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Case Report

Sigmoid Volvulus. Unusual Cause of Surgical Abdomen During Pregnancy. Case Report

Alonso Ávila[1,2], Zulimar Suárez[1,2], María González[1,2], Mariana Añolis[1,2], Adel Al Awad[1,2,3] and María Matera[1,2,4]*

[1]Comunidad Estudiantil para la Difusión e Investigación de la Anatomía Humana (CEDIAH), Escuela de Medicina, Universidad del Zulia, Maracaibo, Venezuela

[2]Chair Human Anatomy, Facultad de Medicina, Universidad del Zulia, Maracaibo, Venezuela

[3]Attending on the General Surgery Service, Promote Tower Paraiso, Maracaibo, Venezuela

[4]Professor of the Chair Human Anatomy, Facultad de Medicina, Universidad del Zulia, Maracaibo, Venezuela

***Corresponding Author:** Mariana Añolis, Universidad del Zulia, Comunidad Estudiantil para la Difusión e Investigación de la Anatomía Humana (CEDIAH), Facultad de Medicina, Maracaibo, Estado Zulia, Venezuela.

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Abstract

Introduction: Colonic volvulus in pregnant women is an infrequent complication. When it occurs, it generates a condition of intestinal obstruction with the presence of unspecific signs and symptoms associated with ischemia, necrosis or perforation of the intestine. Its incidence is 1:1600 gestations, and it is considered a pathology of poor prognosis with high risk of maternal-fetal mortality.

Clinical Case: A 37-year-old woman at 28 weeks of gestation, who consulted for nonspecific clinical symptoms characterized by abdominal pain, cramping, of strong to moderate intensity and diffuse, with presence of increased abdominal circumference and outflow of fluid through the genitals. For this reason, induction of labor was performed. Subsequently, after delivery there was no clinical improvement, so the patient was referred to the general surgery service of the Hospital Universitario de Maracaibo where she was admitted with the presumptive diagnosis of acute obstructive abdomen, so surgery was performed where volvulus of the sigmoid colon was found with necrotic color changes and loop dilatation.

Results and Discussion: The clinical background conditions the patient to present the clinical picture as established in the literature, however, she did not present all the symptoms according to this. Hartmann's procedure was performed as surgical choice obtaining a favorable prognosis.

Conclusion: The diagnosis, treatment and symptomatology of this pathology are described in the literature, although since it is infrequent, its specific causes are not well known, so further research is recommended.

Keywords: Sigmoid Volvulus; Hartmann's Procedure; Acute Obstructive Abdomen; Pregnancy; Clinical Case

Introduction

Colonic volvulus in pregnant women is an extremely rare complication caused by rotation of the colon about its mesenteric axis [1]. When this occurs, it conditions a picture of intestinal obstruction that manifests the presence of non-specific signs and symptoms, which can cause ischemia, necrosis, gangrene and

perforation of the intestine, so it is considered a pathology of poor prognosis with high risk of maternal and fetal mortality [2]. The clinical and radiographic signs of this complications during pregnancy are similar to those to those of non-pregnant women [11].

The incidence of intestinal obstruction associated with pregnancy is 1:16,000 gestations, with great variability between series among the etiologies of intestinal obstruction that can complicate the course of pregnancy are, in order of frequency, bridging and adhesions secondary to previous surgical interventions (60-70%) and pelvic surgeries or intra-abdominal inflammatory processes, followed by bowel volvulus, which represent only 9% of cases [3]. A review of the literature found 112 cases of intestinal volvulus complicating pregnancy, most commonly involving the sigmoid colon [12].

Large bowel volvulus as a cause of intestinal occlusion during pregnancy is very rare, as only 73 cases have been described in the literature (with the first case of colonic volvulus reported in 1885 by Braun et al [4]. It should be noted that the most frequent location is in the sigmoid colon, representing 60-70% of reported cases, followed by the cecum 20-30%, and finally in the transverse and splenic angle [5].

