

Placenta accreta Causing Rupture of an Unscarred Uterus in Second Trimester of Pregnancy: A Rare Case Report

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1. Abstract: Placenta accreta is a rare obstetric condition that occurs primarily in the third trimester and results in life-threatening complications. Uterine rupture due to placenta accreta in the second trimester of pregnancy is extremely rare. We report a rare case of uterine rupture in a 25-year-old patient, 2nd gesture, mother of a child born by vaginal delivery, admitted to the ELHAROUCHI maternity hospital of CHU IBN ROCHD of Casablanca, with a picture of hemodynamic instability and acute abdomen, an emergency laparotomy revealed a uterine rupture with placenta accreta for which the patient underwent a total inter-annexal hysterectomy associated with resuscitation measures with a simple postoperative follow-up.

2. Introduction

Spontaneous uterine rupture caused by placenta accreta is a very rare but serious obstetrical event. It occurs more frequently in late pregnancy and during labor. In the second trimester of pregnancy, the concomitance of these two events has been reported in a few cases in the literature, which highlights the interest of our work [1]. The current rates of caesarean section and the association with placenta previa increase the risk of placenta accreta more than 10 times [2]. Spontaneous uterine rupture in its presence occurs in 1/5,000 pregnancies [3]. Other factors, in addition to cesarean section and placenta previa, increase the risk of placenta accreta and uterine rupture: multiparity, advanced reproductive age, endometriosis, intrauterine maneuvers [4]. Recently, some articles have associated assisted reproduction (in vitro fertilization and cryopre-

served embryo transfer) with the occurrence of placenta accreta [5].

We present here an interesting case of this potentially fatal complication in a patient where placenta accreta led to uterine rupture in the second trimester requiring hysterectomy following uncontrolled hemorrhage.

3. Case Report

Patient aged 25 years, 2nd gesture 2nd pares, mother of a child born by vaginal delivery, having as history an appendectomy in 2017. The current pregnancy is poorly monitored. The patient was referred to our maternity hospital for hemorrhagic shock on a pregnancy estimated at 26SA. On admission, the patient was obnubilated, with hypotension at 70/50 mm hg, tachycardic at 115 beats/min, polypneic at 28 cycles per minute with discolored conjunctiva and cold extremities. Abdominal examination showed a distended abdomen, with dullness on percussion. The patient was taken directly to the operating room where an abdominopelvic ultrasound was performed rapidly after the patient was conditioned, revealing an intrauterine mono-fetal pregnancy of 26 SA with a deep bradycardia at 70 beats per min, and a large intra-abdominal effusion. The indication of an emergency laparotomy was required. During the exploration, we observed first of all the presence of an abundant hemoperitoneum, then discovered an intra-abdominal fetus of male sex, very premature at 26 SA with an Apgar of 4/10, and the demonstration of a transverse fundial uterine rupture of 5 cm and a placenta accreta that could not be detached. The rest of the

exploration was without particularities.

We opted for a total inter-annexal hysterectomy, with transfusion of 2 red blood cells, 4 fresh frozen plasma and 7 platelet cells. The postoperative course was simple and the discharge was authorized after five days of hospitalization. As for the newborn, he did not survive despite the resuscitation measures. The histological examination of the hysterectomy specimen confirmed the diagnosis of placenta accreta with placental villi infiltrating the endometrial wall where they reach the myometrium without reaching the serosa (figure 1, figure 2).

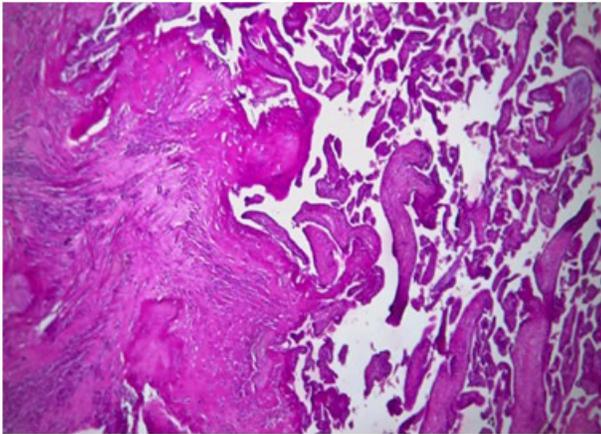


Figure 1 : Histological aspect at high magnification X 200 of a placenta accreta: trophoblasts infiltrating the myometrial fibers. (Laboratory of anatomopathology CHU IBN ROCHD)

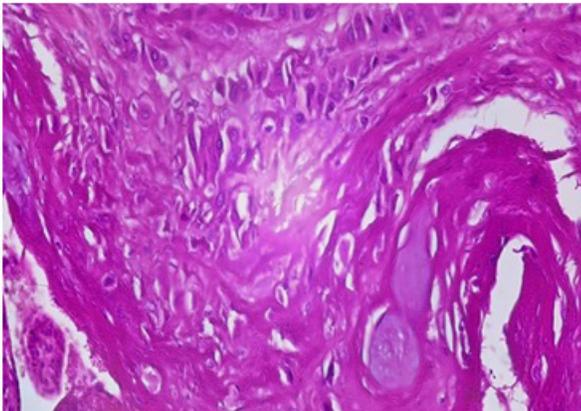


Figure 2 : Histological aspect at high magnification X 400 of a placenta accreta: trophoblasts infiltrating the myometrial fibers. (Laboratory of anatomopathology CHU IBN ROCHD)

4. Discussion

Uterine Rupture (UR) in a non-scarring uterus is a very rare complication in developed countries but relatively more common in developing countries. This disparity reflects differences in socioeconomic conditions, high levels of poverty, and lower levels of medical supervision. In a non-scarring uterus, the frequency of RU is estimated to be between 1/17,000 and 1/20,000 deliveries [6].

