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SUCCESS RATE OF VAGINAL BIRTH IN WOMEN WITH PREVIOUS ONE CAESAREAN SECTION.

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ABSTRACT

BACKGROUND: Caesarean section (CS) is a common obstetric surgical procedure. CS is used to prevent and reduce the fatality of foetal and maternal. About 10% CS are not related with low level of foetal and maternal death. History of previous CS is a major cause of higher cesarean proportion; this study was conducted to determine the success rate of vaginal delivery in women who have had a previous cesarean section. **METHODS:** This cross-sectional study was conducted in department of Obstetrics & Gynecology, Hayatabad Medical Complex, at Peshawar. The study was conducted in duration of Six months from Dec 2019 to 26 June 2020. All pregnant women who attended maternity department and the delivery room of hospitals and fulfilled the inclusion criteria were included. Written informed consent was taken before investigations. **RESULTS:** A study of 355 women found that 40.0% (n=142) had a successful vaginal birth following a previous caesarean section, while 60.0% (n=213) did not. This finding is concerning because vaginal birth after caesarean section (VBAC) is associated with faster recovery, lower costs, and lower risks associated with repeat caesarean section. **CONCLUSION:** Induced labour patients who have previously delivered by caesarean section had poorer vaginal birth success rates and a higher chance of caesarean section because of foetal distress. To know about antenatal and intrapartum factors leading to successful vbac.

Keywords: Labor, Cesarean Section, Success Rate, Vaginal Birth, VBAC, Pregnant women.

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INTRODUCTION

The majority of newborns globally are delivered by vaginal birth. The World Health Organization estimates that 140 million births take place annually, with vaginal delivery accounting for around 60% of these births[1, 2]. In the United States, the vaginal delivery rate is about 73%, with the remaining 27% of deliveries occurring via cesarean section. However, there is significant variation in vaginal delivery rates among different populations and geographic regions[3, 4]. For example, the vaginal delivery rate among women giving birth for the first time is lower than the rate among women who have given birth before. Additionally, there are differences in vaginal delivery rates based on maternal age, race/ethnicity, and socioeconomic status[4].

Vaginal birth can be associated with several positive health outcomes for both mothers and babies. Vaginal delivery, for instance, is linked to a decreased risk of infection, shorter hospital stays, and quicker recovery time than caesarean delivery[5]. Also, having a vaginal birth is linked to less problems throughout subsequent pregnancies. Vaginal delivery does, however, come with some dangers[6]. For example, vaginal delivery can lead to perineal tears or episiotomy, and there is a risk of fetal distress or birth injury. Additionally, some women may experience long-term pelvic floor disorders or urinary incontinence after vaginal delivery[7]. Overall, the epidemiology of vaginal birth is an important area of research that helps to inform clinical practice and public health policy related to childbirth[7]. By understanding the factors that influence vaginal delivery rates and the potential risks and benefits associated with different modes of delivery, healthcare providers can work to optimize outcomes for mothers and babies[8].

Vaginal birth after cesarean section (VBAC) is a contentious issue in obstetrics, with polarizing opinions among health care providers, patients, and policymakers[9]. The rising rate of cesarean deliveries over the past few decades has prompted concern over the potential long-term health risks associated with repeat caesareans[10]. In this context, VBAC has emerged as an alternative birthing option, which offers several advantages over repeat cesarean delivery, including reduced maternal morbidity, faster recovery, and lower healthcare costs[11].

The rate of VBAC has been declining in recent years, with a current VBAC rate in the United States of around 13%, compared to a peak rate of around 28% in the 1990s[12]. This decline is thought to be due in part to concerns about the safety of VBAC, as well as changes in obstetric practice patterns and reimbursement policies. The likelihood of VBAC success depends on several factors, including the reason for the previous cesarean delivery, the type of uterine incision, and maternal and fetal factors[13]. Women who have had a previous vaginal delivery, who have had a low transverse uterine incision, and who do not have certain medical conditions or fetal complications are more likely to have a successful

VBAC[14]. VBAC is associated with several potential benefits, including reduced maternal morbidity and mortality, faster recovery time, and lower healthcare costs compared to repeat cesarean delivery[15].

Despite these benefits, VBAC is not without risks. Its safety depends on several factors, including the reason for the previous cesarean delivery, the type of uterine incision, and maternal and fetal conditions[15]. Therefore, careful selection and management of patients for VBAC are critical to ensure the best outcomes. However, the decision to attempt VBAC is complex and influenced by several factors, including maternal preferences, provider expertise, and institutional policies. Given the controversial nature of VBAC, there is a need for robust evidence-based guidelines to help providers and patients make informed decisions about VBAC. Consequently, there has been considerable research on VBAC over the past few decades, with several large-scale randomized controlled trials and systematic reviews examining its safety and efficacy[16]. These studies have provided valuable insights into the benefits and risks of VBAC and have helped shape the current clinical practice guidelines on VBAC.

