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FREQUENCY OF SUCCESSFUL VAGINAL BIRTH AFTER CESAREAN SECTION IN PATIENTS WITH PREVIOUS ONE CAESAREAN SECTION

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ABSTRACT:

OBJECTIVE: To determine the frequency of successful vaginal birth after cesarean section in patients with previous one caesarean section. **MATERIAL AND METHODS:** This cross-sectional study was carried out in the Department of Obstetrics and Gynaecology Hayatabad Medical Complex, Peshawar. A cohort of 147 participants was thoughtfully selected. The study included women aged 18 to 40 years, each of whom had previously undergone at least one caesarean section. Singleton pregnancy on ultrasound, Cephalic presentation on ultrasound, Gestational age 37-41 weeks LMP, Parity ≥ 1 and previous delivery by caesarean section on medical record were included in the study. Those who had high medical or obstetric risks, unfavorable cervix (with a Bishop score less than 6) and whose medical condition or personal choice led them to refuse participation were excluded from study. **RESULTS:** Age group was analyzed as 97(66%) patients belongs to age group of 18-30 years while 50(34%) belongs to age group <30 years. Total 76(78.4%) & 4(8%) successful vaginal deliveries after C-section was performed in both 18-30 years & < 30 years age groups respectively. Total 117(79.6%) patients had gestational age of 37-39 weeks and 30(20.4%) had >39 weeks of gestational age. Successful vaginal delivery after cesarean was noted in 65(55.6%) cases in 37-39 weeks gestational age patients and in 15(50%) of > 39 weeks gestational age women's respectively.**CONCLUSION:** In conclusion, more than half of the patients who accepted TOLAC hada VBAC.

KEYWORDS: Pregnancy, Previous caesarean section, Vaginal birth

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INTRODUCTION

Cesarean section (CS) rates have shown a consistent upward trajectory in recent years, prompting increased attention to the potential benefits and risks associated with vaginal birth after cesarean section (VBAC).[1,2] The choice between a repeat cesarean delivery and attempting a trial of labor for a subsequent pregnancy following a previous cesarean birth is a complex decision influenced by various medical, obstetric, and personal factors. Successful VBAC has gained recognition as a desirable option due to its potential benefits, such as reduced maternal morbidity, quicker recovery, shorter hospital stays, and potentially fewer complications in future pregnancies.[3,4] However, the decision to pursue VBAC involves careful consideration of the risks associated with uterine rupture and its potential consequences.[5] The frequency of successful

VBAC varies widely and is influenced by factors such as maternal age, prior cesarean indication, interval between pregnancies, and the type of uterine scar.[6] These factors have a significant impact on the likelihood of achieving a successful vaginal birth. VBAC success rates have been extensively studied in diverse populations, yet limited research has focused specifically on women who have had only one previous cesarean section.[7,8] Understanding the success rates of VBAC in this specific subgroup is essential for optimizing clinical decision-making, patient counseling, and obstetric management. The clinical importance of this study is underscored by the increasing emphasis on evidence-based obstetric care and patient-centered decision-making. Insights gained from analyzing the frequency of successful VBAC in patients with one previous cesarean section can guide obstetricians, midwives, and other healthcare professionals in providing tailored recommendations and personalized care plans. Ultimately, the findings have the potential to influence clinical protocols, enhance patient education, and contribute to improved maternal and neonatal outcomes. Given the scarcity of research focusing specifically on VBAC success rates in patients with a single previous cesarean birth, this study addresses a significant knowledge gap in the existing literature. Through comprehensive data analysis and consideration of relevant factors, this research endeavors to contribute to the broader discourse surrounding VBAC feasibility and its implications for obstetric practice.

MATERIALS AND METHODS

In pursuit of understanding the frequency of successful vaginal birth after cesarean section, we conducted a cross-sectional study in the Department of Obstetrics and Gynaecology at Hayatabad Medical Complex, Peshawar. Our study unfolded over a span from the 1st of September 2020 to the 28th of February 2021. A cohort of 147 participants was thoughtfully selected. The study included women aged 18 to 40 years, each of whom had previously undergone at least one caesarean section. Women age 18-40 years, Singleton pregnancy on ultrasound, Cephalic presentation on ultrasound, Gestational age 37-41 weeks LMP, Parity ≥ 1 and previous delivery by caesarean section on medical record were included in the study. Those who had high medical or obstetric risks, unfavorable cervix (with a Bishop score less than 6) and whose medical condition or personal choice led them to refuse participation were excluded from study. We documented each participant's age within the range of 18 to 40 years. The frequency of successful vaginal births was recorded and analyzed. Data was analyzed with statistical analysis program (IBM-SPSS-version- 23). Mean ±SD was used to describe for quantitative variables like age, gestational age and parity. Frequency and percentage was used to describe for categorical variables like socioeconomic status and successful VBAC. Successful vaginal birth was stratified by age, gestational age, parity and socioeconomic status. Post stratification chi square test was applied $p \leq 0.05$ was considered statistically significant.