The diagnosis of intestinal obstructions has a clinical component. This is annexed with simple abdominal X-ray studies is diagnostic reference in 57%-90% of patients and flexible endoscopic detorsion is the main treatment option, with reference to emergency surgery is reserved for complicated cases [6]. In pregnancy, the physiological growth of the uterus is the main predisposing factor for the generation of a volvulus. The increase in size of the uterus displaces the sigmoid colon and turns it into an extrapelvic organ, which gives it significant mobility that allows it to easily rotate about its point of fixation in the mesocolon and trigger the clinical picture [4]. Based on the above, the aim of this research is to describe the clinical manifestations, treatment and prognosis of sigmoid volvulus in pregnant patients as well as a case report.

Case Report

This is a 37-year-old female patient with a history of eutosic labor (VIII gestation, VIII delivery), at the Villa del Rosario Hospital, Municipality Machiques de Perijá Venezuela, Zulia State, who refers the onset of clinical picture characterized by abdominal pain of insidious onset, cramping type of 24 hours of evolution, moderate to severe intensity and diffuse localization, without irradiation, not related to food intake, without crises, without acalmia, without predominance of time, exacerbated by postural changes and walking, which partially subsides with the intake of non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen, without specifying the dose, concomitantly with an increase in abdominal circumference.

On the other hand, she reported clear fluid coming out of the genitals and labor and delivery care was performed. Subsequently, the patient presented persistence of the clinical picture together with the presence of dyspnea of sudden onset, associated with mild exertion that improved with supplemental oxygen support. For this reason, she was referred to the Castillo Plaza Maternity Hospital in the city of Maracaibo.

As for her obstetric history, VIII gestations, VIII deliveries. Uncontrolled pregnancy of 28 weeks of gestation with consequent premature delivery and fetal death. On physical examination, the patient was in poor general condition, febrile with a quantified temperature of 38°C, with marked cutaneous and mucosal pallor, dehydrated, dyspneic. Blood pressure 120/70 mmHg with a mean of 87 mmHg, tachycardic, with heart rate of 122 beats per minute, respiratory rate of 28 breaths per minute, saturation of 92% with supplemental oxygen and 85% room air.

On abdominal examination, abdomen with moderate adipose panniculus, distended. Hydroaerial sounds present, hypophonetic. On percussion, tympanism in all abdominal quadrants with predominance of the upper hemiabdomen. On palpation, hard abdomen, little depressible, painful to superficial and deep palpation, with presence of defense and involuntary muscle contraction of the entire wall. Based on the above, the patient was admitted to the gynecology service with the diagnosis of Acute Surgical Abdomen due to uterine rupture vs. obstructive abdomen, so an inter consultation was made with the General Surgery Service of the Hospital Universitario de Maracaibo.

After emergency preoperative assessment, it was decided to take the patient to surgery. Under general anesthesia, with asepsis

and antisepsis measures, the sterile field was placed, and the diaeresis was performed by planes until entering the cavity, where the following intraoperative findings were evidenced:

- Torsion of the sigmoid colon on its own axis with signs of ischemia (violaceous coloration, vinous liquid in the cavity and necrotic areas of the colon wall), corresponding to sigmoid volvulus.
- Dilatation of the viscera such as stomach, thin loops, cecum, ascending colon, transverse colon and descending colon.
- Free purulent liquid in cavity, approximately 300 cc.
- Presence of fibrin interase and superficial hepatic fibrin.
- Puerperal uterus (tonic, enlarged, normal appearance).

Figure 1

Exploratory laparotomy of a 37-year-old female patient, showing evidence of a volvulus loop corresponding to the sigmoid portion of the colon.

