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# A Rare Case of Necrotic Sigmoid Volvulus Complicating the Postpartum Period

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Necrosis; Volvulus; Sigmoid; Postpartum; Surgery

## 1. Abstract

Sigmoid volvulus is a rare complication of pregnancy and the puerperium. We report a case of sigmoid volvulus complicating the the postpartum periodin a 35-year-old patient who presented on day 5 postoperative of a cesarean section performed in the EL HAROUCHI maternity at the IBN ROCHD CHU in CASABLANCA, in a table of occlusive syndrome. The diagnosis was made on abdominopelvic CT. An exploratory laparotomy revealed a necrotic volvulus of the severely distended sigmoid colon. In our case, the sigmoid volvulus is likely to have been precipitated by the rapid change in the size of the uterus after childbirth. Prompt surgical evaluation of an acute abdomen during the postpartum period is essential; delayed diagnosis and treatment can lead to significant maternal morbidity and mortality.

## 2. Introduction

Sigmoid volvulus, the leading cause of colonic volvulus, corresponds to the torsion of the sigmoid around its meso with a variable degree of rotation from 180 to 360◦ (mesentericoaxial form) or along an organoaxial axis [1] (Figure1), responsible for a mechanical colonic occlusion.

## 3. Observation

KA, 35 years old, single, without any pathological history, was admitted at day 5 postoperative of a caesarean section for a non-reassuring fetal state giving birth to a newborn female, Apgar 8/10, birth weight 3200g on a pregnancy not followed presumed to be full term, in a picture of occlusive syndrome made of diffuse abdominal pain evolving for two days, associated with abdominal distension and stop of matter and gas. The physical examination revealed an altered general state with a fever of 38.5°C, a blood pressure of 80/60 mm Hg, a pulse of 110 beats per minute and a respiratory rate of 24 cycles per minute. Abdominal examination showed a significant meteorism with tympany and diffuse abdominal tenderness. On rectal examination, the rectal ampulla was empty. The gynecological examination found a clean caesarean scar, minimal lochia, a uterus difficult to appreciate due to the abdominal distension. The abdominal CT scan with injection of contrast product showed a significant distension of the ascending and transverse colon with hydro-aerosic levels upstream of a transitional level, creating a beak-like appearance with visualization of a turn of spiral at the level of the mesentery. The descending colon and the gizzard coves were collapsed (Figure 3). The biological exam showed a hyperleukocytosis of 28950 elements/mm3 and a CRP of 320 elements. The diagnosis of mechanical colonic occlusion on organo-axial sigmoid volvulus was retained, and a surgical exploration was required. After a median laparotomy and an aspiration of 300 ml of a brownish fetid liquid, the exploration showed a huge colonic distension (Figure 4) with a volvulus of the mesenteric-axial sigmoid with clockwise turn of spiral with sigmoidal necrosis (Figure 5) and presence of some false membranes in inter-anses. We performed a sigmoidectomy taking away the necrotic sigmoid (Figure 6), closure of the rectal tip and left colostomy in Hartmann.

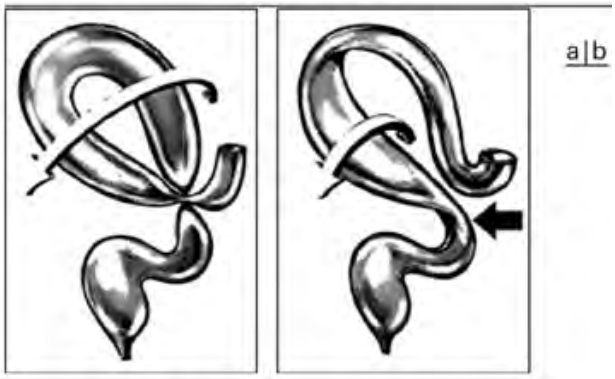


**Figure 1:** Schematic of the volvulus by DL Janzen and WH Stuart (1). This diagram illustrates perfectly the crossing of the 2 loops at the pelvic level in the mesenteric-axial volvulus (a) whereas in the organo-axial volvulus (b), the distal loop is twisted on itself around its long axis.

