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# A Prospective Study on Assessment of Outcome of Patients with Rupture Uterus

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## Abstract

**Background:** Uterine rupture is a major obstetric hazard. Gravid uterine rupture is associated with high maternal and perinatal mortality-morbidity rates and loss of future fertility. The present study was conducted to assess outcome of rupture uterus. **Subjects and Methods:** 84 cases of rupture uterus, with previous scarred or unscarred uterus during latent phase or active phase were included. Maternal and fetal outcome were recorded. **Results:** Age group <20 years had 10, 21-30 years had 30, 31-40 years had 36 and >40 years had 8 cases. Parity was o in 20, 1 in 24, >2 in 40, status was booked in 30 and unbooked in 54, type of rupture was scarred in 20, unscarred in 10, complete in 19 and incomplete in 35. Perinatal outcome was normal fetus in 60, hypoxic injury in 17, perinatal mortality in 3 and malformed baby in 4. Maternal morbidity was anemia in 12, PPH in 4, ICU admission in 7 and maternal mortality in 3 cases. The difference was significant (P< 0.05). **Conclusion:** Most common type of rupture was incomplete followed by scarred.

**Keywords:** Uterus rupture, Scarred, Fetal.

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## Introduction

Uterine rupture is a major obstetric hazard. Gravid uterine rupture is associated with high maternal and perinatal mortality-morbidity rates and loss of future fertility.[1,2] Despite advances in modern obstetric practice, rupture of gravid uterus still remains as a fetal and maternal life-threatening complication especially in developing countries; the incidence is high due to a greater number of unbooked obstetric emergencies, often originating from rural areas with poor antenatal care. In India it still accounts for 5-10% of all maternal deaths. The perinatal mortality ranges from 80 to 95 %.[3]

Uterine rupture is also classified on the basis of previous surgery into 1) Rupture of scarred uterus 2) Rupture of unscarred uterus. With increasing rates of caesarean sections, scar ruptures are more common.[4] Other causes are prostaglandin use, injudicious use of oxytocin, traumatic causes like internal podalic version, manual removal of placenta and instrumental deliveries. Diagnosis of rupture uterus is an enigma as there are no specific or universal clinical features. Patient's history and examination are very important.[5] In high- risk patients, continuous cardiotocograph monitoring during labour wherever available is very useful to detect rupture at the earliest as abnormal fetal heart rate pattern is the first sign.[6] Ultrasound abdomen can be useful to demonstrate breach in uterine layers, to detect hemoperitoneum and extrusion of foetus and placenta outside the uterine cavity. A very high perinatal mortality is the hallmark of rupture uterus, the incidence ranging from 75% to 93%.[7] The present study was conducted to assess outcome of rupture uterus.

## Subjects and Methods

The present study comprised of 84 cases of rupture uterus, with previous scarred or unscarred uterus during latent phase or active phase. All were informed regarding the study and their written consent was obtained.

Data pertaining to patients such as name, age etc. was recorded. A thorough physical examination was performed. Prolonged or obstructed labour, induction and augmentation of labour and use of prostaglandins were noted. Coexisting medical conditions like anaemia, pre-eclampsia, diabetes mellitus, renal or liver disorders were also noted. Management included either primary repair of uterus or its conservation with or without tubal ligation or hysterectomy depending upon the condition of the patient t the time of presentation, type, severity and extent of rupture and future desirability of fertility. Maternal complications, blood loss, transfusion requirements were analysed. Results thus obtained were subjected to statistical analysis P value less than 0.05 was considered significant.

## Results

[Table 1] shows that age group <20 years had 10, 21-30 years had 30, 31-40 years had 36 and >40 years had 8 cases.

The difference was significant (P< 0.05).

**Table 1: Distribution of patients**

| Age group (Years) | Number | P value |
|---|---|---|
| <20 years | 10 | 0.04 |
| 21-30 | 30 | |
| 31-40 | 36 | |
| >40 | 8 | |

**Table 2: Assessment of parameters**

| Parameters | Variables | Number | P value |
|---|---|---|---|
| Parity | 0 | 20 | 0.01 |
| | 1 | 24 | |
| | >2 | 40 | |
| Booking status | Booked | 30 | 0.5 |
| | Unbooked | 54 | |
| Type of rupture | Scarred | 20 | 0.04 |
| | Unscarred | 10 | |
| | Complete | 19 | |
| | Incomplete | 35 | |

[Table 2, Figure 1] shows that parity was 0 in 20, 1 in 24, >2 in 40, status was booked in 30 and unbooked in 54, type of rupture was scarred in 20, unscarred in 10, complete in 19 and incomplete in 35. The difference was significant (P< 0.05).

