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Original Research Article

A clinical study on trial of labor after caesarean at tertiary care centre

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ABSTRACT

Background: The global rise in caesarean section (CS) rates has led to an increase in women eligible for Trial of Labor After Caesarean (TOLAC). TOLAC Offers an Opportunity for Vaginal birth After Caesarean (VBAC), thereby reducing complications of repeat caesarean sections.
Methods: This prospective Observational Study was conducted on 50 antenatal women with a history of one prior lower segment caesarean section (LSCS) at civil hospital, B J medical College, Ahmedabad from September 2023 to December 2023. The women were assessed based on eligibility and monitored during labor. The study analyzed outcomes based on prior caesarean indication, previous vaginal delivery, and intrapartum events.
Results: Out Of 50 women, 32 (64%) achieved successful VBAC, 18 (36%) underwent emergency LSCS for fatal distress (44.44%), scar tenderness (27.77%), non-progression of labor (22.22%), and uterine rupture (5.55%). Prior vaginal delivery had a strong association with successful VBAC (80%).
Conclusions: TOLAC is a viable and safe option for with a prior LSCS if they are carefully selected and monitored. The best predictors for success are prior vaginal delivery, and a non-recurrent indication in previous caesarean. Institutional delivery is essential for ensuring maternal and fetal safety.

Keywords: Emergency LSCS, Fetal distress, Trial of labor after caesarean section, Uterine rupture

INTRODUCTION

The rate of caesarean sections is rising worldwide.[1] According to the World Health Organization, the global rate of caesarean deliveries is approximately 21.1%.[2] In India, rates vary from 14.3% in government hospitals to 47% in private setups as per NFHS-5 data.[3] Traditionally, the dictum 'once a caesarean, always a caesarean' discouraged future vaginal births. However, with modern monitoring and improved emergency response systems, the updated dictum is 'once a caesarean, a trial of labor can be given in a well-equipped hospital'.[1,5] This study evaluates the feasibility, maternal and fetal outcomes, and predictors of successful TOLAC in a tertiary care hospital.

This study aimed to evaluate the success rate of TOLAC, to assess maternal and fetal outcomes of TOLAC, and to identify predictive factors for successful VBAC.

METHODS

This was a prospective observational study conducted at the 1200-bed Civil Hospital, B J Medical College, Asarwa, Ahmedabad, from September 2023 to December 2023. A total of 50 antenatal women with a history of one prior LSCS were included after informed consent. Women were considered eligible if they had a singleton pregnancy with cephalic presentation, a clinically adequate pelvis, and agreed to undergo TOLAC. Women with more than one previous caesarean, classical or vertical scar, multiple pregnancy, placenta previa, previous uterine rupture, or prior uterine surgery were excluded. All eligible women admitted in early labor were monitored using a partograph and continuous fetal heart rate monitoring. Emergency caesarean was performed if signs of fetal distress, scar tenderness, uterine rupture, or non-progression of labor were detected.

Ethical approval was waived as this was an observational study conducted with informed consent. Data was analyzed using descriptive statistics, and results were expressed as percentages. All eligible women admitted in early labor closely monitored using partograph and continuous fetal heart rate monitoring. Emergency caesarean was done in case of signs of fetal distress, uterine rupture, scar tenderness, or non progression of labor.

RESULTS

Demographics

The study included 50 antenatal women with one prior LSCS. The majority of the study participants were between {26-30} years old (50%), and 60% were primigravida. 72% of trials were conducted between 37 and 40 weeks of gestation (Table 1).

Table 1: Demographic characteristics of study participants.

Parameter	Category	Number (n=50)	Percentage (%)
Age (years)	20-25	14	28
	26-30	25	50
	31-35	8	16
	>35	3	6
Gravida	Primi	30	60
	Multi	20	40
Gestational age (weeks)	37-40	36	72
	>40	14	28

Success rate

The overall VBAC success rate in this cohort was 64%. Out of 50 women, 32 (64%) achieved a successful VBAC, demonstrating the feasibility of TOLAC in selected cases (Table 2).

Table 2: Success rate of TOLAC.

	Number	Percentage
Successful VBAC	32	64
Emergency LSCS	18	36
Total patients	50	

LSCS Indications

Fetal distress was the leading indication for emergency LSCS, accounting for 44.44% of all failures. Uterine rupture occurred in one case, representing 5.55% of emergency LSCS and 2% of the total study group. The reasons for the 18 emergency LSCS cases are detailed in Table 3.

Table 3: Indications for emergency LSCS.

Indication	Number of cases	Percentage (%)
Fetal distress	8	44.44
Scar tenderness	5	27.77
Non progression of labor	4	22.22
Uterine rupture	1	5.55

Previous caesarean indication

Non-recurrent indications such as malpresentation and fetal distress were associated with higher success, while recurrent causes like hypertensive disorders showed lower success. Analysis based on the previous caesarean indication is presented in Table 4.

Table 4: Outcome based on indication of previous caesarean.

Previous indication	Trials given	Successful VBAC
Fetal distress	11	8
NPOL	10	7
Malpresentation	7	6
Post-dated pregnancy	9	4
Hypertensive disorder	3	1
Oligohydramnios	6	3
Cord around neck	4	3

Prior VBAC

Women with a history of a prior vaginal delivery had a significantly higher success rate of 80% compared to those without 53.3%, confirming its strong predictive value. The association between prior vaginal delivery and VBAC success is shown in Table 5.

Table 5: Outcome based on prior vaginal delivery.

Prior vaginal delivery	Patients	VBAC success	Success rate (%)
Yes	20	16	80
No	30	16	53.3

Table 6: Material and fetal outcome.

