



## CASE REPORT

# Sigmoid Volvulus in Second Trimester is Challenge to Obstetric and Surgical Departments at St. Francis Referral Hospital, Kilombero, Tanzania

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### Abstract

**Introduction:** Intestinal obstruction is rare in pregnant with the incidence ranging between 1:1500 and 1:66431 deliveries whereby the sigmoid volvulus is the most cause in all causes. Early diagnosis is the most important step to prevent possible maternal and fetal complications. On the other hand, premature delivery and maternal death are among the complications.

**Case report:** A 25 years Gravida 4, para 3, with 2 living at gestation age of 20 weeks who presented at St Francis Hospital with three days of colicky abdominal pain, associated with abdominal distension and constipation. Abdominal X-ray revealed a dilated large bowel and coffee bean sign while abdominal ultrasound showed a single living intrauterine fetus. Emergency laparotomy was done in which the findings revealed a gangrenous and twisted sigmoid at its mesenteric axis by 360 degrees. End to end anastomosis was done following bowel resection. Abortion of a living baby occurred four hours after surgery who died after 24 hours. The patient was discharge at day six post operation in good health.

**Conclusion:** Sigmoid volvulus is rare in non pregnant females but more frequent in pregnant ones. Obstetric complication may mimic the SV findings which may lead to delay in diagnosis. The early of both diagnosis and surgical intervention are recommended to prevent maternal and fetal complications such as preterm delivery and intrauterine death.

### Keywords

Intestinal obstruction, Sigmoid volvulus, Second trimester

### Introduction

Intestinal obstruction is among the rare causes of acute abdomen in pregnancy. With the incidence ranging from 1:1500 to 1:66431 deliveries [1]. Furthermore, although there are a number of causes, sigmoid volvulus is a very rare cause of intestinal obstruction. The volvulus regardless of the site is associated by bowel vascular compromise and gangrene if the obstruction is not relieved early. The etiological differential diagnosis may be obstetric or surgical conditions. In such confusion the pregnant patient with acute abdominal surgical condition like intestinal obstruction is often miss diagnosed [2,3]. In this situation any delay in diagnosis and treatment may lead to serious complications in both the mother and fetus [2,4,5]. The additional uniqueness of abdominal pain occurring in pregnancy renders the gravid uterus overwhelms the physical examination such that one may fail to detect the common abdominal surgical findings in especially in the second and third trimester. As a precaution, the clinician also becomes reluctant to use the abdominal X-ray and computed tomography because of radiation risk to the fetus [5]. In summary; the delay in diagnosing the acute intestinal obstruction in pregnant woman is multifactorial, hence, the need for competency of the clinician in determining the unusual maternal abdominal complaints which normally occur due to delay in surgical intervention

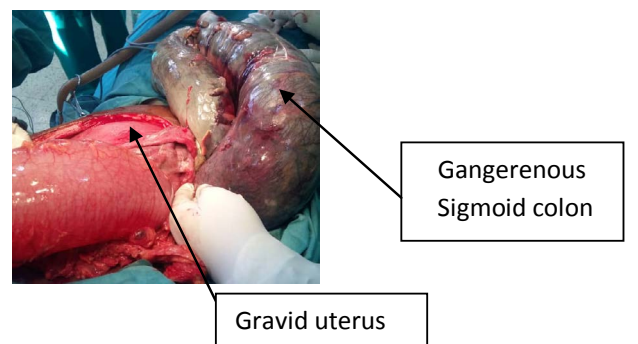
specifically bowel ischemia and gangrene. Other maternal complications include electrolyte imbalance, septicemia, toxemia and even premature death, while fetal complications are abortion, preterm delivery, intrauterine death and neonatal sepsis [6].

## Case Report

A female of 25 years came as referral case from Mlimba health center with a diagnosis of intestinal obstruction in pregnant. She was Gravida four Para three living two at gestation age of twenty weeks with no previous history of surgery. She came in presenting with colicky abdominal pain for three days, progressive abdominal distension, and absolute constipation, negative history of vomiting and fever but positive fetal movements. On physical examination, she was dehydrated, dyspnea, tachypnea, afebrile, no palpable peripheral lymphadenopathy.

**Vital signs:** BP 130/85 mmHg, PR 155 p/min (shock index 1.2), RR 29 c/min, T 37.6 °C. On abdominal examination: She had grossly abdominal distension, tense abdomen with no tenderness, increased tympanic note, absence of bowel sounds but audible fetal heart sounds. Other systems were essentially normal.