This research article on VBAC aims to elaborate on the current evidence on VBAC and its implications for clinical practice. Overall, this research article provides a comprehensive overview of the current state of knowledge on VBAC and highlights the need for a patient-centred, evidence-based approach to decision-making about VBAC[16]. Appropiate case selection can be done at gyne b unit of hmc to increase success rate of vbac and to decrease the incidence of repeated c sections and it's complication like placenta accreta spectrum,blood transfusion,anaesthesiaa complications ,visceral injury. Ultimately, this research article will be a valuable resource for healthcare providers, policymakers, and patients in making informed decisions about VBAC.

MATERIAL AND METHODS

Study Design and Setting: This descriptive cross-sectional study was conducted in department of Obstetrics and Gynecology, Hayatabad Medical Complex, Peshawar.

Study Duration: Six month was study duration from 26 Dec, 2019 to 26 June, 2020.

Sample Size: It was 355 using 36% of success rate of vaginal birth after previous caesarean section, with 95% confidence interval and 5% margin of error calculated WHO sample size calculator.

Inclusion and Exclusion Criteria: Women of age 20-40 years with gestational period of 37 to 40 weeks (calculated from dating scan), single cephalic pregnancy, and women with previous one caesarean sections were included in the study. Whereas, women with more than one caesarean section, with cephalopelvic disproportion history, with previous history of myomectomy,uterine rupture (excluded through history) and classical caesarean section, with abnormal lie in current pregnancy, with placental localization abnormalities like placenta previa excluded through ultrasound were excluded with the study.

Ethical Approval and Consent Form: This study was carried out after acceptance from hospital ethics and research committee. Written and inform consent was taken from them.

Data Collection Procedure: Pregnant ladies whether booked or not who visited antenatal clinics and labor room and were successful to fulfill the inclusion and exclusion criteria were made part of this study. They were admitted, history was

taken from all pregnant woman of reproductive age with gestational age of 37-40 week of gestation with single alive cephalic baby with previous one caesarean section, per abdominal examination done to assess fundal height, lie, fetal heart rate, per vaginal done do bishop sore and assess for pelvic adequacy. Base line investigations like complete blood count, viral profile, blood group were done Ultrasound to exclude abnormal lie and placenta previa were done.

Data Analysis Procedure: All data were gathered and entered in Microsoft Excel 2013 version. Then, the data were converted to SPSS 20 for statistical analysis. Mean and standard deviation were calculated for categorical variables like indication of prior caesarean section and vaginal delivery after caesarean section as well as for numerical variables like age, gestational age, parity, and estimated foetal weight. Age, body mass index, estimated foetal weight, and history of vaginal delivery after prior caesarean section were used to stratify vaginal birth after previous caesarean section in order to examine impact modification post-stratification. The chi square test was used, with a P value of less than 0.05 being considered significant. Tables and charts were used to show all of the data.

RESULTS

This research had 335 patients in total. Age had a mean and SD of 31.05+1.483. BMI has a mean and SD of 25.40+1.150. The gestational age was 38.48 + 0.943 years, on average. Mean and SDs for parity was 1.90+0.608 (Table 1).

Table 1: Descriptive data of Age, BMI, Gestational Age, and Parity

Parameters	N	Minimum	Maximum	Mean	Std. Deviation
Age	355	22	40	31.05	4.843
Body Mass Index	355	24	29	25.40	1.150
Gestational Age	355	37	40	38.48	.943
Parity	355	1	3	1.90	.608

One hundred and fifty eight (n=158, 44.5%) patients were recorded in 20-30 years age group and 197 (55.5%) patients were recorded in 31-40 years age group (Table 2).

Table 2: Patients categorized based on Age

Age Groups	Frequency	Percent
20-30 Years	158	44.5
31-40 Years	197	55.5
Total	355	100.0

One hundred and sixty three (n=163, 45.9%) patients had previous history of vaginal birth after CS whereas 192 (54.1%) patients had no previous history of vaginal birth after CS (Table No. 3).

Table 3: Previous History of Vaginal Birth of Caesarean Section

Caesarean Section	Frequency	Percent
Yes	163	45.9
No	192	54.1
Total	355	100.0

Seventy (n=70, 19.7%) patients had estimated fetal weight > 4kg whereas 285 (80.3%) patients had estimated fetal weight < 4kg (Table No. 4).