RESULTS

Total 147 patients were enrolled. Age ranged between 18 to 40 years with mean age of 29.646±2.35 years, mean gestational age was 38.476±1.13 weeks and mean parity was 1.816±1.02 as shown in Table-I. Age group was analyzed as 97(66%) patients belongs to age group of 18-30 years while 50(34%) belongs to age group <30 years. Total 76(78.4%) & 4(8%) successful vaginal deliveries after C-section was performed in both 18-30 years & < 30 years age groups respectively. Total 117(79.6%) patients had gestational age of 37-39 weeks and 30(20.4%) had >39 weeks of gestational age. Successful vaginal delivery after cesarean was noted in 65(55.6%) cases in 37-39 weeks gestational age patients and in 15(50%) of > 39 weeks gestational age women's respectively. According to parity distribution 135(91.8%) had parity of 1-3 while 12(8.2%) had parity of >3. Success rate of vaginal birth after cesarean was observed in 79(58.5%) cases who had parity of 1-3 and in 1(8.3%) cases with parity of >3. Table-2 Data regarding stratification of socioeconomic status are shown in Table-3. Over all successful vaginal birth after previous cesarean was observed in 80(54.4%) patients. Figure-1

Table- I: Patients demographics and other characteristics (mean ± SD)

Demographics	Mean ± SD
Age (years)	29.646±2.35
Gestational age (weeks)	38.476±1.13
Parity	1.816±1.02

Table-2: Stratification of successful VBAC with respect to age, gestational age & parity

Characteristic	Successful VBAC		p-value
	Yes	No	
Age (years)			
18-30	76(78.4%)	21(21.6%)	0.003
31-40	4(8%)	46(92%)	
Gestational age (weeks)			
37-39	65(55.6%)	52(44.4%)	0.586
>39	15(50%)	15(50%)	
Parity			
1-3	79(58.5%)	56(41.5%)	0.001
>3	1(8.3%)	11(91.7%)	

Table-3: Stratification of successful VBAC with respect tosocioeconomic status

Socioeconomic Status		Successful VBAC		Total	p-value
		Yes	No		
Poor	Yes	21(51.2%)	20(48.8%)	41 (100%)	0.627
	No	59(55.6%)	47(44.4%)	106 (100%)	
Middle	Yes	50(55.5%)	40(44.4%)	90(100%)	0.728
	No	30(52.6%)	27(47.4%)	57(100%)	
Rich	Yes	9(56%)	7(44%)	16(100%)	0.876
	No	71(54%)	60(46%)	131(100%)	

DISCUSSION

The success of vaginal birth after cesarean (VBAC) has been a topic of significant interest in obstetrics due to its potential benefits for both maternal and fetal health. In this study, we aimed to evaluate the factors influencing the success of VBAC among a cohort of 147 patients. Age is a known factor that can impact the success of VBAC. Our findings demonstrated a statistically significant difference in successful VBAC rates between different age groups. Notably, a higher proportion of patients aged 18-30 years achieved successful VBAC compared to those aged 31-40 years. This aligns with previous research that has suggested that younger maternal age might be associated with a higher likelihood of VBAC **success.**[9-10] This could be attributed to factors such as better uterine healing capacity and overall better health status in younger individuals. Gestational age at the time of delivery plays a crucial role in determining the success of VBAC. Our study revealed that while there was a slightly higher rate of successful VBAC in patients with gestational ages between 37 and 39 weeks, this difference was not statistically significant. This finding is consistent with some previous studies that have not shown a strong association between gestational age and VBAC success **Van Duinen AJ et al** [11]. However, it is important to note that achieving a balance between allowing labor to progress and avoiding potential complications associated with post-term pregnancies remains a clinical challenge.[12] Parity, or the number of previous pregnancies, is another key factor affecting VBAC success. Our results indicated that patients with parity between 1 and 3 had a significantly higher rate of successful VBAC compared to those with parity greater than 3. This supports the existing knowledge that women with fewer prior pregnancies are more likely to have a successful VBAC **Impey L et al**.[13] The impact of uterine scars from previous cesarean deliveries might be more pronounced in patients with higher parity, leading to decreased chances of successful VBAC. Interestingly, our study explored the relationship between socioeconomic status and VBAC success. The results did not show a significant association between socioeconomic status (poor, middle, rich) and the likelihood of successful VBAC. This finding contrasts with some previous studies that have suggested potential disparities in VBAC success based on socioeconomic factors **Carter EB et al**[14]**.** However, the lack of significant association in our study could be influenced by various factors, including sample size and local healthcare practices. In our study, the overall

success rate of VBAC was 54.4%, which aligns with the existing **literature.**[15-17] The success rate of VBAC can vary widely based on patient characteristics, obstetric practices, and healthcare facility policies. Our study contributes to the understanding of how age, parity, gestational age, and socioeconomic status collectively influence VBAC success.

LIMITATIONS: It is important to acknowledge the limitations of our study, including its cross sectional nature and potential confounding variables that were not accounted for. Despite these limitations, our findings emphasize the importance of considering multiple factors when counseling patients about the likelihood of successful VBAC. Healthcare providers should tailor their approach based on individual patient characteristics to ensure informed decision-making and optimal maternal and fetal outcomes.

CONCLUSION: Our findings highlight that younger age and lower parity are associated with higher rates of successful VBAC. While gestational age and socioeconomic status did not show significant associations, the overall VBAC success rate of 54.4% underscores the importance of considering these factors when counseling patients. These insights underscore the need for personalized approaches in VBAC decision-making to optimize maternal and fetal outcomes.

ETHICS APPROVAL: The ERC gave ethical review approval

CONSENT TO PARTICIPATE: written and verbal consent was taken from subjects and next of kin

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CONFLICT OF INTEREST: No competing interest declared.

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