

# A Study on Outcomes of Uterine Rupture among Women with Prior Caesarean Section

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## ABSTRACT

**Introduction:** Rupture uterus is a rare and often catastrophic situation. It is related with a high incidence of fetal and maternal mortality and morbidity.

**Objective:** Our main goal of this study is to evaluate outcomes of uterine rupture among women with prior caesarean section.

**Method:** This cross-sectional study was carried out at tertiary Medical College and hospital from 2015 January to 2018 January. Total 42 cases of ruptured uterus were recorded in this study and all the cases of ruptured uterus who were either admitted with complain or who developed it in hospital were included in the study.

**Results:** During the study most occurrences of ruptured uterus was the gestational age 37-40 weeks, (67%) and among 42 patients (63.33%) had no antenatal checkup. (36.67%) had irregular antenatal checkup. Also the rupture was confined to lower segment in (36.67%).

**Conclusion:** Proper antenatal care, appropriate counseling of patients with history of previous caesarian section for hospital

delivery, training of skilled birth attendant can reduce mortality and morbidity due to rupture uterus.


**Keyword:** Ruptured uterus, antenatal checkup, caesarian section.

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## INTRODUCTION

Uterine rupture is a rare, but serious childbirth complication that can occur during vaginal birth. It causes a mother's uterus to tear so her baby slips into her abdomen. This can cause severe bleeding in the mother and can suffocate the baby. This condition affects less than 1% of pregnant women. It almost always occurs in women with uterine scars from previous cesarean deliveries or other uterine surgeries. A woman's risk of uterine rupture increases with every cesarean section. Several factors are known to increase the risk of ruptured uterus. Risk factors include vaginal birth after cesarean section (VBAC), other uterine scars, obstructed labor, induction of labor, trauma. While typically rupture occurs during labor it may occasionally happen earlier in pregnancy.

Diagnosis may be suspected based on a rapid drop in the baby's heart rate during labor. Uterine dehiscence is a less severe condition in which there is only incomplete separation of the old scar.<sup>1,2</sup>

Rupture during pregnancy is a rare occurrence, whereas uterine scar dehiscence is a more common event. Due to lack of health

education, ignorance or poverty women in our country do not come for regular antenatal checkup, preferring home delivery by traditional birth attendant instead of coming to hospital. They are brought to hospital after prolonged dysfunctional labour when traditional birth attendant fail to deliver them, the result is a chance of rupture uterus and as well as rupture of previous caesarian scar. High maternal mortality and morbidity is a consequence of poor maternal care, inadequate socioeconomic and environmental condition, poor accessibility to health services and poor nutrition.<sup>4</sup> Our main goal of this study is to evaluate outcomes of uterine rupture among women with prior caesarean section.

## OBJECTIVE

### General Objective

- To access outcomes of uterine rupture among women with prior caesarean section.

### Specific Objective

- To determine pattern of antenatal care of the patients
- To identify etiology of ruptured uterus in scarred uterus.

