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Research Article

**ANALYSIS OF DIFFERENT RISK FACTORS FOR COMPLETE
UTERINE RUPTURE IN PREGNANCY AMONG LOCAL
FEMALE POPULATION OF LAHORE**

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Abstract:

Introduction: Complete uterine rupture is a rare peripartum complication, often associated with a catastrophic outcome for both mother and child. A scarred uterus, mostly because of a previous cesarean delivery (CD), substantially increases the risk of uterine rupture.

Aims and objectives: The aim of this study is to analyze the risk factors for complete uterine rupture in pregnancy among local female population of Lahore.

Methodology of the study: This study was conducted at Lahore during 2017 to 2018. In this study we find all the factors related to uterine rupture in females. The data were collected from 200 females who gave birth through CD and Vaginal delivery. Those who registered in the data set of hospital were included in this study. For each case we collected the following: maternal history, features of the pregnancy in labour, clinical signs and the method of diagnosing uterine rupture, fetal management, its subsequent course and the maternal outcome.

Results: The data were collected from 500 female patients of the hospital. There were 13 complete ruptures (0.2 per 10,000) among nulliparous women after starting labor. Maternal characteristics are described in detail in Table 1. None of the women with uterine rupture had a diagnosis of endometriosis. None of the women had a story of uterine surgery. None of the women was nulliparous and two (29%) had more than two previous children (four and six). We noted an induction of labour for 71% of cases.

Conclusion: It is concluded that the risk for complete uterine rupture increases with sequential labor induction with prostaglandins and oxytocin and with oxytocin use during labor. These factors included the presence of severe postpartum hemorrhage, maternal age 35 years, and an interdelivery interval labor or by a CD performed at a preterm gestational age.

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INTRODUCTION:

Complete uterine rupture is a rare peripartum complication, often associated with a catastrophic outcome for both mother and child. A scarred uterus, mostly because of a previous cesarean delivery (CD), substantially increases the risk of uterine rupture. The initial signs and symptoms of uterine rupture are typically nonspecific, which makes the diagnosis difficult and sometimes delays definitive therapy [1]. Uterine rupture is a rare obstetric complication associated with significant fetal and maternal morbidity. Complete rupture, in which there is discontinuity of both the serosa and muscle, is the most serious type of rupture.

Complete rupture can occur in the scarred or unscarred uterus. Uterine rupture in the unscarred uterus is rare and its incidence is higher in developing (between 0.1 and 1%) than in developed countries [2]. The prevalence of this event in developed countries varies according to the reporting authors and is estimated at 3/10 000. Unscarred uterine rupture accounts for only 13% of all uterine ruptures. Since uterine rupture in the unscarred uterus is a very rare event, delay in the time taken to make the diagnosis is more common than with a rupture in the scarred uterus [3]. It is also associated with a more severe maternal and fetal prognosis than uterine rupture in the scarred uterus. Lastly, uterine rupture in the unscarred uterus is a diagnostic problem since the clinical signs are not specific and vary according to the studies [4].

Women with prior CS are at higher risk of uterine rupture. The reported incidence of uterine rupture among women with prior CS ranged from 0.22% to 0.5% in some developed countries [5]. The risk factors for uterine rupture in women with a history of CS include prior classical incision, labour induction or augmentation, macrosomia, increasing maternal age, post-term delivery, short maternal stature, no prior vaginal delivery, and prior periviable CS [6].

Aims and objectives

Table 01: Risk factors for complete uterine rupture after starting labor in women without previous cesarean delivery

	N	%
Labor characteristics		
GA at labor (weeks,means)	39.45	-
Induction of labor		
Yes	5	67
- Misoprostol ®	2	28.5
- Propress ®	1	14

The aim of this study is to analyze the risk factors for complete uterine rupture in pregnancy among local female population of Lahore.

Methodology of the study

This study was conducted at Lahore during 2017 to 2018. In this study we find all the factors related to uterine rupture in females. The data were collected from 200 females who gave birth through CD and Vaginal delivery. Those who registered in the data set of hospital were included in this study. For each case we collected the following: maternal history, features of the pregnancy in labour, clinical signs and the method of diagnosing uterine rupture, fetal management, its subsequent course and the maternal outcome.

Statistical analysis

SPSS analysis test was used in making a comparison of the two-tailed P value with a significance set at $p < 0.05$. Results were considered to be of statistical significance if the two-tailed p-value was less than 0.05.

RESULTS

The data were collected from 500 female patients of the hospital. There were 13 complete ruptures (0.2 per 10,000) among nulliparous women after starting labor. Maternal characteristics are described in detail in Table 1. None of the women with uterine rupture had a diagnosis of endometriosis. None of the women had a story of uterine surgery. None of the women was nulliparous and two (29%) had more than two previous children (four and six). We noted an induction of labour for 71% of cases. The reason of labour induction was: macrosomia for two cases and for one case it was associated to gestational diabetes, abnormal fetal rate, post term and reduction of fetal movement. Irrespective of the method used to initiate labour, oxytocin was used for all women in a maximum dose of 6 mIU/h. All women received epidural analgesia.

- Oxytocin	2	28.5
No	2	33
Use of Oxytocin	7	100
Maximum oxytocin dose (mUI/min)	6.4	-
Use of peridural	7	100%
Duration of labor	4.6	-
Clinical signs		
Abnormal FHR	7	100
Decelerations	5	71
Bradycardia	2	28.5
Vaginal bleeding	3	42.9
Abdominal Pain	3	42.9
Vomiting	2	28.5
Moment of diagnosis		
Per partum	5	71
Postpartum	2	28.5

DISCUSSION:

Previous studies reported the incidences of uterine rupture in women with prior CS from 0.22% to 1.69% and these were similar to the results of this study, with an overall rate of 0.5%. The incidence of uterine rupture was highest in low-HDI countries (1.0%), and the multivariate analysis identified giving birth in low-HDI countries as a factor associated with uterine rupture [7]. However, it should be noted that the numbers of observed uterine ruptures were very small in some countries (e.g. 14 countries had 3 or less cases of uterine rupture), and this may affect the reliability of the calculated incidence rates. In this analysis, women with spontaneous onset of labour had a higher incidence of uterine rupture compared to women who had a pre-labour CS [8]. Although previous studies have shown an association between uterine rupture and labour induction, our analysis did not show a significant increase in risk of uterine rupture among women with induced labour [9]. This may be due to the relatively small number of women who had induced labour in our dataset [10].

CONCLUSION:

It is concluded that the risk for complete uterine rupture increases with sequential labor induction with prostaglandins and oxytocin and with oxytocin use during labor. These factors included the presence of severe postpartum hemorrhage, maternal age 35 years, and an interdelivery interval labor or by a CD performed at a preterm gestational age.

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