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# Spontaneous Uterine Rupture in a Pregnancy of 12 Weeks' Amenorrhea: A Case Report at the Medical Center with Surgical Antenna of Dô in Bobo-Dioulasso, Burkina Faso

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## Abstract

**Introduction:** Spontaneous uterine rupture in early pregnancy is exceptional. The incidence in the 1st and 2nd trimester of pregnancy is low. Diagnosis is difficult in the presence of non-specific symptoms. **Case report:** The authors describe a 29-year-old woman with three prior cesarean scars who presented at 12 weeks' gestation with abdominal pain and hemoperitoneum. Ultrasound suggested a heterotopic pregnancy, but laparotomy revealed a 4-cm anterior corporal uterine rupture with protruding gestational sac; subtotal hysterectomy was required. The case highlights the diagnostic challenge of first-trimester rupture and underscores the importance of rapid surgical management in scarred uteri. **Conclusion:** Spontaneous uterine rupture in the first trimester is a rare situation. Practitioners must consider it for better patient management.

## Keywords

Uterine Rupture, Pregnancy, 12 Weeks, Scarred Uterus, Burkina Faso

## 1. Introduction

Uterine rupture (UR) is a full-thick ness tear of the uterus [1]. Risk factors for uterine rupture during pregnancy include a history of cesarean section, myomec-

tomy with uterine cavity breach, multiparity, uterine malformations, mechanical dystocia, excessive use of uterotonics, and uterine expressions. It is one of the direct obstetric causes of maternal mortality, especially in developing countries [2]. Among spontaneous uterine ruptures, only 17% occur before the onset of labor [3] [4]. However, its incidence in the 1st and 2nd trimester of pregnancy is low [4]. Its clinical diagnosis is difficult to establish in the 1st trimester of pregnancy. Ultrasound, when available, allows for the visualization of hemoperitoneum and uterine breach. We report a case of spontaneous uterine rupture in a pregnancy of 12 weeks' amenorrhea in a woman with a history of three times scarred uterus in a context of short inter-genesis space of thirteen months.

## 2. Observation

### 2.1. Anamnesis

This is a 29-year-old patient received on February 11, 2023, at the CMA of DO at 10:45 am for abdomino-pelvic pain of torsion type in a context of a 2-month delay in menstruation. She is a 4th gravida, 3rd para, with 1 living child and 2 stillborns, with a history of three times scarred uterus, the first in 2014 and the second in 2017 for severe preeclampsia, and the third 15 months ago for a second iterative cesarean section. The reports of these cesarean sections were not available, and the birth weight of the newborns could not be specified.

According to the history of the disease, the onset dates back to the day before her admission with the appearance of abdomino-pelvic pain of torsion type in a context of a 2-month delay in menstruation. Faced with this symptomatology, she consulted a local clinic where the clinical examination concluded with a peritoneal irritation syndrome. An abdomino-pelvic ultrasound showed an evolving intrauterine pregnancy of 12 weeks associated with significant hemoperitoneum. Given this association, a heterotopic pregnancy was suggested before being transferred to the Medical Center with surgical antenna of Do (second-level hospital). She was unaware of being pregnant, but the date of the last menstruation was two months at the time of admission. She did not present metrorrhagia.

### 2.2. Clinical Examination

Upon admission, her blood pressure was 100/50 mm Hg, pulse at 126 beats/minute, respiratory rate at 23 cycles/minute, temperature at 37˚C. She was agitated with a Glasgow score of 15/15 and conjunctival pallor. On inspection, the abdomen was not increased in volume. A Pfannenstiel incision scar was noted. On palpation, there was generalized abdominal defensiveness with umbilical cry. On percussion, there was a dullness of the flanks. The uterine height was not measurable due to pain. The speculum examination noted a violet cervix with healthy-looking vaginal walls. The Douglas pouch was bulging and painful. A culdocentesis performed returned 2 ml of incoagulable blood.

On combined vaginal touch and abdominal palpation, the cervix was posterior, long, soft, closed. There was a cry from the Douglas pouch. The uterus was diffi-

cult to appreciate due to pain.

### 2.3. Paraclinical Assessments

The complete blood count showed a hemoglobin level of 8.4 g/dl, hematocrit at 24.8%, leukocytes at 18,000 elements/mm$^3$ with a neutrophil predominance, platelets at 356,000 elements/mm3, blood group O Rh positive. Renal function was normal. The immunological pregnancy test was not performed. The ultrasound performed in the emergency room revealed a liquid effusion in the Douglas pouch and an evolving intrauterine pregnancy of 12 weeks.

We concluded with a hemoperitoneum of gynecological origin laparotomy and indicated an emergency.

