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Volvulus of the Pelvic Colon in Pregnancy: A Case Report from the Surgical Department of the National Hospital of Ignace Deen, Teaching University of Conakry, Guinea

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Abstract: Introduction: Volvulus of the sigmoid colon in pregnancy is a rare and serious complication; prognosis depends on early diagnosis and appropriate surgical management. The high maternal-fetal morbidity is due to delayed diagnosis. Observation: We report a case of sigmoid colon volvulus in a 34-year-old multiparous woman. Her history includes chronic constipation; she has never undergone surgery and her pregnancy is currently being monitored. She was seen in emergency with abdominal pain, cessation of bowel movements and early gas, vomiting on a 26-week, 4-day amenorrhea, which had been evolving for 4 days. Obstetrical examination revealed an open cervix with endo uterine bleeding. The patient expelled a male fetus 2 hours after admission. An unprepared abdominal X-ray revealed a double-legged arch. The patient underwent surgery; the operative lesion being a 2-turn sigmoid volvulus with necrosis of the loop. The necrotic loop was resected and a Hartmann-type colostomy was performed; the peritoneal cavity was cleaned and drained. Results: Preoperative preparation of patients requires a collegial decision involving an obstetrician, a resuscitator-anesthetist and a surgeon, in order to discuss prophylactic tocolysis, corticosteroid therapy for fetal maturation and the surgical indication on a case-by-case basis. The standard surgical treatment is colectomy with restoration of colonic continuity, or colostomy if necrosis is present. Endoscopy is useful for emergency treatment of uncomplicated volvulus. Conclusion: diagnosis of sigmoid volvulus is difficult during pregnancy. It is a medical-surgical emergency requiring multidisciplinary management. The maternal-fetal prognosis depends on early diagnosis and rapid and adequate management. Standard surgical treatment is sigmoidectomy with immediate restoration of colonic continuity; in cases of necrosis, colostomy is indicated. Endoscopy is of vital importance in the emergency treatment of uncomplicated volvulus.

Keywords: Sigmoid Volvulus, Pregnancy, Necrosis, Surgical Emergency

1. Introduction

Sigmoid volvulus in pregnancy is a rare and serious complication whose prognosis is related to early management [1]. Early diagnosis of sigmoid volvulus in pregnancy is important to avoid maternal and fetal complications [2]. During pregnancy, the signs of sigmoid volvulus are masked by the sympathetic signs of pregnancy, which makes it difficult to make the early diagnosis [3]. It is a medical-

surgical emergency requiring multidisciplinary management. We report a case of sigmoid colonic volvulus in a pregnancy setting in the General Surgery Department of the National Hospital of Ignace Deen.

2. Observation

Mrs. MC, 34 years old, multiparous (G9P9V8), was referred to the department for a diagnosis of acute intestinal obstruction in a pregnancy of 26 weeks of amenorrhea and 4 days, evolving since 6 days. In her history we note a notion of chronic constipation (1 to 2 weeks); she has never been operated and the pregnancy is currently being followed.

On admission, the clinical examination revealed a conscious patient, apyretic, pale integuments and conjunctivae; abdominal pain, cessation of feces and gas; diffuse tenderness was noted with a marked tympanum on the left flank; the hernial orifices were free; on rectal touch, the rectal ampulla was empty. Obstetrical examination found an open cervix with endo uterine bleeding, the patient expelled the fetus 2 hours after its reception in the department. The biological examination showed a hyperleukocytosis at 19000 elements/mm3, a hemoglobin level at 10G/dl, a positive CRP at 600mg/l. The unprepared abdominal X-ray (UAP) showed a giant hoop with double leg and thickening of the colonic wall (Figure 1). Obstetrical ultrasound performed 2 days in advance concluded "an evolving intrauterine monofetal pregnancy of 26 weeks 4 days ultrasound age. No placental fetal particularities to date". After a short resuscitation in an emergency context, the operative indication was given. Through a median xypho-pubic incision, we aspirated 850 ml of serum fluid, the exploration revealed a volvulus of the sigmoid loop with 2 turns of spiral in an anti-clockwise direction with necrosis (figure 2). We proceeded to the resection of the necrotic loop (figure 3) and performed a HARTMANN type colostomy; cleaning and drainage of the peritoneal cavity. The immediate aftermath was simple, the patient was discharged from the intensive care unit on the 3rd postoperative day.

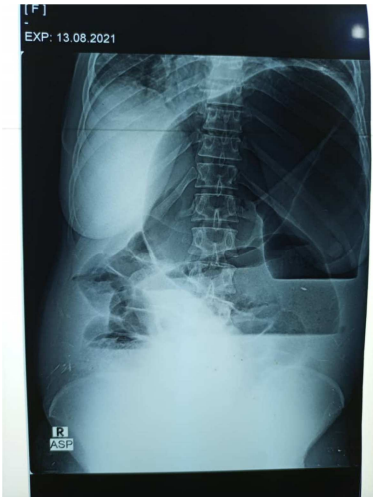

Figure 1. *Unprepared abdominal X-ray showing giant hoop with thickening of the wall.*

