

FIND THE FREQUENCY OF UTERINE RUPTURE IN VAGINAL BIRTH AFTER CESAREAN SECTION (VBAC) AND COMPARE RATES BETWEEN SHORT AND LONG INTERPREGNANCY INTERVALS

NAZAR A^{*1}, AZIZ T², ASHFAQ A³, NOSHEEN S⁴, KHAN AU⁵, AIN QU⁶

¹Department of Obstetrics & Gynaecology, Insaaf Medical Complex, Karachi, Pakistan

²Department of Obstetrics and Gynecology, Al-Yamama Hospital, Riyadh Second Health Cluster, KSA

³Aziz Fatima Medical and Dental College, Faisalabad, Pakistan

⁴Institute of Microbiology, University of Agriculture, Faisalabad, Pakistan

⁵University of Science and Technology Bannu, Pakistan

⁶Institute of Microbiology, Faculty of Sciences, University of Agriculture, Faisalabad, Pakistan

*Corresponding author's email address: amsahito44@gmail.com

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Abstract: Vaginal births after cesarean (VBAC) is not typical and uterine rupture, the most serious complication of a TOL after Cesarean, is characterized as the complete separation of the myometrium regardless of extrusion of the fetal parts into the maternal peritoneal cavity. **Objective:** To determine the frequency of uterine rupture in women who attempt vaginal birth after cesarean section and to compare the frequency of uterine rupture in women with short and long inter-pregnancy intervals. **Methods:** This Descriptive Case Series was conducted from December 23, 2015, to June 22, 2016. Ninety (90) patients were recruited based on inclusion/exclusion criteria. Women were then divided into two groups in short and long interpregnancy intervals per the operational definition. The outcome variable, i.e., uterine rupture, was noted as per the operational definition during the delivery. **Results:** A total of 90 women were included in this study. The age of the women ranged from 18-40 years. The average age of the women was 28.49 + 4.49, with a mean gestational age of 36.45 + 2.24, mean height of 161.94 + 7.62, mean weight of 67.73 + 11.9, and mean BMI of 25.7 + 4.05. The mean inter-pregnancy interval in women who attempted VBAC was 34.8 + 9.73. 70(78%) had 2-4 parity and 20(22%) had parity >4. 58(64.4%) had long inter pregnancy interval and 32(35.6%) had short pregnancy interval. (Table no: 11) **Conclusion:** The data indicate that the relative risk of uterine rupture is increased in women undergoing a TOL after Caesarean. Short pregnancy interval increases the risk for uterine rupture two-fold to three-fold in VBAC Women.

Keywords: Uterine Rupture, Inter Pregnancy Interval, VBAC

Introduction

In modern obstetrics, it is currently standard practice to give preliminary vaginal birth after one cesarean area, likewise called a trail of scar1. The likelihood of a fruitful vaginal birth has been assessed around 70-80% (1). Even though VBAC is viewed as protected with great observation, it isn't without complications like the expanded risk of uterine rupture, which is no question a hazardous crisis. The occurrence of uterine rupture in an unconstrained work after one earlier lower cross-over portion cesarean segment is 0.4% (2). The CD is known to be related to extreme maternal complications, including a high risk of mortality compared to vaginal conveyances (3). The various advantages of vaginal birth, for example, fast maternal recuperation, less maternal complications in ongoing pregnancies (4), and lower risk of young life sicknesses, like sensitivities and asthma, are additionally deserving of note (5). Various examinations zeroing in on the result of TOLAC, distributed over the most recent couple of years, have yielded different outcomes (6). Nonetheless, VBAC was generally considered okay for mothers and children compared to ERCS (9). Effective VBACs are likewise connected with lower general bleakness rates (7) compared to ERCS. By and by, a bombed VBAC builds the risk of perinatal and maternal complications compared to ERCS (8). Vaginal birth after cesarean section (VBAC) is a pivotal consideration in contemporary obstetrics, giving a viable

