A Case Report of Recurrent Sigmoid Volvulus in Pregnancy

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Introduction

Sigmoid volvulus in pregnancy is a very rare entity with less than 200 cases reported in the literature, yet is life-threatening with high rates of morbidity and mortality for the mother and fetus. It is more common during the third trimester of pregnancy. The increasing size of the uterus may elevate a mobile sigmoid colon from the pelvis and produce a partial obstruction either due to pressure or kinking of this portion of the bowel. The extremely low incidence along with masking of the clinical presentation by a gravid uterus lead to delay in diagnosis, which is the main reason for devastating outcomes including bowel ischemia, necrosis, perforation and both fetal and maternal death. An effective multidisciplinary approach and prompt diagnosis are critical.

Case Report

A 34-year-old woman, gravida 5, para 4, presented during week 33 of an otherwise uneventful pregnancy, with intermittent sharp abdominal pain and constipation, and no history of nausea, vomiting, fever. Her previous pregnancies consisted of 2 normal spontaneous vaginal deliveries and 2 C-sections. On examination, she was afebrile, with abdominal tenderness. Sterile vaginal examination showed a closed cervix with no contractions on the tocometer. Laboratory studies revealed elevated WBC count of 13,700. She was admitted and given fleet enema and bisacodyl suppository, with no change in abdominal pain. It was clear that the patient was not in preterm labor as the cervix remained closed. Her pain continued to worsen the next day and it was necessary to explore other etiologies of the abdominal pain. Abdominal ultrasound showed fluid collection in the left lower quadrant of the abdomen measuring 2.3 x 3.0 x 7.7 cm. MRI of the abdomen showed suspected sigmoid volvulus resulting in obstruction of the colon which is prominently dilated with air-fluid levels (Fig 1A,B). She underwent urgent colonoscopy with successful detorsion and decompression of the sigmoid volvulus (Fig 2A,B). She then reported improvement of abdominal pain with 2 subsequent bowel movements. However, the next day, similar symptoms of the abdominal pain returned. With high suspicion of recurrence, she underwent another colonoscopy with another successful detorsion of the sigmoid volvulus. Fetal hearts were monitored continuously before and after the procedures. Due to the recurrence of the volvulus, she was scheduled the next day for a C-section and exploratory laparotomy concomitantly via vertical midline incision which resulted in the delivery of a viable female infant with APGARS 8 and 9 and bowel resection of sigmoid and descending colon and colostomy formation (Fig3). She was discharged on postoperative day 3 without post-operative complications.

Discussion

In the general population, the mortality rate for SV ranges from 0-40% (1,2). Furthermore, the prospective mortality rates for pregnancy with SV demonstrated 20% maternal and 40% fetal mortality; however, maternal and fetal mortality in these patients is directly correlated to the degree of bowel ischemia and subsequent sepsis (3). A grave associated complication of SV is sigmoid gangrene, seen in 6.1-30.2% of all SV patients. The mortality rate increases from 0-40% to 3.7-80%, nearly doubling (1,2).

Given that SV is a medical emergency, initial management in our case resembled conservative therapy for a nonpregnant case consisting of fluid resuscitation, NPO status, pain management and colonoscopic decompression. Conservative therapy with endoscopic detorsion and decompression is efficacious in 75% - 95% of cases (4). In fact, there have been effective endoscopic interventions during pregnancy to relieve obstruction and there are less than 10 cases of persisting sigmoid volvulus in the same pregnancy (4). On the contrary, with pregnancy as the alluring factor for recurrence there was an increased likelihood of another episode of volvulus. While colonoscopy during pregnancy is relatively safe in the third trimester, it still has the risks of bleeding, perforation, infection and possibly inducing early labor (5).

The multidisciplinary team including OB/GYN, FM, GI, MFM, Surgery, and Neonatology physicians reviewed the case and agreed that caesarean section followed by sigmoid resection with colostomy was ideal given the fact that the volvulus was refractory to nonsurgical management.

Although difficult to diagnose based on presenting symptoms, pregnant patients with unresolving symptoms of abdominal distension, pain and constipation should be further evaluated for SV especially during the second and third trimesters. A high index of clinical suspicion is vital in pregnant women with signs and symptoms of intestinal obstruction to avoid any delay in diagnosis and treatment.

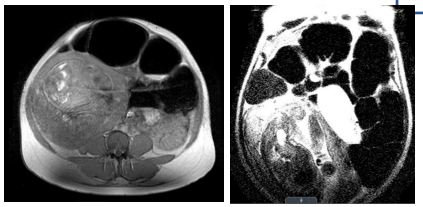

Fig 1A, B: Axial and coronal segments demonstrating gravid uterus and sigmoid volvulus resulting in obstruction of the colon which is prominently dilated with air fluid levels.

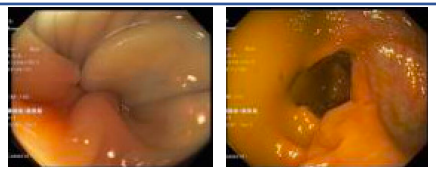

Fig 2A: Colonoscopy image demonstrating luminal appearance of a volvulus seen at 30 cm from the anal verge. (left)
Fig 2B: Colonoscopy image demonstrating luminal appearance post detorsion and decompression of the sigmoid colon.

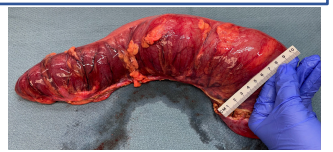

Fig 3: Intraoperative photograph of a dilated sigmoid colon with a segment of descending colon measuring 35 x 9 cm together in length without evidence of necrosis or perforation.

References

1. Atamanalp, S. S., Kisaoglu, A., & Ozogul, B. (2013). Factors affecting bowel gangrene development in patients with sigmoid volvulus. Annals of Saudi medicine, 33(2), 144–148.
2. Atamanalp, S. S., Disci, E., & Atamanalp, R. S. (2019). Sigmoid volvulus: Comorbidity with sigmoid gangrene. Pakistan journal of medical sciences, 35(1), 288–290.
3. Khan, M. R., & Ur Rehman, S. (2012). Sigmoid volvulus in pregnancy and puerperium: a surgical and obstetric catastrophe. Report of a case and review of the world literature. World journal of emergency surgery : WJES, 7(1), 10.
4. Cortez, N., Berzosa, M., Muddasani, K. and Ben-David, K., 2020. Endoscopic Decompression of Recurrent Sigmoid Volvulus in Pregnancy. *Journal of Investigative Medicine High Impact Case Reports*, 8, p.232470962097593.
5. Fox, Steven R. MD; Gorrepati, Navakanth MD; Cappell, Mitchell S. MD Safety of Colonoscopy during Pregnancy, American Journal of Gastroenterology: September 2007 - Volume 102 - Issue - p S270-S271