Complication	Number
PPH	2
Uterine rupture	1
NICU admissions	3
Neonatal mortality	0

Complications

The study documented a low incidence of serious complications, with one case of uterine rupture and no neonatal mortality.

Maternal and fetal outcomes are summarized in Table 6.

DISCUSSION

The present study reported a VBAC success rate of 64%, which is consistent with international literature showing success rates between 60-80%.[6,7-12,13] This supports the feasibility of TOLAC when proper case selection and intrapartum monitoring are ensured. The most common indication for emergency caesarean section was fetal distress, similar to findings reported by Grobman et al and Landon et al, who emphasized the importance of continuous fetal surveillance during TOLAC.[7,6]

The incidence of uterine rupture in our study was 2%, which aligns with the global range of 0.5-2%, as documented in major reviews.[9] The risk of failed TOLAC is also increased when induction of labor is utilized.[14]

Prior vaginal delivery was identified as one of the strongest predictors of TOLAC success, corroborating the findings of Mercer et al and Caughey et al who reported markedly higher VBAC rates among women with previous vaginal births.[8,4,10,11]

Non-recurrent indications (e.g., malpresentation, fetal distress) were associated with higher VBAC success, whereas recurrent indications (e.g., hypertensive disorders, oligohydramnios) showed reduced success.[10,16] This pattern aligns with the evidence presented in ACOG and RCOG guidelines, which highlight the significance of indication type in predicting VBAC outcomes.[1-5] Furthermore, adverse maternal and neonatal outcomes, such as PPH and NICU admissions, are significantly higher in cases of failed TOLAC compared to successful VBAC.[15]

This study was limited by its small sample size, short duration, and single-center design. Long-term maternal and neonatal outcomes were not evaluated. Larger multicenter studies with extended follow-up are recommended.

CONCLUSION

TOLAC is a safe and viable option for women with one prior LSCS when conducted under strict institutional supervision. A VBAC success rate of 64% in this study highlights the importance of proper case selection, prior vaginal delivery, and non-recurrent indications as strong predictors of success. With adequate monitoring, counseling, and availability of emergency care, TOLAC can contribute to reducing caesarean rates while ensuring maternal and fetal safety.

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Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. ACOG Practice Bulletin No. 205. Vaginal birth after caesarean delivery. Obstet Gynecol. 2019;133:e110-27.
2. World Health Organization. WHO statement on caesarean section rates, 2015. Available at: https://www.who.int/publications/i/item/WHO-RHR-15.02. Accessed 01 June 2025.
3. Ministry of Health and Family Welfare. Government of India. National Family Health Survey (NFHS-5), India, 2019-21, 2021. Available at: http://rchiips.org/nfhs/factsheet_NFHS-5.shtml. Accessed 01 June 2025.
4. Flamm BL, Geiger AM. Vaginal birth after caesarean delivery: an admission scoring system. Obstet Gynecol. 1997;90(6):907-10.
5. Royal College of Obstetricians and Gynaecologists. Birth after previous caesarean birth (Green- top Guideline No. 45). London: RCOG; 2015. Available at: https://www.rcog.org.uk/guidance/browse-all-guidance/green-top-guidelines/birth-after-previous-caesarean-birth-green-top-guideline-no-45/. Accessed 01 June 2025.
6. Landon MB, Hauth JC, Leveno KJ, Spong CY, Leindecker S, Varner MW, et al. Maternal and perinatal outcomes associated with a trial of labor after prior caesarean delivery. N Engl J Med. 2004;351(25):2581-9.
7. Grobman WA, Gilbert S, Landon MB, Spong CY, Leveno KJ, Rouse DJ, et al. Outcomes of induction of labor after one prior caesarean. Am J Obstet Gynecol. 2007;197(2):241.e1-6.
8. Mercer BM, Gilbert S, Landon MB, Spong CY, Leveno KJ, Rouse DJ, et al. Labor outcomes with increasing number of prior vaginal births after caesarean delivery. Obstet Gynecol. 2008;111(2):285-91.
9. Guise JM, Eden K, Emeis C, Denman MA, Marshall N, Fu R, et al. Vaginal birth after caesarean: new insights on maternal and neonatal outcomes. Evid Rep Technol Assess (Full Rep). 2010;(191):1-397.
10. Caughey AB, Shipp TD, Repke JT, Zelop CM, Cohen A, Lieberman E. Predictors of VBAC success: a population-based study. Obstet Gynecol. 1998;91(4):511-6.
11. Society of Obstetricians and Gynaecologists of Canada. Vaginal birth after previous caesarean (Clinical Practice Guideline). J Obstet Gynaecol Can. 2019;41(7):992-1011.
12. Tahseen S, Griffiths M. Vaginal birth after two caesarean sections (VBAC-2): a systematic review and meta-analysis. BJOG. 2010;117(1):5-19.
13. Fitzpatrick KE, Kurinczuk JJ, Alfirevic Z, Spark P, Brocklehurst P, Knight M. Uterine rupture by intended mode of delivery in the UK: a national case-control study. PLoS Med. 2019;16(11):e1002990.
14. Rossi AC, D'Addario V. Maternal morbidity following a trial of labor after caesarean section vs

elective repeat caesarean delivery: a systematic review. Arch Gynecol Obstet. 2008;278(3):319-26.
15. Sentilhes L, Vayssière C, Beucher G, Deneux-Tharaux C, Deruelle P, Diemunsch P, et al. Delivery after previous caesarean: guidelines for clinical practice from the French College. Eur J Obstet Gynecol Reprod Biol. 2013;170(1):25-32.
16. Harper LM, Cahill AG, Boslaugh SE, Odibo AO, Stamilio DM, Macones GA. Association of induction of labor and uterine rupture in women attempting vaginal birth after caesarean: a survival analysis. Am J Obstet Gynecol. 2012;206(1):51.e1-5.

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