



UTERINE RUPTURE DURING PREGNANCY IS AN OBSTETRICS EMERGENCY

Obstetrics & Gynaecology

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ABSTRACT

Background- Rupture of gravid Uterus is an obstetrics and surgical emergency. It is a rare and often catastrophic complication with a high incidence of fetal and maternal morbidity and mortality.

Aim And Objective- To review the incidence of ruptured uterus and evaluate associated risk factors, maternal and fetal complications.

Method And Materials- 16 cases of major rupture of pregnant uterus manage in the department of obstetrics and gynecology at DMCH, Laheriasarai. All cases were confirmed by surgery over 1 year period. Detail of each patient were observed and analyzed retrospectively including maternal age, gestational week, term of pregnancy, history of past operation, symptom and sign of uterine rupture as well as the management and perinatal outcome.

Result- The Incidence of rupture was 2 in 1000 deliveries. among 16 patients of uterine rupture, patients aged from 20-36 years. Out of 16 cases of uterine rupture, 13 are multigravida, 3 are primigravida, 13 are term and 3 preterm uterine rupture. Previous caesarian section was the most common predisposing factor and present in 11 patients (69%). Subtotal hysterectomy was done in 3 patients (19%). In 2 pts (12%) UB repair were required. All women needed blood transfusion. No any case of uterine rupture due to trauma or uterine anomaly were recorded. One maternal death and 100% perinatal fetal deaths were seen.

Conclusion- This study confirms that previous Cesarean section scar predominant cause of uterine rupture which can be avoid by pre-pregnancy counselling, regular antenatal care and compulsory institutional delivery.

KEYWORDS

Previous LSCS, Rupture uterus, Labor, Laparotomy

INTRODUCTION

Uterine rupture is a full thickness separation of the uterine wall and overlying serosa. It is an uncommon potentially catastrophic complication associated with severe maternal and perinatal morbidity and mortality. It is a serious acute abdomen with hemodynamic instability and abdominal discomfort in obstetrics leading to hysterectomy of mother, fetal distress and fetal death in uterus if diagnosis and treatment is delayed. Most ruptured cases occur in patients with risk factor for uterine rupture mostly labor after previous LSCS and grand multiparity. Incidence of rupture uterus varies widely from 1:110 in developing countries like Ethiopia to as less as 1:4366 in developed countries [1,2]. In India reported incidence varies from 1 in 1633 to 1 in 346 deliveries [3,4,5,6]. Initial sign and symptom are nonspecific which leads to problem in diagnosis. Uterine scar dehiscence is more common event then uterine rupture which involve disruption and separation of a pre-existing scar. Its outcome is seldom catastrophic like uterine rupture.

The premonitory sign and symptom of uterine rupture are inconsistent and short time for initiating definitive therapeutic action makes uterine rupture in pregnancy a feared event for medical practitioner.

AIM AND OBJECTIVE

To review the incidence of ruptured uterus and evaluate associated risk factors, maternal and fetal complications.

MATERIAL AND METHOD

This study examined 16 cases of ruptured uterus manage in the department of obstetrics and gynecology at DMCH, Laheriasarai. All cases were confirmed by surgery from June 2019 to May 2020. Detail of each patient were observed and analyzed retrospectively including maternal age, gestational week, term of pregnancy, history of past operation, symptom and sign of uterine rupture as well as the management and perinatal outcome.

RESULTS

Details were obtained from medical records retrospectively and analyzed manually.

1. Incidence of uterine rupture- a total 16 cases of uterine rupture were collected and number of hospital delivery in same period was 8010. Incidence of uterine rupture was two in 1000 deliveries (0.2%) in our study.

2. Among 16 patients of uterine rupture, patients aged from 20-36 years. Out of 16 cases of uterine rupture, 14(87.5%) are multigravida, 2(12.5%) are primigravida, 13 are term and 3 preterm uterine rupture [Table 1,2]. We did not see any grand-multipara in our study. All 16 cases had varied etiologies and presentation such as poor antenatal care (even no history of ANC), previous caesarian section present in 11 patients, multiparity in 3 and obstructed labor in one. However, no history of trauma or uterine anomaly noted as risk factor for rupture uterus in our study. Hemoperitoneum present in majority of the cases with dead fetus and placenta in maternal abdomen. Most of patients require basic life support, IV fluids, blood transfusions and emergency laparotomy. Few are admitted in ICU.

Table1-Frequency Of Clinical Features In Patient Of Uterine Rupture

Abdominal pain	14(87%)
Fetal heart rate	14(87%)-absent at time of admission
Vaginal bleed	4(25%)
Hypotension	5(31%)
Hematuria	3(16%)
Fetus palpable in abdomen	4(25%)

Table2-Gestational Age Of Uterine Rupture

After 36 weeks	13
After 28 weeks	3
Before 28 weeks	Nil

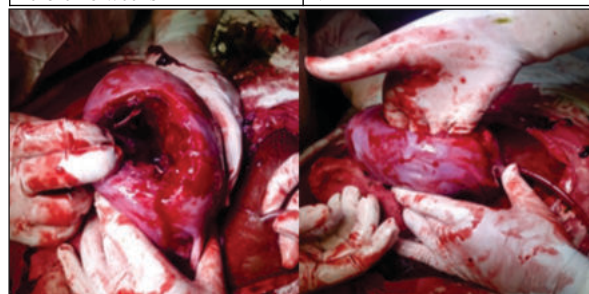


Fig1a,b- Spontaneous Complete Uterine Rupture At The Fundus - Unusual Location In 28 Weeks Primigravida

Operative management included two layers repair of uterine rupture in 13 patients and subtotal hysterectomy in 3 patients to save life of mother as adhesion present in lower segment in one case and in other two cases bilateral extension of rupture to the broad ligament. In 10 patients BLTL were done after repair of uterine rupture. In one case, 28-week primigravida unusual spontaneous rupture at fundus of the uterus with past history of dilation and curettage with placentrex injection as treatment of infertility (Fig.1a, b). The fundal rupture was repaired with using 2 no catgut suture in two layers which is not shown in figure. In our study total two case of fundal rupture of uterus were found both are preterm, although location is unusual for rupture.

