

Sigmoid volvulus in the puerperium[☆]



Vólvulo de sigmoides en el puerperio

The incidence of pregnancy-associated bowel obstruction varies from 1 in 1500 to 1 in 66,431 deliveries.¹ Sigmoid volvulus, which accounts for 12% of cases of intestinal obstruction, is a complication associated with significant mortality in the post-partum period.² The fundamental problem is that a delay in presentation of signs and symptoms may lead to resection of the affected portion and colostomy.^{3,4} Ischaemia, necrosis, perforation, peritonitis and sepsis are the main complications if surgery is not performed early on in the course of the disease. We present the case of a patient in whom sigmoid volvulus was diagnosed in the puerperium.

The patient was 25 years old, gravida 2, para 2. On the fourth day after an uncomplicated vaginal delivery, she was seen for pain and abdominal distension, bilious vomiting and constipation beginning three days previously. She reported no past personal medical or surgical history, or family history of megacolon. On physical examination she was found to be dehydrated, tachycardic and tachypnoeic. Her abdomen was distended and painful, with tympanic sounds on percussion and absence of bowel sounds. The uterus was intrapelvic and the cervix was closed. No stools were found in the rectal ampulla on digital examination.

Chest and abdominal radiographs revealed the presence of pneumoperitoneum and marked sigmoid distension in the shape of an inverted U. Abdominal ultrasound revealed free fluid in the abdomen, and laboratory tests showed an increased white cell count (15,000/mm³),

neutrophilia (89%), hyperkalaemia (6.0 mmol/L), hypoglycaemia (70 mg/dL), metabolic acidosis (pH 7.3) and hypoxia (pO₂ 80%).

Colonoscopic decompression was not attempted due to the time elapsed since onset of symptoms. Laparotomy was performed, and bowel perforation and peritonitis were diagnosed. A sigmoid volvulus (two 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. 1). Perforations with little faecal material in the cavity were identified. The sigmoid and part of the descending colon were resected, and proximal colostomy was carried out with mechanical suturing to close the rectal ampulla. The patient was treated with broad-spectrum antibiotics and transferred to the intensive care unit. She was discharged 11 days post-operatively, and the colostomy and colorectal anastomosis were closed three months after surgery.

Intestinal volvulus occurs when the intestine rotates on its mesenteric axis, resulting in occlusion of the intestinal lumen and vascular pedicle. Bowel obstruction can be caused by congenital or post-operative adhesions, volvulus, intussusception, hernias, Meckel diverticulum or appendicitis.² Sigmoid volvulus is the most common cause of bowel obstruction complicating pregnancy, accounting for 44% of cases.⁵ Pregnancy is a predisposing factor for this condition, caused by displacement, compression or partial obstruction of a redundant or abnormally elongated sigmoid colon, possibly explaining its high incidence during the third trimester of pregnancy; however, cases have also been reported in which this complication occurs during the post-partum period.⁶

The diagnosis of acute abdomen caused by volvulus is difficult and delayed, as the symptoms are similar to those



Figure 1 Macroscopic characteristics of sigmoid volvulus in the puerperium during surgery.

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associated with pregnancy and the puerperium. It should be suspected when a patient presents the clinical triad of pain, distension and absolute constipation. The average time from onset of obstructive symptoms until presentation is 48 h.² Loss of abdominal wall tone and difficulty in identifying abdominal signs may mask signs of peritonitis.³

Plain abdominal radiographs show radiological patterns of obstruction in more than 80% of cases. The key radiological finding is that of a double-loop obstruction or "coffee-bean sign", with a dilated portion of colon associated with small bowel obstruction and retention of faeces in the proximal colon. Single-contrast barium enema is useful when the diagnosis is uncertain.⁴ Ultrasound may aid in the differential diagnosis by confirming the presence of free fluid in the abdominal cavity.⁷ Computed tomography can establish ischaemia of the affected portion, and may identify other possible causes of abdominal pain. Mesenteric angiography with intravenous contrast and magnetic resonance imaging provide definitive evidence of mesenteric ischaemia.¹

Sigmoid volvulus is managed medically and surgically. Mechanical colonoscopic detorsion in clinically stable patients (without peritonitis, ischaemia or perforation) allows tissue viability to be established, exact location to be identified, and mechanical detorsion of the volvulus and decompression of the dilated colon to be performed.⁴ Emergency laparotomy is indicated if intestinal ischaemia or perforation is suspected.⁸ The surgical treatment of choice is sigmoidectomy with primary anastomosis, associated with mortality and recurrence rates of 8% and 1%, respectively. However, this procedure may be difficult to perform in oedematous tissues. Another option is exteriorization of the proximal colon with a terminal colostomy and closure of the distal rectum (Hartmann procedure). Mesosigmoidoplasty is not recommended, as it is associated with high recurrence and mortality rates.⁹

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José Prieto Montaña^a, Eduardo Reyna-Villasmil^{b,*},
Ismael Suárez-Torres^b, María Labarca-Acosta^b

^a *Servicio de Cirugía General, Hospital Central Dr. Urquinaona, Maracaibo, Estado Zulia, Venezuela*

^b *Servicio de Obstetricia y Ginecología, Hospital Central Dr. Urquinaona, Maracaibo, Estado Zulia, Venezuela*

* Corresponding author.

E-mail address: sippenbauch@gmail.com
(E. Reyna-Villasmil).