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Case Report

Rupture of Couvelaire uterus-a very rare case report

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ABSTRACT

Couvelaire uterus is a complication seen in some severe forms of abruptio placentae. A careful watch and early identification can prevent grave maternal and fetal outcome. In literature, there are very few cases reported of rupture of Couvelaire uterus as it is a very rare entity. Our study highlights a case of 24 year old with nine months amenorrhea presented with abruption placenta and intrauterine fetal death. Diagnosis of ruptured Couvelaire uterus made and the same was repaired and managed. We were able to save the mother successfully.

Keywords: Couvelaire, Rupture, Abruptio placentae, Uterus

INTRODUCTION

Couvelaire uterus is also known as utero placental apoplexy. It is a rare but nonfatal condition, that occurs due to extravasation of blood into the uterine musculature and surrounding tissues.[1]It has a typical association with abruption placentae, that is premature separation of the placenta, that enables blood to penetrate through the myometrium and parametrium.[2] Direct visualization during caesarean section or biopsy is the method of diagnosis.[3] Characteristically, it has a bluish or purple colour, mottled by ecchymosis. The incidence is difficult to determine, some estimate it as high as 20%, while others estimate it as low as 5%.[4] The association of accidental hemorrhage and rupture of the uterus is a most uncommon one in obstetric experience.[5]

Ruptured uterus is a potentially catastrophic event where the integrity of the myometrium wall is breached. The presentation of abruption of placenta and ruptured uterus concurrently is extremely rare and there were only a few cases described in the past.[6] Both conditions are considered as obstetrical emergencies and need early diagnosis and prompt treatment.[5] Hence we report a case of ruptured Couvelaire uterus where due to prompt identification and diligent measures, the patient was managed effectively.

CASE REPORT

A 24-year-old G2P1L1 with nine-month amenorrhea with abruptio placenta with intrauterine fetal death was referred from general hospital to our tertiary care center. Patient gave history of leaking per vaginum and non-perception of fetal movements for more than twelve hours. Her general condition was poor with severe pallor and tachycardia. On per examination, abdomen was tender, tense and superficial fetal parts were palpable, decision of emergency laparotomy was taken. As the abdomen was opened, the baby was lying in the abdominal cavity and was delivered along with two and a half liters of hemoperitoneum, uterus was found to be dark, indurated, wooden-like, ecchymotic and with petechial areas. This was the typical clinical presentation of a Couvelaire uterus. The lower uterine segment was ruptured with extension in both sides of broad ligaments as well as in the vagina. Uterine and vaginal rent was repaired in layers. On placental examination, around 500 cc of retroplacental clot was seen. Patient was discharged on tenth post-operative day in stable condition.

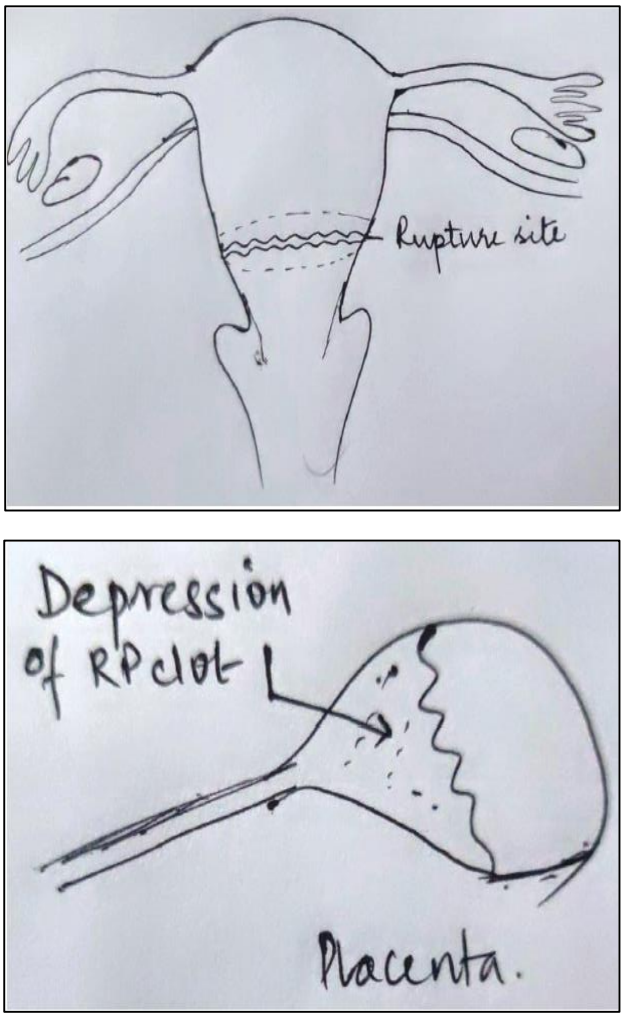

Figure 1: Appearance of uterus and placenta intra-operatively.

