

Original article:

A Retrospective Study to Evaluate the Rupture of Uterus Among Women: A Hospital Based Study

Namrata Agarwal¹, Chandrashekhar Gaur^{2*}, Vijeta Tomar³

¹Associate Professor, ³Assistant Professor, Department of Pathology, SMS Medical College, Jaipur, Rajasthan, India.

^{2*}Consultant Intensivist, Santokba Durlabhji Memorial Hospital, Jaipur, Rajasthan, India.

Corresponding author *

ABSTRACT:

Background: Uterine rupture occurs suddenly and requires immediate critical emergency care for mothers, fetuses, or neonates. Hence; the present retrospective study was undertaken for evaluating the rupture of uterus among women.

Materials & Methods: All records of mothers with uterine rupture who delivered and managed were retrieved and included in the study. Complete demographic and clinical details of all the subjects were obtained. The charts of uterine rupture cases and collect independent variables such as socio-demographic characteristics, pregnancy and labor related variables and treatment-related variables were obtained.

Results: A total of 50 cases of uterine rupture were studied in the present study. Gestational age was between 37 to 41 weeks in 82 percent of the subjects. Onset of labour was spontaneous in 66 percent of the subjects. Mode of delivery was caesarean section in 78 percent of the subjects. Adverse maternal outcome was present in 18 percent of the subjects while adverse perinatal outcome was seen in 22 percent of the subjects.

Conclusion: Women with uterine rupture had a significantly higher risk of adverse maternal and perinatal outcomes.

Key words: Rupture, Uterus.

INTRODUCTION:

A uterine rupture is a complete division of all three layers of the uterus: the endometrium (inner epithelial layer), myometrium (smooth muscle layer), and perimetrium (serosal outer surface). Clinicians must remain vigilant for signs and symptoms of uterine rupture. Uterine ruptures can cause serious morbidity and mortality for both the woman and the neonate. Most uterine ruptures occur in pregnant women, though it has been reported in non-pregnant women when the uterus is exposed to trauma, infection, or cancer.¹⁻³

Causes of uterine rupture in unscarred uterus are: grand multiparity, injudicious (medically not recommended at this stage but prescribed) use of oxytocin, neglected labour, previous CS and myomectomy, uterine instrumentation and manipulation, labour induction, congenital abnormalities of uterus and uterine distension due to polyhydramnios, multiple pregnancy and fetal macrosomia. An 8-time increased incidence of uterine rupture i.e.1 in 920 cases is seen in developing countries due to cited causes.⁴⁻⁶

Typically, uterine rupture occurs suddenly and requires immediate critical emergency care for mothers, fetuses, or neonates. The strategies for prevention and management, as well as the quality of affordable care for women at risk of or experiencing uterine rupture, are likely to vary across settings depending on their diagnostic capacity, availability of obstetric interventions, and human and facility resources. Therefore, the findings in developed countries may not be generalizable to low-resource countries and settings.⁵⁻⁸ Hence; the present retrospective study was undertaken for evaluating the rupture of uterus among women.

MATERIALS & METHODS

The present retrospective study was undertaken for evaluating the rupture of uterus among women. All records of mothers with uterine rupture who delivered and managed were retrieved and included in the study. Complete demographic and clinical details of all the subjects were obtained. The charts of uterine rupture cases and collect independent variables such as socio-demographic characteristics, pregnancy and labor related variables and treatment-related variables were obtained. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software. Chi-square test and Univariate regression curve was used for evaluation of level of significance.

RESULTS

A total of 50 cases of uterine rupture were studied in the present study. In 72 percent of the subjects, maternal age was between 20 to 35 years. 94 percent of the subjects were married. In 76 percent of the subjects, single Cesarean section history was positive. Gestational age was between 37 to 41 weeks in 82 percent of the subjects. Onset of labour was spontaneous in 66 percent of the subjects. Mode of delivery was caesarean section in 78 percent of the subjects. Adverse maternal outcome was present in 18 percent of the subjects while adverse perinatal outcome was seen in 22 percent of the subjects.

