Original Article

The Outcome of Vaginal Birth After Caesarean Section (VBAC): A Descriptive Study

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Abstract

The study, conducted in the tertiary care hospital of Dhaka Bangladesh, describes the outcome of vaginal birth after caesarean section (VBAC) in women with a previous caesarean.

A prospective study was carried out from 1st January 2007 to 31st December, 2007 on 126 women with one prior lower segment cesarean section (LSCS) for a nonrecurrent cause. All unbooked women and those with estimated fetal weight more than 3.5 kg, breech presentation, history of postoperative wound infection after previous LSCS, anemia (Hb < 10 gm%), pregnancy induced hypertension, diabetes, heart disease, renal disease, cephalopevic disproportion abnormal presentation and placenta praevia were excluded from the study. An informed consent was taken for allowing a trial of vaginal delivery. Spontaneous onset of labor was awaited up to 41 weeks. Induction of labor was considered only in highly selected cases. Labor was constantly supervised by competent staff and meticulously monitored by cardiotocography (CTG).

Out of the 126 women enrolled for the study, 26 had to leave the station leaving a total of 100 patients; 72 patients underwent elective repeat C/S, 28 patients (28%) of these underwent trial of labour, among them 15 had successful vaginal delivery (53.57) but 13 patients failed the attempt and had to undergo emergency caesarean section. To assist in the 2nd stage of labour, 6 had ventouse application. In total 85 cases needed repeat caesarean section. Among the cases there was one case of scar dehiscence (6.6%), one case of cervical tear (6.6%), two cases of manual removal of placenta (13.3%), one case of post partum hemorrhage (6.6) and one case of puerperal pyrexia (6.6).Perinatal morbidity was comparable with the elective repeat C/S group.

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

Key words: vaginal birth after cesarean delivery, previous cesarean delivery.

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Introduction

Caesarean 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 caesarean section appear in ancient Hindu Egyptians, Greecians, Romans and other European folklore[1]. In past 20 years, the rate of C/S has steadily increased from about 5% to more than 20%[25]. The policy- once a caesarean always a caesarean 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 present pregnancy[22,23,26].

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[11, 12,13,15]. However, wide variations in VBAC rates still exist between hospitals and physicians. 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. 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[14,16,17,24]. 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 vaginal delivery after previous cesarean section which is safe for the fetus[2-5]. The purpose of this study was to evaluate the efficacy and safety of VBAC.

Materials & 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, 2007 to 31st December 2007. 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 like anemia (Hb<10gm %), 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 previous LSCS
5. Details of the previous cesarean operation not available
6. Contraindications to vaginal delivery like cephalopelvic disproportion, major degree placenta praevia, and transverse lie.
7. Postdated pregnancy with 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 41 weeks. Induction was started in the morning with 5 units of oxytocin in 500 ml of 5% glucose and increased gradually from 6 mIU/minute to a maximum of 36 mIU/minute with the aim of getting 3-4 uterine contractions every 10 minutes each lasting 40-45 seconds. 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 absence of fever, vaginal bleeding, scar tenderness, and fetal heart rate alterations.

Attempt at vaginal delivery 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 126 women recruited for the study, 26 dropped out. Of the remaining 100 women 5 went into preterm labor, 20 went into spontaneous labor between 37 and 40 weeks. Three women had to be induced since they did not go into spontaneous labor till 41 weeks. Demographic profile of the women is given in Table 1. It has been observed that women belonging to 20-30 age group had maximum successful vaginal delivery as shown in Table 2, indication for previous caesarean section, fetal distress was the commonest cause.

Table 1. Demographic profile (n=100).

Maternal age	No of cases	Successful VD	Emergency repeat C/S	Elective Repeat C/S
<20	8	2	2	7
20-30	67	10	9	50
30-35	16	2	1	10
35-40	9	1	1	5
Total	100	15	13	72

Table 2: indication for previous caesarean section, fetal distress was the commonest cause.

Indication for previous caesarean delivery

	No	Percentage
Fetal distress	64	64%
Dystocia	20	20%
Breech	4	4%
Transverse lie	01	1%
Placenta praevia	03	3%
Abruptio placenta	1	1%
Elderly primi	2	2%
Severe pregnancy induced hypertension	4	4%
Cord Prolapse	01	1%

Table 3 shows the mode of delivery among the 28 patients who underwent trial of labour.13 amongst 28 needed emergency repeat c/s, 9 patients had spontaneous, unassisted vaginal delivery, 6 patients needed vacuum extraction to cut short the second stage of labour.

Table 3. Mode of delivery in patients who underwent trial of labour (n=28).

Mode of delivery	Number	Percentage
Spontaneous and unassisted	9	32.14%
Vacuum extraction	6	21.42
Forceps delivery	0	0
Emergency repeat C/S	13	46.428%

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

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

Parameter	Number	Percentage
Fetal distress	4	30.76%
Scar tenderness	6	46.15%
Failed progress of labour	2	15.38%
Cervical dystocia	01	7.6%%

Table 5 shows the comparison of maternal complications in vaginally delivered group and repeat caesarean group. It can be seen that postnatal complications like puerperal pyrexia, blood transfusion, operative bladder injury and pulmonary edema were more common in repeat caesarean 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 intravenous fluids, uterine massage, methergin injection, and misoprostol.

Table 5. Maternal complications in vaginally delivered group and in repeat caesarean group

In vaginally delivered group(n=15)-

Parameter	Number	Percentage
Scar dehiscence after delivery followed by hysterectomy	01	6.66%
Puerperal pyrexia	01	6.66%
Cervical tear	1	6.66%
Manual removal of placenta	02	13%
Primary atonic post partum haemorrage	01	6.6%
In repeat caesarean 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	1	1.17%

Table 6 compares the neonatal complications in vaginal deliveries and repeat caesarean group. Some neonatal complications like birth asphyxia, neonatal infection were more in repeat caesarean section then in vaginally delivered group

Table 6. Neonatal complications in vaginal deliveries (n=15) and repeat caesarean group (n=85)
In vaginally delivered group

Parameters	Number	Percentage
Stillbirth	1	6.6%
Birth asphyxia	01	6.66%
Neonatal septicaemia	02	13.33%
Neonatal jaundice	02	13.33%
Noenatal complications in repeat caesarean 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%

Discussion

It is generally accepted that vaginal delivery is associated with lower maternal morbidity and mortality as against caesarean section. The morbidity associated with successful vaginal birth is about one-fifth that of elective caesarean. Perinatal risk is more after a failed trial of labour compared to elective repeated caesarean section without labour [18,19]. Failed trials of labour, with subsequent caesarean section involve almost twice the morbidity of elective section. The information is important for counseling women about their choices of delivery after a previous caesarean 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 labour and the requirement for a repeated emergency caesarean 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 a period of 1 year. The selection of women for VBAC is mainly influenced by woman's desire and conditions favorable for vaginal delivery. 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. Generally speaking women belonging to higher socioeconomic status were either not keen for VBAC or opted out of the study. Further, women with unfavourable cervix who had gone beyond their due date and had to be induced with PGE2 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 vaginal delivery, delivered vaginally in the present study. This is in line with the fact that the history of a previous normal vaginal delivery is the single most important predictor for a successful VBAC[6,7] 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 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.

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