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Original Article

Outcome of Vaginal Birth after Cesarean Section: A Prospective Study

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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 off springs.

Objectives: The study, conducted in Katihar Medical College Hospital, Katihar, Bihar, describes the outcome of vaginal birth after cesarean section (VBAC).

Materials and Methods: (1) A prospective study was carried out from 1st January 2015 to 31st December 2015 on 100 women with one prior lower segment cesarean section (LSCS) for a nonrecurrent cause. (2) Exclusion criteria: All unbooked women and those with estimated fetal weight >3.5 kg, history of postoperative wound infection in previous LSCS, or any medical illness complicating pregnancy, cephalopelvic disproportion, abnormal presentation, and placenta praevia. (3) Spontaneous onset of labor was awaited up to 40 weeks. Induction of labor - only in highly selected cases.

Results: Out of the 100 women, 72 underwent elective repeat cesarean section (C/S), 28 patients (28%) underwent a trial of labor, among them, 15 had successful vaginal delivery (53.57), but 13 patients failed the attempt and had to undergo emergency C/S. To assist in the 2nd stage of labor, 6 had ventouse application. In total, 85 cases needed repeat C/S. Among the vaginal delivered cases, one had scar dehiscence (6.6%), one cervical tear (6.6%), two cases of manual removal of placenta (13.3%), one postpartum hemorrhage (6.6), and one case of puerperal pyrexia (6.6). Perinatal morbidity was comparable with the elective repeat C/S group.

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

Key words: Previous cesarean delivery, Vaginal birth after cesarean delivery, Post cesarean normal delivery

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 off springs. Numerous references to cesarean section appear in ancient Hindu Egyptians, Grecians, Romans, and other European folklore.[1-3] 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.[4-8] 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.[9-14] 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

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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.[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 1st January 2015 to 31st 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 cardiotocogrpahy,
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)

Maternal age	Number of cases	Successful VD	Emergency repeat C/S	Elective repeat C/S
<20	8	2	2	7
20-30	67	10	9	5o
30-35	16	2	1	10
35-40	9	1	1	5
Total	100	15	13	72

VD: Vaginal delivery

Table 2: Indication for previous cesarean section, fetal distress was the most common cause

Indication for previous cesarean delivery	Number (%)
Fetal distress	64 (64)
Dystocia	20 (20)
Breech	4 (4)
Transverse lie	1 (1)
Placenta praevia	3 (3)
Abruptio placenta	1 (1)
Elderly primi	2 (2)
Severe PIH	4 (4)
Cord prolapse	1 (1)

PIH: Pregnancy-induced hypertension

Table 3: Mode of delivery in patients who underwent trial of labor (*n*=28)

Mode of delivery	Number (%)
Spontaneous and unassisted	9 (32.14)
Vacuum extraction	6 (21.42)
Forceps delivery	0 (0)
Emergency repeat C/S	13 (46.43)

Table 4: Indications for emergency repeat cesarean section after failed trial (*n*=13)

Parameter	Number (%)
In vaginally delivered group (*n*=15)	
Scar dehiscence after delivery followed by hysterectomy	1 (6.66)
Puerperal pyrexia	1 (6.66)
Cervical tear	1 (6.66)
Manual removal of placenta	2 (13)
Primary atonic postpartum hemorrhage	1 (6.6)
In repeat cesarean group (*n*=85)	
Wound infection requiring secondary suture	7 (8.23)
Puerperal pyrexia	4 (4.7)
Blood transfusion required	8 (9.41)
Operative bladder injury	1 (1.17)
Spinal headache	1 (1.17)
Pulmonary edema	01 (1.17)

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 labour.[19-21] 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

Table 5: Compares the maternal complication in vaginally delivered group (*n*=15) and repeat cesarean group (*n*=85)

Parameter	Number (%)
Fetal distress	4 (30.76)
Scar tenderness	6 (46.15)
Failed progress of labor	2 (15.38)
Cervical dystocia	1 (7.6)

Table 6: Neonatal complications in vaginal deliveries (*n*=15) and repeat cesarean group (*n*=85)

Parameter	Number (%)
In vaginally delivered group	
Stillbirth	1 (6.66)
Birth asphyxia	1 (6.66)
Neonatal septicemia	2 (13.33)
Neonatal jaundice	2 (13.33)
Neonatal complications in repeat cesarean group	
Stillbirth	1 (1.17)
Neonatal death	1 (1.17)
Birth asphyxia	5 (5.88)
Neonatal jaundice	5 (5.88)
Neonatal infection	4 (4.7)

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 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[8] and Turner[9] 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.[10,20,21] 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-cesarean 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.

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