

Original research article

Fetomaternal Outcome in Previous Caesarean Pregnancy in A Rural Based Tertiary Care Hospital

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Abstract

Background: A rise in the proportion of pregnant women who have had past caesarean deliveries is a result of rising primary caesarean section rates. Obstetricians are becoming more and more concerned with managing these high-risk situations as effectively as possible. The goal of the current study was to assess the obstetric and foetal outcomes of patients who presented at term and had a history of one prior LSCS.

Methods: The current study was conducted on 541 post-caesarean moms who had been admitted to the Department of obstetrics and gynaecology of Jagannath Gupta Institute of Medical Sciences and Hospital, Kolkata, West Bengal for two years.

Results: In these 541 patients, the average incidence of VBAC was 17.74 percent. The incidence of VBAC was 61.93 percent (96 cases) of the 155 cases chosen for TOL, while the remaining 38.07 percent (59 cases) required repeat section. The 219 individuals who had undergone a previous section for a recurring indication had an incidence of vaginal birth of 8.22 percent (18 patients) (CPD).

Conclusion: As the percentage of women who have had prior caesarean sections rises, it is crucial to provide these women with counselling when they try vaginal birth in hospitals with the necessary equipment. In order to prevent difficulties in subsequent pregnancies, it is worthwhile to limit primary caesarean sections. Recurrent caesarean sections should only be performed when absolutely necessary to prevent foetal and mother morbidity and mortality.

Keywords: Cesarean section, Neonatal Intensive Care Unit (NICU), PROM, Preterm labour, Trial of labour after cesarean (TOLAC), Vaginal birth after cesarean section (VBAC)

Introduction

For more than a century, the management of the post-Caesarean woman has been a contentious subject. Having a caesarean section had become comparatively safe by the turn of the 20th century. But after women recovered from the initial procedure and had subsequent pregnancies, they were now at danger for uterine rupture. Due to the widespread usage of classical incision at the time, this occurred. Because of the inherent risks of uterine rupture, Cragin coined the phrase "once a caesarean, always a caesarean" (1916). This belief was later altered by the

invention of the Kerr's incision, a transverse low segment uterine incision, which gave rise to the idea of vaginal birth following caesarean. Lower segment caesarean sections (LSCS) were developed to give the uterus a healthy, firm scar that would allow it to safely carry and deliver a subsequent pregnancy. "Once a caesarean section, always a hospital delivery" is now a reliable adage. [1]

A growing number of pregnant women are considering their route of delivery due to the skyrocketing incidence of caesarean sections. Regarding uterine rupture, maternal and perinatal morbidity, and the safety of a study for vaginal birth after caesarean delivery (VBAC), there are contradicting reports. In order to assess the mother and foetal outcomes of patients who present at term and have had one prior lower segment caesarean section, a research is needed. For women who have previously undergone a caesarean section, the outcomes of planned vaginal birth versus routine repeat caesarean sections have not been compared in any randomised controlled trials. [2] The best information on the outcome of post-Caesarean pregnancy is now available from observational prospective research in the absence of such trials.

This study's aim was to assess how labour went for women who had previously undergone caesarean sections in our teaching hospital.

Vaginal birth after caesarean section (VBAC) is safe and effective when performed in a suitable clinical setting with a carefully chosen group of women. [1] The risks associated with elective repeat caesarean sections and vaginal birth attempts vary for the mother and the baby, making it challenging to balance the risks when choosing a delivery strategy. [3] Numerous studies have contrasted the risks and advantages of a trial of labour with those of a second caesarean section and have also shown the higher risks connected with a failed trial of labour. Over the past 20 years, there has been a multifold increase in the frequency of primary caesarean sections. As a result, a growing number of women must decide on the manner of delivery when they become pregnant again. It is very important to pay close attention to the rising caesarean section rate. [1]

Methods

The Department of Obstetrics and Gynaecology at Jagannath Gupta Institute of Medical Sciences and Hospital, Kolkata, West Bengal, conducted the current study. In this study, 541 cases of post-caesarean births that were admitted to this department for two years were included. A thorough medical history of the patients was collected, paying close attention to any prior obstetrics history. No matter whether a trial was administered before to surgery or not, emphasis was placed on the number, indication, type, location, timing, and post-operative period of the previous section. The number of vaginal deliveries before or after C.S. was present or not, the baby's health, sex, and weight, as well as the baby's survival or demise and the cause of death, if any, were recorded.