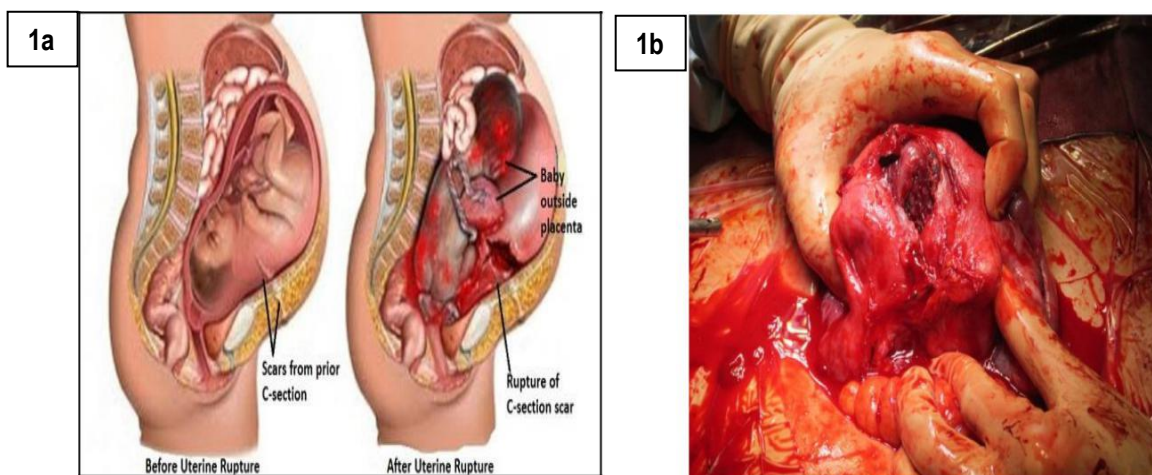


Figure 1a and 1b: before and after uterine rupture and its surgery<sup>3</sup>

**MATERIALS AND METHODS**

**Study Type**

This study was a cross-sectional study.

**Study Place and Period**

This study was conducted at tertiary Medical College and hospital from 2015 January to 2018 January.

**Method**

Total number of delivery during the period was 3606 where total 42 cases of ruptured uterus were recorded. All the cases of ruptured uterus who were either admitted with complain or who developed it in hospital were included in the study. Patients having ruptured uterus due to congenital anomaly were excluded from the study. Patients were initially assessed in labour ward, relevant socio demographic data, previous antenatal obstetric history,

period of gestation, duration of labour pain, history of delivery were recorded. The site of rupture, type of surgery, unit of blood transfusion and maternal and fetal outcome were recorded.

**Data Analysis**

During the study all the data were checked and edited after collection. Then the data were entered into computer and statistical analyses of the results were obtained by using window-based computer software devised with Statistical Packages for Social Sciences (SPSS-13) (SPSS Inc, Chicago, IL, USA). The results were presented in tables and figures, the statistical terms included in this study were mean, median, standard deviation, percentage.

Table 1: Parity and age distribution of patients

Parity	Age 15-20 Years	Age 21-25 Years	Age 26-30 Years	Age 31-35 Years	Age 36-40 Years
1	1	5	5	0	1
2	2	6	6	2	0
3	0	0	4	0	0
4	0	3	1	2	1
5 or more	0	0	2	1	0

Table 2: Pattern of antenatal care of the patients

Variable	Frequency	Percentage
No previous history of antenatal checkup	0	0
Irregular antenatal checkup	17	40.47%
No antenatal checkup	25	59.53%
<b>Total</b>	<b>42</b>	<b>100</b>

Table 3: Per operative findings

Variable	Frequency	Percentage
Fetus outside the uterus	30	71.42%
Fetus inside the uterus	12	28.57%
Placental adhesion		
Previous 1 C/S	15	35.71
Previous 2 or more C/S	27	64.28
Hysterectomy need	32	64.28
Repair of uterus	05	11.90
Bladder injury/Bladder Rupture	05	11.90