Provisional diagnosis was intestinal obstruction in pregnancy. Urgent hemoglobin level was requested and the result was 12 g/dl, other investigations requested were blood grouping and X-match which was group B Rh positive, HIV test Negative, Abdominal-thoracic X-ray film; on which there was dilated colon with omega sign and three air fluid levels. Abdominal Ultrasound reported a single tone intrauterine living fetus with fetal heart rate (FHR) 145 P/min, distended colon, and absence of extra luminal free-fluid were reported by sonographer. The patient was prepared for emergency laparotomy based on sigmoid volvulus triad which is abdominal pain, abdominal distension and absolute constipation supported by an abdominal X-ray film. Preoperative resuscitation was done by intravenous ringer's lactate alternating with normal saline 4 lts, nasal-gastric tube for gastrointestinal decompression and the patient was catheterized, explorative laparotomy was done after adequate urine output and reduced pulse rate (109 P/min from 155 P/min). Intra-operative findings; there was a dilated sigmoid volvulus with purple coloration, which was twisted along its own mesenterial axis by 360°. The bowel was untwisted gently then distal and proximal loops were clamped by using bowel clamps to prevent fecal contamination. The gangrene segment was resected to leave the health tissue, colo-colic end-to-end anastomosis was done then the patient was admitted in intensive care unit (ICU). Four hours after the operation the mother expelled the leaving fetus who was taken into neonate unit but it died within 24 hours due to prematurity respiratory distress. Four days post-operation, control pelvic ultrasound was done which showed no



**Figure 1:** The dilated sigmoid volvulus with purple discoloration indicating gangrenous condition and gravid uterus and the sigmoid volvulus after loop resection has been done.



**Figure 2:** The sigmoid volvulus after loop resection has been done.

features of leakage, but there was intrauterine products of conception whereby evacuation was done. The patient was discharged at day 6 post operative with health condition. Two weeks after discharge the patients came for follow up clinic whereby she was good and she was discharged from clinic follow up (Figure 1 and Figure 2).

## Discussion

Intestinal obstruction is uncommon in pregnant ranging between 1 in 1500 to 66,431 pregnancies [2], furthermore, Sigmoid volvulus is less common in female with the ratios ranging from 1:2 to 1:10 [7]. The colonic mesentery is dolichomesocolic in male than in female while the capacious pelvic volume in females in addition to lax abdominal wall allow the spontaneous untwisting of redundant colon and vice versa in males [7]. In preg-

nant woman especially in third trimester, the sigmoid volvulus is the commonest cause of intestinal obstruction accounting for 44% [8].

The gravid uterus is predisposing factor of sigmoid volvulus to occur by displacing a redundant mobile sigmoid loop out of the pelvis which causes the sigmoid to twist along its own mesocolon axis eventually leads to closed loop obstruction [6,9]. This also gives an explanation of why it is more frequent in third trimester of pregnancy. In our case the patient was in second which becomes similar to that of Sabri, et al. reported two cases out of nine case series [7] while the first trimester being reported to be infrequent the low frequency may be contributed by underreported cases [7,8]. Since when the first case of sigmoid volvulus was described by Braun in 1885, up to 2016 only 101 cases have been reported in literature [8]. In our case, the obstructed loop was significantly gangrenous which becomes similar to the reported in the literatures [7,9].

Sigmoid volvulus is the commonest closed-loop intestinal obstruction associated with bowel blood supply compromise which leads to early bowel ischemia and finally to gangrene if the obstruction persist as it was found in our case [6,8]. The bowel resection and end to end anastomosis was done in our patient due to gangrenous sigmoid colon, this correlate well with what was reported by Machando, et al. whereby resection of the sigmoid colon followed by primary anastomosis was done successfully [10]. Primary colo-colic anastomosis is rarely encouraged in the few literatures [2,11] to avoid anastomotic leakage, instead Hartman's procedure is advocated by several authors [8,9,11]. However, early surgical intervention should be performed to prevent further complications as it has been found in some cases. General management of sigmoid volvulus in pregnant needs multidisciplinary approach involving general surgeon, obstetrician and neonatology [1] to save pregnant women's and fetal lives.

## Conclusion

Sigmoid volvulus is the commonest cause of intestinal obstruction in pregnancy being associated by multiple complications in both maternal and fetus such as abortion, premature delivery and death of the either or both mother and the fetus. Any delay in diagnosis and treatment may increase the probability of fetal and maternal mortality. In the presence of SV triad; the surgeon should use the index of suspicion together with abdominal radiograph so as to have early and timely surgical intervention to reduce fetal and maternal morbidity and mortality.

## Ethical Considerations

This case report received approval from St. Francis Referral Hospital and St. Francis University of Health and Allied Sciences. A written informed consent to publish the surgical condition was sought from the patient.

## Guarantor

The corresponding authors are the guarantors of submission.

## Conflict of Interest

The authors declare no conflict of interest.

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