC: 20,400 μ L, Hb: 12 g/dL, PLT: 273,000 μ L, ESR: 60, and CRP: 51. A single dose of betamethasone and nifedipine was prescribed. She underwent emergent cesarean section due to cervical dilatation and a non-reassuring fetal state within a few hours. We performed the surgery under spinal anesthesia with a Pfannenstiel skin incision and a Kerr uterine incision. Severe bladder adhesions to the anterior wall of the uterus were released, and the fetus was delivered. The surgery ended uneventfully. No bowel adhesion was seen during the surgery.

On the first day after surgery, the patient had gas

passing and brief defecation. So, a soft, tolerable diet was initiated. However, she gradually developed abdominal distension and intolerance to oral intake. Because of the progression of the symptoms, we took abdominal and chest X-rays. They revealed evidence of generalized dilated loops of small bowel and colon in favor of POI (Figure 1).

Thus, we began supportive prokinetic therapy and adequate hydration, and a nasogastric tube was inserted to drain the bilious fluid.

On the 3rd day after surgery, abdominal distension had decreased, and gas passing had resumed. We removed the nasogastric tube, and the patient began a clear liquid diet. Once again, she had intolerance to oral intake the next day. Her laboratory test results were WBC: 13,600 μ L, Hb: 9.7 g/dL, PLT: 291,000 μ L, ESR: 85, CRP: 168, urea: 40 mg/dL, Cr: 0.9 mg/dL, Na: 135 mmol/L, K: 3.5 mmol/L, PCT: 0.55. She had a low-grade fever (37.5°C).

According to the infectious disease specialist's consultation, we administered piperacillin-tazobactam and clindamycin. She underwent an abdominopelvic computed tomography scan with oral and intravenous contrast. It revealed signs of ileus and dilated small bowel and colon loops with a maximum size of 44 mm, suggesting low-grade obstruction. There was no consolidation, abscess formation, or perforation in these images. During this period, the patient had non-bloody diarrhea, but she still experienced intermittent abdominal distension, low-grade fever, and intolerance to oral intake. Despite these symptoms, conservative management continued in the absence of acute abdomen and peritonitis signs.



Fig. 1. left: the first post ileus abdominal X-ray revealed small bowel and colon dilatation. right: abdominal X-ray on the exploratory laparotomy revealed exacerbation.

On the 7th day after surgery, she underwent computed tomography cystography to rule out the possibility of bladder damage and urine leak as an etiology for prolonged ileus, which was normal. Also, after consultation with a gastroenterologist, she underwent decompressive endoscopy and colonoscopy. The endoscopic report stated: "dilated duodenum and jejunum loops with normal appearing mucosa" and "total colonoscopy up to cecum, dilated colon in the proximal segment, normal mucosal appearance." Although the distention of the abdomen decreased relatively after decompression, the ileus and abdominal discomfort did not recover completely. Multiple abdominal ultrasound and X-ray examinations were performed, all of which showed only ileus.

On the 9th day after surgery, due to progressive abdominal distention, tenderness, continued low-grade fever, and lack of response to supportive treatment, the patient became a candidate for exploratory laparotomy. Under general anesthesia, we performed a laparotomy. After exploration, we identified 12 perforations in the terminal ileum with different sizes from 2 mm to 2 cm. We performed en-bloc resection of the perforated segments and hand-sewn single-layer end-to-end anastomosis of the normal bowel with Vicryl 2/0 (Figure 2).

The patient was treated with broad-spectrum antibiotics, proper liquid and electrolyte support, and intravenous nutritional care. Finally, she was discharged in good general condition 10 days after laparotomy. Pathologic study from the resected

terminal ileum revealed active and chronic ileitis with ulceration, segmental transmural inflammation, and segmental transmural necrosis, suggesting inflammatory bowel disease (Crohn's disease). Thus, the patient was referred to a gastroenterologist for further evaluation.

Discussion

POI is a common complication after different types of surgeries. Many women who undergo cesarean section develop POI, leading to serious gastrointestinal complaints, difficulties with oral intake, an increase in hospital stay, and an inability to breastfeed their newborns [5]. The pathophysiology of prolonged POI is not completely understood. Manipulation of the intestine and surgical traumas can result in a neurohormonal response that causes bowel inflammation and systemic inflammatory response. This inflammation has a key role in developing prolonged POI [6].

