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Research Article

UTERINE RUPTURE AT SECOND AND THIRD TRIMESTER OF PREGNANCY. CASE SERIES

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ABSTRACT

The uterine rupture is when muscular wall of the uterus tears during antenatal period or during labour. Such condition in non-laboring patient is a rare, which can lead to significant morbidity and mortality for the mother and fetus. The early diagnosis and multidisciplinary team approach is very important in such cases. Management is very critical at (pre-viable) early period of gestation

INTRODUCTION

Uterine rupture is defined as complete separation of the myometrium.[1-2] It can occur in the laboring or non-laboring uterus. The non-labouring is known as spontaneous uterine rupture. It is a rare occurrence which can lead to maternal hemorrhage, placental abruption and extrusion of the amniotic sac and fetal parts through the uterine defect. This can result in significant consequences for both the mother and fetus, such as blood transfusion, hysterectomy, urinary bladder injury, neonatal respiratory distress, perinatal asphyxia and maternal or fetal death. [3-4]

The most common risk factor for spontaneous uterine rupture is previous uterine surgery such as myomectomy, caesarean section or uterine reconstructive surgeries.[5] Less common causes include iatrogenic uterine perforation, invasive placenta, congenital anomalies, trauma, sacculation of the entrapped retroverted uterus and open maternal-fetal surgery or rarely couvelaire uterus[6]. The classical caesarean section scar or hysterotomy scar is likely to rupture during later months of pregnancy. The weakening of scar is due to implantation of placenta over previous caesarean scar and consequent increased vascularity. These scar are more vulnerable to rupture during labour. Lower segment scar rarely rupture during antenatal period. The incidence of lower segment caesarean scar rupture is 1-2% while that of classical caesarean scar is 5-10 times higher. The scar following myomectomy or meteroplasty hardly rupture as wound heals well as uterus remains quiescent following surgery. The hysterotomy uterine scar behaves like that of classical scar and which is of growing concern.

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Management of this rare pregnancy complication requires several consideration. The caesarean delivery with either uterine repair or hysterectomy may be appropriate at fetal viability. When the fetus is extremely premature, management decisions are complex. Termination of the pregnancy with uterine repair or hysterectomy is the best approach for the management [7]. In recent years, repair of uterine rupture in the second and early third trimesters has been reported, with successful delay of delivery[8-9]

We describe a rare case of spontaneous uterine rupture in the mid-second trimester and second case at third trimester with successful surgical repair.

Case presentation

Case no. 1 A 35-year old G2P1+0 woman with previous caesarean section presented to hospital at 21 weeks 2 days gestation. She had history of hyperemesis since two days and sudden onset of pain since three hours.

Initially she had slight abdominal discomfort that suddenly became severe, waking her from sleep. There was no history of trauma. The interval between previous caesarean section and conception was 26 months. The current pregnancy was spontaneously conceived and had been progressing normally.

At presentation, she was afebrile and clinically severe pallor, blood pressure was systolic 60mmHg, heart rate 120 beats per minute, respiratory rate 40, temperature 98 F and fetal heart rate not heart clinically. Abdomen was distended and significant tenderness at the uterine fundus. On pervaginal examination uterus was 16 weeks size, tender and internal ballotment was absent. Fullness felt in bilateral fornices.

Hemoglobin at presentation was 5 g/L and white blood cell count was 7000 cmm. Ultrasound examination showed a singleton fetus with no amniotic fluid. The placental position was left posterofundal. Massive fluid was seen peritoneum. Ovaries appeared normal bilaterally; the appendix was not visualized. Evaluation of the uterine wall demonstrated focal uterine disruption at fundal region. Crystalloids and colloid were given through two wide bore canula. Blood is arranged Patient was ready for exploratory laparotomy. High risk consent was taken Differential diagnosis included fibroid degeneration or torsion, placenta percreta, concealed placental abruption, uterine rupture and non-obstetrical causes. High risk consent was taken to include several potential scenarios and outcomes including death on table. The patient and her attendants were counseled extensively around possible complications of surgical repair, including prolongation of the pregnancy leading to severe prematurity, preterm rupture of membranes, and risks of unsuccessful repair, including hysterectomy and fetal loss. On culdocentesis unclotted blood was aspirated. With a demonstration of an understanding of these risks, she consented for exploratory laparotomy with uterine repair, possible hysterotomy and evacuation of the fetus and possible hysterectomy. Diagnosis of uterine rupture was confirmed on laparotomy. On laparotomy there was 2 litres of blood and around 450 grams of clot in abdominal cavity. Uterus was around 18 weeks size. There was tear of size 4x3 cms on right fundal region. Placenta was visualized through the tear which was bleeding actively.

