Complete spontaneous rupture of the uterine fundus on an unscarred malformed uterus (double uterus) in a 15 weeks of pregnancy

- case report -

Cringu A. Ionescu, Ciprian Coroleuca

UMF "Carol Davila" Bucharest, Department of Obstetrics and Gynecology - Clinical Emergency Hospital "Sf. Pantelimon" Bucharest (Romania)

Correspondence: Dr. Cringu Antoniu Ionescu, e-mail: antoniuginec@yahoo.com

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Abstract

Uterine rupture is a major obstetric emergency as a life-threatening situation. Rupture of a pregnant uterus in early pregnancy and an unscarred uterus are extremely rare. We present a rare case of spontaneous uterine rupture on a patient with unscarred, malformed uterus, at 15 weeks of pregnancy.

Keywords: *hemo-peritoneum, uterine malformation, uterine rupture*

Introduction

Uterine rupture is one of the most serious obstetric emergencies as a threat to the life of the fetus and of the mother as well. Uterine rupture during pregnancy is described mainly during the second and third trimester, in patients with a history of previous birth by caesarean section. Spontaneous uterine rupture in early second trimester of pregnancy, apparently without any known cause, is extremely rare and in the literature are few similar cases.

Clinical case

Patient N.V., aged 29 years, married, urban, 15 weeks pregnant (stopped in evolution), monitored by physician, is brought at the hospital on the 12th of January 2012 to the emergency room, where she was admitted for hypovolemic shock, pregnancy 15 weeks stopped in evolution and severe secondary anemia. Admission diagnosis was: hemorrhagic shock, hemoperitoneum, 15 weeks pregnancy stopped in evolution, double uterus presenting severe secondary anemia. The patient is into an altered state, having blood pressure 80/40 mmHg, 110 bpm AV, 38^{0}C temperature, with chills. Clinical examination of the patient showed: pale skin and mucous, cold extremities, cyanotic, furred tongue, abdomen slightly distended by the pregnant uterus, slightly sensitive to touch on the flanks, intestinal transit present in the last 24 hours, spontaneous urination, normochromic urine. Patient charges a sudden faintness state one hour before, due to vomiting. Interestingly, patient did not complain about any abdominal pain.

Valve examination reveals a unique cervix, opened external os, without loss of blood or other pathological secretions. Vaginal touch finds: shortened cervix, admitting index external os of the cervix, enlarged uterus as a 15 weeks of pregnancy right side diverted (right hemiuterus), with irregular contour, mobile, sensitive to mobilization, flanked on the left by a increased volume formation as a 9-10 weeks of pregnancy, with regular contours and mobile (left hemiuterus); vaginal bag bottoms flexible and sensitive pouch of Douglas.

The patient history includes: 5th of October 2011 the date of last menstrual period, *nuligesta nulliparous* (births: 0, abortions: 0), malformed uterus (double), unscarred uterus (no surgical procedures of the uterus), the patient denied surgery in the past, and recently suffered trauma of any kind.

Laboratory investigations show: severe secondary anemia (8.33 g/dL hemoglobin), leukocytosis (27600/uL white blood cells), lymphopenia (13.4% lymphocyte), low hematocrit (24.4%), glucose 247 mg/dL,124 IU/L lactat dehydrogenase, 20 IU/L alkaline phosphatase, normal coagulation times, cervical cultures positive for *Enterococcus faecalis*.

Ultrasound examination on admission shows: right hemiuterus - gestational sac with embryo corresponding to a 15 weeks pregnancy (DBP 2.95 cm); no heart activity present, amniotic fluid in normal amounts; left hemiuterus, 12 mm thick endometrium, the two cavities seem to be separate uterus (double uterus); retrouterine, diffuse hypoechogenic areas and distended bowel loops covering the uterus. Having in the view that the ultrasound examinations did not show clearly the rupture of a malformed uterus (Figure 1 and Figure 2), we tried further the computer tomography examination.

Computer tomography scan showed: the presence of a massive serohematic effusion in all peritoneal recesses with a maximum thickness of 6 cm, with increased

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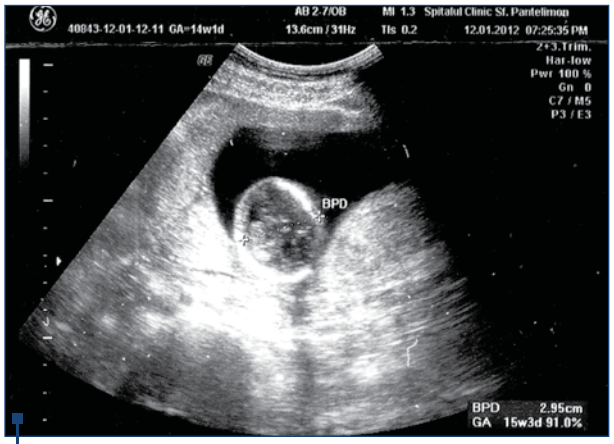

Figure 1. First ultrasound which do not shows more precisely a complete rupture of a malformed uterus

