



**ORIGINAL RESEARCH PAPER**

**Medical science**

**RETROSPECTIVE STUDY OF UTERINE RUPTURE : UNDERSTANDING THE ACUTE EMERGENCY.**

**KEY WORDS:** Uterine, rupture, caesarian , scar.

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**ABSTRACT**

Uterine Rupture is a life threatening emergency condition. We aimed this retrospective analytical study to understand incidence of uterine rupture, it's risk factors, maternal outcome and the approach to manage this emergency condition in eastern UP India at SS Hospital Varanasi. Study revealed very high prevalence of uterine rupture 0.62% . Scar rupture (68.57%) plays a major role with high mortality (20%).

**Conclusion:** Previous caesarian section and scarred uterus was commonest risk factor. Impending uterine rupture by proper partogram and timely referral to tertiary care centre remains key to reduce the adverse outcome.

**INTRODUCTION**

Uterine Rupture is a life threatening emergency condition having very high rates of foetomaternal mortality.<sup>[1]</sup> As per WHO review it is primarily a problem of developing and poor country with incidence of 5 to 6/10000 birth. The contributing factors includes socio cultural element like poverty, illiteracy, cultural malpractice along with medical elements like grand multiparity and advanced age. Untrained hands in obstetrics clinic also contribute a lot especially use of uterotonic medication in obstructed labour. However in a developed country previous caesarean section and scar rupture plays a major role due to rising rate of caesarean delivery.<sup>[2,3]</sup> However survived cases have very high morbidities related to complications like bladder rupture, vesico-rectovaginal fistula, poor future pregnancy, anemia , psychological trauma along with excessive financial burden.<sup>[4]</sup> We aimed this retrospective analytical study to understand incidence of uterine rupture, it's risk factors, maternal outcome and the approach to manage this emergency condition in eastern UP India at SS Hospital Varanasi.

**Methodology:**

This is a retrospective study of cases of rupture uterus admitted at SS hospital Varanasi India. Cases of complete uterine rupture with a full thickness separation of uterine wall and serosa , scar dehiscence of previous cesarean scar without disruption of visceral peritoneum were included in current study. Parameters recorded were socio-demographic data ,reproductive status which include age, parity, antenatal booking, preexisting risk factors, management protocol, fetal and maternal mortality rate. The surgical management included repair of uterus with or without tubal ligation, subtotal or total hysterectomy, bladder repair. Data were recorded from hospital record section and statistical calculation were done using spss 16. Measuring means with standard deviation or frequency with percentage.

**Observation:**

The total number of deliveries recorded during the study period 2015 to 2016 was 5062 out of which 35 cases of rupture uterus was reported. Incidence of rupture uterus was 0.62%. Maximum cases were grouped in 25 to 30 year age group 20 (57.14%) cases followed by 7(20%) cases in 30 to 35 year age group mean age was 29.78±4.6 years. Parity of 2 observed in 18(51%) followed by parity 1 cases 11(31.4%) .Most of cases were fallen under gestational age of 37-40 weeks 22(62.85%) followed by 33-36 weeks in 8(22.85%) cases. Antenatal booking had been done in only 2 (5.71%) cases however 33(94.28%) cases were unbooked prior to coming to our hospital. Most of patients came from interior rural area 32(91.42%) cases .Twenty four (68.57%) of the patients had scarred uterus out of which complete rupture was present in 13(37.14%) cases and scar dehiscence noted in 11(31.14%) cases. Eleven cases (31.14%) had unscarred uterus creating ratio of 2.18:1 between scarred to unscarred uterus. Most of case were multipara 23 (65.71%).Reason of scar was previous caesarian section in 24(68.57%) cases with 13 (54.16%) cases had

history of only one caesarian section. Regarding etiological and predisposing risk factors on scarred uterus injudicious use of oxytocin was 58.33% and spontaneous labour was 41.66% . Cephalopelvic disproportion as a risk of rupture was present in 6(54.14%) case among total previously unscarred uterine rupture. Factors determining management protocol were type and site of rupture, surgical co morbidity, parity and general condition of the patient. Most common surgical procedure was uterine repair 24(68.57%) along with tubal ligation done in 8 (33.33%) cases. Hysterectomy was done in 9 (27.71%) cases out of which total hysterectomy was 3(8.57%)and subtotal hysterectomy was 6(17.14%). Bladder repair done in 3(8.57%) cases and 2(5.71%) cases died unexplored. Hemorrhage was most common preoperative complication in 21(63.63%) cases and infection was commonest postoperative complication 12(37.5%) cases followed by hemorrhage 5(15.62%) cases .Total maternal mortality was 7 (20%) cases out of that 2(5.17%) died unexplored and 4 (11.42%) died in postoperative period. Total fetal mortality was very high 29(82.85%) cases.

