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Postpartum Sigmoid Volvulus: A Case Report

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Authors' contributions

This work was carried out in collaboration among all authors. Authors EBY and FY designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors EBY, FY, AEB and MB managed the analyses of the study. Authors AEB and MB managed the literature searches. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Sigmoid volvulus is a rare complication of pregnancy and the puerperium.A *case* of a35-year-old patient, gravida 1, para 1, recently delivered her foetus with caesarean section. Her postoperative period was complicated by abdominal distension, bilious vomiting and absolute constipation and the ultimate diagnosis of sigmoid volvulus. The patient was surgically treated by sigmoidectomy and potoperative medications ; and discharged 8 days postoperatively. *Conclusion*: Prompt surgical evaluation of an acute abdomen during the postpartum period is important; delayed diagnosis and poor treatment can lead to significant maternal morbidity and mortality.

Keywords: Intestinal volvulus; Puerperium; Surgery.

1. INTRODUCTION

Sigmoid volvulus is a less common complication in pregnancy. Normal physiological signs of the puerperium such as abdominal pain, vomiting may obscure the clinical picture in the setting of sigmoid volvulus. However, it is important to consider this rare entity in the differential

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diagnosis of severe abdominal pain because early recognition has been shown to be the main predictor of outcome [1]. The sigmoid colon is the part of intestine that retains its mesentery in development. Other parts retaining mesentery include the transeverse colon and loops of small intestine called jejenum and ileum [2]. This factor might be an element in their mobility and hence occurnce of volvulus. In this article, we report a rare case of sigmoid volvulus in postpartum period.

2. CASE REPORT

A 35 years old, gravida 1, para 1, recently delivered her foetus with caesarean section. After one week, she suffered abdominal distension, bilious vomiting and absolute constipation. She reported no past personal medical or surgical history, or family history of megacolon. Physical exam revealed a dehydrated, tachycardic and tachypnoeic. Her abdomen was distended and painful, with tympanic sounds on percussion Fig. 1. No stools were found in the rectal ampulla on digital examination.

Chest and abdominal radiographs showed sigmoid distension in the shape of an inverted U. Abdominal computed tomography revealed a dilated colon with air-fluid levels and the whirl sign, which represented twisted colon and mesentery; and laboratory tests showed an increased white cell count (29 000/mm3), neutrophilia (90 %), hyperkalaemia (6 mmol/l), c-reactive protein (320 g/L), urea (1,31 g/l) and creatinine (25 mg/l). Laparotomy was performed. A sigmoid volvulus (three twists on the axis of the sigmoid mesocolon) with a closed-loop obstruction was found, accompanied by distension and ischaemia of the colon, which was dilated, friable and gangrenous Fig. 2.

The sigmoid and part of the descending colon were resected Fig. 3, and colostomy was carried out (Hartmann's procedure).

The patient was treated with broad-spectrum antibiotics and transferred to the intensive care unit. She was discharged 08 days postoperatively. Clinical examination showed conscious patient, hemodynamically stable, in good general condition.

3. DISCUSSION

This is a rare form of postpartum sigmoid volvulus. Volvulus, carcinoma, hernia, adhesions, intussusceptions, and appendicitis are the most frequent forms of intestinal obstruction in the puerperium [3-4], with sigmoid volvulus becoming the most common volvulus occurring around pregnancy. This phenomenon was first reported by Houston in 1830 and initial maternal and fetal mortality was described in 1937 with rates of 21% and 50%, respectively [1]. In other reports, maternal and fetal outcomes were directly related to bowel ischemia and all maternal deaths were associated with delayed presentation and surgical intervention over 48 hours [1], [5-6]. Maternal mortality has

