

To Determine the Mode of Delivery after Previous Caesarean Section Either VBAC or ERCS

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ABSTRACT

Background & Methods: The aim of the study is to determine the mode of delivery after previous caesarean section either VBAC or ERCS. All pregnant women with previous caesarean section coming to the department was taken up for study after written and informed consent. Detailed history of patients with previous caesarean section attending antenatal clinic including a detailed obstetric history with special reference to indication of previous caesarean, preoperative, intra operative and postoperative complications, wound sepsis and delayed stitch removal was taken into account. **Results:** The presence of prior vaginal delivery after caesarean section was associated with increased success of VBAC as seen in this study. Out of 112, 64 cases (57.14%) had prior one vaginal delivery and underwent successful VBAC in the present pregnancy. In the other group of emergency repeat caesarean section, 75.51% cases had no previous history of vaginal delivery. The above stated results were statistically significant. **Conclusion:** In the present study number of booked cases were 53.84% and unbooked were 46.15%. Rate of vaginal delivery was more in booked cases i.e. 74.10% than in unbooked cases 25.89%. Substantial reduction in the caesarean rates can be achieved safely and efficiently by encouraging the trial of labor in women with a single previous LSCS. Successful trial of labor in previous caesarean section is associated with better maternal and perinatal outcomes. We further proved that in the cases of non recurrent causes of previous LSCS, a fair trial of labor can be given. Caesarean section should not be always followed by repeat caesarean section but patients must have regular ANC visits and have hospital delivery in well equipped hospital and complications should be diagnosed at an early stage so that we can prevent maternal and perinatal morbidity and mortality.

Keywords: delivery, caesarean, VBAC and ERCS.

INTRODUCTION

Caesarean section is the most commonly performed surgery in obstetrics. Due to the rise in caesarean section rate due to non recurring indications in past few years, the number of pregnancies with previous caesarean section has also increased. There is no consensus regarding decision of mode of delivery in patients with previous caesarean section. [1] Delivery planning for the woman who has had a previous caesarean delivery can begin with preconceptional counselling, but should definitely be addressed early in prenatal care. Assuming no mitigating circumstances, there are two basic choices, first is a trial of labor after caesarean (TOLAC) with the

goal of achieving vaginal birth after caesarean (VBAC). If caesarean delivery becomes necessary during the trial, then it is termed a "failed trial of labor". A second choice is elective repeat caesarean delivery (ERCS). [2]

With the significant rise in the incidence of primary caesarean sections for various indications, an increasing proportion of the pregnant women report with a history of a previous LSCS. These women fall into category of high-risk group due to the risk of scar rupture. The obstetrician is always in a dilemma regarding the mode of delivery in these cases. Assessment of the individual case with regard to the possibility of a successful VBAC

is necessary. The unending dilemma of an obstetrician is about the management of subsequent labor, once the patient has a scar on the uterus. Some suggest an elective LSCS for such cases, whereas others choose a trial of labor. Many take a middle route, that is, individualization of case.[3]

Previous caesarean section has been found to be the commonest cause of increased caesarean section rate in many parts of the world.[3] Cragin's dictum "once a caesarean always a caesarean" perpetuates some of the cost of first caesarean section in subsequent pregnancies.[4] All post caesarean pregnancies do not require repeat Caesarean section and a majority of them may have uncomplicated vaginal delivery.[5] The introduction of lower segment caesarean section resulted in a sound and strong scar on the uterus, being capable to hold and safely deliver a subsequent baby by vaginal route. Thus, it is no longer an absolute practice to always opt for caesarean section once a patient underwent caesarean section. However, there is slightly increased risk of uterine scar rupture or scar dehiscence, when vaginal birth after caesarean section is attempted. Therefore, it is now safe to say that 'once a caesarean section, always a hospital delivery'.[6]

Rate of caesarean section in India is 30%. Based on NFHS-III (2005-06) data, the rate of caesarean delivery is highest in women of Kerala (30.09%) followed by Goa(25.51%), Andhra Pradesh (27.49%), Tamil Nadu (23.00%), Punjab(16.45%) and Karnataka(15.27%), which have crossed the WHO recommended range of 5-15%.[7] There is also some astonishing data from the South American nations which reports the rate of caesarean sections at 50% in the nongovernment hospitals of Chile, Argentina, Brazil and Paraguay.[8]

MATERIALS AND METHODS

Study Design

Comparative Study.

