

Cecal volvulus: A rare cause of surgical abdomen in pregnancy ☪

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Introduction

Colonic volvulus, a rare cause of large-bowel obstruction, occurs in approximately 10-15% of cases, with cecal volvulus being particularly uncommon, especially during pregnancy.

Case Presentation

A 41-year-old woman, gravida 9, para 4, at 28+4 weeks of gestation, presented with a one-day history of progressive, left-sided abdominal pain, urinary frequency, and uterine irritability. The pain, initially intermittent, became constant and radiated to the left lower quadrant. She denied abdominal trauma but reported strenuous farm work over the past 2-3 days. Physical examination revealed uterine irritability, and a speculum exam showed a closed cervix. Urinalysis showed bacteria but no leukocytes, and blood tests indicated neutrophilia. A fetal fibronectin test suggested low risk of preterm labor. Abdominal ultrasound and imaging ruled out placental abruption, and a CT scan revealed a cecal volvulus.

Multidisciplinary Team Discussion and Management Decision

Due to the imminent risk of cecal rupture, emergency laparotomy was deemed necessary. Caesarean section was deferred due to the risks of extreme prematurity. The local pediatric team was informed of the situation and potential need for neonatal resuscitation and transfer.

During the laparotomy, a midline vertical incision was made, with careful protection of the uterus. The cecal volvulus was identified, and the obstructed segment of the cecum was resected with an end-to-end anastomosis. Remifentanyl was used for anesthesia, with non-opioid agents for intraoperative analgesia. Instruments for an emergency caesarean section were kept ready but were not needed.



Figure 1 Xray abdomen showing moderate gaseous distension of the stomach

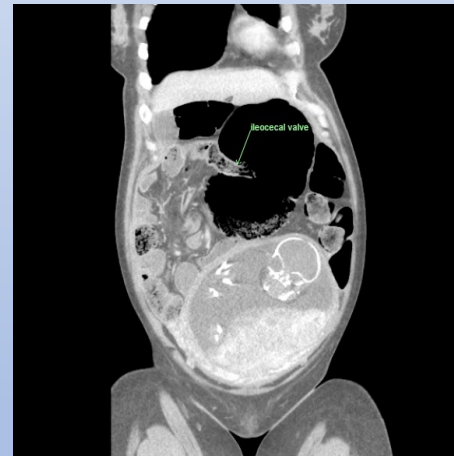


Figure 2 CT abdomen pelvis with contrast showing cecal volvulus with marked distension of the cecum

Postoperative Management

Postoperatively, the following measures were implemented:

- **Analgesia:** Non-opioid pain relief was prioritized to avoid risks to the fetus. Rectus sheath catheters were used to deliver localized analgesia directly to the incision site.
- **Fetal Monitoring:** Twice-daily cardiotocography (CTG) was performed, showing reassuring fetal well-being.
- **Progesterone Pessaries:** Administered to reduce the risk of preterm labor.
- **Dietary Support:** A short-term parenteral nutrition (PPN) plan was implemented for nutritional support.
- **Antibiotic Therapy:** Targeted antibiotics were started based on intraoperative cultures showing **Klebsiella oxytoca**.

By Day 3 post-surgery, the patient developed abdominal tenderness and bilious nasogastric aspirates, raising concerns of ileus, anastomosis failure, and potential Klebsiella peritonitis. Due to these complications and the risk of preterm labor, she was transferred to a tertiary center for further management. The patient was discharged from the tertiary center at 32 weeks and went on to have a term vaginal birth at 40 weeks, with an uncomplicated intrapartum and postpartum course.

Discussion

Cecal volvulus during pregnancy is a rare but serious complication, accounting for approximately 1.5% of all cases of intestinal obstruction in pregnant women. It involves axial torsion or twisting of the cecum and ascending colon, leading to bowel obstruction and potential ischemia if untreated. The risk increases as pregnancy progresses, particularly around 16-20 weeks, 32-36 weeks, and the puerperium.

The presentation of cecal volvulus can be subtle and easily mistaken for pregnancy-related issues such as preterm labor or placental abruption. In this case, the patient initially presented with abdominal pain, which was initially attributed to preterm labor or placental abruption. Symptoms like abdominal distension and vomiting became more prominent only later in the admission.

Cecal volvulus is difficult to diagnose, with laboratory tests and imaging studies providing limited diagnostic value. Plain X-rays may show a "coffee bean deformity," but a CT scan is the most effective diagnostic tool, with a diagnostic accuracy of 90%. However, concerns over radiation exposure to the fetus may delay imaging. In this case, a contrast-enhanced CT scan confirmed the diagnosis.

Management typically involves laparotomy, with right hemicolectomy being the preferred surgical option. Non-obstetric surgery during pregnancy carries the risk of preterm labor, so antenatal steroids are recommended for fetuses at very premature gestations. A multidisciplinary team (MDT) approach, involving obstetrics, surgery, pediatrics, and anesthesia, is crucial in planning the management and addressing potential complications, including fetal well-being and premature delivery.

Conclusion

This case highlights the importance of considering uncommon causes of surgical abdomen in pregnant women. Timely imaging and intervention are essential to managing such rare but potentially life-threatening conditions. MDT discussions are critical to assess risks to both mother and baby, ensuring optimal outcomes.

REFERENCES:

Coughlan B, O'herlihy C. Acute intestinal obstruction during pregnancy. *J.R Coll Surg Edinb.* 1978;23(3):175-177.

Henry Montes, Jacqueline Wolf, Cecal volvulus in pregnancy, *The American Journal of Gastroenterology*, Volume 94, Issue 9, 1999, Pages 2554-2556, ISSN 0002-9270,

Harer WB, Harer WE. Volvulus complicating pregnancy and puerperium. *Obstet Gynecol.* 1958;12:367-76.

Bogale NT, Beyene SA, Desta DZ, Tessema EH, Birhanie SA. Cecal Volvulus in Pregnancy, a Diagnostic Dilemma and Management: A Case Report and Literature Review. *Open*

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