

# Sigmoid Volvulus in Pregnancy: Recurrent Episodes of Abdominal Pain

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## PATIENT DESCRIPTION

A 26-year-old female at 28 weeks of gestation with her fourth pregnancy presented with a 24-hour history of diffuse abdominal pain and distension. In addition, she had nausea, vomiting, and constipation. The pain did not respond to analgesics. She had poor prenatal care during her pregnancy. She had previously had three cesarean deliveries. The first cesarean delivery was due to non-progressive second stage of labor, the second was preterm due to abdominal pain and suspected uterine rupture, and the last was due to the previous cesarean deliveries. In her last previous pregnancy, she presented with recurrent milder abdominal pain, which resolved spontaneously.

On examination, she was afebrile, with normal blood pressure and heart rate. Her abdomen was distended, tympanic, and mildly tender to palpation with no tenderness on the cesarean scar and no peritoneal signs. Her laboratory testing was normal except for mild hypokalemia.

Obstetrical ultrasonography revealed normal findings, and uterine activity was demonstrated without cervical shortening or dilation. She was treated with magnesium for neuroprotection, steroids for fetal lung maturity and tocolytics, as well as oral potassium supplements.

A clinical diagnosis of bowel obstruction was inferred. She was referred to the on-call surgeon and the decision was to

proceed with an abdominal radiograph, which revealed signs of colonic obstruction including dilated large bowel with abnormal gas pattern. A computed tomography (CT) scan was performed, which showed a bird beak and whirl signs. These signs are pathognomonic for sigmoid volvulus as well as dilated large intestine and air-fluid level [Figure 1A]. The patient underwent an urgent decompression with rectal tube. The colon was decompressed with immediate relief of symptoms. She was discharged several days later. Unfortunately, she presented at 34 weeks of gestation with similar symptoms. Physical examination and laboratory investigation revealed similar findings. Plain radiograph and CT scan demonstrated dilated large bowel with no signs of obstruction. During the ultrasound examination a suspicion of uterine dehiscence was raised. Therefore, she underwent an emergency cesarean delivery. Intraoperative findings included very thin lower uterine segment and dilated sigmoid [Figure 1B]. Intestinal reduction was conducted by general surgeons intraoperatively. A healthy preterm neonate was delivered. She was discharged with no complications and was later scheduled for a sigmoid colectomy.

## COMMENT

Gastrointestinal symptoms are common during pregnancy. However, bowel obstruction in pregnancy is uncommon with a reported incidence from one in 1500 to one in 66,431 deliveries. The most common causes are adhesions, sigmoid volvulus, intussusceptions, carcinoma, and hernia [1]. Sigmoid volvulus is one of the

**Figure 1.** Signs of dilated sigmoid colon

**[A]** Computed tomography scan with dilated large intestine and air-fluid level as well as bird beak and whirl signs



**[B]** Dilated sigmoid colon during cesarean delivery



most common causes of bowel obstruction during pregnancy, accounting for up to 44% of reported cases and is associated with high incidence of maternal and fetal complications.

Maternal mortality ranges between 5% if the bowel is viable to over 50% if the bowel is perforated. Most reported maternal mortality cases occur when the delay in presentation and surgical intervention was more than 48 hours [2].

Rates of fetal morbidity and mortality in sigmoid volvulus are approximately 30%. Fetal compromise can be caused by a reduction of placental blood flow due to maternal hypovolemia or due to increased intra-abdominal pressure. Early diagnosis and intervention are the key to

improved maternal and fetal outcomes.

Diagnosis of sigmoid volvulus in pregnancy may be challenging. Accurate and expeditious diagnosis with a high index of suspicion is crucial to reduce mortality and morbidity. The classic clinical presentation includes a triad of abdominal pain, distension, and constipation. These symptoms may be vague during pregnancy or regarded as pregnancy related [3]. Another challenge is the physical examination. The enlarged uterus limits proper physical examination of various abdominal regions. Another challenge is selecting the appropriate radiological modalities, which are complicated by reluctance of physicians to conduct any radiologic investigations because they could expose the fetus to radiation. In general, no single diagnostic study exceeds 5 rads and all are considered safe for the fetus [4].

In our patient, examination was not suggestive of threatened preterm delivery

or other gynecological source of pain, thus further investigation with plain abdominal X-ray and CT scan was conducted.

In an early diagnosis with no signs of peritonitis, as in our case, endoscopy can be both diagnostic and therapeutic. Endoscopy is reported to be successful in 50–80% of non-pregnant patients. Nevertheless, during the third trimester it could be limited by the gravid uterus [3].

The risk of recurrence is high and reaches up to 50% [5]. Thus, definitive sigmoid colectomy is usually recommended postpartum, as was recommended in our case.

**CONCLUSIONS**

Sigmoid volvulus during pregnancy is rare but may lead to high maternal and fetal mortality rates. Diagnosis during pregnancy is a challenge. However, early diagnosis and intervention and high incidence of clinical suspicion are the key to improve maternal and fetal outcome.

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**To move freely you must be deeply rooted.**

Bella Lewitzky (1916–2004), modern dance choreographer, dancer, and teacher

**Love is never lost. If not reciprocated, it will flow back and soften and purify the heart.**

Washington Irving (1783–1859), American short-story writer, essayist, biographer, historian, and diplomat of the early 19th century

**Capsule**

**Bivalent prefusion F vaccine in pregnancy to prevent RSV illness in infants**

**Kampmann** and colleagues studied whether vaccination during pregnancy could reduce the burden of respiratory syncytial virus (RSV)-associated lower respiratory tract illness in newborns and infants. Overall, 3682 maternal participants received the vaccine and 3676 received a placebo. In total, 3570 and 3558 infants, respectively, were evaluated. Medically attended severe lower respiratory tract illness occurred within 90 days after birth in 6 infants of women in the vaccine group and 33 infants of women in the placebo group (vaccine efficacy 81.8%, 99.5% confidence interval [CI] 40.6–96.3). Nineteen cases and 62 cases, respectively, occurred within 180 days after birth (vaccine efficacy 69.4%, 97.58% CI 44.3–84.1). Medically attended RSV-associated lower respiratory tract

illness occurred within 90 days after birth in 24 infants of women in the vaccine group and 56 infants of women in the placebo group (vaccine efficacy 57.1%, 99.5% CI 14.7–79.8). These results did not meet the statistical success criterion. No safety signals were detected in maternal participants or in infants and toddlers up to 24 months of age. The incidence of adverse events reported within 1 month after injection or within 1 month after birth were similar in the vaccine group (13.8% of women and 37.1% of infants) and the placebo group (13.1% and 34.5%, respectively).

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