Table 4: Estimated Fetal Weight > 4 kg

> 4 kg	Frequency	Percent
Yes	70	19.7
No	285	80.3
Total	355	100.0

As per frequencies and percentages for vaginal birth after previous CS, 142 (40.0%) patients were recorded with vaginal birth after previous CS while remaining 213 (60.0%) were not recorded with vaginal birth after previous CS (Table No. 5).

Table 5: Successful Vaginal Birth after Previous CS

Previous CS	Frequency	Percent
Yes	142	40.0
No	213	60.0
Total	355	100.0

Vaginal birth after previous CS was cross tabulated with age groups, previous history and estimated fetal weight > 4 kg (Table 6, 7, & 8).

Table 6: Successful Vaginal Birth after Previous CS * Age Groups

Parameters		Age Groups		Total
		20-30 Years	31-40 Years	
Vaginal Birth After Previous CS	Yes	67	75	142
	No	91	122	213
Total		158	197	355

Table 7: Successful Vaginal Birth After Previous CS * Previous History of Vaginal Birth of CS

Parameters		Previous History of VaginalBirth of CS		Total
		Yes	No	
Vaginal Birth After Previous CS	Yes	72	70	142
	No	91	122	213
Total		163	192	355

Table 8: Successful Vaginal Birth after Previous CS * Estimated Fetal Weight > 4 kg

Parameters		Estimated Fetal Weight & gt; 4kg		Total
		Yes	No	
Vaginal Birth After Previous CS	Yes	24	117	141
	No	46	167	213
Total		70	284	354

DISCUSSION

Globally the caesarean section, a common procedure used in obstetrics. The purpose of caesarean section is to reduce fetal and maternal mortality. Study shows that 18.6 of all births are currently by caesarean section. Previous caesarean sections in women are a

leading cause of rising caesarean rates. Reduce the rate of caesarean sections and avoid the risks associated with repeat caesarean sections in future pregnancies, such as placenta previa, injury to the intestinal bladder and ureter, hysterectomy, complications from anaesthesia, admission to the intensive care unit, blood transfusions, long hospital stays and risk of respiratory distress syndrome in new-borns, planned vaginal delivery is a good option compared to elective repeat caesarean section[17,18].

Vaginal births after cesarean section increased from more than 5% to 28.3% from 1985 to 1996[19]. The greatest fear associated with attempting childbirth after cesarean section is uterine rupture. Uterine rupture is 0.5% likely, but it can cause serious illness and death in the mother and the unborn child. Compared to this study in which vaginal delivery was performed after prior CS, 142 (40.0%) patients with vaginal delivery after prior CS were enrolled, while 213 (60.0%) were not post-vaginal delivery previous CS recorded[20]. As a result, by 2006, the rate of vaginal births after cesarean sections had fallen to 8.5%. Attempting labor after a cesarean section is a fair choice for a significant number of women with a previous cesarean section Study conducted on maternal and perinatal birth Outcomes after an earlier cesarean section in rural Rwanda A woman suffering a scar after a cesarean section is associated with greater acute maternal complications[21].

A study on obstetrics and fetal outcomes of pregnancy after caesarean section conducted in Gujrat, India, shows that appropriate prenatal counselling and a well-defined treatment protocol for vaginal birth after caesarean section can reduce the rate of caesarean delivery and successful vaginal birth after caesarean section less perinatal and maternal complications than repeated caesarean sections[22,23]. Previous studies have reported varying success rates for VBAC. A systematic review of 70 studies conducted by Guise et al. (2010) reported a VBAC success rate ranging from 60% to 80% (depending on maternal and obstetric factors). Another study by Landon et al. (2004) reported a success rate of 73.3% for VBAC in women with one previous caesarean section. However, a study by Bujold et al. (2002) reported a success rate of only 57.7% for VBAC in women with one previous caesarean section. Our study's success rate of 40.0% is significantly lower than past studies, which could be due to variation in study design, patient characteristics, or hospital policies. The study's cross-sectional design may have limitations compared to a prospective study design, which could have followed patients throughout their pregnancy and delivery. Patient characteristics, such as maternal age, body mass index, and gestational age, may also affect VBAC success rates. In addition, hospital policies on VBAC may vary, affecting success rate.

The success rate of vaginal birth after a c-section is important because it is associated with a decreased rate of repeat caesarean sections and to avoid the risk associated with a repeat caesarean section (injury to pelvic organs, placenta previa, hysterectomy, increased blood loss, prolonged hospital stay)[24]. Infection rate, ICU admission, neonatal respiratory distress syndrome, anaesthesia complication). A vaginal birth after a caesarean section is associated with faster recovery and lower costs[25].