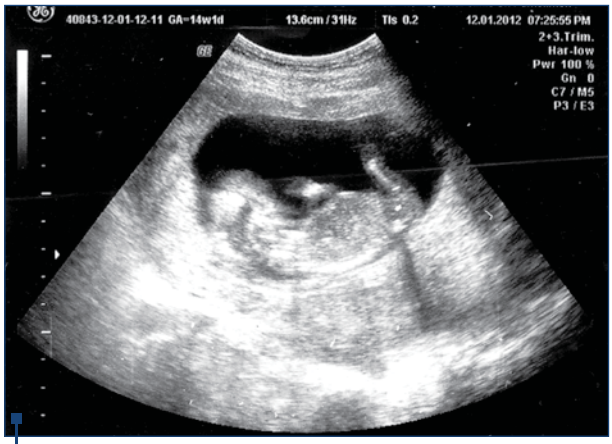

Figure 2. Second ultrasound which do not shows more precisely a complete rupture of a malformed uterus

density at the pelvis; bowel loops and colic framework of normal appearance projected in the median plane by the effusion described above. Neurosurgical examination showed: conscious patient, temporal-spatial oriented, without neck stiffness, equal pupils, photo-motor reflex present bilaterally.

The outcome of the computer tomography scan and dynamic evolution in laboratory data (decreased HGB at 6.69 g/dL) decides emergency surgery.

During surgery in the peritoneal cavity is found: non-coagulated blood clots in the amount of 500-600 ml, clots located predominantly in the greater omentum and right parietocolic gutter; intact gestational sac (corresponding to a pregnancy of 14-15 weeks) that herniated through a complete solution of continuity (5-6 cm) located on the fundus of the right hemiuterus, with active bleeding from the myometrium; left hemiuterus, soft, slightly enlarged, purple, completely separate from the right hemiuterus up to the isthmus, where the two uterine bodies unites (Figure 3, 4, 5 and 6).

It is practiced the evacuation of the intact gestational sac, fundic resection of right hemiuterus, the suture of the right hemiuterus, left hemiuterus histerotomy with removal of the deciduous debris, the suture of the left hemiuterus and multiple abdominal drainage. A sample for bacteriological culture was collected from the right hemiuterus. Postoperative course is favorable and the patient is discharged the 8th day after surgery.

Discussion

Uterine rupture is a rare and often catastrophic complication, an obstetric emergency involving an increased incidence of maternal and fetal death. According to World Health Organization, uterine rupture frequency range from 1/93 in developing countries to 1/11365 in developed countries, with a global incidence of 1/1536 (0.07%).

At the present, we know a number of predisposing factors that can lead to uterine rupture, and the most important being the uterine scar. Most commonly, uterine scar is described as a result of births by caesarean section in history,

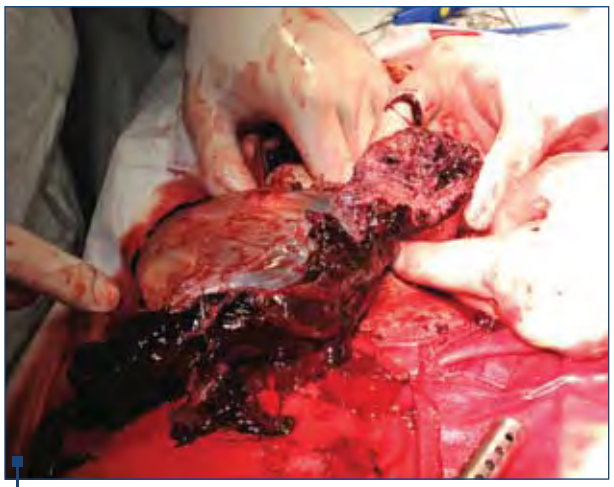

Figure 3. Complete uterine rupture. Complete rupture of a malformed uterus

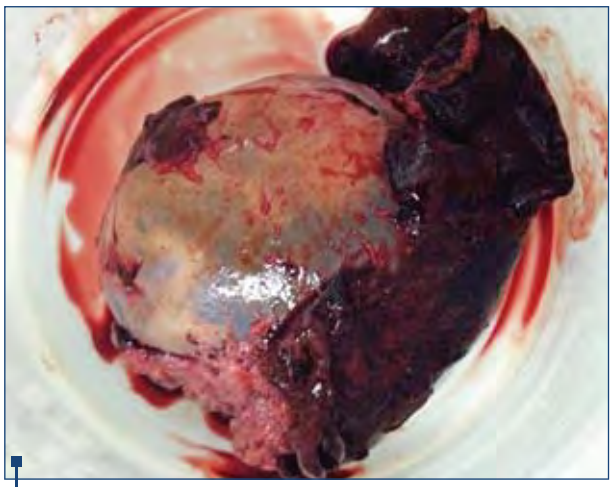

Figure 4. Intact gestational sac (15 weeks). Complete rupture of a malformed uterus