**Tables:**

**Table 1: Demographic Characteristics.**

Indices Age (In years)	No and %	Indices Gestational Age in weeks	No and %
20-25	3(8.57%)	< 28	2 (5.71%)
>25-30	20 (57.17%)	28-32	3(8.57%)
>30-35	7 (20%)	33-36	8(22.85%)
>35-40	5 (14.2%)	37-42	22(62.85%)
Parity		Antenatal status	
0	1 (2.8%)	Unbooked	33( 94.28%)
1	11(31.4%)	Booked	2 (5.71%)
2	18 (51%)	Residence	
3	2 (5.71%)	Rural	32(91.42%)
4	3(8.57%)	Urban	3(8.57%)

**Table 2- Risk factors.**

Scar Status	
Scar Rupture(complete rupture)	13(37.14%).
Scar Dehiscence(Incomplete rupture)	11(31.42%)
Unscarred Rupture (Causes) Total	11(31.14%)
Risk factors predisposing to rupture in unscarred rupture	Risk factors predisposing to rupture in scarred rupture/ Dehiscence
(a) Cephalo pelvic disproportion 6 (54.54%)	(a) Injudicious oxytocin 14 (58.33%)
(b) Malposition & Malpresentation 2 (18.18%)	(b) Spontaneous labour 10 (41.66%)
(C) injudicious use of oxytocin. 3 (27.27%)	

Scar distribution in number(Total=24)	
Previous 1 caesarian	13(54.16%)
Previous 2 caesarian	6(25%)
Previous 3 caesarian	2(8.3%)
Previous rupture	3(12.5%)
Previous classical caesarian	3(12.5%)
Yes	3(12.5%)
No	21(87.5%)

**Table-3 Management and Outcome.**

Parameters	No (%)
<b>Management (Total- 35)</b>	
Repair	24 (68.57%)
Subtotal Hysterectomy	6 (17.14%)
Total Hysterectomy	3 (8.57%)
Bladder repair	3 (8.57%)
Expired unexplored	2 (5.71%)
<b>Per operative complication (Total -33)</b>	
Hemorrhage	21(63.63%)
Death	1 (3.03%)
No Complication	9 (27.27%)
<b>Post operative complication(Total -32)</b>	
Hemorrhage	5(15.62%)
Infection.	12(37.5%)
Death	4 (12.5%)
Eventless	11(34.37%)
Massive Transfusion	29(90.62%)
Yes	29(90.62%)
No	3 (9.37%)

**Discussion:**

Uterine rupture is condition having high fetal and maternal mortality. [5] Incidence of this grave medical condition widely varies from 2.6 to 0.06% depending upon developmental status of country and available medical facility.<sup>[6-8]</sup> In our study incidence was 0.62% comparable to other developing country. Lack of booking and proper antenatal follow up creates the preface of such clinical situation. Our study have 92.28 % case either unbooked or improper antenatal follow up reason could be due to being our hospital a tertiary health care center receiving referral care from remote rural area .Cases from rural area was 91.42% and this is comparable to other studies.<sup>[2,9]</sup> Mean age in our study was 29.78±4.6 years . Commonest age group was 25 to 30 years, our finding matches the data from African country where uterine rupture case have highest incidence.<sup>[7]</sup> As reported in many studies multiparity or grand multiparity remains a important risk factor of uterine rupture and in our study 23( 65.71%) cases are multi or grand para comparable to other studies.<sup>[10]</sup> There is need to sensitize and make awareness regarding importance of booking for antenatal care , contraception and family planning. In a developing country the clinical background of previous caesarian section scar amount immense risk for uterine rupture. Our study showed 68.57% had scar due to previous caesarian section comparable with Mbamra SU et al .<sup>[7]</sup> In India incidence of caesarian section has increased in last decade and seeking a medical advice with unskilled intervention with lack of advance medical facility doubles the risk of uterine rupture. In such situation proper partograph at primary health care centre will be very helpful in timely referral to tertiary center for impending uterine rupture. Prolong 3rd stage of labour and injudicious use of oxytocin was major risk factor in our study. Injudicious use of oxytocin contributed a lot adversely in our study 17(48.57%) case were given improper dose prior to arrival in hospital. This indicates need to improve clinical skills.<sup>[9,10]</sup> Besides this in spite of counseling for institutional deliveries especially in a case of previous caesarean section, tendency to seek unskilled intervention due to aversion for a repeat caesarean section, lack of proper surgical skills and aseptic techniques at private hospital leads to poor outcome. Partograph is an important tool to detect deviation from normal labour, and early referral helps in prevention of rupture uterus . In our study management protocol was decided on type and extent of rupture, future fertility and associated co morbid conditions. It is advisable to go for conservative surgery considering, socio psychological adversities. In our study uterine repair was done in 68.57% cases .Number of

hysterectomy in our study is 9(25.71%) out of which 3 were total hysterectomy and 6 were subtotal hysterectomy. Bladder repair was done in 3(8.57%) cases .Number of hysterectomy was less in our study could be due to availability of advance and skilled surgical facility compared t o other study .<sup>[11]</sup> Rupture uterus was noted as most common indication for emergency hysterectomy in our study like Shah N et al .<sup>[12]</sup> reported 34.86% and 35% respectively. In our study maternal mortality was in 7 (20%) case out of which 2(5.71%) case with very poor general condition died unexplored with in 20 minute of arrival in hospital .Foetal mortality was quite high 82.85% in our study compared to study from European country[8] ,indicating good possibility to reduce foetomaternal mortality with improving health structure .

**CONCLUSION:**

Our study revealed very high prevalence of uterine rupture. Previous caesarian section and scarred uterus was commonest risk factor. High foetomaternal mortality rate compared to European country remind us to improve health structure in our country with help of health education, awareness, improving medical surgical skill by repeated training and refresher courses. Suspicion of High risk factors, impending uterine rupture by proper partogram and timely referral to tertiary care centre remains key to reduce the adverse out come .

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