During a cesarean section, amniotic fluid and blood contaminate the peritoneal cavity. This fluid and the procedures to drain it may stimulate the intestines and increase the risk of prolonged POI [5]. In the postpartum period, decreasing serum estrogen levels can also cause a decrease in parasympathetic tone [7]. This parasympathetic interruption makes the colon and proximal intestine atonic. As a result, the colon's diameter increases, and the wall tension may cause ischemia or perforation [8]. The cecum is the most common site of perforation secondary to ileus. However, non-traumatic ileal perforation can

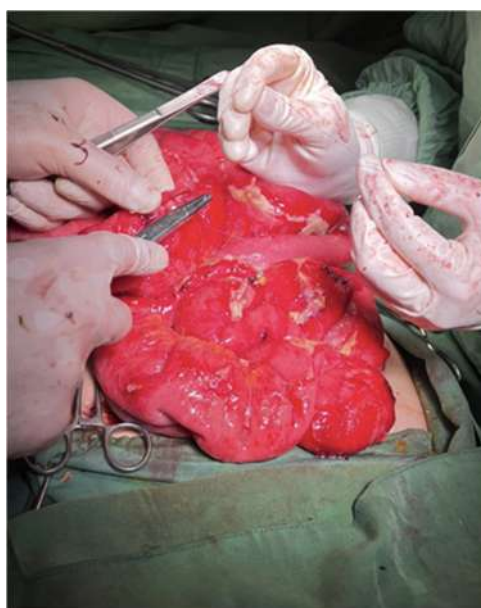


Fig. 2. En-bloc resection of the necrotic perforated segments and hand-sewn single layer end-to-end anastomosis of the normal bowel.

also result from typhoid fever, tuberculosis, non-specific inflammation, radiation, or Crohn's disease. Extensive ectopic decidual reaction (deciduosis) is another rare peripartum entity that should be considered in the differential diagnosis of abdominal pain, ileus, or peritoneal nodules; although it can mimic carcinomatosis or tuberculosis, it is benign, progesterone-driven, and typically resolves spontaneously after delivery without perforation [9].

The typical clinical scenarios of Crohn's disease, as a chronic inflammatory disease of the gastrointestinal tract, are young patients with abdominal pain, chronic diarrhea, weight loss, and fatigue [10]. The perforation of the bowel as the first presentation of inflammatory bowel disease is a rare occurrence reported in about 0.15% to 3% and is especially unusual in patients younger than 30 years old. It is a serious event with most of the perforations occurring on the ileum [11]. Similar presentations have been documented in case reports, including isolated ileal perforation as the initial manifestation of Crohn's disease [12]. Risk factors for perforation can be related to the pathophysiology of Crohn's disease, such as significant inflammatory activity and ischemia. Perforation may also be due to very significant distention upstream of stenosis [13].

Multiple intestinal perforations during Crohn's disease have rarely been reported. The underlying mechanism is bowel distension with increased intraluminal pressure proximal to an obstruction [14]. According to our case, postoperative ileus, because of the mechanisms mentioned above, can aggravate inflammation, leading to perforation in the susceptible bowel in undiagnosed Crohn's disease. On the other hand, it is possible that the insidious inflammatory bowel disease in Crohn's disease can be the underlying cause, leading to prolonged postoperative ileus. Adar et al. believe that pregnancy reduces the systemic immune response to allow the fetus, as a non-self-tissue, to develop in a woman's body. This physiologic change may mask the first presentation of inflammatory diseases like Crohn's disease. However, 30% to 40% of pregnant women with active inflammatory bowel disease will have exacerbation during pregnancy [11].

Conclusion

This case shows a new form of Crohn's disease characterized by small intestinal perforations as a non-common site of bowel perforation after a prolonged POI. The occurrence of prolonged POI in our patient was not unexpected because of an emergent cesarean section with an unprepared bowel. But the important point is the progression of illness to multiple necrotic

perforations in the terminal ileum ending in Crohn's disease diagnosis.

Ethical Considerations

Compliance with ethical guidelines

There were no ethical considerations to be considered in this article.

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Conflict of Interests

The authors have no conflict of interest to declare.

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