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SPONTANEOUS PRE LABOUR RUPTURE OF UNSCARRED NULLIPAROUS UTERUS AT 28 WEEKS- A CASE REPORT AND REVIEW OF LITERATURE

Obstetrics & Gynaecology

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ABSTRACT

Rupture of gravid uterus is one of the worst obstetrics emergencies that are a threat to both mother and fetus. Vast majority of uterine rupture occur in women who have uterine scar, most of which are a result of previous cesarean delivery. Traditionally, primigravida and unscarred uterus are considered immune to rupture.This case report is based on spontaneous rupture of unscarred uterus in nulliparous woman prior to onset of labour at 28 weeks pregnancy with previous history of dilatation and curettage[D &C] done for missed abortion. Patient presented in the state of shock with loss of fetal movements. USG revealed haemoperitoneum. with intrauterine fetal demise. After resuscitation, patient was taken up for emergency laparotomy that revealed an intact amniotic sac with dead fetus in abdominal cavity and uterine fundal tear of about 7 cm. Thus, past history of curettage should be considered as a risk factor for uterine rupture during pregnancy in an apparently unscarred uterus . However, clinical suspicion, early diagnosis and timely intervention can improve maternal and perinatal outcome .

KEYWORDS

Spontaneous, Prelabor, Nulliparous, Unscarred uterine, Rupture

INTRODUCTION :

Unscarred rupture of uterus in pregnancy is one of the worst obstetric emergencies associated with a high risk of maternal mortality and morbidity. Although it is a rare event, the overall rate of unscarred uterine rupture ranges from 1/5700 to 1/20,000 pregnancies.[1]

Several risk factors are associated with uterus rupture , but most common is previous caesarean section . Rupture of unscarred uterus is very rare. The primigravid uterus is considered immune to spontaneous rupture. [2]

Uterine rupture can be due to trauma, labour stimulation by prostaglandins, oxytocin, intra amniotic instillation by saline or prostaglandins. It can even be spontaneous and be associated with grand multiparty, malpresentations, abnormally invasive placenta, prolonged labour, multifetal pregnancy and macrosomic fetus. Certain connective tissue disorders like Ehlers Danlos and Loeys Dietz syndrome also increase the risk of rupture .[3]

It is possible to classify uterine rupture according to etiology as spontaneous rupture of previous scar [caesarean section , myomectomy etc.], traumatic rupture of previous scar, spontaneous rupture of unscarred uterus and traumatic rupture of unscarred uterus .[4]

Rupture of uterus is also associated with perinatal morbidity and mortality. Fetal and placental extrusion into the abdominal cavity is associated with worse perinatal outcomes.

Significant maternal morbidity and mortality including blood transfusions , hysterectomy and urological injury can also occur. Risk is higher in unscarred uterus, when rupture is diagnosed after vaginal birth .[5]

Spontaneous rupture of uterus has been reported many times in pregnant women mainly during labour, however spontaneous rupture in unscarred uterus in nulliparous prior to onset of labour is extremely rare.

Symptoms of uterine rupture are severe abdominal pain of sudden onset, palpable fetal body parts , signs of intraperitoneal bleeding and deterioration of vital signs leading to shock .[6]

Less common symptoms are epigastric pain, shoulder pain, abdominal distension and paralytic ileus. Often there is minimal external bleeding but massive internal bleeding that can be detected by USG examination .[6]

In this article, we report a case of rupture of unscarred uterus at 28 weeks period of gestation in a nulliparous woman prior to onset of labour and literature review was performed .

Case Report :

A 23 years old G3 P0 A2 with 28 weeks of pregnancy was admitted in the emergency labor ward of our hospital with acute pain in the abdomen and loss of fetal movements for one day. Pain was not associated with vomiting, diarrohea and any urinary complaints .There was no history of trauma and bleeding per vaginum. One day before reporting to our hospital she was admitted at a rural hospital where she was treated conservatively. As the pain was not relieved and her USG-scan revealed an Intra uterine fetal demise[I.U.F.D], she was referred to our hospital on the very next day. Her present pregnancy was unsupervised. She had history of two second trimester missed abortions for which dilatation and curettage was done each time with uneventful post abortal period. Last abortion was two years back.