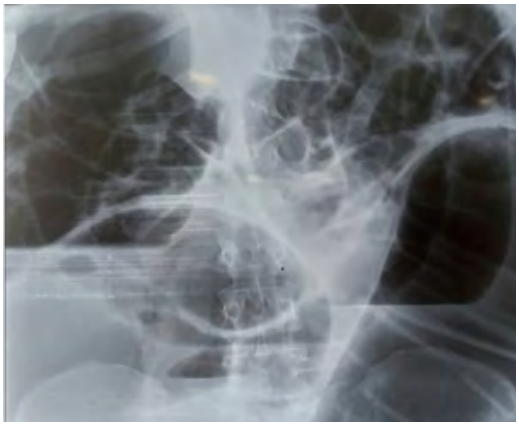

**Figure 2:** Unprepared abdomen showing the "inverted U" image.

**Figure 3:** Axial scan section showing the "bird's beak" appearance.

**Figure 4:** Enormous gallbladder and colonic distension.

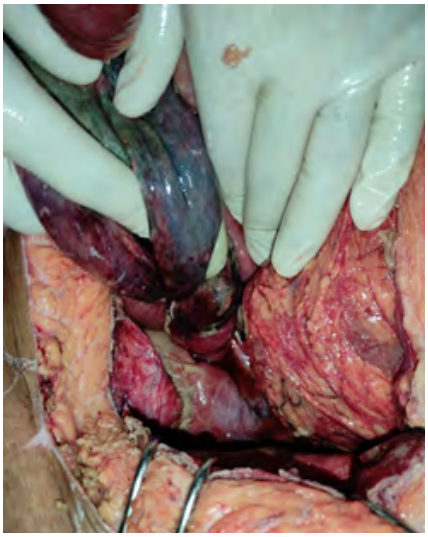

**Figure 5:** Clockwise turn of coil with sigmoidal necrosis

**Figure 6a:** A sigmoidectomy removing the necrotic sigmoid

## 4. Discussion

Volvulus of the sigmoid represents the most common etiology of antepartum bowel obstruction [2 ,3]. Volvulus in the postpartum period, as in our case, is extremely rare, but the risk is thought to be increased by colonic distortion resulting from a rapid change in uterine size after delivery [4]. Circumferential torsion of an intestinal segment around its mesenteric origin, if left untreated, can progress to intestinal ischemia and perforation [ 2]. The etiology of colonic volvulus is probably multifactorial in origin. Some factors are common to the localization of volvulus, such as chronic constipation, high fiber diet, frequent use of laxatives, history of laparotomy and anatomical predispositions. Thus, the dolicho-sigmoid is the factor most often cited as predisposing to volvulus of the sigmoid [5]

### 4.1. Pathophysiology

In sigmoid volvulus, a torsion of the mesosigmoid less than 180◦ is considered physiologic. In about 2% of cases, the volvulus reduces spontaneously. Beyond this angle of torsion, complications arise leading to occlusion, ischemia or even colonic necrosis and perforation. For unknown reasons, the torsion is counterclockwise in 70% of cases [6]. During a sigmoid volvulus, colonic distension leads to an increase in intra-luminal pressure which induces a decrease in digestive capillary perfusion, aggravated by mechanical phenomena of compression and axial rotation ("twist") of the mesosigmoid vessels [7]. This early colonic mucosal ischemia favors bacterial translocation which increases colonic distension and toxic phenomena. A vicious circle is then created which, if detorsion is not early, leads to colonic necrosis, inducing ischemia-reperfusion. All these phenomena lead to a state of mixed septic and cardiovascular shock. (Figure 1) describes the two mechanisms of torsion during sigmoid volvulus, with mesenteric-axial volvulus being more frequent than organo-axial volvulus (75% vs. 25% [8]).

### 4.2. Diagnostic

The clinical picture is that of a distal colonic occlusion, with sudden abdominal pain predominating in the left iliac fossa, early cessation of feces and gas with meteorism (sometimes masked by diarrheic stools due to emptying of the distal segment). Nausea and vomiting are delayed [9]. However, these symptoms in the postpartum period, in this case after a caesarean section, are frequent and are not specific. The uterus, cervix and adnexa share the same visceral innervations as the terminal ileum, sigmoid, colon and rectum, so that differentiation between a gynecological or gastrointestinal origin of the pain may be difficult [10]. In addition, abdominal distension may be a late and unreliable finding of postpartum volvulus; associated abdominal tenderness and, if detected, may be interpreted as fundal tenderness since the obstructed bowel is usually posterior to the enlarged uterus [11]. The clinical picture may be confused at this time with endometritis or postoperative complications. Signs of peritonitis and sepsis suggest ischaemia of the volvular segment. The signs suggestive of seriousness are those of dehydration, shock and cardiorespiratory decompensation [9]. Biological examinations do not point to a diagnosis. They only reflect the occlusive syndrome and the possible infectious syndrome: hydro-electrolytic disorders (hypokalemia, functional renal failure), hyperleukocytosis, inflammatory syndrome, and even hemostasis disorders in necrotic forms [5]. Standard radiography (unprepared abdomen), with visualization of the classic "inverted U" image, is no longer indicated; it was performed in our case, given the postoperative context, to eliminate an ogilvie syndrome. The French National Authority for Health recommends that an abdominopelvic CT scan be performed as a first-line procedure [12] as soon as possible. Its sensitivity is close to 100% and its specificity higher than 90% for the positive, topographic and etiological diagnosis in case of occlusion [13,14]. Abdominopelvic CT scan with injection of contrast medium, at portal time, confirms the diagnosis (presence of a U-shaped loop, whose two legs converge towards the point of torsion giving or "coffee bean" on frontal reconstructions, with a whirl sign corresponding to the rolling of the mesocolon around the point of torsion) [15], visible on axial and coronal sections. It also allows to show indirect signs (dilatation of the upstream colon or even of the small intestine, distal colon and non-aired rectum, identification of the transition zone between flat loop and dilated loop) and to eliminate differential diagnoses.

