Outcome of Vaginal Birth after Cesarean Section: A Prospective Study

Prama Ray¹, Ankan Mondal², Pramatha Kumar Ray³

¹Post Graduate Student, Department of Obstetrics and Gynaecology, Katihar Medical College Hospital, Katihar, Bihar, India,
²Clinical Tutor, Department of General Surgery, Medical College Kolkata, Kolkata, West Bengal, India,
³Senior Consultant, Department of Obstetrics and Gynaecology, Krishnanagar District Hospital, Krishnanagar, West Bengal, India

Abstract

Introduction: Cesarean section has been a part of human culture since ancient times, and there are tales in both Western and Eastern cultures of this procedure resulting in live mothers and offsprings. Numerous references to cesarean section appear in ancient Hindu Egyptians, Grecians, Romans, and other European folklore.¹³ In past 20 years, the rate of C/S has steadily increased from about 5% to more than 20%. The policy once a cesarean always a cesarean is no longer tenable. A planned vaginal birth after a previous C/S should be recommended for women whose first C/S was by lower segment transverse incision and who have no other indication for C/S in the present pregnancy.¹⁸ There is a definite risk of uterine rupture in vaginal birth after cesarean delivery (VBAC) often leading to catastrophes which can be avoided by rapid diagnosis and prompt intervention. Evidence confirming the safety of VBAC within proper guidelines has been available for more than 10 years. However, wide variations in VBAC rates still exist between hospitals and physicians.⁹¹⁴ The present study was undertaken to reascertain these facts with the hope that more women will be encouraged to avoid an unnecessary repeat cesarean section by opting for vaginal delivery (VD). VBAC offers distinct advantages over a repeat cesarean section since the operative morbidity, and mortality are

INTRODUCTION

Cesarean section has been a part of human culture since ancient times, and there are tales in both Western and Eastern cultures of this procedure resulting in live mothers and offsprings. Numerous references to cesarean section appear in ancient Hindu Egyptians, Grecians, Romans, and other European folklore.¹³ In past 20 years, the rate of C/S has steadily increased from about 5% to more than 20%. The policy once a cesarean always a cesarean is no longer tenable. A planned vaginal birth after a previous C/S should be recommended for women whose first C/S was by lower segment transverse incision and who have no other indication for C/S in the present pregnancy.¹⁸ There is a definite risk of uterine rupture in vaginal birth after cesarean delivery (VBAC) often leading to catastrophes which can be avoided by rapid diagnosis and prompt intervention. Evidence confirming the safety of VBAC within proper guidelines has been available for more than 10 years. However, wide variations in VBAC rates still exist between hospitals and physicians.⁹¹⁴ The present study was undertaken to reascertain these facts with the hope that more women will be encouraged to avoid an unnecessary repeat cesarean section by opting for vaginal delivery (VD). VBAC offers distinct advantages over a repeat cesarean section since the operative morbidity, and mortality are
completely eliminated, the hospital stay is much shorter, and expenses involved are much less. The rate of cesarean section needs to be reduced, and this can be achieved to a small extent by avoiding primary cesarean sections done without explicit indications and more importantly by resorting to a trial of VD after previous cesarean section which is safe for the fetus.\textsuperscript{15-18} The purpose of this study was to evaluate the efficacy and safety of VBAC.

**MATERIALS AND METHODS**

A prospective study was carried out on 100 women with one previous lower segment cesarean section (LSCS) for a nonrecurrent cause, from 1\textsuperscript{st} January 2015 to 31\textsuperscript{st} December 2015. All the cases were booked in the antenatal clinic and were regularly reporting for check-up. The following cases were excluded from the study:

1. Associated medical disorder such as anemia (hemoglobin <10 g %), pregnancy-induced hypertension, diabetes, heart disease, and renal disease
2. Estimated fetal weight >3.5 kg
3. Breech presentation
4. History of postoperative wound infection following the previous LSCS
5. Details of the previous cesarean operation not available
6. Contraindications to VD such as cephalopelvic disproportion, major degree placenta praevia, and transverse lie
7. Postdated pregnancy with an unfavorable cervix.

All women were admitted if they went into spontaneous labor. Those who failed to go into labor on their own were induced after completion of 40 weeks. Induction was started in the morning with 5 units of oxytocin in 500 ml of ringer lactate and increased gradually from 6 mIU/min to a maximum of 20 mIU/min with the aim of getting 3-4 uterine contractions every 10 min each lasting 40-45 s. Whether the labor was spontaneous or induced, it was monitored with,

1. Hourly recording of vital parameters - temperature, pulse, respiration, and blood pressure,
2. Continuous electronic fetal monitoring by cardiotocography,
3. Monitoring of uterine contractions,
4. Partograph,
5. A close watch for the early recognition of scar dehiscence by identifying maternal tachycardia in the absence of fever, vaginal bleeding, scar tenderness, and fetal heart rate alterations.

