



Pelvic Abscess with Initial Presentation of Crohn's Disease in Pregnancy Leading to Maternal Sepsis

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Abstract

Background: A new diagnosis of Crohn disease during pregnancy is uncommon. Intra-abdominal abscess as an initial feature of Crohn disease during pregnancy is rare.

Case: A 26-year-old healthy primigravida woman at 33 weeks of gestation presented with abdominal pain and an abdominal mass. Labor was induced at 37 weeks to expedite postpartum evaluation. On postpartum day 2 she developed septic shock and multiorgan failure. Emergent exploratory laparotomy revealed an intra-abdominal abscess involving the right colon and terminal ileum. Pathology was consistent with Crohn's disease.

Conclusion: Intra-abdominal abscess from Crohn's disease is a rare occurrence during pregnancy and may be associated with significant maternal morbidity. When diagnosis in the postpartum period is uncertain and the differential diagnosis includes Crohn's disease or abscess, early postpartum evaluation may prevent complications.

Keywords: Crohn's disease, Laparotomy, Hematuria, Nausea, Colonoscopy

Introduction

Approximately 4% of women with Crohn's disease are initially diagnosed during pregnancy [1]. Intra-abdominal abscess as a presenting symptom of Crohn's disease in pregnancy is rare; a review of the literature identified five cases [2-4]. In a patient with Crohn's disease and a suspected abscess, CT scan or colonoscopy can aid in making a diagnosis. In a patient without a previous diagnosis of Crohn's disease, suspicion for a related abscess will generally be very low and complete evaluation may be deferred until the postpartum period. In such a case, immediate postpartum evaluation may prevent complications.

We report a case of a previously healthy primigravida in whom labor was induced for an enlarging intra-abdominal mass. A diagnosis of abscess resulting from Crohn's disease was confirmed after she developed postpartum septic shock and multiorgan failure. This is the second case reported in the literature of an intra-abdominal abscess with a new diagnosis of Crohn's disease resulting after a postpartum woman developed sepsis in the postpartum period. The purpose of this report is to share our experience to facilitate future diagnosis and management of this rare complication.

Case

A 26-year-old primigravida at 37 weeks of gestation was admitted for induction of labor due to an enlarging abdominal mass. A first-trimester ultrasound demonstrated a 2 cm right ovarian dermoid cyst, which was stable on her anatomic survey. At 26 weeks of gestation she developed intermittent right lower quadrant pain which resolved spontaneously. At 29 weeks of gestation, ultrasound demonstrated a

stable dermoid cyst. At 33 weeks of gestation, she developed contractions, abdominal pain, nausea and emesis. She presented to an outside hospital where she was febrile to 101° F. She was admitted, treated with intravenous antibiotics and evaluated by Maternal Fetal Medicine, Surgery and Gastroenterology. An MRI showed non-specific terminal ileal transmural thickening and an adjacent 4 cm mesenteric mass. The differential diagnosis included infection, inflammation and malignancy. She was subsequently afebrile and both her contractions and abdominal pain resolved. Then plan at this time was for CT or MRE following delivery. She was discharged with outpatient follow-up. At 36 weeks of gestation she was readmitted to the outside hospital with right flank pain, hematuria, nausea and vomiting. She was afebrile. The differential included nephrolithiasis. On assessment by a multidisciplinary team, her nausea had resolved and her pain had improved. Abdominal ultrasound demonstrated an echogenic ill-defined focus lateral to the uterus and posterior to the ovary that was felt to represent the abnormal bowel loop and mesenteric mass previously seen on MRI. At this time, the patient was asymptomatic without complaints. Outpatient ultrasound showed a pelvic mass measuring 6.7 and 8.4 cm with a septation at 36 and 37 weeks, respectively. Delivery at our tertiary-care center was recommended to facilitate postpartum management of the mass or intrapartum evaluation of the mass should a cesarean delivery be required. Elective cesarean delivery with intra-operative evaluation of intestines, mesentery and adnexa was considered; however, given the patient was asymptomatic and the differential was broad, the plan was made for induction with multidisciplinary evaluation after delivery. On admission at 37 weeks, her blood pressure was 114/74, her heart rate was 106 beats per minute, respiratory rate was 18 breaths per minute, temperature was 98.8° F and her white blood cell count was 13.4 K/ μ L.

She underwent an induction of labor and had a spontaneous vaginal delivery of a viable female infant weighing 2530 g with Apgars of 9 and 9 and 1 and 5 minutes, respectively.