**Table-4: Etiology of ruptured uterus in scarred / unscarred uterus.**

Injudicious use of oxytocin	Percent
Scarred uterus	43.34%
Unscarred uterus	19.9%

**Table 4: Site of rupture of the patients**

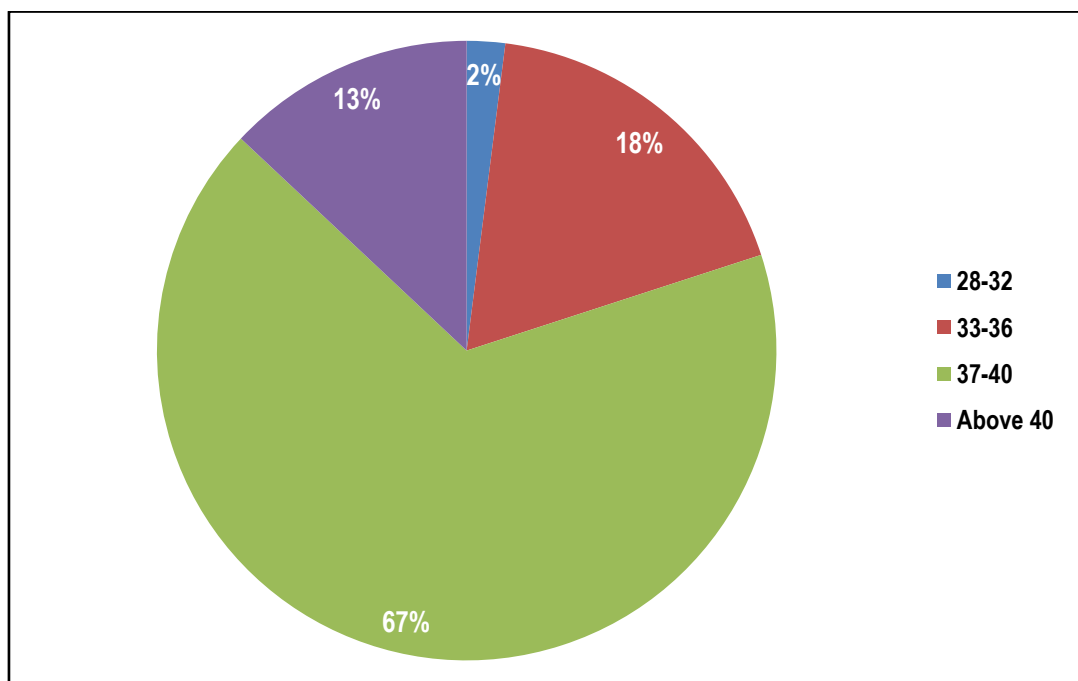
Site of rupture	Number of the patients
Scar	6
Lower segment	15
Extension to upper and lateral segment	11
Injury to urinary Bladder	5
Not explored due to death	5

**Table-5: Type of scar**

During Pregnancy	n
Classical	1
previous 2 LSCS	1
During labour	
Classical	2
previous 1LSCS	22
previous 2LSCS	3