Table 1: Demographic details

Variable		Number of subjects	Percentage
Maternal age (years)	Less than 20	8	16
	20 to 35	36	72
	More than 35	6	12
Marital status	Single	3	6
	Married	47	94
Number of previous Caesarean section	1	38	76
	2	11	22
	More than or equal to 3	1	2
Gestational age (weeks)	Less than 37	3	6
	37 to 41	41	82
	More than 41	6	12

Table 2: Onset of labour and Mode of delivery

Variable		Number of subjects	Percentage
Onset of labour	Induced	5	10
	Pre-labour	12	24
	Spontaneous	33	66
Mode of delivery	Vaginal	7	14
	Caesarean	39	78
	Laparotomy caused by uterine rupture	4	8

Table 3: Maternal and perinatal adverse outcomes

Variable	Number of patients	Percentage
Adverse maternal outcome	9	18
Adverse peri-natal outcome	11	22

DISCUSSION

Uterine rupture (UR) is one of most dangerous obstetric situations carrying an increased risk of maternal and perinatal morbidity and mortality, which is associated with poorly managed labour. UR related with some instant hitches, such as shock, anaemia, and a ruptured bladder, may leave surviving patients with term complications like vesicovaginal fistula and inability to deliver children.^{6- 8} Hence; the present retrospective study was undertaken for evaluating the rupture of uterus among women.

A total of 50 cases of uterine rupture were studied in the present study. In 72 percent of the subjects, maternal age was between 20 to 35 years. 94 percent of the subjects were married. In 76 percent of the subjects, single Caesarean section history was positive. Gestational age was between 37 to 41 weeks in 82 percent of the subjects. Onset of labour was spontaneous in 66 percent of the subjects. Overall, it is estimated that one uterine rupture occurs for every 5,000 to 7,000 births. The incidence of uterine rupture in both scarred and unscarred uteri is increasing worldwide. Uterine rupture is more common in women with a prior caesarean delivery. The rate of uterine rupture is highly dependent upon the number of caesarean deliveries a woman has had and the type of uterine incision present. The rate of uterine rupture is approximately 1% for women with one previous caesarean delivery versus 3.9% for those with greater than one previous caesarean delivery.^{9- 13} Geremew Astatikie et al assessed the magnitude of uterine rupture; maternal and fetal outcome of uterine rupture and factors associated with maternal death secondary to uterine rupture. A total of 242 records of mothers with uterine rupture at Debremarkos referral Hospital during the year 2011–2014 were included in the study. A total of 10,379 deliveries were attended A total of 242 uterine rupture cases were included in this study. The magnitude of uterine rupture was 2.44% (1 in 41 deliveries). Sixteen (6.6%) mothers died from uterine rupture. Fourteen (5.8%) had experienced Vesico Vaginal Fistula. The majority of the mothers, 72% (176), admitted for uterine rupture stayed in hospital for 6–10 days. Fetal outcome was grave, 98.3% (238) were stillborn. Place of labor, occurrence of hypo volume shock and postoperative severe anemia were significantly associated with maternal death secondary to uterine rupture. 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.¹⁴

In the present study, mode of delivery was caesarean section in 78 percent of the subjects. Adverse maternal outcome was present in 18 percent of the subjects while adverse perinatal outcome was seen in 22 percent of the subjects. Jeanne-Marie Guise et al evaluated the incidence and consequences of uterine rupture in women who have had a delivery by caesarean section. They reviewed 568 full text articles to identify 71 potentially eligible studies, 21 of which were rated at least fair in quality. Compared with elective repeat caesarean delivery, trial of labour increased the risk of uterine rupture by 2.7 (95% confidence interval 0.73 to 4.73) per 1000 cases. No maternal deaths were related to rupture. For women attempting vaginal delivery, the additional risk of perinatal death from rupture of a uterine scar was 1.4 (0 to 9.8) per 10,000 and the additional risk of hysterectomy was 3.4

(0 to 12.6) per 10 000. The rates of asymptomatic uterine rupture in trial of labour and elective repeat caesarean did not differ significantly. Although the literature on uterine rupture is imprecise and inconsistent, existing studies indicate that 370 (213 to 1370) elective caesarean deliveries would need to be performed to prevent one symptomatic uterine rupture.¹⁵

CONCLUSION

From the above results, the authors concluded that women with uterine rupture had a significantly higher risk of adverse maternal and perinatal outcomes. However; further studies are recommended.

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