

Original Research Article

# Uterine rupture, a grave but preventable obstetrical emergency: A prospective Cross Sectional Study

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## Abstract:

**Background & Method:** Maternal mortality and morbidity are the priority agenda. Uterine rupture is the leading cause of maternal and fetal death in developing countries. Limited evidence is available on the magnitude of uterine rupture; maternal and fetal outcomes of uterine rupture and factors associated with maternal death secondary to uterine rupture. This study aimed to assess the magnitude of uterine rupture; maternal and fetal outcome of uterine rupture and factors associated with maternal death secondary to uterine rupture.

## Results:

**Conclusion:** The magnitude of uterine rupture was high in the study area. Initiation of labor at health institutions, early treatment of hypo-volemia and prevention of postoperative anemia is recommended to decrease maternal death secondary to uterine rupture.

**Keywords:** Uterine, rupture, obstetrical & emergency.

**Study Design:** A prospective Cross Sectional Study.

## 1. INTRODUCTION

Uterine rupture occurs when a full thickness disruption of the uterine wall that also involves the overlying visceral peritoneum, is present. • Uterine rupture is one of the most dangerous obstetric situations carrying an increased risk of maternal and perinatal morbidity and mortality, which is associated with delayed reporting to the hospital or poorly managed labour[1].

The prevalence was found significantly higher in underdeveloped countries of Asia and Africa in comparison to high income countries in developed countries the prevalence of uterine rupture for women with previous cesarean section is around 1%, whereas for women without previous cesarean section is extremely rare (<1 per 10,000) [2].

Uterine rupture, an obstetrical emergency though rare but still has grave implications. Uterine rupture is the occurrence of breach in the wall of uterus[3]. Complete rupture involves complete disruption of uterine wall resulting in spillage of uterine contents into the abdominal cavity whereas an incomplete rupture has intact peritoneum or serosa. The most commonly reported risk factor in developed countries is previous caesarean section whereas in developing countries neglected and obstructed labour are more frequently reported predisposing factors[4].

The incidence of rupture of gravid uterus is particularly high in developing countries because of inadequate public health education and health services, failure to seek medical advice either due to ignorance or poverty and poor obstetrical care in combination with intrinsic factors like contracted pelvis and high parity. The low incidence in developed countries is

due to the fact that their basic health education and health services are excellent and they follow modern trends in obstetrical care[5].

Rupture may occur in a previously scarred uterus or in an intact uterus. The aim of this study was to determine and analyze the etiological factors and maternal and foetal outcome. Some of the results are compared with other studies. Recommendations to reduce the incidence of this problem are made.

**Aim:** To determine the incidence of uterine rupture

**Objective:**

1. To study the causes and risk factors of uterine rupture.
2. To study maternal and fetal outcome of uterine rupture, and
3. To identify preventable measures.

**2. METHOD**

A prospective cross sectional study will be conducted in the department of obstetrics and gynaecology at Gajara Raja Medical College, Gwalior, M.P. from duration 15-05-2020 to 14-05-2021. Patients will be followed up till discharge and after 01 month.

**Data collection:**

- a) Patients demographic profile and obstetric history
- b) Clinical examination
- c) Operative findings and type of surgery (repair/hysterectomy)
- d) No of blood transfusions or blood product trasfusions
- e) Need for inotropic and ventilatory support
- f) Maternal and fetal outcome
- g) Follow up after 1 month

**Inclusion Criteria:** All case of full thickness uterine rupture who were admitted with the diagnosis or who had rupture uterus in the hospital

**Exclusion criteria:**

1. Scar dehiscence
2. Cases of vaginal delivery without complication.
3. Cases of vaginal birth after cesarean section without any evidence of scar rupture.
4. Cases of cesarean section without any evidence of rupture

**RESULT:**

| Table 1: Age of patients | No. | %age |
|--------------------------|-----|------|
| 15-20 yrs                | 03  | 7.5  |
| 21-25 yrs                | 15  | 37.5 |
| 26-30 yrs                | 09  | 22.5 |
| 31-35 yrs                | 09  | 22.5 |
| 36-40 yrs                | 04  | 10.0 |

| Table 2: Parity | No. | %age |
|-----------------|-----|------|
| 0               | 02  | 05   |
| 1-2             | 14  | 35   |
| 3-4             | 04  | 10   |
| 5-8             | 12  | 30   |
| >8              | 08  | 20   |

| Table 3: Risk factors for uterine rupture | No. | %age |
|---|-----|------|
| Lower segment C/S                         | 20  | 50   |
| Upper segment C/S                         | 04  | 10   |
| Instrumental Delivery                     | 04  | 10   |
| Multiparity                               | 02  | 05   |
| Obstructed labour                         | 06  | 15   |
| Previous uterine rupture                  | 02  | 05   |
| Others                                    | 02  | 05   |

#### 4. DISCUSSION

Rupture of pregnant uterus is a grave obstetrical complication associated with high maternal mortality and morbidity, perinatal mortality. The frequency of ruptured uterus in this study was 1.73/1000 deliveries. It is significantly lower than figures reported from Canada and Nigeria but higher than reported prevalence in Tunis and West Africa[6]. This wide variation is due to divergent inherent characteristics of the obstetric population in different regions in quality and quantity of obstetric services around the world.

Most of the patients in this study presented between the ages of 21-25 years (37.5%). This is in contrast to a study done in Abbasi Shaheed Hospital Karachi<sup>5</sup> where uterine rupture had significant association with maternal age more than 35 years[7].

Multiparity is generally recognized as an important predisposing factor in the etiology of uterine rupture. In the present study, 35% patients and 50% patients. In my study, increasing trend of uterine rupture in low parity group may be due to increase in caesarean section rate in primigravida. A similar study has also been reported[8].

Rupture due to obstructed labour is more common in areas with poorly developed health facilities while scarred uterus is the main causative factor in places with an increasing caesarean section rate without careful monitoring in subsequent pregnancies. Rupture of the previous caesarean section scar was the most common aetiological factor identified in this series (60%). The study reported from Saudi Arabia, India and Tunis showed similar results. The rate of uterine rupture at the site of previous caesarean section was even high in Sagamu (Nigeria) and Canada. However, in contrast to these, study carried out in Swat and study reported by Konje in Nigeria showed obstructed labour as the most common aetiological factor.

In present study, scarred uterus was found to be the main causative factor for uterine rupture followed by obstructed labour. During the last two decades the caesarean section rate has doubled and tripled and single indication contributing the most to this increase was dystocia. Liberal use of caesarean section for dystocia must be checked in order to control the rising percentage of scarred obstetrical population and associated disasters particularly rupture. At private hospitals and clinics, the threshold for doing caesarean section is lower due to commercial reasons and extra caution. In small clinics and centres, most of the sections are done without legitimate indication by unskilled personnel resulting in various intra- and post-operative complications. This will keep on increasing the number of parturient with prior uterine scar making them more vulnerable to uterine rupture in subsequent pregnancies. The most important factor associated with uterine rupture detected in this study was lack of skilled monitoring during the process of labour.

## 5. CONCLUSION

The magnitude of uterine rupture was high in the study area. Initiation of labor at health institutions, early treatment of hypo-volemia and prevention of postoperative anemia is recommended to decrease maternal death secondary to uterine rupture.

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