



MATERNAL AND PERINATAL OUTCOMES IN WOMEN WITH PREVIOUS CAESAREAN SECTION: A HOSPITAL-BASED OBSERVATIONAL STUDY

Obstetrics & Gynaecology

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ABSTRACT

Background: With rising global rates of cesarean deliveries, a growing proportion of pregnant women present with a history of previous cesarean section. This raises important clinical considerations regarding the mode of delivery in subsequent pregnancies. Both elective repeat cesarean delivery (ERCD) and trial of labor after cesarean (TOLAC) carry distinct maternal and perinatal risks. **Objectives:** To evaluate maternal and perinatal outcomes in women with previous cesarean section, to assess intraoperative complications during repeat cesarean delivery, and to examine the outcomes of TOLAC in eligible patients. **Methods:** This hospital-based observational study was conducted at the Department of Obstetrics and Gynaecology, Santosh Medical College, Ghaziabad over one year. A total of 289 women with a history of one or more lower segment cesarean sections (LSCS) were included. Data on maternal demographics, obstetric history, mode of delivery, intraoperative and postoperative complications, and neonatal outcomes were collected and analyzed using SPSS version 21.0. **Results:** The mean maternal age was 27.5 ± 3.69 years; 66.4% had normal BMI, and 78.2% were from rural areas. Only 24.6% of women were booked for antenatal care. Most women (77.2%) had a history of one previous cesarean section. The most common indications for repeat cesarean included postdatism (17.8%), non-progress of labor (12.7%), and meconium-stained liquor (12.1%). Emergency cesarean was the most frequent mode of delivery (43.6%), followed by ERCD (36.4%) and VBAC (20%). Maternal complications were observed in 13.5% of cases, with infection (66.7%) and postpartum hemorrhage (23.1%) being the most common. Perinatal complications included hypoxia (66.7%) and low birth weight (33.3%). **Conclusion:** Repeat cesarean section remains the predominant mode of delivery among women with a prior CS. While VBAC is a feasible and often safe alternative in selected cases, low rates reflect caution among clinicians. Improved antenatal care, careful patient selection, and enhanced intrapartum monitoring may optimize outcomes and reduce unnecessary repeat cesareans.

KEYWORDS

Cesarean section, VBAC, maternal outcomes, perinatal outcomes, TOLAC, ERCD

INTRODUCTION

Cesarean section (CS) is among the most commonly performed surgical procedures worldwide. Over the last few decades, CS rates have escalated dramatically due to multiple factors, including maternal request, obstetric indications, and improved surgical safety [1,2]. In India and other developing countries, this trend is particularly evident in tertiary care centers. However, previous cesarean delivery is associated with increased risks in subsequent pregnancies, including uterine rupture, placenta previa, placenta accreta spectrum (PAS), and surgical morbidity [3-5].

Trial of labor after cesarean (TOLAC) offers several advantages over elective repeat cesarean delivery (ERCD), such as reduced surgical risks, shorter recovery, and higher maternal satisfaction [6,7]. Nevertheless, TOLAC also carries risks such as uterine rupture, fetal distress, and emergent surgical intervention [8]. Thus, the choice between TOLAC and ERCD must be individualized, considering maternal history, obstetric indications, and institutional capability. [9] This study aims to evaluate maternal and perinatal outcomes in women with previous cesarean delivery, investigate intraoperative complications in repeat cesarean deliveries, and assess outcomes of TOLAC.

MATERIALS AND METHODS

This hospital-based observational study was conducted over a one-year period at the Department of Obstetrics and Gynaecology, Santosh Medical College, Ghaziabad. A total of 289 pregnant women with a gestational age of ≥ 34 weeks and a history of one or more lower segment cesarean sections (LSCS) were included. Women with classical cesarean scars, uterine malformations, or previous uterine rupture were excluded. Upon admission, detailed demographic and obstetric histories were recorded, including gravida, parity, comorbidities, and indication for previous cesarean. Clinical examinations and obstetric ultrasounds were performed. Eligible women with non-recurrent indications were counselled for TOLAC. Mode of delivery—VBAC, ERCD, or emergency cesarean—was recorded, along with intraoperative findings such as adhesions and scar dehiscence. Maternal outcomes were assessed based on surgical complications, ICU admission, and postpartum recovery. Neonatal outcomes included APGAR scores, NICU stay, birth weight, and need

for resuscitation. Statistical analysis was performed using SPSS version 21.0, and significance was determined at $p < 0.05$

OBSERVATION & RESULTS

The majority of participants were aged between 26–30 years (51.2%), with a mean age of 27.5 ± 3.69 years. Most women (66.4%) had a normal BMI, and 78.2% belonged to rural areas. A significant proportion were illiterate (60.4%) and unbooked (75.4%).

Obstetrically, 48.4% were gravida 2 and 65.4% para 1. About 77.2% had a history of one previous cesarean section. The most frequent indications for the current cesarean delivery included postdatism (17.8%), non-progress of labor (NPOL, 12.7%), and meconium-stained liquor (MSL, 12.1%).

The most common mode of delivery was emergency cesarean (43.6%), followed by elective repeat cesarean (36.4%) and vaginal birth after cesarean (VBAC) (20%).

Intraoperative complications were noted in 25% of cases, with adhesions (37.5%), thinned lower uterine segment (19.5%), and scar dehiscence (13.8%) being the most frequent. Maternal complications included infection (66.7%), postpartum hemorrhage (23.1%), and sepsis (10.2%). ICU admission was necessary in 2.4% of women.