DISCUSSION

Couvlaire uterus results from the hemorrhage that gets into the decidua basalis ultimately splits the decidua and the hematoma may remain within the decidua or may extravasate into the myometrium. The myometrium becomes weakened and may rupture due to the increase in intra uterine pressure associated with uterine contractions.[7] Although the exact etiology of Couvelaire uterus is unknown, it has been associated with: placental abruption, placenta previa, coagulopathy, preeclampsia, ruptured uterus from a transverse lie and amniotic fluid embolism.[8]

The most current etiologic theory suggests that blood from the retroplacental hemorrhage invades the myometrium, separating the muscle bundles, and extends to the serosal surface.

Rupture of Couvelaire uterus is an uncommon event. It can be incomplete or complete. Spontaneous rupture in primigravida is a rare event. In unscarred uterus , incidence is about 1 in 17,000-20,000 deliveries, while that in the scarred uterus is 5.1 per 10,000 deliveries.[9,10] The maternal death rate from uterine rupture is 0-1% in developed nations and 5-10% in developing nations.[11]

In 2009, Massinde et al described an unusual case of placenta abruption complicated with ruptured uterus where a 40 year-old woman, gravida 7 para 6 presented with features of placenta abruption with fetal demise and she was allowed progression to labour while anticipating vaginal delivery.[12] Unfortunately during the course of labour she was suspected to have ruptured uterus, and laparotomy was performed. Findings were hemoperitoneum, Couvelaire uterus with bilateral uterine rupture involving uterine vessels. A dead fetus was delivered followed by supracervical hysterectomy. She recovered without major complications.

In 2019, Cipullo et al report 32 years old pregnant woman G1, who had a placental abruption, bleeding per vagina and stillbirth and whose uteroplacental apoplexy was diagnosed at the time of the caesarean section (CS).[2] Several hours after the CS, during which patient's condition worsened, an emergency hysterectomy was performed, because of persistent uterine bleeding and hemoperitoneum associated with hypofibrinogenemia.

In 2021, Senkaya et al studied the risk factors of Couvelaire uterus and maternal and neonatal outcomes. Obstetrics emergency clinic data between January 2013-December 2019 were screened and placental abruption patients confirmed by pathology or surgery note were recruited.[13] Patients were divided into two groups; with or without Couvelaire uterus. Clinical features; such as maternal age, gravida, parity, gestational age at delivery, comorbidities, chief complaint, ultrasonography examination, placental pathology, degree of placental separation, DIC (disseminated intravascular coagulation), required hysterectomy and transfusion, maternal hemoglobin, maternal or fetal ICU (intensive care unit) admission, neonatal birth weight, APGAR 1' and 5' scores were compared. Age, gravida, and parity were significantly higher in patients with Couvelaire uterus

Jaiswani et al reported two maternal deaths due to uterine rupture in a term pregnancy consequent to abruptio placentae.[14] In one case, the uterus ruptured at the previous lower segment Caesarean section (LSCS) scar site and in another over the lateral wall of Couvelaire uterus. In both cases, the fetus was partially lying outside the uterus in the peritoneal cavity, and there was a massive retro-placental clot. Conclusions: Early identification of high-risk factors, followed by institutional delivery, may reduce maternal and fetal mortality due to abruption followed by uterine rupture two cases of maternal death due to ruptured corvulaire uterus and deduced, early identification of high-risk factors, followed by institutional delivery, may reduce maternal and fetal mortality due to abruption followed by uterine rupture.

In 2022, Bennani et al reported two cases of Couvelaire uterus on retroplacental hematoma, complicated by

intrauterine fetal death. The first case is a 27-year-old patient, primigravida, referred for a typical clinical state of retroplacental hematoma associated with preeclampsia at 37 weeks of amenorrhea. The second case is a 38-year-old patient, hospitalized for hemorrhagic shock within a context of retroplacental hematoma at 34 weeks of amenorrhea. Both cases were complicated by intrauterine fetal death and the diagnosis of Couvelaire uterus was made intraoperatively. The treatment was conservative for both cases, with no postoperative complications. Hence, diagnosis was made by visual inspection or biopsy and the recommended management is usually conservative. It can lead to maternal and fetal mortality, so we should be vigilant in monitoring antenatal bleeding and postpartum hemorrhage to reduce fetal and maternal morbidity and mortality.

CONCLUSION

Concurrent presentation of Couvelaire uterus and ruptured uterus is extremely rare, in the past there were only few cases described in the past which makes it difficult to identify. Both conditions are considered as obstetrical emergence and their diagnosis can easily be made through clinical presentation. She recovered without major complications. Careful monitoring of this patient was the only thing which allowed us to discover this unusual presentation and manage the patient effectively. The patient was discharged without any morbidity.

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