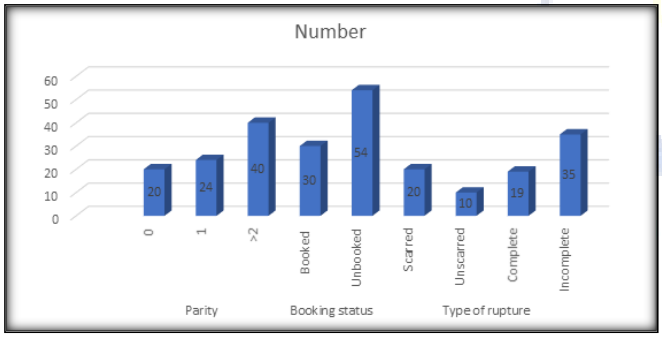


**Figure 1: Assessment of parameters**

**Table 3: Maternal and fetal outcome**

| Parameters | Variables | Number | P value |
|---|---|---|---|
| Perinatal outcome | Normal fetus | 60 | 0.01 |
| | Hypoxic injury | 17 | |
| | Perinatal mortality | 3 | |
| | Malformed baby | 4 | |
| Maternal morbidity | Anemia | 12 | 0.01 |
| | PPH | 4 | |
| | ICU admission | 7 | |
| | Maternal mortality | 3 | |

[Table 3] shows that perinatal outcome was normal fetus in 60, hypoxic injury in 17, perinatal mortality in 3 and malformed baby in 4. Maternal morbidity was anemia in 12, PPH in 4, ICU admission in 7 and maternal mortality in 3 cases. The difference was significant (P< 0.05).

## Discussion

Uterine rupture typically is classified as either complete uterine rupture was defined as complete when all layers of the uterine wall are separated, with or without expulsion of the fetus or incomplete uterine rupture was defined as incomplete when the uterine muscle is separated but the visceral peritoneum is intact.[8]

Rupture of an unscarred uterus may be either traumatic or spontaneous. Traumatic factors include instrumental deliveries, internal podalic version, assisted breech delivery, abdominal trauma, labor induction, and in particular the unmonitored usage of oxytocin or prostaglandins.[9] Fundal pressure during third stage of labor also has been linked to traumatic rupture. Spontaneous rupture is usually observed with cephalopelvic disproportion, delivery of a macrosomic or a grossly anomalous fetus, malpresentation.[10] Rupture may also develop spontaneously in grand multiparas, congenitally abnormal uteri, abnormal placental implantation, previous history of uterine perforation and in women with a history of invasive mole in previous pregnancy.[11] The present study was conducted to assess outcome of rupture uterus.

In present study, age group <20 years had 10, 21-30 years had 30, 31-40 years had 36 and >40 years had 8 cases. Desai et al,[12] in their study 25 consecutive cases of uterine rupture was carried. All the cases of rupture uterus either referred or diagnosed after admission were included. Detailed demographic data, past and present obstetric events, time taken to reach the referral centre, the reasons for any delay, mode of presentation, type of rupture, management and maternal and foetal outcomes were analysed. The incidence of rupture was 1 in 915 deliveries. Seventy-two per cent of them were referred cases. Average time to reach from referral centre was 4.3 hours, the common reasons for delay being patient factors (33%), transport problems (38%) and delayed referrals (22%). Previous caesarean section was the most common predisposing factor (56%). Sixty-four per cent of the ruptures were diagnosed clinically. Eighty-four per cent of the ruptures were complete. Sub-total hysterectomy was carried out in 14 (56%) patients. Internal iliac artery ligation (20%) and bladder repair (8%) were sometimes required. All women required blood transfusion. Perinatal mortality was seen in 76%. There was no maternal mortality.

We found that parity was o in 20, 1 in 24, >2 in 40, status was booked in 30 and unbooked in 54, type of rupture was scarred in 20, unscarred in 10, complete in 19 and incomplete in 35. Kalewad et al,[13] found that the incidence of uterine rupture was 0.64%. The uterine rupture in scarred uterus seen in 66 (95.6%) cases and unscarred uterus 3 (4.4%) cases. Forty- five (65.3%) patients did not receive any antenatal care. Sixty- six (49.1%) of the cases underwent previous uterine surgery due to cesarean. Other observed predisposing factors were induced/augmented labor seen in 39 cases (29.1%), prolonged labor in 8 (6%), macrosomic fetus 8 (11.6%), grand multiparous 10 (7.5%), multiple pregnancies 4 (3%) and malformed baby 2 (1.5%), cephalopelvic disproportion 2 (1.5%), instrumental deliveries 1 (0.7%) respectively. Primary repair of uterus was performed in 52 (75.2%) of the patients. Subtotal abdominal hysterectomy was performed in 10 patients (15.2%). There were seven fetal deaths and two maternal deaths recorded during the study period.

A WHO systematic review of maternal morbidity and mortality showed that the prevalence of ruptured uterus ranged between 0.006% for women without previous caesarean section from a developed country and 25% for women with obstructed labour in a least developed country. Most studies show foetal mortality varying between 56.8 to 94.74% and maternal death in the range of 0 to 5.9%.[14]

## Conclusion

Authors found that most common type of rupture was incomplete followed by scarred.

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