



Rupture of Uterus – the Changing Trends

Rupture of uterus is a life threatening obstetric complication. It carries a high rate of maternal and perinatal morbidity and mortality. Overall incidence of rupture of uterus has been currently quoted ranging between 1 in 1146 (0.07%) and 1 in 200 (0.5%) pregnancies depending upon the quality of maternal care during the antenatal and the intrapartum period.

In low and middle income countries uterine rupture following prolonged and obstructed labor, multiparity are common. Author had the experience of managing such cases years back, while working as a registrar in one rural medical college in this state of West Bengal. One such study covering the period 1977-1986 revealed, 13.7% of all maternal deaths were due to rupture uterus.¹ Another such subsequent study, revealed a significant reduction the incidence of rupture uterus to 2.2%.²

In India, intervention with Janani Sishu Suraksha Karyakram (JSSK), for safe motherhood under the umbrella of National Health Mission (NHM), has brought a significant change. The presence of a skilled birth attendant at every labour, early referral, Nischay Jan (free transport), institutional delivery and partographic monitoring of labor are the important measures to lower the incidence of rupture uterus drastically. Impact of this combined approach in comprehensive routine and emergency obstetric care, is reflected by the significant reduction in maternal deaths in India.

Spontaneous uterine rupture is extremely rare. The estimated incidence is 1 in 8000 to 1 in 15000,³ Lower segment cesarean scar rupture is observed in $\leq 1\%$ of cases. Uterine rupture following prior uterine

surgery (myomectomy), uterine malformation are relatively uncommon. Rupture of a gravid uterine horn of a bicornuate uterus with multiple pregnancies is extremely uncommon. Such type of uterine rupture has not been observed in the literature. Author's experience of managing such a case has been reported.⁴

Spontaneous rupture is usually complete and it involves the upper segment. Spontaneous disruption of the uterus in the midline during pregnancy has been reported. It is thought to be due to the weakness of the area of lateral fusion of the Mullerian ducts. Rupture of a gravid unicornuate uterus, has been reported, it is uncommon though. Iatrogenic rupture is rare again, in these days of obstetric practice.

Pregnancy in the cesarean scar and its rupture in the first trimester of pregnancy is a new entrant to the obstetric complications. Cesarean scar pregnancy comprises upto 6% of such cases in women with prior history of cesarean delivery. It was once thought to be the rarest complication. With rising incidence of cesarean delivery, cesarean scar pregnancy is quoted to be about 0.15% in women with a history of prior cesarean delivery. Different studies have quoted the incidence with a range from 1 in 1800 pregnancies to 1 in 2226 of all pregnancies.⁵

The mechanism of cesarean scar pregnancy is thought to be due to invasion of the trophoblasts through the microtubular tract of the scar tissue of prior cesarean section. The decidua over the scar tissue is either partially developed or may be absent at places. The trophoblasts invade the scar as well as the myometrial tissues, if it is present.

Presentation of a patient with cesarean scar pregnancy vary widely depending upon the degree of trophoblast invasion to the myometrium or the scar. There may be painless bleeding in the first trimester of pregnancy mimicking a miscarriage problem. In a worse situation, invasion may go up to the bladder. Pregnancy may grow towards the uterine cavity. In that situation, patient may remain asymptomatic and continue the pregnancy till term and deliver a live born baby.

Severe pain with or without profuse bleeding is due to scar rupture of the uterus. Cesarean scar pregnancy is often referred to as cesarean scar ectopic pregnancy. Interestingly, implantation occurs inside the uterus and above the internal os and it is not an ectopic pregnancy. Diagnosis of cesarean scar pregnancy is made by the way of exclusion of intrauterine, endocervical and a tubal pregnancy. Diagnosis is made mostly by using transvaginal sonography (TVS). Sensitivity of TVS to the diagnosis is of 86%.⁵

The myometrium between the gestation sac and the urinary bladder may be very thin or even absent. Invasion of the trophoblasts outwards often lead to rupture of the uterus. The bleeding may be life threatening. Color Doppler USG study is useful to diagnose the invasion of the bladder. MRI is an adjunct to sonography to confirm the diagnosis of bladder invasion. MRI can show the thinning out of myometrium between the gestational sac and the bladder.

Complications of cesarean scar pregnancy are many and at times may be life threatening. When gestational

sac has no fetal pole, it may end in missed abortion or pregnancy failure. When the pregnancy continues, risk of placenta previa and its complications are to be kept in mind. Morbid adherent placenta is a known complication. Invasion and stretching of the scar, ends in rupture of the uterus with massive hemorrhage.

Majority of the patients that present with pain and hemorrhage are treated with laparotomy or laparoscopy. Hysterectomy may be a life-saving surgery. It is done in cases with uterine rupture, or placenta accreta for control of hemorrhage.

Uterine preserving surgery could be done with termination of the pregnancy safely. Medical management includes ultrasound guided local injection of methotrexate (MTX) or KCL. Laparoscopic or hysteroscopic resection of the gestational sac has been reported.⁶ Hysteroscopic surgical excision were associated with less complications. Uterine artery embolization has been done to reduce the risk of bleeding. Patients with medical or conservative surgical management need to be followed up with serum β hCG for complete regression of trophoblastic activities.

This issue of IJOPARB has two case reports on rupture of uterus. One in the first trimester with a scarred uterus (p.64) and the other with spontaneous rupture of the fundus, in the third trimester. (p.57) These are uncommon. Going through these two case reports, I believe all of us would be benefitted.

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