Perinatal complications observed included hypoxia (66.7%) and low birth weight (33.3%). NICU admission was required in 16.6% of cases.

Table 1: Demographic And Obstetric Profile Of Study Participants

		Frequency	Percentage (%)
Age group	18-20 years	5	1.7
	21-25 years	82	28.4
	26-30 years	148	51.2
	31-35 years	45	15.6
	36-40 years	7	2.4
	>40 years	2	0.7
BMI	Normal weight	192	66.4
	Overweight	90	31.1

	Obese	7	2.4
Education	Illiterate	174	60.4
	Primary	57	19.8
	Secondary	42	14.6
	Graduate	15	5.2
Area of residence	Rural	226	78.2
	Urban	63	21.8
Booking status	Booked	71	24.6
	Unbooked	218	75.4

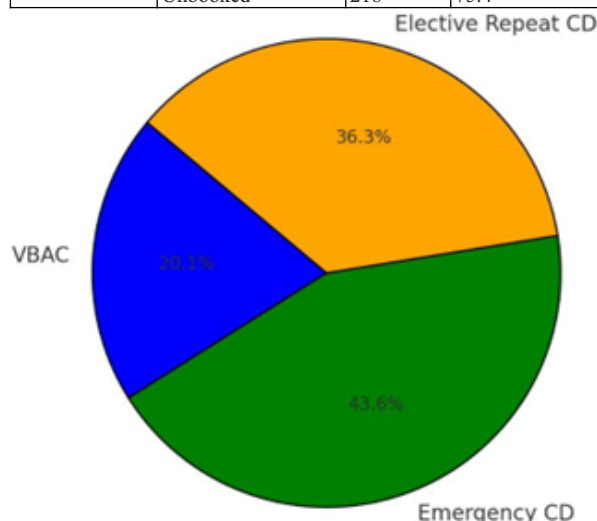


Figure 1: Distribution Of Study Subjects According To Type Of Delivery

Table 2: Maternal And Neonatal Outcomes Of Study Participants

		Frequency	Percentage (%)
Maternal outcome	Infection	26	66.7%
	PPH	9	23.1%
	Sepsis	4	10.2%
Neonatal outcome	NICU admission	48	16.6%
	APGAR <7 at 1 min	5	1.7%
	APGAR <7 at 5 min	0	0%
	ICU admission	7	2.4%
	Hypoxia	34	66.7%
	Low birth weight	17	33.3%

DISCUSSION:

The findings of this study are consistent with several national and international studies. The mean maternal age and parity reflect typical reproductive patterns [1,3]. A significant proportion of women belonged to low socioeconomic and educational backgrounds, which is commonly associated with reduced health literacy and lower rates of antenatal care utilization [10].

The high percentage of unbooked cases (75.4%) likely contributed to the elevated rate of emergency cesarean deliveries (43.6%). Timely and consistent antenatal care is critical in identifying high-risk pregnancies early and allowing for planned interventions. As supported by George et al. [10], inadequate prenatal care in rural populations often leads to late referrals and emergency operative interventions, increasing the risk of maternal and neonatal complications.

VBAC, attempted in only 20% of cases, had limited success due to factors such as non-recurrent indications not being appropriately utilized, lack of institutional protocols, and clinician hesitancy. Evidence from Bansode et al. [11] and Figueroa et al. [12] highlights that VBAC, when supported with proper selection and monitoring, can be safe and effective. However, its low uptake in this study mirrors a broader trend in resource-limited settings where emergency preparedness is constrained.

Intraoperative complications such as adhesions (37.5%), thinned-out lower uterine segment (19.5%), and scar dehiscence (13.8%) were prevalent. These findings correlate with earlier studies by Vishwakarma et al. [13] and Kietpeerakool et al. [14], which emphasized how multiple cesarean surgeries contribute to pelvic

adhesions and increase surgical complexity and duration. Such complications also elevate the risks of bladder injury, hemorrhage, and extended recovery times.

The maternal morbidity rate of 13.5%, with predominant infections and PPH, underlines the need for better surgical protocols and postoperative care. Studies like Souza et al. [15] stress the importance of quality obstetric care in mitigating these complications. Postpartum infections in cesarean cases are frequently associated with factors like prolonged labor, ruptured membranes, anemia, and suboptimal sterile techniques.

Perinatal complications, particularly hypoxia (66.7%) and low birth weight (33.3%), reflect the influence of intrapartum stress, preterm interventions, and maternal comorbidities. Although most neonates had acceptable APGAR scores by 5 minutes and NICU admission was relatively low (16.6%), these outcomes still suggest room for improvement in neonatal resuscitation and monitoring. Research from Hossain et al. [6] and Rowe et al. [8] reinforces the role of efficient fetal surveillance and timely obstetric decision-making in improving neonatal health indicators.

Overall, this study emphasizes the need for individualized risk stratification for mode of delivery in women with prior cesareans. Strengthening institutional protocols for VBAC, improving antenatal coverage especially in rural areas, and enhancing surgical training and postoperative care can collectively improve maternal and perinatal outcomes.

CONCLUSION:

This study highlights that while elective repeat cesarean delivery remains the dominant mode of delivery in women with a history of previous cesarean, VBAC is a viable and safe option in selected cases. Maternal and perinatal complications were higher among emergency procedures and unbooked cases, underscoring the importance of antenatal care and early risk assessment. Institutional preparedness, clinician training, and standardized protocols for VBAC and intrapartum care are essential to optimize outcomes. Tailored counseling and decision-making that incorporates maternal preferences, clinical risk factors, and hospital resources can help reduce unnecessary cesarean rates and improve both maternal and neonatal health.

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