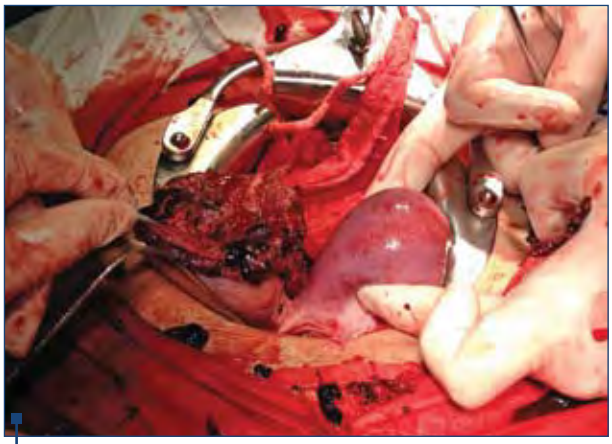

Figure 5. Uterine defect of the right hemiuterus. Complete rupture of a malformed uterus

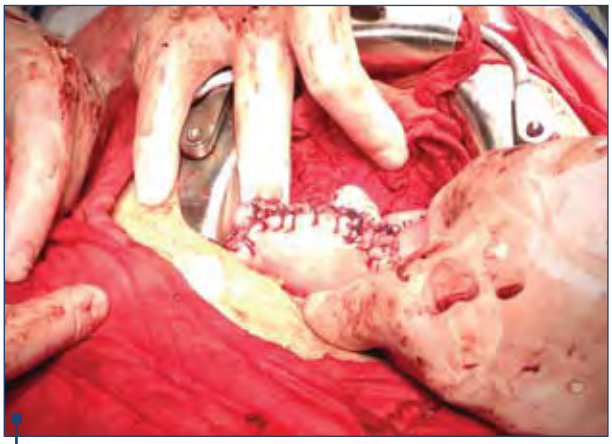

Figure 6. The suture of the uterine defect. Complete rupture of a malformed uterus

but it can exist as a result of other surgery: myomectomy, cornual uterine resection, uterine perforation after uterine curettage, hysteroscopic resection of a uterine septum.

Risk factors related to pregnancy include: multiparity, maternal age, cornual pregnancy, enlarged uterus (fetal macrosomia, polyhydramnios), trophoblastic invasion of the myometrium (hydatidiform mole, choriocarcinoma).

Other risk factors that can lead to uterine rupture are represented by congenital uterine anomalies and uterine trauma.

Of all risk factors listed above, the only one which is found in the presented case is the congenital uterine anomaly (double uterus)[1]; it can not be identified another factor that led to uterine rupture. The incidence of uterine anomalies is 1 in 201 women[2]. The incidence of uterine rupture in patients with congenital uterine malformations is 8% (2/25). In these cases, abnormal uterine wall is much thinner as pregnancy progresses[3,4], increasing the risk of uterine rupture.

The clinical presentation of uterine rupture is very different and symptoms may vary depending on the etiology, time of the detection, location and extent of injury. Uterine rupture of an old uterine scar is usually less violent than a spontaneous uterine rupture or a post-traumatic rupture due to relatively low vascularization at that level.

Classical symptoms of uterine rupture in the third quarter are: fetal distress (modified fetal heart activity), no uterine contractility, abdominal pain, vaginal bleeding and hypovolemic shock, but previous studies have shown that these symptoms are generally nonspecific and may occur and other obstetric conditions, therefore the differential diagnosis has become mandatory (placenta praevia, premature abruption of a normally inserted placenta).

Pregnant uterus rupture in patients without previous pregnancy, on an unscarred uterus, in the second trimester of pregnancy is extremely rare; symptoms are nonspecific[5], so that a positive diagnosis can be difficult. Even if vomiting occurred one hour before presentation to the hospital, this can not be directly related to uterine rupture, and could be assumed that gastrointestinal discomfort could be a sign of the major obstetric complications. These nonspecific symptoms may delay the emergency diagnosis and therapeutic conduct.

The specific symptoms present in this case can include hypovolemic shock, hemoperitoneum and severe secondary anemia, which required emergency surgery. Once the diagnosis of uterine rupture is established, surgery as soon as possible has a vital importance, to evacuate pregnancy and ensure homeostasis.

Therapeutically approach in these cases requires homeostasis hysterectomy or the suture of the uterine defect, decision to be taken after careful consideration of the general condition of the patient[6]. Considering the patient's general condition, location and type of uterine rupture (transverse rupture, with regular edges), uterine defect size and the desire to have children, it is decided the conservative intervention, which involved removal of the intact gestational sac, fundic resection of right hemiuterus, the suture of the right hemiuterus, intervention that offers a possible new other pregnancy in the future.

Conclusions

Complete spontaneous rupture of the uterus on an unscarred malformed uterus (double uterus), in a 15 weeks of pregnancy is extremely rare, being reported in the literature only a few isolated cases and is a major obstetric complication that endangers the mother's life due to the presence of massive uterine bleeding. Even if such cases are very rare, the presence of hemoperitoneum and hypovolemic shock in the early second trimester of pregnancy should guide the uterine rupture diagnosis. The key to success is the emergency surgical treatment with evacuation of pregnancy and ensuring homeostasis. ■

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