choice to women with a history of cesarean deliveries (9). Despite its benefits, concerns regarding the potential event of uterine burst during VBAC persist, necessitating a careful investigation into its frequency and associated risk factors10. Uterine bursts, however rare, can have severe consequences for both the mother and the infant. Recognizing factors that may impact the probability of uterine break, such as interpregnancy intervals, is crucial for risk stratification and informed decision-making in clinical practice. Short interpregnancy intervals have been suggested, and understanding their impact on uterine rupture rates in VBAC is paramount. The primary aim of the study was to determine the frequency of uterine rupture in women after cesarean section and to compare the frequency of uterus rupture in women with short and long inter-pregnancy intervals.

Methodology

This Descriptive Case Series was conducted from December 23, 2015, to June 22, 2016. Data was collected through the Non-probability consecutive sampling technique. Inclusion criteria encompassed women aged 18-40 with parity more significant than 1, gestational age > 37 weeks confirmed by LMP, singleton pregnancies on ultrasound, and those with previous cesarean sections opting for vaginal delivery. Conversely, exclusion criteria

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included primigravida, multiple pregnancies, failed VBAC attempts, gestational hypertension, preeclampsia/eclampsia, congenital anomalies, placenta previa/abruption, uterine surgeries, and genital tract infections/UTIs. These criteria analysed VBAC outcomes in a specific obstetric cohort, excluding high-risk pregnancies and potential confounding factors. Ninety (90) patients were recruited based on inclusion/exclusion criteria. Per operational definition, women were divided into two groups in short and long inter-pregnancy intervals. The outcome variable, i.e. uterine rupture, was noted as per the operational definition during the delivery. All the procedures were done by the researcher herself. Data were analysed using SPSS version 19.0. Mean±SD was calculated for age, gestational age, height, weight, BMI, and interpregnancy interval.

Results

A total of 90 women were included in this study. The mean age of the patients was 28.49 + 4.49, with a mean gestational age of 36.45 + 2.24; mean height was 161.94 ± 7.62; mean weight was 67.73 ± 11.9 and mean BMI was 25.7 ± 4.05. The mean inter-pregnancy interval in women who attempted VBAC was 34.8 ± 9.73. 70(78%) had 2-4 parity and 20(22%) had parity >4. 58(64.4%) had long inter pregnancy interval and 32(35.6%) had short pregnancy interval. (Table 1)

Table 01: Demographic data of patients

Variables	Mean	Standard Deviation
Age	28.49	4.49
Height	161.94	7.62
Weight	67.73	11.92
Gestational age	36.45	2.24
BMI	25.7	4.05
Inter pregnancy interval	34.8	9.73

Table 02: Parity-wise distribution of the women (n=90)

Parity	Frequency	Percentage
2-4	70	78%
>4	20	22%
Inter pregnancy interval	Frequency	Percentage
Long	58	64.4%
Short	32	35.6%
Uterine rupture	Frequency	Percentage
Yes	38	42%
No	52	58%

Out of 90 women who attempted VBAC, 38(42%) had a uterine rupture. A significant difference was observed when the incidence of uterine rupture was compared between short and long interpregnancy intervals. When the frequency of uterine rupture was stratified concerning age, BMI and parity, and when the same was stratified concerning gestational age, a significant difference was observed. (Table 2)

Table 03: Comparison of uterine rupture

Inter pregnancy interval	Uterine rupture		P-value
	Yes	No	
Short	24	08	0.00
Long	14	44	
Uterine rupture			0.665
18-25	21	32	
>25-40	17	20	

When the incidence of uterine rupture was compared between short and long inter-pregnancy interval age groups, gestational age 37-40 weeks, BMI, parity (2-4), and when same were stratified concerning gestational age >40 weeks and parity > 4, no significant difference was observed. (Table 4,5)

