

## A Retrospective Study to Evaluate Maternal and Fetal Outcomes in Vaginal Birth After Cesarean Section

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### Abstract

**Background:** Primary cesarean section (CS) rates are increased these days. A growing number of women report having had a previous CS. The aim of this study was to determine the factors that influence maternal and fetal outcomes in vaginal birth after Caesarian section. **Methodology:** A retrospective research was performed on 100 postpartum women who gave birth vaginally in SNMMCH, Dhanbad, Jharkhand after a previous Caesarian section from 01/09/19 to 31/03/21. The research enlisted the aid of women who had already undergone one LSCS. With nonrecurrent indications and prior vaginal delivery either before or after caesarian section in all cases, a complete history and abdominal and vaginal examinations are performed shortly after admission to determine the size of the fetus, its location and appearance, membrane status, cervical dilatation, bishop score, and the adequacy of the maternal pelvis. **Results:** 169 women who had previously caesarian section were offered a trial of labor (82.84 %) out of 204 women with previous CSs. 100 women with prior LSCS had healthy vaginal births out of them. After caesarian section, the success rate of vaginal delivery was found to be 59.17%. During the study period, there were 69 LSCS for failed labor trials. In the current research, uterine rupture occurred in 1% of cases. **Conclusion:** If cases are carefully selected, vaginal birth after Caesarian is a healthy option. After a caesarian, vaginal birth should not be attempted for at least two years.

**Keywords:** Vaginal birth, Caesarian section, uterine rupture.

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### Introduction

One of the strategies developed to manage the increasing rate of cesarean sections (CSs) is vaginal birth after cesarean section (VBAC). In a fully equipped hospital, it is a trial of vaginal delivery in selected cases of a previous CS. Cragin coined the phrase "once a caesarian section, always a caesarian section" in 1916. Pregnant women who had prior cesarean section have two choices for delivery: vaginal birth after cesarean (VBAC) or elective repeat CS. The success rate of VBAC varies in different studies. For example, a study in the United States (33,560 women) found that women seeking a vaginal birth after a previous CS had a success rate of about 73 % [1-3]. When compared to CS, the VBAC segment has less complications and a quicker recovery. There is conflicting evidence about the protection of induction of labor (IOL) in women who have had a prior single lower segment CS (LSCS). The most serious consequence of a failed VBAC trial is emergency CS [3,4].

It is reported that 60 - 80 % of women who had a c-section can deliver vaginally. If the fetal heart rate drops or labor does not progress, the risk of CS should be considered. As a result, VBAC should only be done in properly equipped hospitals under the supervision of an obstetrician. The majority of women are either unaware of the risk of VBAC or are afflicted by worries and anxieties concerning maternal and neonatal complications. As a result, perinatal education can address this issue [3-5].

Higher amount of blood loss, more chances of bladder and ureteral injuries, postpartum infections, pulmonary embolisms, and neonatal

respiratory problems are all linked to CSs. Furthermore, because of irregular placental adherence and cesarean hysterectomy, multiple repeat CSs may increase the risk of maternal morbidity and mortality, which increases with each subsequent CS. Complications like these are difficult to deal with and may have serious effects, like maternal death [2-6]. Our practice is to advise women with one CS about the risk and benefit of VBAC in order to reduce the increasing CS incidence and its complications. This new trend also caters to our area's large family size. The risk of cesarean scar rupture in subsequent pregnancies is extremely low with today's techniques and skill. The uterine scar's resilience and ability to endure the stress of subsequent pregnancy and labor cannot be fully measured or assured ahead of time. During delivery, a senior obstetrician must evaluate and supervise these cases. If a woman wants to have more children, VBAC is a good option. Other benefits of VBAC include a lower infection rate, a shorter hospital stay, and so on. The most common complication of VBAC is uterine rupture (which occurs in less than 1% of cases) and damage to other abdominal pelvic organs. Women who have had a prior transverse incision should have a VBAC [4-8].

The aim of this study was to assess the maternal and fetal outcomes of vaginal birth following Caesarian section.