**Table 6: Fetal consequence after delivery**

Fetal consequence	Percent
Still births	78%
NICU	8%
alive	3%



**Figure 2: Gestation age (weeks) of patients**

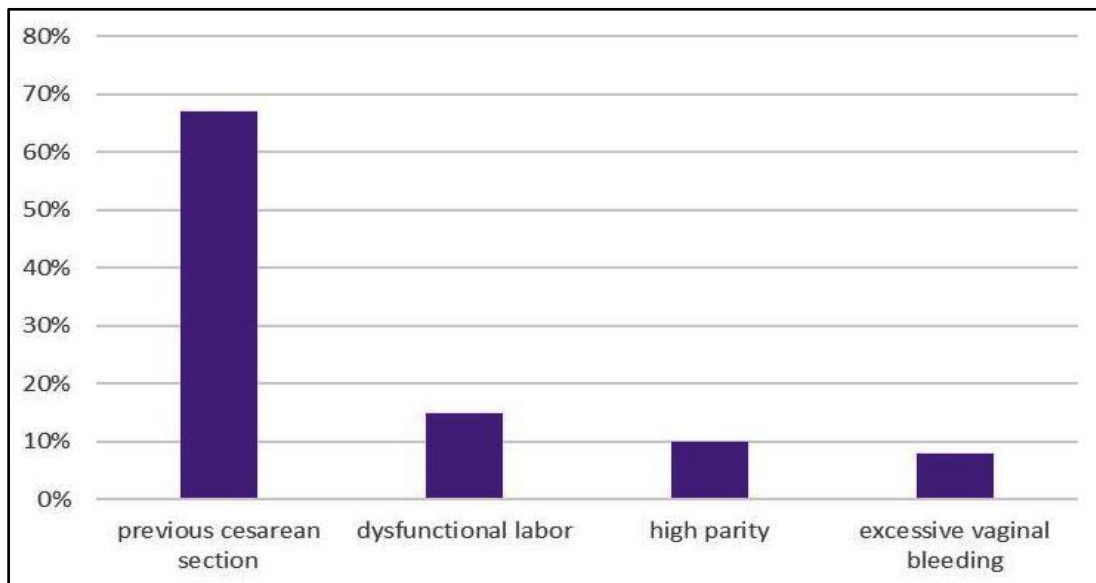


Figure 3: Risk factor for ruptured uterus

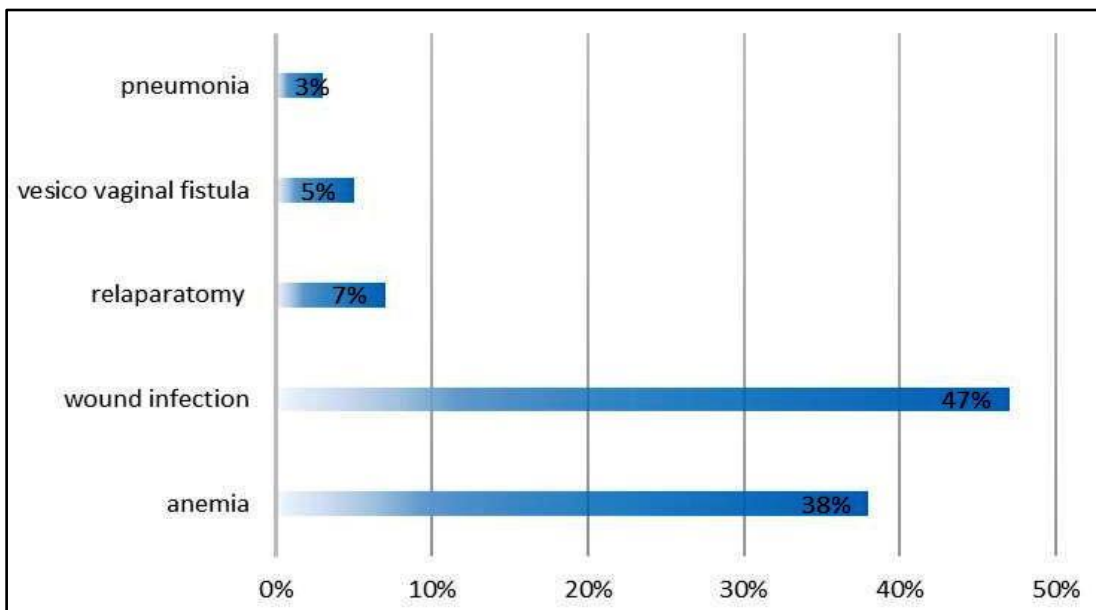


Figure 4: Postoperative complication of mothers

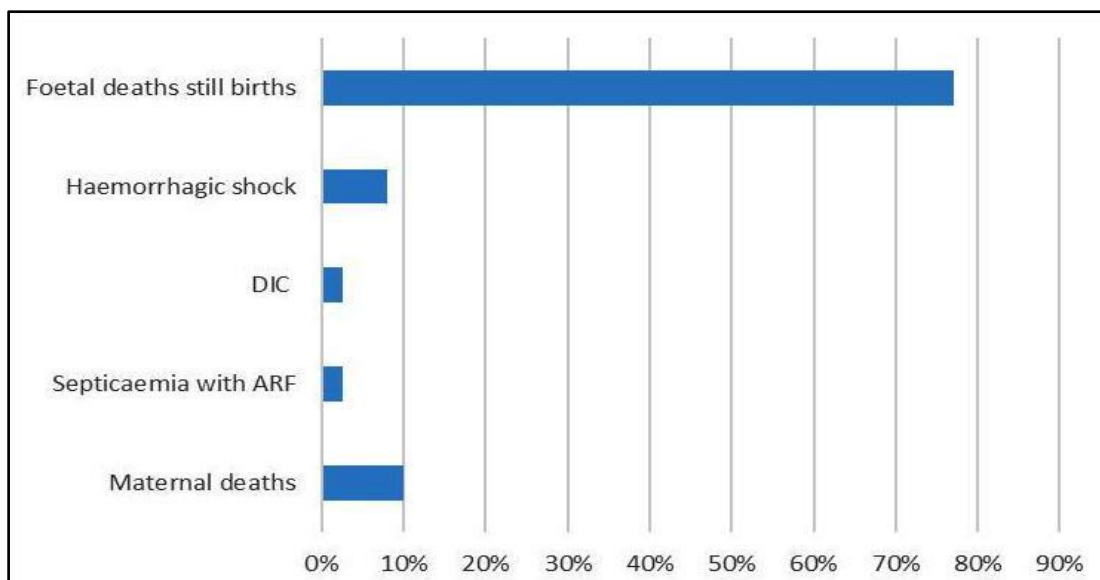


Figure 5: General condition after admission for mother and fetus

## RESULTS

Total deliveries were 2200. Prevalence of ruptured uterus was 42 cases (1.90%). In table-1 shows parity and age distribution of patients where age of patients ranged from 15-40 years. Most of the patients were in the age of 21-30 years.

In figure-2 shows gestation age of patients where most occurrences of ruptured uterus was the gestational age 37-40 weeks, (67%).

In table-2 shows pattern of antenatal care of the patients where among 30 patients total 19 patients (63.33%) had no antenatal checkup. 11 (36.67%) had irregular antenatal checkup and no patients had history of regular antenatal checkup.

In table-3 shows site of rupture of the patients where out of the 42 patients, the rupture was confined to lower segment in 15. In 11 patients had ruptured extended to upper segment and lateral extension. 5 patients had injury to the urinary bladder and not explored in 5 patients due to death before operation. The following table is given below in detail:

In Table-4 shows etiology of ruptured uterus in scarred /unscarred uterus where most common factor was injudicious use of oxytocin (43.34%) in scarred and (19.9%) unscarred uterus.

In figure 3 shows risk factor for ruptured uterus where 67% had previous cesarean section which higher among others. In a recent study showed the types of scar where 27 patients had scar during pregnancy. In figure-4 shows Postoperative complication of mothers who had uterine rupture where most of the patients had wound infection. In figure-5 shows general condition after admission for mother and fetus: where maternal deaths were 10%. In table 6 fetal consequence after delivery where 89% had stillbirths, 8% admitted at NICU.