### 2.4. Treatment

In view of this situation, emergency laparotomy was indicated. Preparation for surgery consisted of taking two venous lines with G18 catheter, followed by a blood sample for CBC and rhesus blood grouping in emergency. A saline infusion was started and the patient was transferred to operating room. After the patient had been placed on the on the operating table, she was given a general anesthetic and antibiotic prophylaxis with 2 g ceftriaxone. A urinary catheter was inserted. Cutaneous preparation was meticulous, with staining of the skin with polyvidone-iodine. The skin incision was a suprapubic Pfannenstiel incision. At laparotomy, a hemoperitoneum was discovered and quantified at 1500 milliliters. On exploration, the fallopian tubes and ovaries were without anomaly, the uterus was increased in size (Photo 1) with a complete anterior transverse corporal uterine continuity solution of approximately 4 centimetres, hemorrhagic with protrusion of the ovular sac and its placenta (Photo 2). We proceeded with the extraction of the ovular sac and placenta. The hysterorrhaphy was laborious with unsatisfactory

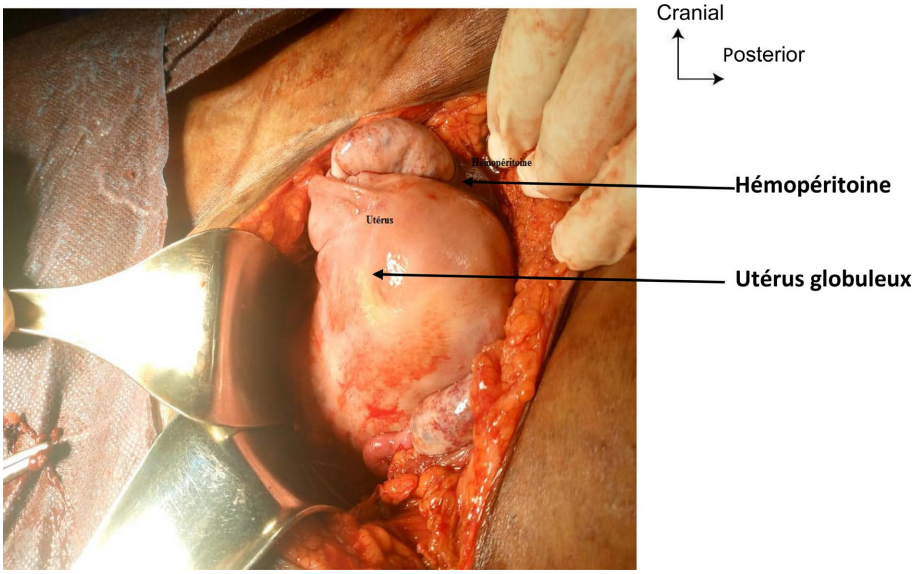


**Photo 1.** Discovery of hemoperitoneum and a globular uterus (source: CMA DO).

hemostasis due to the fragility of the uterus and the involvement of the left uterine pedicle, necessitating a subtotal hemostasis hysterectomy. We cleaned the abdominal cavity with a dry compress. The patient received a blood transfusion of 800 cc, and the fetus (Photo 3) and its placenta weighed 205 g (Photo 4).


**Photo 2.** Uterine continuity solution with protrusion of the ovular sac (source: CMA DO).


**Photo 3.** Fetus still in its sac after extraction (source: CMA DO).

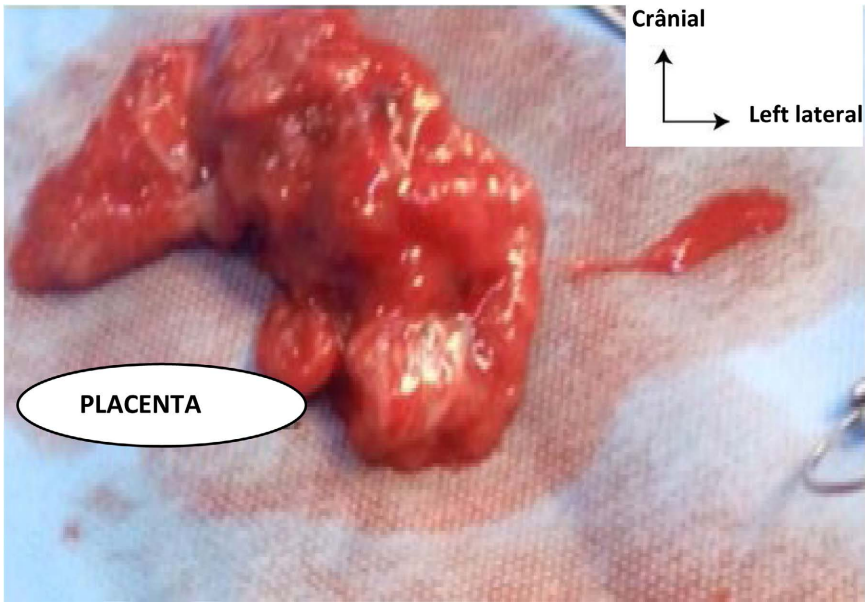


**Photo 4.** Placenta after extraction (source: CMA DO).

### 2.5. Postoperative Course

The postoperative course was simple. Counseling on the obstetric prognosis was provided to the patient before her discharge on the 4$^{th}$ day of hospitalization.