Pregnancy complications in different trimesters are highlighted as part of a thorough history of the current pregnancy. If instances were reported in the first trimester, they were tracked through delivery. These patients underwent thorough general examinations, which included measurements of height and weight. To determine the gestational age of the foetus, an abdominal examination was performed. The scar's state was taken into consideration as a sign of the prior section's type and post-operative duration. The foetal heart rate, presentation, position, engagement, and fundus height were all meticulously recorded. To feel for scar discomfort, the scar was palpated.

Clinical examination of the pelvis was conducted, and any possible cephalopelvic disproportion was noted. The cervix's condition and the presenting portion of the foetus were noted. When there was no other reason to prevent a vaginal delivery, individuals were carefully chosen to undergo TOL based on their medical history, general abdominal examination, and pelvic examination. Patients with previous two CS history, a clearly constricted pelvis, or aberrant presentation were not eligible for TOL. In every case, pertinent standard investigations were conducted. The majority of patients were let to have spontaneous labour.

Results

TYPE OF VAGINAL DELIVERY-

Nine instances (14.58 percent) out of 96 delivered via normal vaginal delivery (NVD), 41 cases (53.12 percent) via episiotomy, 12 cases (20.83 percent) via application of outlet forceps, and 11 cases (11.45 percent) via application of ventouse. ARM performed augmentation in 20 instances.

Table 1: Type of vaginal delivery

TYPE OF DELIVERY	NO OF CASES	PERCENTAGE(%)
NVD	14	14.58%
VD WITH EPISIOTOMY	51	53.12%
LOW FORCEPS APPLICATION	20	20.83%
VENTOUSE APPLICATION	11	11.45%
AUGMENTATION		
ARM	20	20.83%

NVD- normal vaginal delivery, ARM-artificial rupture of membrane

PREFERENCE OF FAMILY PLANNING METHODS DURING CAESAREAN AND JUST AFTER VAGINAL DELIVERY

Out of 445 RCS cases, 77 post-CCS mothers preferred bilateral tubal ligation (BTL) and 41 post-CCS mothers preferred postpartum intrauterine contraceptive devices (PPIUCD) during caesarean section. Following vaginal birth, PPIUCD was preferred in 4 cases across the VBAC groups.

Table 2: shows to preference of contraception

CATEGORY	BTL	PPIUCD
VBAC	0	4
RCS	77	45

CORRELATION BETWEEN THE BIRTH WEIGHT OF NEWBORN AND MODE OF DELIVERY**TABLE 3:**

WEIGHT OF NEWBORN IN (kg)	VBAC	RCS	TOTAL
0.6-2	17(30.90%)	38(69.10%)	55(10.16%)
2.1-2.5	25(16.02%)	131(83.98%)	156(28.83%)
2.6-3.0	32(15.02%)	181(84.98%)	213(39.37%)
3.1-3.5	20(22.72%)	68(77.28%)	88(16.26%)
3.6-4	2(8.69%)	21(91.31%)	23(4.25%)
>4.0	0	6(100)	6(1.10%)
TOTAL	96	445	541(100%)

The birth weights of infants delivered via RCS and VBAC are shown individually in this table. The majority of infants, 213 (39.37%), were born between 2.6-3.0 kg, of which 32 (15.02%) were delivered vaginally and 181 (84.98%) by RCS. Maximum percentage of VBAC occurred with infants weighing 0.6-2 kg at delivery, or 17. (30.90 percent).

PERINATAL OUTCOME

Most newborns (421, or 77.82%) were healthy, while the remainder had some issues including birth asphyxia (33, or 6.09%), IUGR (32, or 5.91%), neonatal jaundice (17, or 3.14%), neonatal infection (4, or 0.73%), and congenital anomaly (4, or 4%). (0.73 percent). 30 cases of perinatal mortality were discovered (5.54%), of which 28 (5.17%) were stillbirths and the remaining 2 (0.36%) were cases of early neonatal deaths.