### Methodology

A retrospective research was performed from 1/09/2019 to 31/03/2021 on 100 postpartum women who gave birth vaginally in SNMMCH, Dhanbad, Jharkhand after a previous Caesarian section. The research enlisted the aid of women who had already undergone one LSCS. Maternal age, gestational age, parity, gravidity, indication of IOL, form of membrane rupture (natural vs. artificial), use of syntocinone, and mode of delivery (spontaneous vaginal delivery, outlet forceps delivery, CS for failure to progress or fetal distress) were all taken from patients' case notes. Maternal age was specified as the number of completed years at the time of delivery; women aged 20 to 45 years were included. Parity was described as the

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number of previous births with a gestational age greater than 20 weeks or a birth weight greater than 500 grams at delivery. The last menstrual cycle and/or a regular ultrasound test before the completion of 20 gestational weeks were used to calculate the gestational era. Patients who had two or more Caesarean sections, a non-vertex presentation, a classic Caesarean section, or a twin pregnancy were removed from the study. In all cases, a complete history and abdominal and vaginal examinations are performed shortly after admission to determine the size of the fetus, its location and appearance, cervical dilatation, membrane status, bishop score, and the adequacy of the maternal pelvis. The estimated fetal weight, placental location, and amniotic fluid volume were all determined

through ultrasound analysis of the fetus. The results were statistically analyzed using SPSS software 23.0, with a statistically significant difference identified as P 0.05.

**Results**

169 women who had previously caesarian section were offered a trial of labor (82.84 %) out of 204 women with previous CSs. 100 women with prior LSCS had healthy vaginal births out of them. After caesariansection, the success rate of vaginal delivery was found to be 59.17%. During the study period, there were 69 LSCS for failed labortrials. In the current research, uterine rupture occurred in 1% of cases.

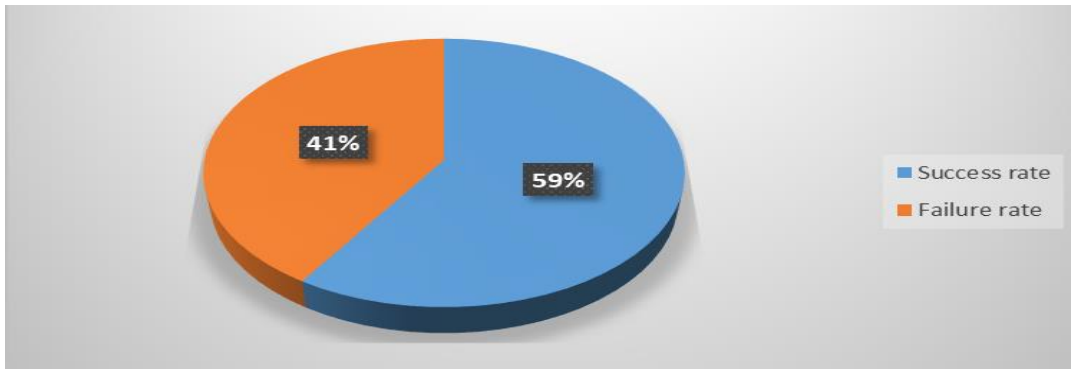


Fig 1: Pie chart showing success and failure rate of vaginal birth after caesarean section