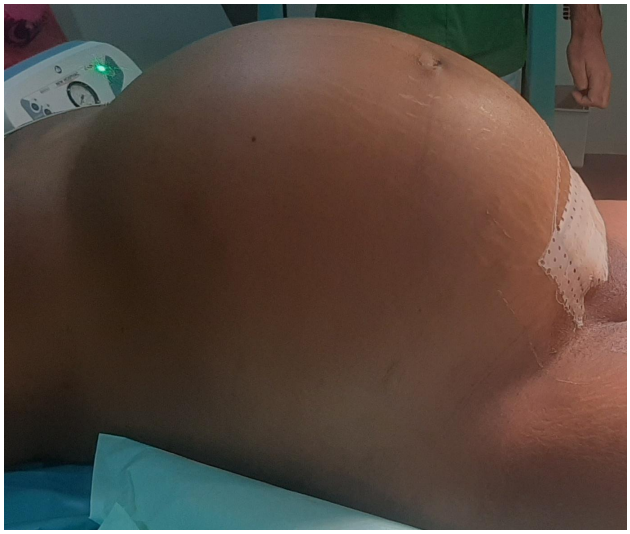

Fig. 1. Abdominal distension following cesarean section (CS)

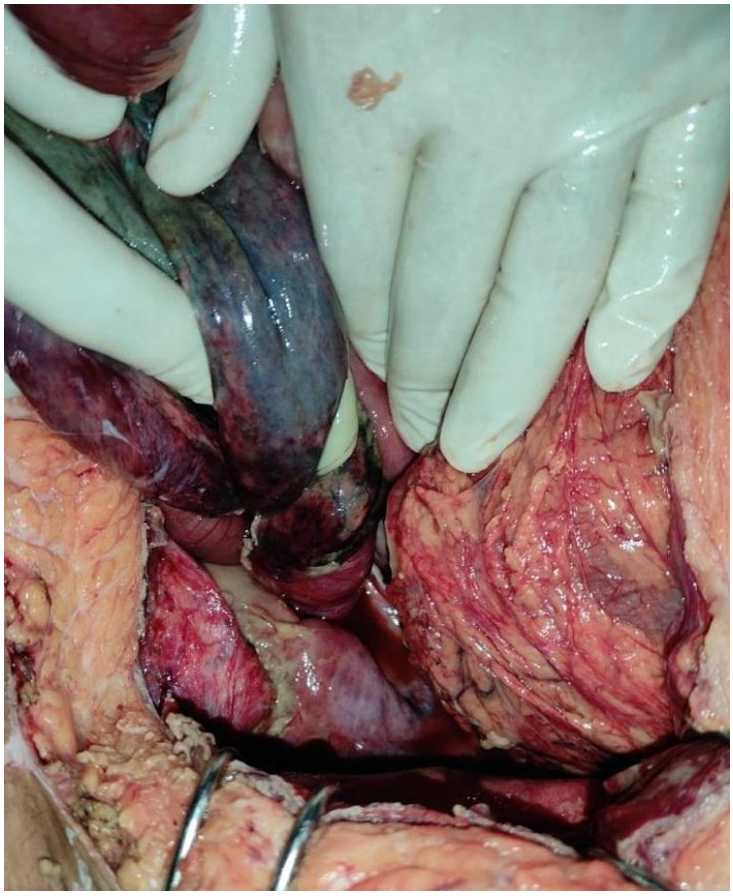

Fig. 2. Dilated ischemic sigmoid colon which had undergone volvulus

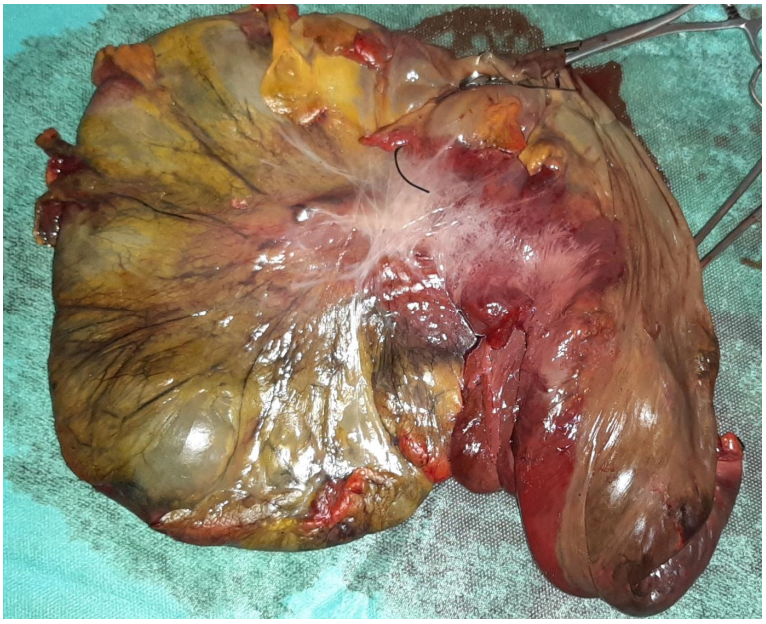

Fig. 3. Surgical specimen of sigmoid volvulus showing the necrosis

declined since the first case of volvulus during pregnancy from 1830; however, mortality rates are still too high with 20% maternal mortality and 40% fetal mortality [1,7]. Volvulus in the postpartum period, as in this case, is exceedingly rare, but risk is thought to be increased from distortion of the colon occurring from rapid change of uterine size following delivery [8]. This risk may be further increased by an underlying redundancy of the sigmoid colon in the setting of a narrow-based mesentery.

The most frequent cause of bowel obstruction complicating pregnancy is sigmoid volvulus, which accounts for 44 percent of cases. Pregnancy is a risk factor for this syndrome, which is caused by the displacement, compression, or partial obstruction of a redundant or abnormally elongated sigmoid colon, which may explain its high occurrence during the third trimester; however, cases have also been recorded [9].

The diagnosis of acute abdomen caused by volvulus is difficult and delayed, as the symptoms are similar to those associated with pregnancy and the puerperium. It should be suspected when a patient presents the clinical triad of abdominal pain, distension and constipation. The pain may be severe from the start or worsen in intensity, colicky in nature. Initially, it is not associated with vomiting, fever. Vomiting progresses to fecal vomiting. During the illness, the patient may present with dehydration, fever, and absence of bowel sounds. The average time from onset of obstructive symptoms to onset of symptoms is 24-48 h, but also up to 6 days have been reported [10]. Loss of abdominal wall tone and difficulty in identifying abdominal signs may mask signs of peritonitis [8].