An attempt at VD was abandoned if there was any suspicion of scar dehiscence or sign of fetal distress or unsatisfactory progress of labor. Vacuum extraction was used to cut short the second stage.

**RESULTS**

Out of the total of 100 women, 5 went into preterm labor, 20 went into spontaneous labor between 37 and 39 weeks. Three women had to be induced since they did not go into spontaneous labor till 40 weeks. The demographic profile of the women is given in Table 1. It has been observed that women belonging to 20-30 age groups had maximum successful VD as shown in Table 2, indication for the previous cesarean section, fetal distress was the most common cause.

Table 3 shows the mode of delivery among the 28 patients who underwent a trial of labor. 13 amongst 28 needed emergency repeat C/S, 9 patients had spontaneous, unassisted VD, 6 patients needed vacuum extraction to cut short the second stage of labor.

Table 4 shows the indications of emergency repeat cesarean section after failed trial. It shows that scar tenderness was the most common cause followed by fetal distress.

Table 5 shows the comparison of maternal complications in vaginally delivered group and repeat cesarean group. It can be seen that postnatal complications such as puerperal pyrexia, blood transfusion, operative bladder injury, and pulmonary edema were more common in repeat cesarean group. One case of cervical tear occurred with ventouse extraction. Scar dehiscence was noticed in a case taken up for emergency LSCS due to scar tenderness. One case of primary atonic postpartum hemorrhage was managed with

![Table 1: Demographic profile (n=100)](image)

![Table 2: Indication for previous cesarean section, fetal distress was the most common cause](image)

**PIH:** Pregnancy-induced hypertension
intravenous fluids, uterine massage, methergine injections, and misoprostol.

Table 6 compares the neonatal complications in vaginal deliveries and repeat cesarean group. Some neonatal complications such as birth asphyxia, neonatal infection were more in repeat cesarean section than in vaginally delivered group.

**DISCUSSION**

It is generally accepted that VD is associated with lower maternal morbidity and mortality as against cesarean section. The morbidity associated with successful vaginal birth is about one-fifth that of elective cesarean. Perinatal risk is more after a failed trial of labor compared to elective repeated cesarean section without labor. Failed trials of labor, with the subsequent cesarean section, involve almost twice the morbidity of the elective section. The information is important for counseling women about their choices of delivery after a previous cesarean section. The adverse events include chorioamnionitis, postpartum endometritis, and uterine rupture requiring hysterectomy, blood transfusion, perinatal and neonatal deaths, and neonatal neurological impairment. Many of these adverse events seen in trial of scar are attributable to the failure of labor and the requirement for a repeated emergency cesarean section. However, in this study, there were fewer complications noted in those who underwent VBAC then elective or emergency repeat C/S. This study represents our observations for 1 year. The selection of women for VBAC is mainly influenced by woman’s desire and conditions favorable for VD. The objective of this study was to evaluate the success rate and safety of attempted VBAC, in a tertiary care setting, after one previous cesarean delivery. In general, our institution offers a conservative approach both in the selection of women and in the management of their labor. In general, speaking women belonging to higher socioeconomic status were either not keen for VBAC or opted out of the study. Further, women with an unfavorable cervix who had gone beyond their due date and had to be induced with prostaglandin E2 gel combined with oxytocin were abandoned from the study. In the present study, suitable women were selected for VBAC during early pregnancy after a thorough assessment, and adhering to strict inclusion and exclusion criteria as mentioned earlier. Of the 100 women, 15 (15%) delivered vaginally and 85 (85%) had to be taken up for emergency LSCS for various indications as given in (Table 4). All the six women who had one previous VD delivered vaginally and 85 (85%) had to be taken up for emergency LSCS for various indications as given in (Table 4). All the six women who had one previous VD delivered vaginally in the present study. This is in line with the fact that the history of a previous normal VD is the single most important predictor for a successful VBAC. Farmer and Turner have highlighted that caution is to be exercised in inducing labor in these patients because of the relatively higher risk of scar dehiscence and rupture associated with induction. Induction was withheld till 41 weeks in our study for this reason. No case of scar dehiscence occurred.
in any of the 3 cases who underwent induction under close supervision. The maternal complications and perinatal morbidity in the present study are identical to those seen with other normal vaginal deliveries with the exception of scar dehiscence in one case (6.66%). The study shows the high success of VBAC and the fewer complications. Many women in the study were multiparous with a prior vaginal birth. Prior vaginal birth is a good predictor for the outcome of VBAC. An attempt for VBAC is well justified for post-caesarean pregnancies with nonrecurrent indications. Screening for this should preferably begin at antenatal booking itself to minimize the associated risks. Proper selection, appropriate timing and suitable methods of induction with close supervision by competent staff are the key factors to achieve greater degree of success.²²-²⁵

CONCLUSION

VBAC should be considered in cases of previous one cesarean delivery for nonrecurrent indication.

REFERENCES

9. Wing DA, Paul RH. Vaginal birth after cesarean section