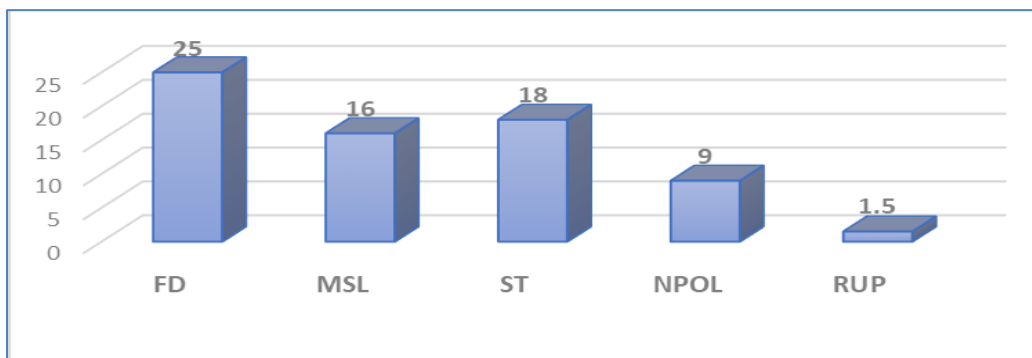


Fig 2: Indication of repeat caesarean section

Table 1: Parameters related to previous pregnancy

1.	Recurring Indication	9%
2.	< 2yrs from previous CS	15%
3.	Previous vaginal delivery	32%

Table 2: Parameter related to current pregnancy

1.	Induction of labour	15%
2.	Post-dated pregnancy	21%
3.	Fetal weight > 3 kg	25%

Table 3: Maternal outcome

1.	Instrumental delivery	1%
2.	Postpartum Haemorrhage	1%
3.	Uterine Rupture	1%

Table 4: Fetal outcome

1.	Meconium stained liquor	8%
2.	Neonatal Nursery admission	2%
3.	Fresh still birth	0%

**Table 5: Various variables studied**

S No	Variable Studied	p-Value
1.	Rupture uterus & short interdelivery interval.	<0.05
2.	Postdated pregnancy and Meconium stained liquor.	<0.05
3.	Induction of labour, Previous vaginal delivery or Postdated pregnancy and rupture uterus.	NS

### Discussion

Due to the substantial increase in the occurrence of primary CS for different reasons, a growing number of pregnant women seeking antenatal treatment report having had a previous CS. Due to the possibility of a scar rupture, these women are in a high-risk category. In these cases, the obstetrician is often confused between which mode of delivery to use. When making the decision, it is important to assess each case individually in order to determine the likelihood of a good VBAC. The control of subsequent childbirth once the patient has a scar on the uterus is an obstetrician's never-ending problem. For such cases, some recommend elective CS, while others recommend a labor trial. Many people want the middle ground, which is case individualization. The quality of the uterine scar is by far the most significant issue for the attendant in subsequent labor. Uterine rupture has the ability to hurt both the pregnant woman and her unborn child. This is the most significant risk to be aware of, but the benefits of vaginal delivery far outweigh the risks associated with a repeat CS[2-7]. According to previous researches, success rates have ranged from 60% - 80%. The success rate of vaginal birth after Caesarian Section was found to be 59.17 % in this study (Graph 1). This is similar to Melamed's findings, which showed a 61 % success rate for VBAC. This low rate may be due to previous CS causes; however, it appears that VBAC is more difficult, if not impossible, in cases where there has been a lack of improvement in the past. The most common reasons for VBAC failure were a lack of improvement (71%), as well as fetal distress (29 %). Melamed discovered that a lack of improvement is linked to a failed VBA. Knight's success rate was 63 %, with the lower rate due to higher birth weight[8]. In the present study, uterine rupture occurred in 1% of cases (Table 3), while in another study mentioned by Ramirez, uterine rupture occurred in 2.4% of cases, with the majority of cases occurring after induction[9]. It seems that carefully choosing women for VBAC is important, and that the likelihood of life-threatening complications can be reduced by using suitable parameters (such as not using induction for delivery, a previous transverse incision, and keeping track of the time since the previous CS). According to some research, a 18-month gap between previous CS and VBAC is appropriate. Bangal discovered that uterine rupture occurred in women who attempted a VBAC within two years of a previous Csection[10]. When compared to women who presented in spontaneous labour, women with one prior CS who undergo IOL have lower vaginal delivery success rates. In the current analysis, 15% of the cases had a previous C.S. <2 year and 32% had a previous vaginal delivery. We also discovered that the induced group had a higher CS rate than the spontaneous onset group. In the setting of a trial of labor after caesarean delivery in the second stage with a fetal station of at least +2, Son et al[11] found that attempted operative vaginal delivery resulted in a VBAC in the majority of women and was not associated with increased adverse maternal and neonatal outcomes, but was associated with a lower frequency of endometritis as compared to repeat caesarean delivery. Based on the findings of the previous research, we recommend that women who have had a CS seek

vaginal delivery for subsequent pregnancies to prevent the risks of multiple repeat CSs.

### Conclusion

If cases are carefully selected, vaginal birth after Caesarian is a healthy option. After a caesarian, vaginal birth should not be attempted for at least two years.

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