## 3. Discussion

Uterine rupture is a non-surgical continuity solution of the uterine wall that can occur during pregnancy or labor [5] [6]. It has become exceptional in developed countries with a prevalence of 0.5/10000 to 7.9/10000 births [7] but remains prevalent in under-medicalized countries with the inflation of cesarean rates over the past 20 years. The scarred uterus is a major risk factor for uterine rupture. In developed countries, its share among uterine ruptures varies between 70% and 90% [8]. In the present clinical case, the patient had a history of three uterine scars for cesarean section. The occurrence of uterine rupture could be explained by this state of fragility of the uterus induced by multiple uterine scars. The type of uterine incision is the main factor increasing the risk of uterine rupture, with the risk being higher in the case of corporal incision compared to a low transverse segmental incision [9] [10]. In the present clinical case, the operative protocols of the different cesarean sections were not available. The conditions of the surgical act were therefore not documented. Intraoperatively, it was a complete anterior transverse corporal uterine rupture of 4 centimeters long, hemorrhagic with protrusion of the ovular sac. This finding could therefore explain this uterine rupture. Multiparity is generally considered a risk factor for UR through histological changes in the uterine muscle [11]. In this clinical observation, the patient was a pauciparous individual with a brief inter-genesis interval of just 13 months. The occurrence of uterine rupture in this case could be explained by repeated pregnancies that would exhaust the uterus already weakened by cesarean scars.

Uterine rupture may occur at any gestational age, but 75% - 80% of cases happen during labor attempts after a cesarean section or in the latter half of pregnancy [12] [13]. Spontaneous uterine rupture in pregnancy in the first trimester is therefore exceptional in literature. It occurred in our observation on a pregnancy of 12 weeks. The history of three uterine scars, including a probable corporal scar in the context of short intergenital space of 13 months, could explain this exceptional situation.

Uterine rupture in pregnancy in the first trimester presents heterogeneous and non-specific symptoms, leading to frequent delays in management and more severe complications. Abdomino-pelvic pain, peritoneal irritation, vomiting, and minimal metrorrhagia generally dominate the clinical picture [2] [14]. This non-specific symptomatology generally suggests either an abortion, a molar pregnancy, or an extrauterine pregnancy, as was the case in the present clinical case (heterotopic pregnancy).

Abdomino-pelvic ultrasound reveals hemoperitoneum [9] but particular attention should be paid to the continuity of uterine wall and the search for peritoneal hematoma, especially in pregnant woman with a history of cesarean section. The absence of total expulsion of the conception product into the peritoneal cavity in the present clinical observation was a factor increasing diagnostic doubt. The intrauterine visualization of a gestational sac containing a fetus with cardiac activity in a context of hemoperitoneum suggested a heterotopic pregnancy, one intrauterine and the other ruptured extrauterine. The diagnosis of uterine rupture was confirmed intraoperatively during laparotomy.

Regarding therapy, our approach called for surgical treatment framed by pre, intra, and postoperative resuscitation to ensure hemostasis. Conservative treatment was considered necessary to preserve the fertility of this 29-year-old woman with three parities, including one living child. The intraoperative difficulties in achieving hemostasis due to the fragility of the uterus and the involvement of the left uterine pedicle necessitated a subtotal hemostasis hysterectomy. Conservative treatment with repair of uterine lesions was undertaken in cases of spontaneous uterine rupture in young pregnancy reported by Ilunga-Mbaya [2] and Diaouga [14]. A subsequent pregnancy is not contraindicated in the case of UR, but the risk of recurrence (of the order of 4% - 19%) increases, especially in the case of corporal scar [11]. The patient's vital prognosis was good given the resuscitation measures implemented, and the hemostasis achieved. However, the possibility of a subsequent pregnancy is impossible given the hysterectomy she underwent.

## 4. Conclusion

Uterine rupture is a rare but formidable obstetric complication. It is exceptional in the first trimester of pregnancy. It was favored by the uterine scar and short intergenesis space in the present clinical case. The clinical symptomatology was misleading, and the diagnosis was made at laparotomy. Conservative treatment

with repair of uterine lesions proposed by most authors was technically impossible and necessitated a hemostasis hysterectomy. It's important to remain attentive to clinical appropriately in any pregnant woman in the first trimester who has risk factors for uterine rupture.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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