### 4.3. Traitement

It associates the stopping of feeding, a high digestive aspiration, and hydro-electrolytic rebalancing. In an emergency, in the absence of signs of seriousness (digestive perforation, ischemia), the treatment is based on endoscopic detorsion of the volvulated segment, with colo exsufflation and placement of a Faucher tube to limit the risk of recurrence in the short term [16]. The type of surgical treatment is controversial [17]. In immediately complicated forms (colonic necrosis, perforation, shock), colonic colectomy and resection, usually without restoration of continuity, is necessary [5]. The mortality associated with sigmoid volvulus is estimated to be between 7 and 20% [9]. The most important prognostic factor is the delay in management, as the natural course is towards digestive ischemia, colonic infarction and peritonitis [18]. In case of perforation or ischemia, the postoperative mortality rate reaches 40% [19].

## 5. Conclusion

Colonic volvulus is a medical-surgical emergency involving the sigmoid colon in 60 to 75 % of cases. Its diagnosis is difficult in the immediate postpartum period. Abdominopelvic scans are necessary for a positive diagnosis and to assess the severity of the disease. in complicated forms, a colonic colectomy and resection, usually without restoration of continuity, is necessary. The increased volume of the abdomen and the difficulty in obtaining abdominal signs (due to the loss of tone of the abdominal wall)

may mask the signs of peritonitis.

## 6. Declaration of Interest

The authors declare that they have no conflict of interest.

### References


1. Bernard C, Lubrano J, Moulin V. Apport du scanner multi-détecteurs dans la prise en charge des volvulus du sigmoïde. JRadiol. 2010; 91: 213-20.
2. Aftab Z, Toro A, Abdelaal A. Endoscopic reduction of a volvulus of the sigmoid colon in pregnancy: case report and a comprehensive review of the literature. World Journal of Emergency Surgery (WJES). 2014; 9(41).
3. Khan MR, Rehman SU. 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. 2012; 7(1).
4. SaschaDua R, Rothnie ND, Gray EA. Sigmoid volvulus in the puerperium. International Journal of Gynecology and Obstetrics. 2007; 97(3): 195.
5. Perrot L, Fohlen A, Alves A, Lubrano J. Colon volvulus: what management in 2016?. Journal of Visceral Surgery. 153(3): 188-198.
6. Shepherd JJ. The epidemiology and clinical presentation ofsigmoid volvulus. Br J Surg. 1969; 56: 353-9.
7. Altarac S, Glavas M, Drazinic I. Experimental and clinicalstudy in the treatment of sigmoid volvulus. Acta Med Croatia. 2001; 55: 67-71.
8. Lubrano J, Paquette B, Delabrousse E, Koch S, Mantion G. Vol-vulus of the sigmoid. EMC Gastroenterology. 2012; 1-6.
9. Rothmann C, Pierrard O, Schmutz T. Sigmoid volvulus: emergency diagnosis and treatment. European Journal of Emergencies and Resuscitation. 2018; 30(1-2): 41-45.
10. Augustin G, Majerovic M. Non-obstetrical acute abdomen during pregnancy. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2007; 131(1): 4-12.
11. Atamanalp SS, Kisaoglu A, Ozogul B. Sigmoid volvulus complicating pregnancy: a case report. Eurasian Journal of Medicine. 2015; 47(1): 75-76.
12. Main indications and “non-indications” for radiography of the abdomen without preparation. 2009; Pg No: 1-28.
13. Atamanalp SS. Treatment of sigmoid volvulus: a single-centerexperience of 952 patients over 46.5 years. Tech Coloproctol. 2013; 17: 561-9.
14. Atamanalp SS, Ozturk G. Sigmoid volvulus in the elderly:outcomes of a 43-year, 454-patients experience. Surg Today. 2011; 41: 514-9.
15. Wai CT, Lau G, Khor CJ. Clinics in diagnostic imaging:sigmoid volvulus causing intestinal obstruction, with suc-cessful endoscopic decompression. Singapore Med J. 2005; 46: 483-7.
16. Perrot L, Fohlen A, Alves A. Management of the colonicvolvulus in 2016. J Visc Surg. 2016; 153: 183-92.
17. Kasten K, Marcello P, Roberts P. What are the results ofcolonic volvulus surgery. Dis Colon Rectum. 2015; 58: 502-7.
18. Dulger M, Canturk NZ, Utkan NZ. Management of sigmoidcolon volvulus. Hepatgastroenterology. 2000; 47: 1280-3.
19. Raveenthiram V, Madiba TE, Atamanalp AA. Volvulus ofthe sigmoid colon. Colorectal Dis. 2010; 12: 712.