In two patient's urinary bladder is also ruptured along with uterus and in one case during operative management urinary bladder was opened. In all above three cases two layers urinary bladder wall repair was done under guidance of general surgeon in our department.

Uterine rupture is a life-threatening emergency condition during pregnancy, so laparotomy is done on urgent basis in attempt to save mother and foetus without imaging. In one patient who delivered vaginally with history of prior CS, and during manual examination of uterus revealed a defect in anterior uterine wall. Abdominal USG shows obvious discontinuity or defect in lower anterior wall at the uterine scar which appears hypoechoic [fig.2] with moderate peritoneal fluid collection(hemoperitoneum).



Fig.2

One maternal death and 100% perinatal fetal deaths were seen [Table3,4]. Maternal death was due to septicemia as trial of labor for prolong time was given at home without aseptic precaution and was came to our department with rupture uterus and with severe clinically deteriorated stage.

Table3. Risk Factors

Previous scarred uterus	11
Prior one LTCS	7
Prior two LTCS	3
Prior classical incision	1
History of myomectomy/hysterectomy	0
Uterus without previous scar	5
Multiparity	3
Obstructed labor(primigravida)	1
Spontaneous rupture(primigravida)	1
Uterine anomalies	0
Trauma (RTA or others)	0

Table4. Operative Management

Uterine rupture repair with bilateral tubal ligation	10
Uterine rupture repair without tubal ligation	3
Subtotal hysterectomy	3

DISCUSSION

Among the women in this series, the lack of antenatal care is common. This lack of antenatal care probably reflects the lack of access to obstetrics care in general. It is the lack of access to emergency obstetrics care in particular emergency cesarean section and blood transfusion in many developing countries like India [7,8]. Also, low socioeconomic status and poor literacy rate and ignorance also have significant impact on it. They visit the hospital in emergency situation after prolong trial of labor given at home. When traditional birth attendant (TBA-dais) fails to deliver baby. In 2018 Nordic obstetrics

surveillance study reported a set of data [9]. The incidence of uterine rupture was 4.6/10000 in Denmark and 7.8/10000 in Finland. In our study, incidence of rupture uterus was 0.2% is less compared to incidence reported in other developing countries; 0.8% in Ghana, 0.76 in Uganda, 0.74% in Pakistan, 2.8% in Ethiopia and 0.63 in Yemen [10-15]. But in current scenario, as our govt had taken too many steps to strengthen health care system and priorities the role of govt health system in all its dimension and envisioned to make India a USD 5 trillion economy FY25, incidence 0.2% is still very high. In our study relatively high incidence of uterine rupture likely due to a greater number of referral high risk patient and more importantly trial of vaginal delivery given at home even after history of previous cesarean section or obstructed labor. In recent years, with the development of gynecological endoscopy technology the number of pregnant women who underwent laparoscopy myomectomy and hysteroscopy surgery is increasing and the incidence of uterine rupture is also increasing.

Most cases were diagnosed clinically and USG only aided to clinical diagnosis. All patients need 1 to 2 unit of blood transfusion as had features of shock. Few require intensive care unit. However, with increasing rate of caesarian section, in future increase no of uterine rupture might be expected. This leads to either injudicious intervention and/or further delay in transferring to a hospital. Most women in our study were belong to village, poor educational background and low socioeconomic age group. The location of the uterine rupture was varied. The majority of the cases, even no history of caesarian section involving the lower segment of uterus, transversely across the anterior wall. In our study most common etiologies was previous caesarian section (Scarred uterus). Anterior lower segment transverse rupture with or without scar were found in 13 patients (81%). In one pt with previous LTCS, rupture was suspected clinically but on laparotomy scar appear normal and LTCS was done, but on exploration rupture was found unusual posterior lower segment. In other, previous one preterm patient unusual fundal rupture was found. The rupture of unscarred uterus was more severe with lateral extension of tear compared to ruptured in scarred uterus. Extension of rupture to adjacent structures, causing difficulty in repairing the rupture and often hysterectomy needed. In our study subtotal hysterectomy were done in 3 cases to save mother life.

With increase in gestational age, intrauterine pressure gradually increases and myofibrillar rupture is direct cause of uterine rupture. In literature from Taiwan in 2016 reported that severe abdominal pain accompanied by fetal movement may be early sign of uterine rupture [16]. Hence, regular antenatal care checkup and mandatory institutional delivery are utmost required to avoid this obstetrics emergency and tragedy.

CONCLUSION

This study confirms that previous Cesarean section scar predominant cause of uterine rupture which can be avoided by pre-pregnancy counselling, regular antenatal care and compulsory institutional delivery. Strategies need to be developed to prevent uterine rupture.

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