On admission she was pale and distressed with a PR 110 /min. and BP 90/60 mmHg. Abdomen was distended, tense and tender. Fundal height was more than the period of gestation. Fetal parts were not well palpable and fetal heart rate could not be localized. Speculum examination revealed an upper positioned cervix with no bleeding p/v or leaking p/v. On digital examination, the cervix was long, tubular and uneffaced. Reported Hb was 5.9 gms/dl , other investigations were within normal limits. USG abdomen revealed single dead fetus of 27 weeks and 4 days in breech presentation with ? Abruptio placentae and moderate amount of collection in peritoneal cavity ? haemoperitoneum, with normal Liver and spleen. Provisional diagnosis of abruption placenta with IUD was made and due to deteriorating condition of the patient ,she was taken up for emergency laparotomy. Intra op there was approx .1.5 liter of hemoperitoneum. An intact amniotic sac with dead fetus was found in the abdominal cavity . Membranes were ruptured and male stillborn fetus (weight 1.5 kilograms) was delivered by breech extraction . The amniotic fluid was clear, placenta was lying outside the uterus and appeared normal . There was no evidence of couvelaire uterus. The uterus was about 16 weeks pregnant size and had a fundal tear of about 7 cm extending horizontally from one cornu to another [figure 1]. The tear was repaired with Vicryl no 1 in three layers [figure 2] . Hemostasis was achieved .Patient received one unit of packed RBC during intra op period and

four units of blood with four units of fresh frozen plasama [FFP] during the post op period . Post op period was uneventful and stitch removal was done on day eighth . Patient was discharged with advice of contraception . Couple was counselled for risk of rupture at scar site in future pregnancy .

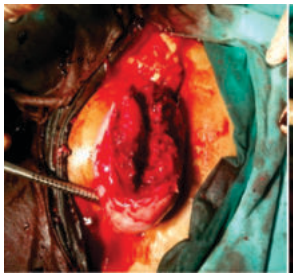

Figure -1

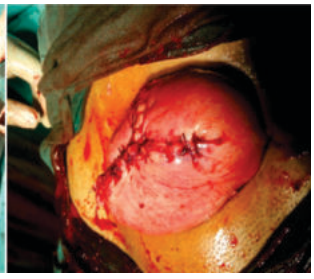

Figure-2

DISCUSSION:

Uterine Rupture is a rare obstetric emergency to keep in mind, due to its extreme and life-threatening consequences for both the neonate and the woman. Considering the maternal and fetal risks, a timely diagnosis is mandatory. [7]

Uterine rupture refers to tear in the wall of the uterus during pregnancy or delivery. On the basis of etiology and anatomy it can be categorized into two types as complete and incomplete rupture. Incomplete rupture does not extend to the entire thickness of the uterus which is covered by peritoneum .

It generally occurs in the area scarred from the previous uterine scar , fetus is not extruded in this case. Compared to this, complete uterine rupture is much worse event resulting in direct communication between the uterine and peritoneal cavities associated with extrusion of uterine contents in the peritoneal cavity.

Complete uterine rupture generally occurs in unscarred uterus, sudden in onset and associated with severe pain and significant blood loss. In the case of spontaneous uterine rupture in primigravida without identified risk factors 50 % are found to have complete rupture.[7] The clinical presentation is often atypical, but acute abdominal pain and abnormal fetal heart rate are the most common features as reported in literature.

Imaging studies such as ultrasonography, CT, and magnetic resonance imaging lack specificity but may facilitate early diagnosis. [7]

Incidence of pregnancy related uterine rupture is 1/1146 pregnancies and incidence of spontaneous rupture of unscarred uterine pregnancies is 1/8,434 pregnancies [0.012 %] in industrialized countries and 1/920 pregnancies [0.11 %] in developing countries .[8]

Spontaneous rupture of uterus has been reported many times in pregnant women mainly during labour . However spontaneous rupture in unscarred uterus in nulliparous prior to onset of labour is extremely rare. Various cases have been reported in literature where uterine rupture has been reported in a primigravid women with / without identified risk factors .[Table 1]