Table 04: Stratification of uterine rupture in women

Inter pregnancy interval	Uterine rupture		P-value
	Yes	No	
Short	14	07	0.002
Long	07	25	

Table 05: Stratification of uterine rupture in women concerning parity (2-4)

Inter pregnancy interval	Uterine rupture		P-value
	Yes	No	
Short	21	06	0.000
Long	08	35	

Discussion

Uterine rupture, the most severe complication of a TOL after Cesarean, is characterised as complete separation of the myometrium regardless of extrusion of the fetal parts into the maternal peritoneal cavity and requires crisis Cesarean section or postpartum laparotomy (9). Uterine rupture in pregnancy is an uncommon and frequently devastating confusion with a high occurrence of fetal and maternal grimness (10). Various elements are known to expand the risk of uterine rupture; however, even in high-risk subgroups, the general frequency of uterine rupture is low. From 1976-2012, 25 companion audited distributions depicted the occurrence of uterine rupture, and these revealed 2,084 cases among 2,951,297 pregnant ladies, yielding an in general uterine rupture pace of 1 out of 1,146 pregnancies (0.07%) (11). The underlying signs and side effects of uterine rupture are ordinarily vague, which makes the conclusion troublesome and, once in a while, postpones conclusive treatment (12). From the hour of finding to conveyance, by and large, just 10-37 minutes are accessible before clinically huge fetal dreariness becomes inescapable (13). Fetal dismalness happens because of the disastrous drain, fetal anoxia, or both. Meta-examination of pooled information from 25 examinations in the friend-evaluated clinical writing distributed from 1976-2012 showed a general rate of pregnancy-related uterine rupture of 1 for every 1,416 pregnancies (0.07%) (14). At the point when the examinations were restricted to a subset of 8 that gave information about the unconstrained rupture of unscarred uteri in created nations, the rate was 1 for every 8,434 pregnancies (15). Innate uterine inconsistencies, multiparity, past uterine myomectomy, the number and sort

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of past cesarean conveyances, fetal macrosomia, work enlistment, uterine instrumentation, and uterine injury all increment the risk of uterine rupture. However, past effective vaginal conveyance and a delayed interpregnancy stretch after a past cesarean conveyance might present relative security (16-18). As opposed to the accessibility of models to foresee the progress of a vaginal conveyance after a TOLAC, precise models to anticipate the individual explicit risk of uterine rupture in particular cases are not accessible (19). Vaginal Birth After Cesarean (VBAC) is perhaps the most irritable point in obstetrics; in this way, doctors and well-being labourers in maternal wellbeing should explore the intricacy of the upsides and downsides while prompting and guiding forthcoming moms that wish to think about the vaginal course of conveyance after a cesarean (20).

Conclusion

The data indicate that the relative risk of uterine rupture is increased in women undergoing a TOL after Caesarean. Short pregnancy interval increases the risk for uterine rupture twofold to threefold in VBAC Women. These findings must be confirmed in comparative studies with larger sample sizes, including assessing risk factors for uterine rupture. Moreover, suspected uterine rupture requires urgent attention expedited urgently to decrease the incidence of uterine rupture.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department Concerned.

Consent for publication

Approved

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Conflict of interest

The authors declared the absence of a conflict of interest.

Author Contribution

ANEESA NAZAR (Consultant)

Study Design, Review of Literature.

Conception of Study, Development of Research Methodology Design, Study Design, manuscript Review, and final approval of manuscript.

TEHMINA AZIZ (Consultant)

Coordination of collaborative efforts.

Conception of Study, Final approval of manuscript.

AYESHA ASHFAQ (Student MBBS)

Study Design, Review of Literature.

SIDRA NOSHEEN

Manuscript revisions, critical input.

Coordination of collaborative efforts.

ASAD ULLAH KHAN

Study Design, Review of the manuscript.

Manuscript drafting.

QURAT-UL-AIN

Data entry and data analysis, as well as drafting the article. Coordination of collaborative efforts.

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