Hemoperitoneum Caused by Spontaneous Uterine Varicose Vein Rupture in the Third Trimester of Pregnancy-A Case Report

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Abstract

Spontaneous rupture of uterine varicose veins is a rare and poorly understood complication during pregnancy. Its clinical presentation is misleading and non-specific. Due to the high maternal and fetal mortality, the diagnosis of a hemoperitoneum must be done quickly.

We report a case of spontaneous rupture of uterine varicose veins revealed by an abundant hemoperitoneum that occurred in a 35 year-old pregnant patient at 32 weeks of gestation. A laparotomy enabled the diagnosis and the treatment of this complication in addition to the extraction through a cesarean section of a healthy newborn.

Keywords: Hemoperitoneum; Uterine varicose veins; Pregnancy; Mortality

Introduction

The occurrence of a spontaneous hemoperitoneum during pregnancy is a rare condition and often unknown but with potentially serious maternal and fetal outcomes [1]. Its causes can be gynecological, gastrointestinal or vascular such as the rupture of uterine varicose veins. The diagnosis of a hemoperitoneum due to ruptured uterine veins is difficult to establish because of its rarity and the lack of specific clinical signs that may delay the therapeutic management which should be quick and immediate to improve the still reserved maternal and fetal prognoses [2].

Case Report

Mrs. H. aged 35, second a para with no specific medical history, consulted at 32 weeks of gestation for an abdomino-pelvic pain of a sudden onset that started initially in her low back. No pain trigger especially no trauma was reported by the pregnant patient who reported the notion of a prolonged walk the day before. The clinical examination revealed mild skin pallor. The temperature of the patient was normal of 37°C. Her pulse was steady at 79 bpm and her blood pressure was 110/54 mm Hg. The abdominal palpation revealed a sensitivity in both the iliac fossi without contracture. The vaginal examination was painful without genital bleeding. The cervix was posterior and closed, the fetal movements were present and irregular uterine contractions were confirmed by external tocography. The fetal heart rate was normal-responsive and varied. Laboratory tests revealed the absence of leukocytosis, a low hemoglobin level of 10.7 g/dl and a negative C Reactive Protein. Obstetric ultrasound showed an evolutive singleton pregnancy in cephalic presentation with a 3 kg estimated fetal weight and an anterior normally-inserted placenta without a peeling image. An abdominal ultrasound was performed and revealed a small peritoneal effusion interpreted initially as reaction ascites. The patient was hospitalized in the high-risk pregnancy unit with strict maternal and fetal monitoring and the decision was to await in a state of uncertainty. Two days later, while the initial evolution of abdominal syndrome was favorable, we witnessed an exacerbation of pelvic pain associated with a fall in hemoglobin to 7 g/dl without any change in the bishop score or in the uterine contractions rhythm. An emergency abdomino-pelvic injected CT found an intruterine fetus and an abundant intra-peritoneal effusion predominant in the sub-mesocolic region without any liver, kidney or spleen damage and with no visible vascular malformation (Figures 1a and b). The patient was thus transferred to the Intensive Care Unit with the transfusion of four red blood cells packs and six pockets of fresh frozen plasma. The evolution was marked by a 12-hour transient hemodynamic stability followed by a gradual decrease in hemoglobin up to 6.3 g/dl hence the surgical indication. The median under umbilical laparotomy revealed a hemoperitoneum of about 1300 ml which was evacuated. We then realized a cross segmental hysterotomy that allowed the extraction of a healthy newborn of 3100g. The exploration of the abdomino-pelvic cavity in search of the cause of the bleeding showed a large ruptured varicose vein packet at the posterior face of the left large ligament above the utero-sacred ligament with a venous bleeding responsible for the hemoperitoneum (Figure 2). The hemostasis was achieved through a number of suture points in X. The postoperative course was uneventful and the patient was discharged on the 6th postoperative day.
Discussion

The hemoperitoneum during pregnancy due to a vascular rupture was first described in 1950 by Hodgkinson and Christensen [1]. It was an intraperitoneal bleeding in connection with a rupture of the utero-ovarian veins. The rupture of uterine varicose veins during pregnancy is a rare vascular complication and a little known one despite its very serious maternal and fetal prognosis [1].

The physiopathology of the rupture of uterine varicose veins is still poorly understood. It seems to get into the general framework of the physiological changes in the vascularization of the pregnant uterus. These changes are related to hormonal factors and also to a mechanical factor due to the compression of both the inferior vena cava and the iliac vessels by the gravid uterus. This results in an increase in the venous pressure and elasticity associated with a slowing of the blood flow promoting the appearance of aneurysms that may rupture particularly during late pregnancy [1,3]. This rupture can also result of the physiological vascular changes during pregnancy, including the delicacy and fragility of the vessel walls by the atrophy of their muscular layer.

