

## RESEARCH ARTICLE

# Uterine rupture - the current scenario in the south Assam

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## ABSTRACT

**Objective:** To find out the incidence of complete uterine rupture in Silchar Medical College and to evaluate its causes and the assessment of maternal and perinatal outcome. **Methodology:** All the patients diagnosed and treated as a case of rupture uterus from June 2014 to May 2015 in the department of Obstetrics and Gynaecology in Silchar Medical College and Hospital were taken. Information of cases under study was arranged in a systematic manner in MS- Excel sheet. Appropriate statistical analysis was carried out using SPSS software. **Result:** There were a total of 37 cases of uterine rupture, giving an incidence of 1 in 267 (0.37%). The majority of the cases were unbooked (75.65%). Nineteen (51.35%) ruptured occurred in unscarred uterus and 18 (48.64%) occurred in scarred uterus. In unscarred uterus majority 68.42% ruptured is due to malpresentation leading to obstructed labour. Spontaneous ruptures were more in 4<sup>th</sup> gravid and above (41.17%). Rent repair with or without tubal ligation was possible in 61.25% of scar rupture, 29.4% of unscarred uterine ruptures. The need of subtotal hysterectomy was higher in unscarred uterine rupture (64.70%). Bladder injury occurred in 3 cases where repair was done. Out of the 3 cases, 2 developed VVF and one recovered. There were 2 (5.40%) maternal death. Out of 37 cases 75.67% were IUD and 16.21% were live births. There was 100% IUD in rupture of unscarred uterus. **Conclusion:** The timely decision to do caesarean in cases of previous scar uterus and obstructed labour can reduce the rupture rates.

**Keywords:** Ruptured uterus, scarred uterus, unscarred uterus, malpresentation.

Uterine rupture is a catastrophic obstetrical complication. In the developed countries the incidence has reduced. An observed shift in the aetiology from obstructed labour and multiparity is seen due to increase in the primary caesarean rates. In developing countries uterine rupture in unscarred uterus is still the dominant picture and maternal death due to rupture uterus is not uncommon. In India it still accounts for 2 to 10% of all maternal deaths. Perinatal mortality ranges from 80 to 90%. In a WHO systematic review of uterine rupture worldwide found the incidence of 2.3 per 10 000 births <sup>1</sup>. A study was initiated by the Federation of Obstetric and

Gynaecological Societies of India, who felt the necessity to look into the issue as to why do the Indian mothers die as a result of pregnancy and child birth with a life time risk of 6 in 1,000 compared to women of Sweden having that risk of only 1 in 17,400 <sup>2</sup>. The aims of the present study were to find out the incidence of complete uterine rupture in Silchar Medical College and to evaluate its causes and the assessment of maternal and perinatal outcome.

### **Methodology**

This prospective observational study was carried out in the department of Obstetrics and Gynaecology of

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Silchar Medical College and Hospital, Silchar from June 2014 to May 2015. All the patients diagnosed and treated as a case of rupture uterus were taken. Data were collected by a pre- designed proforma. Rupture was labelled as complete when entire thickness of the uterine wall along with visceral peritoneum had given away. Incidence of the rupture was calculated from the total number of deliveries that had occurred in the hospital during the study period. All the babies were followed up until the time of discharge for signs of intrapartum asphyxia and other problems. Mothers were followed throughout the post operative period for evidence of sepsis, abdominal distention, temperature, abdominal wound healing. Information of cases under study was arranged in a systematic manner in MS- Excel sheet.

Appropriate statistical analysis was carried out using SPSS software. P-value < 0.05 is considered significant.

**Results**

A total of 9915 deliveries were conducted during the one year period from June

**Table 2: Risk factors of ruptured uterus**

Risk factors	Number (%)
Scar ruptured	13(35.13%)
Previous once LSCS	2(5.40%)
Previous two LSCS	1(2.70%)
Previous myomectomy	16(43.24%)
Total	13(35.13%)
Malpresentation	4(10.81%)
Cephalopelvic disproportion	2(5.54%)
Instrumental delivery	2(5.54%)
Induction	36(97.29%)
Multiparity	

of 1 in 267 (0.37%). Out of this 19 (51.35%) occurred in unscarred uterus and 18(48.64%) occurred in scarred uterus (including the iatrogenic cases) (Table 2). Total number of caesarean section done during the period is

**Table 3: Causes of rupture in relation to gravidity**

Gravida (G)	Cause of rupture			Total	Chi square test	P value
	Unscarred No (%)	Scarred No (%)	Induction/forceps No (%)			
2	5(29.41%)	10(62.50%)	2(50%)	17(47.22%)	4.507	0.3417
3	5(29.41%)	2(11.76%)	1(25%)	8(22.22%)		
≥4	7(41.17%)	3(20%)	1(25%)	11(30.55%)		
Total	17(100%)	15(100%)	4(100%)	36(100%)		

Note: G1( 1 case) is not included in this table

**Table 1: Incidence of ruptured uterus with respect to demographic variable**

Demographic variables	Number (%)	
Age in years	20-25	15(40.54%)
	26-30	18(48.64%)
	31-35	3(8.10%)
	36 and above	1(2.70%)
Residence	Rural	32(86.48%)
	Urban	5(13.51%)
Antenatal care	Booked cases	9(24.32%)
	Unbooked cases	28(75.67%)
Socioeconomic status	Low	30(81.08%)
	Middle	7(18.91%)
Parity	0	1(2.70%)
	1	18(48.64%)
	2	7(18.91%)
	3 and above	10(27.02%)

2014 to May 2015. In this study period, there were 37 cases of complete uterine rupture, giving an incidence

3611, giving the incidence of 0.49% in scarred uterus. Though it was statistically not significant, the number of ruptured uterus is more in 2<sup>nd</sup> gravid post caesarean cases and in cases of unscarred uterus it is more for women of higher parity (Table 3).

