

STUDY OF RISK FACTORS & MANAGEMENT IN CASES OF RUPTURED UTERUS

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ABSTRACT

Background: Rupture of the uterus is a dire emergency where the life of the mother & fetus is in danger. Incidence varies by institution depending on the level of obstetric care. This study aims to help in identifying the high risk pregnancies and planning preventive methods. **Objective:** To evaluate the risk factors associated with type and site of rupture uterus, different modes of management, maternal and fetal outcome and to study risk factors for implementation of preventive strategies. **Method:** A prospective study for one year was done to describe the frequency, causes, treatment, complications, and maternal & fetal mortality associated with ruptured uterus. **Results:** A total of 15 cases of ruptured uterus were observed over the one year span at our Institute, Civil Hospital, Ahmadabad, Gujarat. Most of the women with rupture uterus were in the age group of 20-25 years (46.6%) and it was commonest in para 2 (66.6%). The most common etiology of rupture uterus was rupture of previous caesarean scar (66.6%). In majority of the cases, lower uterine segment was affected. There were no maternal deaths, but fetal demise seen in every case. **Conclusion:** Leading cause of rupture uterus is changing from obstructed labor to caesarean section scar rupture, but recent advance in obstetrics, availability of broad spectrum antibiotics, advances in anesthesia and availability of blood transfusion have given major surgical procedures a great degree of safety, hence reduced maternal mortality in cases with a rupture uterus to a considerable extent. So extra efforts to educate women about institutional delivery, especially after caesarean section should be considered.

Key Words : Previous LSCS, Rupture Uterus, Hysterectomy.

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INTRODUCTION

Uterine rupture is rare, but associated with catastrophic complication.¹ The hospital based incidence of uterine rupture varies from 1 in 100-500 deliveries in developing countries to 1 in 3000-5000 in hospital with well-developed health services². In India incidence varies from 0.03 to 0.7% and it still accounts for 5-10% of all the maternal deaths.² The perinatal mortality ranges from 80-95%. As there is an increase in the incidence of previous caesarean section deliveries in teaching and referral hospitals, the commonly seen uterine rupture in these centers are those involving a previous uterine scar. Different modes of management are practiced namely repair of the uterine tear, total abdominal hysterectomy, subtotal hysterectomy, bladder repair. The preference of management and outcome varies in different centers.

METHODOLOGY

A prospective study on 15 patients of uterine rupture, whether booked or un-booked over a period ranging from one year (1st July 2014 to 30th June 2015) admitted in Civil hospital, Ahmadabad was done.

Following definitions were used to classify diagnosis of cases:

- Complete uterine rupture was defined when the whole uterine thickness including the peritoneal cover was involved
- Patients were said to be booked if they had visited our health institute at least twice during their antenatal period.

- Spontaneous uterine rupture was defined as rupture without any iatrogenic manipulation, trauma or oxytocic drugs use or without any previous scar on the uterus.
- Traumatic rupture was defined as follows obstetric manipulation, violence/ trauma or use of oxytocic drugs.

RESULTS & DISCUSSION

The incidence of rupture uterus found is 0.47% at our institute (Civil hospital, Ahmadabad) comparable to study by Malik et al (0.5%),³ which is higher than that of in developed countries like 0.086% in Australia & 0.014% in USA. Most of the women with rupture uterus were in the age group of 20-25years (46.6%). It was commonest in para 2 (66.6%). In our study, out of 15 patients, 11 (73.3%) patients were un-booked patients, which is comparable to other studies^{4,5} and only 4(26.6%) patients were registered patients taking routine antenatal visits. The majority of the patients was referred to us from various centers (60%). Rupture of the previous CS scar site was the most common etiological factor associated with uterine rupture (66.6%), which is comparable to the study conducted by Malik et al (53.3%)³ and it may be due to increase in rate of CS. Use of Oxytocin and trauma, accounting for 6.6% each, congenital anomaly of uterus accounting for 6.6% of cases (Table 1). Silent rupture of uterus found in 6.6% of cases and rupture associated with the use of MTP pills found in 13.3% of cases.

Table-1: Demographic and Clinical

Characteristics (n=15)

MATERNAL AGE	NO. OF CASES	PERCENTAGE
20-25yrs	7	46.6
26-30yrs	5	33.3
30-35yrs	3	20
Antenatal Care		
Booked	4	26.6
Unbooked	11	73.3
Referred from Outside		
Yes	9	60
No	6	40

Table-2: Distribution According to Etiological Factor

ETIOLOGY	NO. OF CASES	PERCENTAGE
Pre. LSCS	12	66.6
Obstructed Labour	-	-
Oxytocin	1	6.6
Malpresentations	-	-
Use of MTP pills	2	13.3
Congenital anomaly	1	6.6
Trauma	1	6.6
Spontaneous rupture	2	13.3

Table-3: Period of Gestation of the patients

GESTATIONAL AGE	NO. OF PATIENTS
Less than 28 weeks	4
28-32 weeks	1
33-36 weeks	2
37-40 weeks	8