On postpartum day 2 she developed nausea and vomiting followed by acute shortness of breath, chest pain and rigors. She was tachycardic, hypotensive and hypoxemic. She was intubated, started on intravenous enoxaparin for a suspected pulmonary embolus and transferred to the intensive care unit. She received intravenous fluids, broad-spectrum antibiotics, corticosteroids and vasopressors. She developed a fever of 102.9° F and remained hypotensive despite maximal pressor support. On physical exam her abdomen was distended with a palpable mass up to the diaphragm on her right and her fundus was 2 cm below the umbilicus. Labs demonstrated leukopenia, anemia, hypofibrinogenemia and a normal lactate. CT scan showed a 9.5 cm abdominal mass, no free fluid and no evidence of a pulmonary embolus. Sepsis from the intra-abdominal mass was suspected. Exploratory laparotomy performed by the Acute Care Surgery team at the bedside showed a large intra-abdominal abscess; ileocectomy was performed and the wound was left open. Pathology of the ileum, cecum and appendix showed gross (Figure 1) and microscopic features of Crohn's disease with chronic severe enteritis with inflammation, mural abscesses, fibrosis with stricture, and an entero-appendiceal fistulous tract. The ovary was identified within the abscess cavity on pathology and noted to contain a 3 cm mature cystic teratoma. Blood cultures were positive for *Klebsiella pneumoniae*, *Escherichia coli*, and *Streptococcus anginosus*. The patient remained in critical condition on three vasopressors in the intensive care unit.



Figure 1: Cobblestone appearance to the mucosa due to inflammatory pseudopolyps and wall thickening in the distal ileum. Notice the normal mucosa in the proximal ileum (left) and cecum (right).

On postpartum day 3, she underwent an abdominal washout and partial resection of the transverse colon and on postpartum day 5, she had a repeat washout with ileostomy performed. Evaluation of the pelvis demonstrated adhesions between the distal ileal mesentery and the posterior uterus, and a normal left fallopian tube and ovary. The right ovary was not visualized. On postpartum day 9 she had a third washout, the fascia was closed and a negative pressure wound vacuum was placed. She was extubated on postpartum day 9, transferred out of the ICU on postpartum day 11, and discharged on postpartum day 18. The neonate was evaluated for infection at the time of maternal diagnosis of sepsis and had a normal white blood cell count with negative blood cultures.

Discussion

Approximately 10% of patients with Crohn's disease develop an intra-abdominal abscess [5]. Acute complications of Crohn's disease,

such as abscess, may occur during pregnancy and the postpartum period. CT scan and colonoscopy can be performed safely in pregnancy to aid in this diagnosis [6,7]. In these patients, indications for surgery are the same as in non-pregnant patients [3].

Approximately 4% of patients with Crohn's disease are diagnosed during pregnancy [1]. Because the symptoms of Crohn's disease overlap with normal symptoms of pregnancy, this can be a challenging diagnosis. Because only 5 cases of pelvic abscesses as a presenting feature of Crohn's disease in pregnancy have been reported in the literature, a high level of suspicion is needed to make this diagnosis. Our patient's presentation of Crohn's disease in pregnancy presented a diagnostic challenge for several reasons. Her pain was intermittent, varied in location and was not present at the time of induction of labor or for several weeks prior. She had non-specific ileal wall thickening with a mass of unclear etiology on MRI. Due to her pregnancy and gestational age, a multidisciplinary team opted to defer colonoscopy and CT scan until after delivery. It is likely that our patient had a contained abscess that ruptured with the mechanical stress of labor, or with shearing forces during uterine involution. She developed sepsis and became critically ill over the next 48 hours.

In a case series of six women with Crohn's disease who developed intraperitoneal sepsis, three women received their initial diagnosis during pregnancy [4]. One of these three women had a vaginal delivery complicated by peritonitis which developed within 48 h of delivery and required surgical management. She was determined to have a ruptured abscess secondary to ileocecal Crohn's disease. This case, along with our case, suggest that early postpartum evaluation may lead to a prompt diagnosis of intra-abdominal abscess, allowing for treatment prior to the development of sepsis. Another option that may be considered in pregnant patients with an abdominal mass of uncertain etiology is a planned cesarean delivery to evaluate the mass at the time of delivery, with surgical treatment if indicated.

Intra-abdominal abscess as an initial presenting feature of Crohn's disease during pregnancy is rare and presents a diagnostic challenge. When the differential diagnosis for a postpartum woman includes complications of Crohn's disease or intra-abdominal abscess, immediate postpartum evaluation may allow for management prior to the development of complications.

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