It was decided to perform the resolution by means of the Hartmann's procedure approach for sigmoid colon resection with closure of the distal side and colostomy containment. Subsequently, the cavity was washed with 2,500 ml of 0.9% physiological solution, 3.4 m of thin loop was used and tubular drainage was placed in the bottom of the Douglas pouch. Finally, the presence of hernias was verified and closed by planes up to the skin, finalizing the surgical act.

Subsequently, a favorable evolution was obtained, with administration of antibiotic therapy, such as metronidazole, sulbactam ampicillin and tolerable liquid diet. Complications were evidenced in the lower respiratory system, with bilateral basal pneumonia of nosocomial origin, which was treated immediately. On the 8th day the patient was discharged with outpatient controls.

Discussion

Volvulus in pregnancy is one of the main causes of intestinal obstruction during gestation, which can be observed in the puerperium, this is nothing more than the rotation of a segment of air-filled intestine on its narrow mesentery being the most common sites of volvulus in the sigmoid colon and transverse colon that correspond to the mobile segments, This usually results in early mesenteric vascular obstruction and occlusion, compromising the blood flow of the colon leading to tissue ischemia, hypoxia and consequent necrosis. During gestation, the pregnant uterus can displace the redundant sigmoid colon out of the pelvis, predisposing to its torsion [4].

In turn, it is characterized by the presence of signs and symptoms among which stand out continuous abdominal pain, absence of hydroaerial sounds, fever, increased heart rate, as well as nausea, vomiting and abdominal distension associated with leukocytosis [7]. Sigmoid volvulus during pregnancy represents a high mortality for both mother and fetus. It is much more frequent in multiparous women, due to the increase in size of the uterus together with a compliant mesocolon, enhancing the rotation of the loop. Other situations, such as fetal head descent at the end of pregnancy and constipation, have also been described as predisposing factors [4].

The patient in the case study, with a history of VIII gestations, presented this significant predisposing factor, such as multiparity. The paraclinical diagnostic method of choice is abdominal radiology while standing and lying down or in lateral decubitus, highlighting that between 10 to 20% of pregnant patients with intestinal obstruction have radiographic studies without pathological findings, even more so if the occlusion is high [2].

This was not done in the previous case due to the severity and condition of the patient, who was referred with the presumptive diagnosis of uterine rupture by the gynecology service, this being a surgical emergency. The patient was in poor general condition placing her at risk without immediate intervention. Diagnosis is a challenge with success rates of 33% to 91%, and can be detected late because the symptoms present are related to pregnancy and this will determine the choice of studies that will determine the treatment to be indicated [1].

Patients usually present colicky, intermittent pain with mild onset and gradual increase; during the painful crisis there may be peristalsis of struggle. Other important symptoms are nausea and vomiting, taking into account that the characteristics of the vomit material can guide the diagnosis as well as the time of evolution and especially the site of obstruction, the vomit presents as a dark liquid and takes a foul smell until reaching the fecaloid vomit typical of low obstructions; on the other hand, it has been demonstrated that abdominal distension is one of the most important signs for the diagnosis [1].

Clinically, the patient presented unusual signs and symptoms or according to the established pathophysiology, such as; abdominal pain of insidious onset, colicky type of 24 hours of evolution, of moderate to strong intensity and diffuse localization, without irradiation, not related to food intake, with increase in abdominal circumference and presence of fluid in the genitals, without the presence of nausea or vomiting.

On the other hand, complicated forms of volvulus, in the presence of clinical severity and/or evidence of necrosis or perforation of the colon, with or without signs of shock, require surgical treatment from the beginning. This should be performed after correction of fluid and electrolyte deficiency, coagulation abnormalities and stabilization of the patient's condition (restoration of vascular volume) [1].

Surgical management consists of midline laparotomy with resection of the necrotic intestinal segment. Primary closure or colostomy will depend on local conditions and the hemodynamic status of the patient [8-10]. In the case presented, the patient was hemodynamically unstable, so the Hartmann procedure was used as the surgical method of choice in cases of low volvulus with necrosis of the distal colon, making it impossible to take the distal colonic segment above the level of the skin, making a terminal colostomy of the proximal segment of the colon, thus allowing for a subsequent restitution of intestinal transit in a future intervention, preserving the patient's life.

