



## UTERINE RUPTURE: A THREE YEAR STUDY

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**ABSTRACT**

**Introduction:** Uterine rupture is a rare event, which threatens maternal and fetal lives. Rupture of uterus is usually associated with previous cesarean sections, multiparity, obstructed labor and in cases where oxytocin or prostaglandins are used for induction of labor.

**Materials and methods:** A retrospective analysis of cases of uterine rupture, was done at MGM Medical college and hospital, a tertiary centre in Navi Mumbai. The study was conducted for a period of three years, from 1st January 2015 to 31st December 2017. In this period, there were 9 cases of uterine rupture with a total of about 9000 deliveries.

**Results:** Out of these nine cases, six were previous LSCS and three were unscarred uteruses. Four of the patients underwent an obstetric hysterectomy. Five patients were managed conservatively by repair of the ruptured site. There was no maternal mortality but perinatal mortality was 100%.

**Conclusion:** Rupture uterus is a rare complication of pregnancy having almost 100% fetal mortality and life threatening maternal morbidity. Obstetric hysterectomy is generally considered standard treatment for rupture uterus but in this series hysterectomy could be avoided in 55% of the patients.

**KEYWORDS :****Introduction:**

Uterine rupture is a catastrophic event in obstetrics. Overall incidence in developed countries is 7.4 in 1000 (1) and 9.40/ 1000 in developing countries of (2). Uterine rupture defined as 'disruption in the continuity of all uterine layers including the serosa beyond 28 weeks of pregnancy' (3). It is associated multi parity, mal-presentation and obstructed labor, uterine anomalies, and use of oxytocic/prostaglandins for induction of labor. It is rarely seen in cases of unscarred uterus (4) and is common in patients with previous caesarean section (5). The complications associated with uterine rupture can vary in severity depending on the time between the incident, diagnosis and delivery. The level of medical care and time interval between uterine rupture and management decides the morbidity and mortality in both, the patient and the fetus. Hemorrhage, shock, bladder involvement, hysterectomy and maternal death can occur in the mother. The fetal complications include hypoxia or asphyxia, fetal or neonatal death (6).

**Methods:**

A retrospective study conducted at the Department of OBGY, MGM Medical College and Hospital, a tertiary referral centre in Navi Mumbai, over 3 years from 1<sup>st</sup> January 2015 to 31<sup>st</sup> December 2017. Nine cases of uterine rupture were recorded in this study period. The data of these patients were noted and analyzed for registration details, social background, clinical presentation, risk factors, intra-operative findings, maternal/fetal outcome and post-operative complications.

**Results:**

Booking status	Number	Percentage
Booked	1	11.1%
Unbooked	8	88.8%

Gestational Age	Number	Percentage
>38	8	88.8%
28-37	1	11.1%

Parity	Number	Percentage
Primigravida	1	11.1%
Multigravida	8	88.8%

History of previous LSCS	Number	Percentage
Scarred	6	66.6%

Unscarred	3	33.3%
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Status of the uterus	Number	Percentage
Obstetric hysterectomy	4	44.4%
Conserved	5	55.5%

Maternal outcomes	Number	Percentage
Alive	9	100%
Deaths	0	0

Perinatal outcomes	Number	Percentage
Alive	0	0
Deaths	9	100%

**Discussion:**

Uterine rupture is a serious obstetrical emergency, that not only threatens the life of the fetus but also threatens the maternal life due to its severe complications and consequences (7). In this series, the incidence of rupture in this study is 1 in 1000 (0.1%) deliveries which is similar to other studies conducted (4, 8).

The common causes of uterine rupture are grand multi-parity, trauma, mal-presentations and fetal macrosomia (9, 10, 11). In our study, there was only one case of grand multipara (Gravida 7) referred to us after prolonged labour. Also, there was a case of oblique presentation again referred to our hospital after prolonged labor and a case of primigravida patient in obstructed labour where trial of forceps was given in outside facility. Out of the 9 patients 5 cases (55.5%) were managed conservatively by suturing the uterus and achieving the hemostasis and in the other 4 cases (44.4%) obstetric hysterectomy was performed.

Our study also showed that majority cases of uterine ruptured occurred in patients with previous caesarean section (67%). These patients were brought to our hospital after the rupture had already occurred. The uterine rupture in these cases could have been prevented by early assessment and prompt decision for repeat caesarean section. With the increasing number of patients with previous scar in labour, the probability of scar rupture has also increased. However the judicious selection of patients for trial of labour in these patients shall reduce the risk of maternal morbidity and mortality (12). The risk of rupture of previous scar also depends on the type of scar. Classical caesarean section incision and T-shaped

incision are more prone to rupture than the usual lower segment transverse incision (13). Although, in our study we had 6 cases of previous caesarean scar rupture out of which only 1 was classical incision rest all were lower segment transverse incisions.

In our study there was no maternal mortality. The other studies show maternal mortality rate ranging from 0 to 13% (14, 15). This shows that the maternal mortality occurring due to uterine rupture can be prevented by prompt diagnosis and early intervention. The only mode of therapy for fetus is by intervening surgically and delivering the fetus. This reduced the fetal morbidity and mortality. Good long term neonatal outcome is seen in patients where delivery of fetus is done within 30 minutes of suspecting uterine rupture (16). All the patients were referred to our hospital from peripheral hospitals. It took longer time than 30 minutes window. All the patients were received with absent fetal heart sounds. There were certain facts that could not be assessed in this study as all the patients were referred to our hospital after suspecting or diagnosing rupture such as the duration for which the patient was in labour, whether the patient was induced and the time lost in transportation of the patient.

### Conclusion:

Uterine rupture is a serious obstetric emergency that leads to maternal and fetal morbidity and mortality in large number of cases. This can be prevented by identifying the major causes of rupture such as previous caesarean section, grand multiparity, obstructed labour and mal-presentations. This study also points out that early registration of patients in antenatal period, early detection of high risk factors and timely diagnosis with immediate transfer and prompt management at a tertiary care centre can reduce the maternal and fetal morbidity and mortality. Special care and alertness should be present while managing a patient with previous uterine scar and giving trial of labour. Better obstetric care facilities at primary level and referral systems with transportation to higher centers in developing countries can help in preventing such life threatening emergencies.

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