Table -1 Antepartum Uterine Rupture in Unscarred Uterus in Nulliparous Woman

AUTHOR	AGE	GESTATIONAL AGE	RISK FACTORS	PRESENTING SYMPTOMS	RUPTRE SITE	FETAL OUTCOME	TREATMENT
Nel [11]	19 years	38weeks	Unremarkable	Sudden onset of acute abdominal pain worsening with time Fetal tachycardia of 180 per min .	Posterior uterine wall	Live Fetus	Repaired in two layers .
Langton[12]	27 years	32 weeks	Unremarkable	Sudden sharp abdominal pain, nausea, shoulder pain. Fetal heart rate was normal	Right Uterosacral area	Live Fetus	Repaired in two layers without tubal Sterilization
Matsubra [13]	27 years	38weeks	Unremarkable	Weak abdominal pain	Uterine anterior wall [Incomplete rupture]	Live Fetus	Excised the thin part of the uterine wall and reconstructed the site
Yang[14]	35 years	27 weeks	Unremarkable	Mild abdominal pain and hypotension	Right uterine cornu	Live Fetus	With several figure of eight sutures
Fischer [15]	16 years	30weeks	Unremarkable	Lower abdominal pain and no vaginal bleeding. Fetal heart rate tracing was reactive	Posterior wall extending toward the cervix	N/A	Repaired in two layers
Abbi [16]	20 years	37 weeks	Unremarkable	Abdominal pain, Loss of fetal movements	Left cornual area	Still birth	Repaired in two layers
Wang YL[17]	30 years	40 weeks	Unremarkable	Fetal Distress	No Mention	Live Birth	Repaired without tubal sterlization
Wang YL[17]	26 years	30 weeks	Unremarkable	Fetal Distress	No Mention	Live Fetus	Repair without tubal sterlization
Our Case	23 years	28 weeks	H/o Dilatation and Curettage two times in past for second trimester abortions	Pain abdomen since one day associated with absent fetal movements after onset of pain	Uterus had a fundal tear of about 7 cms	Still Born	Repaired in three layers

According to the literature, the risk of recurrent uterine rupture is linked to the site of rupture as the highest risk is linked to fundal injuries . Previous studies reported the risk of recurrent rupture as 22–40% in patients who reconceived after uterine repair .[8]

In review of literature fundus was found as the site of rupture in 12.5 % cases .Rupture of the posterior uterine wall in 25% cases and rupture of anterior uterine wall in 12.5 % of cases . Rupture of the lower segment was found in 12 .5 % cases .The rupture of right utero sacral area occurred in 12 .5 % cases . Data regarding the rupture at other sites is unclear [8].

Surgical repair of the rupture site should be performed for patients who wish to preserve reproductive function. However, depending on the size of the rupture and/or the clinical condition of the patient, hysterectomy may be required. [9]

There is no consensus in the literature on the optimal timing of conception and timing of elective cesarean delivery in patients with a history of unscarred uterine rupture [UUR]who underwent uterus-preserving surgery in the past. The timing of delivery of a subsequent pregnancy in UUR cases should be considered carefully, as recurrent rupture may occur early in the third trimester.[10]

The issue of uterine rupture[UR] in women with their first pregnancy should be taken into consideration as a point of reflection for future pregnancies; specifically, accurate and multidisciplinary counseling must be performed considering the high risk of recurrence associated with maternal and fetal morbidity and mortality.

CONCLUSION :

Our case report suggests that a past history of uterine dilatation curettage should be considered as a risk factor for uterine rupture during pregnancy in an apparently unscarred uterus because there could be an unnoticed uterine perforation or uterine weakening by the curettage, especially if it was done in the second trimester when the uterus is softer and more fragile

Traditionally, primigravida and unscarred uterus are considered immune to rupture but with previous history of dilatation and curettage, an acute onset of pain abdomen , sudden loss of perception of fetal movements and hypovolemic shock , all these together should raise the suspicion of uterine rupture . In conclusion, uterine rupture is a rare complication especially in nulliparous women and before labor. However, clinical suspicion, early diagnosis and timely intervention can improve maternal and perinatal outcome .

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