## DISCUSSION

Ruptured uterus still remains one of the severe obstetric complications. Lack of health information, illiteracy, poor antenatal care, poverty, home delivery by traditional birth attendants and delay in referrals all contributes to uterine rupture. Prevalence of uterine rupture in the present study is 0.84%. This study was similar to study done by one article.<sup>5</sup> However the incidence is higher in a study done by another study where they found 1.14%.<sup>6</sup> In developing countries like in Ethiopia and Nigeria it is 0.03% and 0.83% respectively.<sup>7,8</sup> Studies conducted in developing countries gives strong evidence that uterine rupture is a major health problem in developing countries, with the rate higher in rural areas. This studies also revealed that socioeconomic condition along with poor health services play a major role in determining the incidence of rupture.<sup>9,10</sup> Most of the patients in this study were between the age of 21-30 years. Which was compared with one study, where most of the women belonged to the age 31-35 years.<sup>11</sup> Majority of the patients were no antenatal checkup and with irregular antenatal checkup 36.67% and similar results were found in other studies.<sup>5,10</sup> Injudicious use of oxytocin and trial of labour was the common cause, whereas prolonged obstructed labour was the second common cause. This is similar to the one study<sup>5</sup> and others where rupture of previous caesarian scar was the most common cause.<sup>12</sup> In this study 11 patients had rupture in the lower segment and 9 had extension in the upper segment or in the vaginal fornices, 2 had injury to urinary bladder.

**Fatal event:** More hospital stay and more blood transfusion is required for survival of mother.

## CONCLUSION

From many analysis and examination we can conclude that lack of antenatal care, inappropriate counseling of patients with history of previous caesarian section for hospital delivery, misuse of oxytocin are the main cause of ruptured uterus in this study. Further study is needed for better outcome.

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