Table 4: perinatal outcome

CONDITION OF BABY	VBAC	RCS	TOATAL
NORMAL	77(80.20%)	346(77.76%)	423(78.18%)
BIRTH ASPHYXIA	6(6.25%)	27(6.06%)	33(6.09%)
IUGR	4(4.16%)	28(6.29%)	32(5.91%)
NEONATAL JAUNDICE	2(2.08%)	15(3.37%)	17(3.14%)
NEONATAL INFECTIONS	0	4(0.89%)	4(0.73%)
CONGENITAL ANOMALY	0	2(0.44%)	2(0.36%)
STILL BORN	6(6.25%)	22(4.94%)	28(5.17%)
NEONATAL DEATH	1(1.08%)	1(0.22%)	2(0.36%)
TOTAL	96	445	541(100%)

Discussion

The adage "Once a Caesarean, always a Caesarean" by Craigin [4]. is no longer true, and the National Institute of Health Consensus Development Conference USA's popular suggestion for VBAC reframes the maxim. "Once a C-section, always in a hospital, and twice, ideally a C-section." Each medical facility's management philosophy and patient population determine how best to treat post-caesarean pregnancy. Therefore, it differs from hospital to hospital and from centre to centre. The reasons for primary section have been loosened in recent years, and as a result, modern obstetricians encounter many post-Caesarean pregnancies in their daily practise.

AGE GROUP OF PATIENTS:

The age range of women with post-CS pregnancies in the current study ranges from 18 to 40 years. The youngest and oldest patients ranged in age from 18 to 40. The majority of patients (43.43%, or 235 patients) fell into the 21–25 age range. 455 patients, or 84.09 percent, were between the ages of 21 and 30.

It is almost identical to a research by Nahar K, Akhter L, and Chowdhury S Bal [5] that found that 78 percent of patients were between the ages of 21 and 30.

The age of post-Caesarean pregnancy, however, varies from location to location and is influenced by the age of the primary section, the age of marriage, and the average age of the first pregnancy in the area. In the present study mean age for the patients who delivered vaginally is 26.8 years and for those who have undergone repeat section also 26.8 years.

PARITY DISTRIBUTION:

Out of 541 post-cesarean pregnancies, 439 (81.14%) in the current study are primipara, which is substantially identical to the data provided by Arora and Oumachigui [6] who discovered that the majority (80%) of the patients in their series were primipara.

ANTENATAL COMPLICATION IN PRESENT PREGNANCY:

The majority of patients (71.16%) in the study's 541 cases had no serious prenatal complications. There were some related problems in 156 patients (28.84%). In 82 cases, pregnancy-induced hypertension (PIH) was the most prevalent antenatal consequence (15.15 percent). In 14 cases, a respiratory tract infection was discovered (2.58 percent). Six cases involved complications from prior surgery, including placenta previa (1.10 percent). The prevalence of gestational diabetes mellitus was 0.36 percent. 4.62 percent of cases had urinary tract infections. 1.01 percent of cases had sickle cell illness, and 3.32 percent had sickle cell trait. Congenital cardiac disease and hypothyroidism were also discovered in 2 (0.36%) of the cases each. As West Bengal is a sickling belt so the prevalence is much higher in my study.

DURATION OF TIME INTERVAL BETWEEN LAST SECTION & PRESENT PREGNANCY:

Table No. 4 shows that 252 (46.58%) patients were admitted within 3–5 years following the previous section. The gap after the last Caesarean was 2-3 years in 128 (23.65%) cases.

Similar to the current study, Bengtsson [7] reported that 2/3 of his patients sought safe conferral within 4 years of the preceding section.

HISTORY OF PREVIOUS VAGINAL DELIVERY:

70 (12.93%) of the 108 women in the current series who had post-cesarean deliveries had previously given birth vaginally. A history of vaginal delivery was unknown in 471 cases (87.06 percent), and the majority of these individuals were primipara, which accounts for the high prevalence.

Furthermore, it is clear from the current study that 50 of the 46 women who had previously given birth vaginally and 46 of the 50 women who had not did so.

Grinstead and Grobman (2004), Hendler and coworkers (2006), and Cahill and coworkers (2006) all agree that having previously delivered a baby vaginally is advantageous for a vaginal birth after caesarean. This fact is also supported by the current investigation.

CORRELATION OF GESTATIONAL AGE WITH MODE OF DELIVERY:

Out of the 541 cases, the majority of post-caesarean moms were admitted between 38 and 40 weeks of pregnancy, or 51.38 percent, while the majority of VBACs occurred in mothers admitted between 20 and 32 weeks of pregnancy, or 14.4 percent (50 percent). The rate of VBAC declines as gestational age rises.

Out of 92 cases of post-caesarean mothers with gestational ages greater than 40 weeks, we only permitted TOL in 21 cases (22.82%) and 8 of those cases (38.09%) resulted in vaginal deliveries.

According to Zelop CM et al [8], waiting for spontaneous labour beyond 40 weeks is not related with a lower chance of a successful vaginal delivery, but it is associated with a caesarean rate that is comparable to that following induced labour before 40 weeks.

