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ORIGINAL ARTICLE

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Vaginal birth after caesarean delivery

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OBJECTIVE(S) : To study the efficacy and safety of attempted vaginal birth after a cesarean delivery (VBAC).

METHOD(S) : A prospective study was carried out from 1st January 2001 to 31st December, 2003 on 263 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 hypertention, diabetes, heart disease, renal disease, cephalopevic disproportion abnormal presentation and placenta previa 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).

RESULTS : Out of the 263 women enrolled for the study, 15 had to leave the station and 11 aborted leaving a total of 237 patients; 171 (72.1%) of these delivered vaginally while 66 (27.9%) required emergency cesarean section. There was one case of scar dehiscence (0.5%), three cases of cervical tear (1.5%) and one case of second degree perineal tear (0.5%). The perinatal morbidity was comparable to that for other normal vaginal deliveries.

CONCLUSION(S) : VBAC should be considered in cases of previous one cesarean delivery for nonrecurrent indication.

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

Introduction

Practicing obstetricians encounter increasing number of postcesarean pregnancies because the number of primary cesarean sections for nonrecurrent causes is rapidly rising. There is a growing concern by the obstetrician managing these cases since there are medical as well as legal problems involved. All postcesarean pregnancies do not require repeat cesarean section and a majority of them may have uncomplicated vaginal delivery [1].

There is a definite risk of uterine rupture in vaginal birth after cesarean delivery (VBAC) often leading to catastrophies 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. The present study was undertaken to re-ascertain 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. 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 [2-4].

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The purpose of this study was to evaluate the efficacy and safety of VBAC.

Methods

A prospective study was carried out on 263 women with one previous lower segment cesarean section (LSCS) for a nonrecurrent cause, from 1st January, 2001 to 31st December 2003. 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. Unbooked cases
2. Estimated fetal weight > 3.5 kg
3. Breech presentation
4. History of postoperative wound infection following previous LSCS
5. Associated anemia (Hb<10gm%), pregnancy induced hypertention, diabetes, heart disease and renal disease
6. Details of the previous cesarean operation not available
7. Contraindications to vaginal delivery like cephalopelvic disproportion, major degree placenta previa, and transverse lie.

All women were admitted a week prior to their due date or earlier if they went into spontaneous labor before that time. Those who failed to go into labor on their own were induced after completion of 41 weeks. In cases with unfavourable cervix, 0.5 mg of PGE_2 gel was instilled in the cervical canal on the night prior to the day of induction. Induction was started in the morning with 5 units of oxytocin in 500 mL of 5% glucose through an infusion pump 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 dehisence or sign of fetal distress or unsatisfactory progress of labor. Vacuum extraction or forceps delivery was used to cut short the second stage.

Results

Out of the total of 263 women recruited for the study, 15 droped out on account of their leaving the town and 11 aborted, nine in the first trimester and two in the second. Of the remaining 237 women 27 went into preterm labor and 162 went into spontaneous labor between 37 and 40 weeks. Forty-eight 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. As shown in Table 2, 21 women delivered spontaneously. All of them had easy deliveries not needing vacuum extraction or forceps application.

Table 1. Demographic profile (n=237).

Parameters	Number
Age (years)	
21 – 25	76 (29.5%)
26 – 30	105 (40.0%)
31 – 35	60 (23.8%)
>35	22 (6.7%)
Period of gestation (weeks)	
28 – 37 weeks	27 (11.4%)
37 – 41 weeks	162 (68.4%)
> 41 weeks	48 (20.2%)
Indication for previous cesarean delivery	
Fetal distress	99 (41.7%)
Dystocia	81 (34%)
Breech	33 (13.9%)
Transverse lie	03 (1.3%)
Placenta previa	03 (1.3%)
Abruptio placenta	03 (1.3%)
Elderly primi	06 (2.6%)
Severe pregnancy induced hypertension	06 (2.6%)
Cord proapse	03 (1.3%)

Table 2. Mode of delivery (n=237).

Mode of delivery	Number
Spontaneous	21 (8.8%)
Vacuum extraction	114 (48.1%)
Forceps delivery	36 (15.2%)
Emergency repeat cesarean	66 (27.8%)

Sixty-six women needed emergency LSCS, indications for which are given in Table 3. The commonest indication was fetal distress.

Table 3. Indications for emergency repeat cesarean section (n=66).

Indications	Number	
Fetal distress	33	(50.0%)
Scar tenderness	15	(22.7%)
Failed progress of labor	09	(13.7%)
Cord prolapse	03	(4.5%)
Abruptio placenta	06	(9.1%)

Maternal complications and neonatal outcome are shown in Tables 4 and 5 respectively. Two of the three cases of cervical tears occurred with forceps delivery and the remaining one during spontaneous delivery. Second degree perineal tear occurred in one case during vacuum extraction. All the six cases with abruption were taken up for emergency LSCS. 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, injection methergin, and injection 15 methyl PGF 2 α.

Table 4. Maternal complications in vaginal deliveries (n=171).

Complications	Number	
Placental abruption	06	(3%)
Scar dehiscence	01	(0.5%)
Cervical tear	03	(1.5%)
Second degree perineal tear	01	(0.5%)
Primary atonic postpartum hemorrhage	01	(0.5%)

Table 5. Neonatal complications in vaginal deliveries (n=171).

Complications	Number	
Prematurity	27	(15.7%)
Asphyxia neonatorum	03	(1.7%)
Neonatal septicemia	03	(1.7%)
Intracranial hemorrhage	03	(1.7%)

Discussion

This study represents our observations over a period of 3 years. 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.

As a general philosophy, our institution offers a trial of labor to women with history of one previous cesarean delivery. A conservative approach is taken 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 PGE_2 gel combined with oxytocin, were often taken up for emergency cesarean section either for nonprogress of labor, impending fetal distress, or scar dehiscence.

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 237 women, 171 (72.1%) delivered vaginally and 66 (27.9%) had to be taken up for emergency LSCS for various indications as given in (Table 3).

Wing and Paul [5] stated that success of VBAC varies with the indications of primary cesarean section and reported 91%, 84% and 77% success when the previous LSCS was for breech presentation, fetal distress, and dystocia respectively. This is comparable to our success rate of 30 out of 33 (91%) for breech, 87 out of 99 (88%) for fetal distress and 57 out of 81 (70%) for dystocia as indications of previous cesarean section. 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 et al [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. Induction was withheld till 41 weeks in our study for this reason. No case of scar dehiscence occurred in any of the 48 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 (0.5%). Farmer et al [8] give 0.7% incidence of scar dehiscence.

Conclusion

An attempt for VBAC is well justified for postcesarean 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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