Uterine rupture is a complete break in continuity of the uterine wall and its serosa. The uterine lumen then communicates with the

peritoneal cavity. There are two types of Uterine Rupture (UR): traumatic and spontaneous. The etiologies of so-called "traumatic" UR are varied and may be related to shock (direct or indirect) or obstetrical maneuvers (endo-uterine maneuvers) [7,8]. We will focus on spontaneous UR which occur outside of any traumatic context. The risk factors for uterine rupture in a healthy gravid uterus are multiple, the most important of which are malformed uterus, multiparity, obstetrical maneuvers, instrumental extractions, mechanical dystocia, placentation anomalies, history of uterine curettage, and use of oxytocic [9]. In our patient, placenta accreta was the only risk factor found, which made this accident unexpected.

Placenta accreta corresponds to an abnormal adhesion of the placenta to the myometrium without interposition of the caducus. Its incidence is 1.3/1000 [10,11]. There are three types of placenta accreta according to the degree of myometrial infiltration: true placenta accreta (75%), placenta increta or placenta deeply penetrating the myometrium (15%) and placenta percreta [12].

The exact etiology of this obstetric pathology is not known; however, several risk factors have been identified: placenta previa, repeated caesarean sections, advanced maternal age, multiparity, multiple abortions by curettage [10-12]. Other risk situations are the existence of a submucosal fibroid or a rudimentary horn [10]. In most cases, placenta accreta is a combination of several factors and it is unlikely to be linked to a single factor [13]. Our patient had no risk factors for placenta accreta, which underlines the interest of our study.

Spontaneous rupture of the uterus due to placenta accreta is one of the most urgent obstetric complications resulting in hemorrhagic shock and high mortality, which is more frequent in the third trimester and is very rare in the second trimester [14], hence the interest of our work.

This abnormality can be suspected in case of unexplained elevation of Alpha-Fetoprotein (AFP) [15]. Ultrasound and MRI can give more details leading to this diagnosis. We could not perform MRI and AFP in our patient because the discovery was fortuitous due to a state of hemorrhagic shock in an unattended pregnancy, hence the interest of monitoring the pregnancy.

Contrary to many cases where placenta accreta has been diagnosed in patients with a scarred uterus [16], our patient had no notion of a previous caesarean section or any other risk factor, which underlines the importance of our clinical case. Spontaneous uterine rupture on placenta accreta in the second trimester is extremely rare [17], and only a few cases among them have been reported on healthy uterus [18].

The clinic is often silent during pregnancy. The diagnosis is usually suspected in the presence of risk factors and explored by ultrasound, which has become the main screening tool for women at risk of placenta accreta [19-20]. The ultrasound signs classically

described are the presence of intraplacental lacunae, the absence of a hypoechoic border between the placenta and the myometrium, an interruption of the hyperechoic zone at the interface of the uterine serosa and the bladder, and the presence of a pseudo tumoral appearance of the placenta opposite the uterine serosa [19-21]. MRI has been reported to be helpful in the diagnosis, among the diagnostic criteria proposed are abnormal bulging of the inferior segment, heterogeneity of the placental signal intensity on T2, intraplacental black bands on T2 [22].

The diagnosis is sometimes made at the time of delivery or, as in our case, by a picture of hemorrhagic shock. This complication is certainly rare but serious, underlining the great interest of preoperative diagnosis of this entity [18].

Certain differential diagnoses may pose a problem during delivery, such as preserved incarcerated placenta, choriocarcinoma, and it is the anatomopathological study that decides [23].

Anatomopathological diagnosis should be made on a hysterectomy specimen, preferably fresh, where the implantation zone is easily identifiable, rather than on a fixed specimen where the incriminated zone becomes difficult to identify. Macroscopic examination may show a rupture of the maternal surface related to abnormal focal adhesion, however the accreta zone may not be detected macroscopically hence the need to perform multiple sections for microscopic study. Microscopic study finds an absence of decidua between the chorionic villi and the myometrium, as well as smooth muscle cells opposite the placental villi [24].

Management is based on scheduled cesarean section at 34 weeks of amenorrhea with, in the absence of subsequent desire for pregnancy, hysterectomy, which is considered the "gold standard", and consists of performing hysterectomy after the birth of the child without attempted artificial delivery when there is a strong prenatal suspicion of placenta accreta, or after attempted artificial delivery when the diagnosis of placenta accreta is made intraoperatively [21]. This option may reduce maternal morbidity [25], but necessarily results in the loss of the patient's fertility. Conservative treatment has been reported by some authors followed by administration of methotrexate [23], which seems a potentially interesting option for patients with a subsequent desire for pregnancy. It consists of extracting the child, tying and then cutting the umbilical cord at its base, leaving in situ the placenta which is partially or totally adherent to the myometrium, after either a careful attempt at manual delivery or no attempt at manual delivery [10, 17]. The main advantage of this option is the potential preservation of the patient's fertility [26-27]. However, it is currently very controversial because conservative treatment exposes the patients to a risk of abdominopelvic infection or even peritonitis, as well as massive post-partum hemorrhage.

It is a management reserved for specific cases with an adapted infrastructure and close follow-up because of the complications

described above which must be identified and treated rapidly [28].

5. Conclusion

Placenta accreta is a formerly rare pathology, but its incidence has increased in recent years. It can lead to serious hemorrhagic complications during pregnancy and postpartum. Although rare, but which can be complicated by uterine rupture in a healthy uterus starting from the second trimester. Screening during prenatal follow-up, in patients at risk, is of great interest in order to improve the prognosis of these patients by organizing an adapted management with the mobilization of a multidisciplinary team including gynecologists, resuscitators and pathologists.

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