MATERNAL MORBIDITY AND MORTALITY:

Maternal morbidity and mortality have been linked to a variety of modifiable and non-modifiable factors, for which different authors have reported varying outcomes. The incidence of maternal deaths reported by different writers is as follows: Guise JM (2010) 0.016 percent; Wen and associates (2005) 0.006 percent; Landon and collaborators (2004) 0.06 percent. In the current investigation, two ruptured uterus cases in which uterus repair was performed resulted in two maternal fatalities (0.44 percent). This is better than the earlier outcomes. Septicaemia is the cause of mortality in both cases.

10.78 percent of repeat sections and 3.12 percent of VBAC groups had fetril morbidity. Sepsis and abdominal distension were other maternal morbidities that were more prevalent in the repeat C.S. group. PPH, however, was greater in the group with vaginal deliveries.

Three cases (0.55 percent) of placenta accreta were seen, which is comparable to the incidence noted by Stafford and Belfort [9].

Two examples include injuries to the bladder. 9.66% of instances involve extensive adhesion. Retained placenta complicated one of the VBAC cases.

A caesarean section was done in 8 (1.81%) instances. The reason for the procedure was uterine rupture in 6 cases and placenta previa complicated with placenta accreta in 2 cases. Therefore, 6 (40.00 percent) of the 15 cases of scar rupture required caesarean sections. This was greater than the 10–20 percent reported by McMahon (1996) and Miller (1997). The necessity for further catheterization in some repeat caesarean instances is most likely what is causing the increasing incidence of U.T.I.

Two instances of utero-vesical fistula complicating recurrent caesareans.

Blood transfusions were required in 12.56 percent of cases overall, with the need being higher in RCS groups (13.25 percent). The findings of my study on the requirement for transfusions are consistent with Tan PC et al's study [10], which found that successful VBACs necessitate less blood transfusions than emergency caesarean sections. According to Shiliang Liu, Robert M. Liston, et al. [11], planned caesarean delivery groups had considerably higher overall rates of severe morbidity than planned vaginal delivery groups.

The high rate of caesarean sections and maternal deaths in my study is attributable to a number of factors, including the fact that our institute is a rural tertiary care centre, the scarcity of

emergency transportation services, illiteracy, and the fact that the majority of the patients are unbooked cases.

According to Kiran TS et al [12], there was no increase in caesarean sections, maternal morbidity, or perinatal morbidity among women who experienced trial of labour after the predicted date of delivery. Even after adjusting for other potential sources of confusion such as birth weight, labour induction, and BMI, the effect of gestational age on scar rupture persisted. Therefore, they oppose TOL in gestational ages greater than 40 weeks.

However, according to ACOG [13], although there may be a lesser possibility of success with longer gestations, TOLAC should still be possible even if the gestational age is over 40 weeks.

PERINATAL MORTALITY:

In the current dataset, the overall perinatal mortality rate is 5.54 percent. S.N. Goswami (1982) reported a rate of 4.5 percent close to this.

Arora et al. (1992) reported a 0.29 percent incidence of prenatal mortality, Smith (2002) reported a 0.17 percent incidence, and Marian (2006) reported a 0.13 percent incidence.

There were 28 stillbirths in this series. 22 of the cases come from RCS groups; the high rate of stillbirths is caused by the fact that most stillbirths result from uterine rupture. The high frequency of stillbirths in the VBAC groups—six—is caused by the fact that the majority of them are IUIDs.

Compared to newborns who underwent repeat surgery (0.22 percent), babies who underwent VBAC experienced a higher incidence of neonatal death (1.08 percent). In our hospital, there is a higher incidence of perinatal death because many cases are referred in a late stage of death and because the patients have low socioeconomic status and little antenatal care. However, Marian F. Macdorman (2006) and Eugene Declercq [15] showed that neonatal mortality rates were greater among infants delivered by repeat caesarean group. Smith and associates (2002) reported that risk of perinatal death higher women who attempted VBAC.

Conclusion

Repeat CS increases overall maternal risks, although successful vaginal deliveries are still achievable if women are treated appropriately in tertiary care facilities. The risks and advantages of planned vaginal birth following a CS and elective repeat CS should be discussed with them. To reduce the risk of premature birth, elective repeat CS should ideally be performed at 39 completed weeks of gestation. In conclusion, finding a balance between safety concerns and the requirement to lower CS rates remains difficult. Only around half of the women having a prior CS were permitted to attempt a VBAC due to the low threshold most obstetricians tended to set for elective repeat CS due to the restricted facilities for foetal monitoring.

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