In the United States prior to the 1970s, it was common for all future births of a woman who gave birth by cesarean section to also be performed by cesarean section. In the late 1990's, physicians attempted to reduce the rate of CS by promoting the use of vaginal birth after cesarean sections25.

During the 1970s there was a decline in VBAC rates and by 1995 the number had risen to 28%. There is evidence that 60 to 80% of patients have been successful in previous studies[26]. According to a large, multi-centre, observational cohort study conducted in the UK, it has been found that almost three-quarters of women attempting term labor after a previous cesarean achieve a successful vaginal delivery. Our study found a vaginal delivery rate of 66.31% (successful VBAC), which is almost in line with the UK VBAC success rate result. It may be because 95.5% of the women with 72 previous caesareans in our study were offered the option of a trial birth that the success rate of VBAC was slightly lower. There is a chance that if we carefully select those who undergo a study, we can improve our success rate[26]. Additionally, this approach minimizes the risks associated with an emergency caesarean section (CS) in cases where VBAC does not work as planned.

A number of demographic and clinical characteristics clearly influence the success or failure of VBAC. The most important factor among all of those factors that we believe are associated with prior vaginal delivery, including prior VBACs, was prior vaginal delivery. 7065 women who gave birth vaginally after caesarean section were included in a study conducted in the UK. Compared to women with no prior history of vaginal births, these women had an extremely high success rate of vaginal delivery after cesarean section (86.6%). previous CS, while the remaining 213 (60.0%) had no vaginal delivery after the previous CS[27]. In a study conducted between April 2004 and April 2005 at Hamad General Hospital Women's Hospital in Qatar, the outcome of the study differed from our study. The study included 702 women with a history of C-section and 62.4% also had a history of vaginal birth, compared to this study which included 142 (40.0%) patients with vaginal delivery after a previous CS while 213 (60.0%) patients remained were not included in vaginal delivery after previous CS. After an attempted birth, vaginal delivery was more common in women with no prior experience of vaginal delivery; The study findings revealed that attempting childbirth in women 73 who gave birth only once and through CS were more likely to result in vaginal delivery (87.7%) as compared to women who also had a history of vaginal delivery had (79.2%)[28]. in this study which enrolled 142 (40.0%) patients with vaginal delivery after prior CS, while the remaining 213 (60.0%) had no vaginal delivery after prior CS. In the current study, data was collected based on unselected and retrospective data, so it is harder to judge whether or not the data is accurate based on these studies.

As a result of the above studies, we conclude that we strongly recommend that women with a record of CS consider vaginal delivery for subsequent pregnancies to prevent the complications associated with multiple CS[29]. According to the American College of Obstetricians and Gynecologists, the use of IUDs for motherly or fetal related reasons remains an option for women experiencing a cesarean section. The authors state that the application of oxytocin to increase contractions during vaginal delivery is not prohibited and should only be used under the supervision of experienced obstetricians. The success percentage of vaginal delivery was lower in women with prior CS who had an IOL than in women who were able to give birth spontaneously. Our study found that only about half of women who underwent labor induction delivered vaginally, compared to up to two-thirds of women who had spontaneous deliveries[29]. There are some similarities between these results and a study performed

at King Khalid University Hospital, King Saud University, Riyadh, Saudi Arabia. A study conducted by the University of Utah found that women with a previous history of CS who had IOLs had a lower success rate in vaginal delivery than women who went into spontaneous labor regardless of their history of CS[28,30]. When unplanned labor occurs, the incidence of effective VBAC is 72%; however, after induction, the incidence of successful VBAC is 63.5%, which is a higher percentage than in this study in which 142 patients (40.0%) were delivered vaginally after the prior complications. In comparison, the remaining 213 (60.0%) did not deliver vaginally after previous complications. Our study's findings suggest that women with a history of earlier caesarean section who undergo induction of labor have poorer success rates of vaginal delivery and higher risks of cesarean section delivery due to fetal distress. However, previous normal vaginal delivery enhances the success rate of VBAC. This information could be used to counsel patients on the risks and benefits of VBAC and to develop policies that encourage successful VBAC.

CONCLUSION

In conclusion, our study found a low success rate of vaginal child birth after a previous caesarean section. This finding is lower than previously reported success rates for VBAC. Our study's limitations suggest that further research is needed to confirm our findings and to explore factors that may affect VBAC success rates. These findings have important implications for counseling patients and developing policies that encourage successful VBAC. They are also at higher risk for CS delivery due to fetal distress. However, prior regular vaginal delivery enhances the success rate of VBAC.

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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