In this present study the commonest site of rupture was the previous caesarean scar in scarred uterus (40.54%) and lower segment in unscarred uterus (32.43%). The p- value has been found to be significant. Present study revealed, lower segment rupture is highest in unscarred uterus (76.92%) (Table 4).

In the present study, rent repair with or without tubal ligation was possible in 45.94% of cases and 54.05% of cases had undergone hysterectomy. Bladder injury occurred in 3 cases where repair was done. Out of the 3 cases, 2 developed VVF and one recovered (Table 5).

In the study 40.54% of the cases had prolonged hospital stay and 24.34% had septicaemia. Two (5.40%) developed VVF. There were 2 (5.40%) maternal death

**Table 4: Site of rupture in relation to scarred and unscarred uterus**

P- value	Scar rupture	Lower segment rupture	Upper segment rupture	Lower+upper segment rupture	Posterior wall rupture	Total
<0.0001						
Scarred	15	2	0	1	0	18
Unscarred	0	10	2	5	2	19
Total	15	12	2	6	2	37

**Table 5: Types of management**

Management	Number (%)
Rent repair	
With sterilization	12(32.43%)
Without sterilisation	5(13.51%)
Total	17(45.94%)
Hystere-ctomy	
Subtotal hysterectomy	18(48.64%)
Total hysterectomy	2(5.40%)
Total	20(54.05%)
Bladder repair	3(8.10%)
Colporrhexis	2(5.40%)
Blood transfusion	31(83.73%)

from uterine rupture. There was significant number of IUD in rupture of unscarred uterus. Fetal outcome was

**Table 6: Fetal outcome in relation to cause of rupture**

Foetal outcome	Cause of rupture			Total	Chi square test	P value
	Unscarred No (%)	Scarred No (%)	Induction/forceps No (%)			
IUD	17(100%)	9(56.25%)	2(50%)	28(75.67%)	12.746	0.0472
Still birth	-	1(6.25%)	-	1(2.70%)		
Live birth	-	5(31.25%)	1(25%)	6(16.21%)		
NICU admission	-	1(6.25%)	1(25%)	2(5.40%)		
Total	17(100%)	16(100%)	4(100%)	37(100%)		

better in cases of scar rupture i.e. 31.35% of live births occurred in rupture of scarred uterus (Table 6).

**Discussion**

During the study a total 9915 deliveries were conducted in the institute and there was a total of 37 cases of ruptured uterus giving the incidence of 1 in 267 (0.37%). Silchar Medical College serves as the only tertiary health care centre and referral for a population of 3 million in south Assam. The incidence of ruptured uterus is quite high in South Assam (1 in 267 i.e. 0.37%) compared to the studies of other regions of India like Andhra Pradesh i.e. 1 in 432<sup>3</sup> and in JIPMER, Pondicherry has found an incidence of 1 in 346<sup>4</sup>. Most of the ruptured uterus (72.67%) occurred in the unbooked cases, 86.48% of cases were originating from rural areas,

majority referred cases (70.27%), occurring in 2<sup>nd</sup> gravida of low socio-economic group (81.08%) which is similar to the other studies<sup>3-9</sup>.

In the Indian studies by K. Sunitha<sup>3</sup> and Rashmi et al<sup>8</sup>, rupture of caesarean section scar was the

leading cause. But in countries like Yemen<sup>10</sup> and Nigeria<sup>11</sup> where family size is more, obstructed labour due to multiparity and malpresentation is the leading cause of rupture uterus. In the present study at Silchar Medical College, which reflects the population of South Assam, where family size is more, rupture of unscarred uterus is more i.e. 51.35%, due to multiparity and malpresentation.

In the present study repair was possible only in 42.94% and hysterectomy was required in 54.05%. This management varies with different studies. The studies done by Latika Sahu<sup>12</sup>, K. Sunitha<sup>3</sup>, Fabamwo<sup>13</sup>, Ibrahim SM<sup>14</sup>, rent repair was possible in majority of the cases i.e. 68%, 28.33%, 68.4% and 68% respectively, but

in one Indian study by Ganesh Shinde et al<sup>9</sup> hysterectomy was performed in 64% of cases of rupture uterus. Management varies with the presence or absence of following criteria as the amount of delay in time

from rupture to surgery, presence or absence of sepsis, blood loss and also with the expertise of the surgeon.

In the present study 5.40% i. e. 2 maternal deaths were recorded. There is 100% IUD in rupture of unscarred uterus. Fetal outcome was better in cases of scar rupture. As a whole out of 37 cases 72.67% were IUD and only 21.62% were live births.

**Conclusion**

Uterine rupture is a devastating condition. Booking of the patients followed by a good quality antenatal care by the obstetric care provider, detection of high risk cases, timely referral with smooth and swift transportation is very important for timely intervention. The timely decision to do caesarean in cases of previous scar can reduce the rupture rates in post caesarean cases. In my

study, the factors like lack of proper antenatal care, illiteracy and ignorance to access health care system, lack of expertise to detect high risk cases and timely referral and poor transportation all lead to an increased incidence in our College. The aim with which the NHM started functioning did not have the desired impact of touching the unreachable at the peripheral level in our region. Government should take intervention to enhance the necessary infrastructure and also improve the transportation. Educating the women and her family and also the local population is equally important to avail immediate obstetric care.

**Conflict of interest:** None. **Disclaimer:** Nil.

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