Plain abdominal radiographs show radiological patterns of obstruction in over 80% of cases. The main radiological feature is that of a double loop obstruction or "classic omega shape", with a dilated portion of the upstream colon associated with small bowel obstruction and retention of feces in the proximal colon. Single-contrast barium enema is useful when the diagnosis is not obvious [11]. CT scan can establish ischemia of the affected part and can identify other possible causes of abdominal pain.

Sigmoid volvulus is managed medically and surgically. The initial management includes correcting fluid and metabolic derangements, and nasogastric decompression. Treatment of hypovolemia and correction of electrolyte abnormalities [12]. Sigmoidoscopy with endoscopic decompression is considered the treatment of choice when the colon is viable (without peritonitis, ischeamia or perforation) [13]. Emergency laparotomy is indicated if intestinal ischaemia or peritonitis is suspected [14]. The standard surgical treatment is sigmoidectomy with primary anastomosis, associated with mortality of 8%. Another option is exteriorization of the proximal colon with a terminal colostomy and closure of the distal rectum (Hartmann procedure) eliminating the risk of anastomotic dehiscence [15-16].

4. CONCLUSION

Sigmoid volvulus complicating the postpartum period is an uncommon condition with significant maternal morbidity and mortality. A reliable diagnosis requires a high index of clinical suspicion in patients with distension, abdominal pain and constipation. Prompt therapeutic management of an acute abdomen during the postpartum period is important; delayed diagnosis and treatment can lead to high maternal morbidity and mortality.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline participant consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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