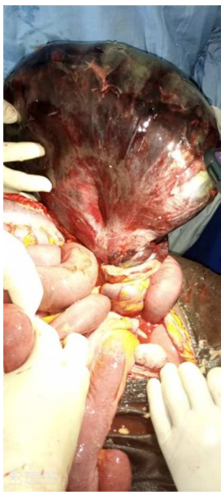

Figure 2. *Operative view of sigmoid colon 2-turn volvulus with necrosis.*

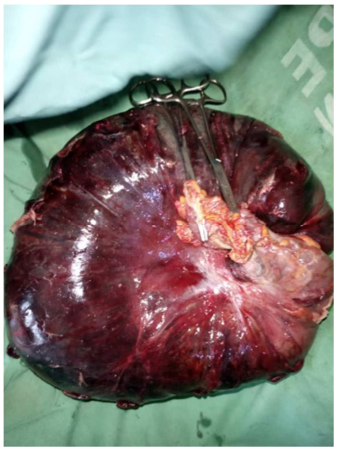

Figure 3. *Resected colonic segment.*

3. Comments

Intestinal obstruction during pregnancy is a rare and serious complication; the frequency reported in the literature varies between 1/1,500 and 1/66,000 [4]. The frequency of sigmoid volvulus reported in the literature during pregnancy is estimated to be between 25 and 44% [1]. Al Maksoud AM et al [5], reported that sigmoid volvulus in pregnancy is rare, and this rarity can be judged by the fact that only 105 cases have been reported in the literature since the 1st case in 1885 until 2015. Volvulus of the sigmoid colon accounts for 60-70% of all colonic volvulus [6].

Pregnancy itself predisposes to sigmoid volvulus, as the increased volume of the uterus moves the abnormally mobile sigmoid loop out of the pelvis, causing it to twist the sigmoid colon around its meso, resulting in vascular compromise and obstruction. This could also be a possible explanation for the higher frequency of sigmoid volvulus in the third trimester of pregnancy [3, 5, 7, 8]. Atamanalp SS et al [3], reported that sigmoid volvulus in pregnancy affects the age group between 15 - 35 years, in 75% of the cases it is multiparous and 66% of the cases it occurs in the third trimester. Clinical diagnosis is often difficult and delayed because the usual signs of

occlusion (pain, distension, vomiting, constipation) are attributed to the sympathetic signs of pregnancy; in addition, the displacement of the abdominal organs as the pregnancy progresses gives atypical localizations of pain. This shows the importance of clinical examination and careful observation in the presence of such symptoms [4]. The diagnosis should be suspected in pregnant women in the presence of pain associated with abdominal distension, vomiting and cessation of feces and gas [9]. Biological tests are often inconclusive; the increase in adrenal activity during pregnancy leads to a physiological hyperleukocytosis varying between 9000 and 12000, so it is an unreliable indicator in this period [10], but attention should be paid to the progressive increase in leukocyte count during pregnancy [11].

Abdominal ultrasound is the first-line diagnostic test for suspected acute intestinal obstruction during pregnancy. It allows the diagnosis to be made with a sensitivity of 89% and a specificity of 100%. Its safety allows repeated examinations to follow the evolution of the dilatation of the intestinal coves [8], to detect the presence or abundance of intraperitoneal fluid, to appreciate the parietal thickening that indicates venous stasis, ischemia or infarction in case of volvulus [12]. Ultrasound allows a complete assessment of the abdominal sphere and pregnancy in search of other pathologies, especially obstetrical ones.

While CT scan is not recommended during pregnancy, except in exceptional cases when the potential benefit justifies the risk to the fetus and on a case by case, in close consultation with the obstetrician and the digestive surgeon [4].

Observations of conservative medical treatment of occlusion during pregnancy in order to avoid surgical treatment have been reported in the literature, but this attitude does not seem to be appropriate and often ends in failure because the pregnancy itself constitutes an additional cause of occlusion [4]. Delayed surgical management contributes significantly to increased maternal and fetal mortality [13]. Najih M et al [4], reported that the attempt to manage three patients in their series was unsuccessful and during surgery necrosis was found in one patient, they proceeded to anastomotic resection.

The principle of treatment varies according to the gestational age: Up to 26 weeks: laparotomy with removal of the occlusion, continuation of the pregnancy until term if possible; between 26 and 34 weeks: caesarean section followed by surgical treatment of the occlusion; between 34 weeks and term: caesarean section, median incision for surgical treatment of the occlusion; in all cases, laparotomy or caesarean section imperatively before 72 hours [4].

Preoperative preparation of patients should require a collegial decision including an obstetrician, a resuscitator-anesthetist and a surgeon in order to discuss prophylactic tocolysis, corticosteroid therapy for fetal maturation in the third trimester and the surgical indication on a case by case [4].

The management of sigmoid colon volvulus is medical-surgical. It consists of correction of hydroelectolytic and metabolic disorders, placement of a nasogastric tube for gastric aspiration and rehydration [7]. The standard surgical treatment is sigmoidectomy followed by immediate restoration of colonic continuity which has a mortality rate of 8%. Hartmann colostomy is another procedure performed if there is no colonic necrosis, it allows to avoid the release of the anastomotic suture [14]. Endoscopy is of primary interest not only in the emergency treatment of an uncomplicated sigmoid volvulus but also allows delaying surgery. Surgery is still performed in 89% of cases of intestinal obstruction occurring during pregnancy [4].

Delayed diagnosis and management are at the root of increased maternal mortality rates of up to 45%, due to colonic perforation, peritonitis and sepsis, but early management can reduce this mortality rate to about 5% [15].

4. Conclusion

The volvulus of the sigmoid colon during pregnancy is a rare but serious entity, of difficult and often late diagnosis because the signs are often attributed to the signs of pregnancy. The diagnosis must be suspected in the presence of digestive signs or their persistence after the 1st trimester. It is a medical-surgical emergency requiring multidisciplinary management; the maternal-fetal prognosis depends on early diagnosis and rapid and adequate management. Standard surgical treatment is sigmoidectomy with immediate restoration of colonic continuity; in cases of necrosis, colostomy is indicated. Endoscopy is of vital importance in the emergency treatment of uncomplicated volvulus.

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