The rupture of the uterine veins most often occurs without any triggering factor such as in our case. However, it can be promoted by any increase in the venous pressure, frequently observed during the expulsive efforts during childbirth, during coughing, defecating, lifting heavy objects or even sexual intercourses [1,4].

The diagnosis of hemoperitoneum from ruptured uterine veins during pregnancy is difficult to determine preoperatively due to the few and often delayed specific symptoms [5,6]. This diagnosis should be considered when dealing with any brutal abdominal pain despite its location and its nature that may be associated with signs of peritoneal irritation and hypovolemic shock including acute fetal distress proportional to the importance of the bleeding. In some cases, an unexplained hemorrhagic shock with no external bleeding may be the only warning signal. The signs of hemodynamic instability may be delayed or even absent in the minor hemorrhagic forms or during any compression of the ruptured vessel by the gravid uterus [2,7]. In our case, the diagnosis was delayed three days due to the poor non-specific initial symptoms reduced to an isolated abdomino-pelvic pain.

The rupture of the uterine veins can occur from the tenth week of gestation and up to three weeks postpartum but the majority of cases have been reported in the third trimester of pregnancy [1, 3,6].

The diagnosis of a hemoperitoneum from ruptured uterine veins during pregnancy is a maternal and fetal emergency. Indeed, any delay in the diagnosis and/or the therapy is associated with a considerable risk of maternal and fetal mortality. This diagnosis, often made intraoperatively, may be suspected in case of some biological and/or radiological abnormalities associated with this illness. Indeed, the blood count often shows an unexplained drop in hemoglobin [8]. Radiological investigations are based on ultrasound which is a first-line examination to visualize and quantify the intra-peritoneal effusion without specifying its nature. It also assesses the fetal vitality [7]. The magnetic resonance imaging (MRI) and computed tomography confirm, when performed, the hemorrhagic nature of effusion and exclude many digestive, urinary and gynecological differential diagnoses. These investigations should in no way delay the surgical exploration in a shocked pregnant woman presenting with an intra-peritoneal effusion without specifying its nature. It also assesses the fetal vitality [7]. The magnetic resonance imaging (MRI) and computed tomography confirm, when performed, the hemorrhagic nature of effusion and exclude many digestive, urinary and gynecological differential diagnoses. These investigations should in no way delay the surgical exploration in a shocked pregnant woman presenting with an intra-peritoneal effusion [9]. In our case, the abdominal ultrasound revealed a small intra-peritoneal effusion and when facing the rapid and massive blood loss, a CT scan was performed because of the unavailability of the MRI and confirmed the diagnosis of a hemoperitoneum and eliminated any digestive, urinary or gynecological causes for this effusion.

The differential diagnoses of a non-traumatic hemoperitoneum during pregnancy are numerous and essentially represented by:

- The placental abruption which is the main differential diagnosis but it is often associated with uterine contractions and vaginal bleeding.
The uterine rupture should be suspected especially in a parturient with a history of scarred uterus.

Other differential diagnoses should be discussed and are represented mainly by the placenta percreta, the hepatic or splenic rupture in a context of severe preeclampsia, the rupture of an aneurysm of the renal artery or the rupture of hepatic or splenic vessels [6].

Any hemoperitoneum from ruptured uterine veins during pregnancy is a surgical emergency. This surgery must be preceded by an adequate maternal intensive care adapted to her hemodynamic status. The surgery often involves a laparotomy to evacuate the hemoperitoneum and ligate the bleeding vessels thus achieving hemostasis. A caesarean section for the fetal extraction is discussed in ante partum according to the maternal hemodynamic status. The vaginal delivery is possible in case of an early diagnosis and surgical treatment in a stabilized patient with no hemodynamic shock and no severe signs of fetal distress [10].

Conclusion

The rupture of uterine varicose veins during pregnancy is a rarely mentioned but an extremely serious cause of hemoperitoneum. The diagnosis is always difficult to establish because of the very few and sometimes delayed specific clinical symptoms. Early diagnosis and treatment are the cornerstone of the maternal and fetal prognosis. The diagnosis is often facilitated by ultrasound which is a first-line examination. The management is surgical which is preceded by an adequate resuscitation. Fetal extraction is debatable depending on the maternal and fetal state and on the gestational age.

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