Uterine rupture

The placenta and dead fetus was removed through the same tear, which was stitched in three layers and complete haemostasis was achieved. Two packed RBCs and two fresh whole blood were given.

Case no 2. A 41-year old G3P2+0 woman with previous two caesarean section presented to hospital at 36 weeks 1 days gestation with breech presentation presented in emergency with labour pains since four hours. Complaints of sense of something giving way at height of uterine contration. Her pulse 130 bpm BP 100/50 mmHg, RR 20 per minute, temperature 98.5 F and investigation sent.

Her first caesarean section was performed for flexed breech presentation five years back and second caesarean section was performed for failed (VBAC) vaginal birth after caesarean section two years back.

On examination height of uterus corresponds to 32 weeks breech presentation, head felt in fundic region, liquor could not make out with fetal bradycardia, variable decelerations, suprapubic scar tenderness. Fullness felt in bilateral flanks suggestive of fluid. On pervaginal examination breech could not felt.

High risk consent was taken, blood was arranged and patient was prepared for emergency caesarean section. On opening abdomen uterus was ruptured completely at previous caesarean scar and margins were clean and look fibrosed, through which one right fetal leg and both buttocks were protruding. Baby was extracted as breech not cried on table and apgar score was 4,9 resuscitated by pediatrician. Baby was shifted immediately to NICU. Placenta was posterior and low lying, removed completely. Uterus was closed in layers. No blood transfusion was given. Mother and infant were stable postpartum. The neonate received continuous positive airway pressure (CPAP) until day 2 of life. The patient was discharged home on seventh post operative day.

DISCUSSION AND CONCLUSIONS

The uterine rupture is one of the most dreaded complication of child birth with potentially grave consequences to mother and child. Though maternal mortality is rare in such cases when managed in well equipped hospital, however morbidity may be significant. according to WHO overall incidence of uterine rupture in unselected cases is 1:2000 in community based studies and 1:300 in facility based hospital. The incidence is markedly low in developed world.[10]

Spontaneous antenatal uterine rupture is usually complete, involves upper segment and occur in later months of pregnancy. In rare case it may also occur in early months of pregnancy, as described in a recent review by Surico et al. (2016). These cases presented at 13 to 26 weeks gestation and had a median pregnancy prolongation interval of 12 weeks. Identified risk factors in that series included previous cesarean delivery and previous uterine surgery, although some cases presented with no apparent risk factor. [9]

In case one our patient reported in emergency with history of hyperemesis since two days and sudden onset of pain since three hours.

Symptoms and signs of uterine rupture include fetal bradycardia, variable decelerations, evidence of hypovolemia, loss of fetal station (detected during cervical examination), and severe or constant abdominal pain. If the fetus has been expelled from the uterus and is located within the peritoneal cavity, fetal and maternal morbidity and mortality increase significantly.

Diagnosis. This was a rare presentation of pre-viable spontaneous uterine rupture as in case no 1. and uterine rupture was confirmed by laparotomy. Accurate pre-operative diagnosis was a challenge in this case. The most common presenting symptom of spontaneous rupture is sudden onset of severe abdominal pain, which happened to our patient. Vaginal bleeding, shock and fever have also been described. [9] Although ultrasound examination confirmed hemoperitoneum, its utility in diagnosing uterine rupture was limited. MRI has been shown to be useful in the work-up of acute abdomen in pregnancy in hemodynamically stable patients and has demonstrated superior accuracy in evaluation of uterine wall defects.[10] Differential diagnosis included fibroid degeneration

or torsion, placenta percreta, concealed placental abruption, uterine rupture and non-obstetrical causes.

A multidisciplinary team was formed to plan delivery but both our patients were reported in emergency. Factors that contributed to the decision-making process included fetal maturity, risk of developmental sequelae of severe prematurity, risk of secondary uterine rupture, risk of premature labor, and associated risk of fetal demise.

Risks of subsequent pregnancy and recurrent uterine rupture were discussed extensively. The same surgical team that was involved in the uterine rupture repair carried out the cesarean delivery in order to provide continuity of clinical care and surgical expertise.

CONCLUSION

Primary caesarean section is to be reduced. VBAC vaginal birth after caesarean section is implemented in those institutions where 24 hours availability of gynaecologist, anaesthetist, neonatologist and blood bank facility.

Multidisciplinary approach involving Obstetrical, Gynecologic, Maternal Fetal Medicine, Pediatric, Anesthesia and Nursing teams to plan delivery.

This team approach is crucial to navigating medical and ethical considerations. The successful technical closure of uterine wall dehiscence is needed. Superior myometrial reapproximation leads better myometrial healing and future pregnancy outcome..

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