Table-4: Management of Rupture Uterus

Primary repair	10
Subtotal Hysterectomy	1
Total Hysterectomy	4
Associated Bladder Repair	2

Lower segment was most commonly affected in our study and findings are comparable to the study conducted by Ezechi, et al (60%).⁶ Only in 20% of cases of the upper segment of the uterus was

involved. In cases of upper uterine segment involvement, 2 cases were the extension of the tear from the lower segment while in another 1 case there was a previous classical caesarean section, comparable to study done by Green Ra.⁷ All cases were of completely variety out of which 66.6% were scar rupture, spontaneous rupture found in 13.3% out of which rupture uterus due to obstructed labor found in 6.6% of cases which is very less compared to study by Nahum et al (53.3%),¹ traumatic in 6.6% of cases. Rupture due to MTP pills occurs in 13.3% and bladder injury was observed in 13.3% cases. Most of the cases were presented at the gestational age of 37-40 weeks (53.3%). In our study, primary repair was performed in 53.3% of cases, subtotal hysterectomy in 6.6% of cases and total hysterectomy was done in 26.6% cases. The majority of the patients had a previous LSCS scar rupture, which was avascular and simple to repair the rent, which is quite effective in such cases. There was no maternal mortality in the present study, which was noticed in 2% cases by Ezechi OC, Mabayoje P, Obiesie LO in their study.²

Rupture of the uterus is a very serious obstetrical event and emphasizes the fact that, although much has been accomplished in the prevention and treatment of rupture uterus, the ultimate goal has yet not been achieved. In developing countries the incidence is high due to a greater number of un-booked obstetric emergencies, often originating from rural areas with poor antenatal care. As there is an increase in the incidence of previous caesarean section deliveries in teaching and referral hospitals, the commonly seen uterine ruptures in these centers are those involving a previous

uterine scar^{3,8} Rupture of the unscarred uterus may be either traumatic or spontaneous. Fed Fedorkow et al⁸ and Golan et al⁹ in their study didn't find any evidence of obstructed labour among women with ruptured uterus, suggesting changes in leading causes of uterine rupture to caesarean scar rupture. In our study, there was a complete uterine rupture in majority of the cases and the commonest site was lower and left lateral uterine segments. Bladder injury was associated with cases of tear of lower uterine segment. The type of surgical intervention depended on various factors like whether the patient was in shock, availability of blood transfusion and experience of surgeon for total hysterectomy. Rent, repair was the most common procedure done in this study and maternal mortality was not noted, though the fetal demise was present in every case.

CONCLUSION

Proper antenatal and intra-natal care, identification of high risk cases and education of people about supervised pregnancy and delivery will reduce the occurrence of uterine rupture. As morbidity & mortality following rupture of the uterus depend on the level of medical care,¹⁰ recent advances in obstetrics, availability of a wide range of antibiotics and blood transfusion, advances in anesthesia have given to major surgical procedure, a degree of safety never achieved before. As a result the maternal mortality has been reduced to a considerable extent and conservation of the uterus has also become possible, Therefore extra efforts to educate women about institutional delivery specially after caesarean section should be considered.

Maternal mortality and morbidity can be reduced by early diagnosis and proper monitoring of the labor and availability of blood transfusion with round the clock services of trained hospital staff may help further.

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REFERENCES

1. Nahum GG, Pham KQ. Unscarred Uterine Rupture in pregnancy-a retrospective analysis, the journal of obstetric & gynecology India October 2016; 66 (Suppl-1) : 51-54.
2. Arias F, Bhide A, Kaizad AS, Daftary DS. Arias' practical guide to high risk pregnancy & delivery, 4th Ed, Elsevier, India, 2015; 151-162.
3. Malik HS. Frequency, predisposing factors and fetomaternal outcome in uterine rupture. J Coll Physicians Surg Pak 2006; 16:472.
4. Hasan JA, Zaki M, Kareem K. Rupture of gravid uterus. J Surg Pak Mar 2005; 10: 20-2.
5. Gul A. Rupture of previously scarred uterus. Ann King Edward Med Coll 2004; 10: 473-5.
6. Ezechi OC, Mabayoje P, Obiesie LO. Ruptured uterus in south Western Nigeria: a reappraisal. Singapore Med J 2004; 45:113-6
7. Kaakaji Y, Nghiem HV, Nodell C et-al. Sonography of obstetric and gynecologic emergencies: Part I, Obstetric emergencies. Am J Roentgenol. 2000; 174 (3): 641-9.

8. Fedorkow DM, Nimond CA, Taylor PJ. Rupture uterus in pregnancy: a Canadian hospital's experience. *Can Med Assoc J* 1987; 137: 27-29.
9. Golan A, Sandbank O, Rubin A. Rupture of the pregnant uterus. *Obstet Gynaecol* 1980; 56: 549-554.
10. Shore E, Kingdom J, Windrim R. Spontaneous uterine rupture. *J Obstet Gynaecol Can.*2009;31 (5): 395-96. Pubmed citation