The immediate postoperative period is spent in a post-surgical recovery unit for 24-48 hours, after which the patient is transferred to the surgical hospitalization ward. Mobilization of the patient was started within the first 24 hours [5]. Antibiotic therapy appropriate to the site of the lesion was indicated from the time of diagnosis, however, metronidazole was incorporated once the sigmoid colon lesion was identified; rehydration was continued and once hemodynamically stable and the colostomy was functioning, enteral feeding was started at 48 hours.

On the fourth postoperative day, a lower respiratory tract infection was evidenced by changing the antibiotic regimen and improvement of the respiratory infectious picture. At present the patient is under ambulatory control of the general surgery service evaluating both the postoperative period and the pertinent preparations for the future surgical planning of the intestinal transit restitution.

Conclusion

Sigmoid colon volvulus in pregnant patients is a rare entity, but it occurs more frequently in multiparous women. The predominant symptom and sign is abdominal pain and distension. Timely diagnosis reduces maternal-fetal morbimortality and the most accepted treatment is exploratory laparotomy with the performance of surgery: Hartmann type colostomy and restitution in a second surgical stage. A high level of diagnostic suspicion is recommended in the gynecological service, in addition to encouraging prenatal control in the pregnant population.

Conflict of Interest

There was no conflict of interest on the part of any of the authors involved in the completion of this article.

Bibliography

1. González-Salazar EA., *et al*. "Recurrent colonic volvulus in a pregnant woman: endoscopic treatment". *Gynecology and Obstetrics of Mexico* 89.3 (2021): 274-278.

2. Cano CA., *et al*. "Sigmoid volvulus: a rare complication in pregnancy". *Revista Argentina De Cirugía* 108.2 (2016): 1-10.

3. Ruiz AC., *et al*. "Intestinal obstruction by post-surgical flange in a pregnant woman: A case report". *Chilean Journal of Obstetrics and Gynecology* 84.3 (2019): 217-224.

4. Chaparro-Solano HM., *et al*. "Volvulus in pregnancy: a case report". *Alcadía Mayor de Bogotá* (2017).

5. López-Ruiz JA., *et al*. "Treatment of sigmoid colon volvulus by endoscopic detorsion followed by laparoscopic-assisted sigmoidectomy on a deferred urgency basis". *Cir. Andal* 38.1 (2017): 39-42.

6. Saravia-Burgos J and Acosta-Canedo A. "Megacolon and sigmoid volvulus: Incidence and pathophysiology". *Journal of Gastroenterology of Peru* 35.1 (2015): 38-44.

7. Campos Salvador Francisco Campos. "Surgical physiopathology of the digestive system". Editorial El Manual Moderno (2012).

8. Borda-Mederos LA., *et al*. "Andean megacolon and high-altitude sigmoid volvulus. Presentation of 418 cases between 2008 - 2012 at the C. Monge hospital - Puno, Peru". *Revista Gastroenterologia del Peru* 37.4 (2017).

9. Aravind MP. "A rare case of sigmoid volvulis in pregnancy". *University Journal of Surgery and Surgical Specialities* 6.7 (2020).

10. Lodhia J., *et al*. "Sigmoid volvulus in pregnancy: a case report". *Journal of Medical Case Reports* (2020): 15.

11. Ghahremani S., *et al*. "A case of sigmoid volvulus in pregnancy: a rare emergency in pregnancy". *International Journal of Pediatrics* 8.1 (2020): 10743-10747.

12. Watanabe T., *et al*. "Sigmoid Volvulus in Pregnancy Assessed by Contrast-Enhanced Computed Tomography Scanning". *Case Reports in Obstetrics and Gynecology* (2021): 1-4.