This one year prospective and observational study was carried out in the Department of Obstetrics and Gynaecology, Government Medical College, Rajindra Hospital Patiala. Women with previous one LSCS who met the inclusion criteria were included in the study. A detail history and clinical examination and required investigations were done. The maternal and perinatal outcome was noted.

Inclusion Criteria

1. History of previous one caesarean section.
2. Single ton pregnancy.

3. Vertex presentation
4. Gestational age ≥ 37 weeks.
5. Patient willingness to participate in study.

Exclusion Criteria

1. Estimated fetal weight > 3.5 kg on ultrasonography
2. Mal presentation
3. Previous caesarean section due to recurring indications.
4. Multiple pregnancy.
5. Major degree placenta previa.
6. Medical conditions (chronic hypertension, pre-eclampsia, GDM, heart disease etc.)
7. Previous 2 or more LSCS.
8. Carcinoma cervix.
9. Previous classical caesarean section
10. Presence of signs suggestive of scar dehiscence or rupture.
11. Patient refusal to participate in the study.

METHODS

All pregnant women with previous caesarean section were taken up and divided into two groups;

1. Group A: who underwent Trial of Labor after Caesarean (TOLAC).
2. Group B: who underwent elective repeat caesarean section (ELRCS).

Particulars of the patient and detailed history as per proforma was recorded. Patients were followed till term and the mode of delivery was decided accordingly. At term gestation vaginal examination was done for pelvic assessment to decide mode of delivery. The labor was monitored with hourly recording of vital parameters-temperature, pulse, respiration and blood pressure, continuous electronic fetal monitoring by cardiotocography, monitoring of uterine contractions, Partograph and a close watch for early recognition of scar dehiscence by identifying maternal tachycardia, 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. Decision for repeat emergency caesarean was taken by the consultants who were blinded to the study. If the patients had to undergo emergency repeat caesarean section, all operative findings were noted including integrity of previous caesarean scar and other intraoperative problems. Maternal and fetal outcome was noted.

RESULTS

Table 1: Mode of Delivery in Cases Willing for TOLAC

Mode of Delivery	No. of Cases	%age
VBAC	112	53.33%
ERCS	98	46.67%
Total	210	100.00%

The above table describes the mode of delivery in the cases willing for TOLAC. 112 cases (53.33%) had VBAC and 98 (46.67%) underwent emergency repeat caesarean section. Out of 112 cases who delivered vaginally, instrumental delivery was done in 6 cases (5.36%).

Table 2: Relationship of Booking Status to Mode of Delivery in TOLAC Cases

	VBAC		ERCS		Total	
	No. of Cases	%age	No. of Cases	%age	No. of Cases	%age
Booked	83	74.10	53	54.08	136	64.76
Unbooked	29	25.89	45	45.91	74	35.24
Total	112	100	98	100	210	100
p-value	<0.000					

The above table shows that VBAC occurred more in booked cases. Out of 112 cases, 83 (74.10%) delivered vaginally were booked and 29 (25.89%) were unbooked whereas in those who underwent ERCS, 53 (54.08%) were booked and 45 (45.91%) were unbooked. The observed results were statistically significant.

Table 3: Distribution of Gestational Age According to Mode of Delivery in TOLAC Cases

Gestational Age (in weeks)	VBAC		ERCS	
	No. of Cases	%age	No. of Cases	%age
37-37 ⁺⁶	4	3.57%	2	2.04%
38-38 ⁺⁶	5	4.46%	6	6.12%
39-39 ⁺⁶	53	47.32%	46	46.94%
≥40	50	44.64%	44	44.90%
Total	112	100%	98	100%
Mean±SD	40.11±1.18weeks		40.08±1.12weeks	

The above table shows that the mean gestational age in VBAC cases and ERCS cases was 40.11±1.18 weeks and 40.08±1.12 weeks respectively. As we had enrolled the cases after strict inclusion/exclusion criteria and we waited for spontaneous onset of labor, so the mean gestational age in TOLAC cases was above 40 weeks.

Table 4: Mode of Delivery in TOLAC Cases with Previous VBAC

No. of Vaginal Deliveries after caesarean section	VBAC		Emergency Repeat Caesarean Section (ERCS)	
	No. of Cases	%age	No. of Cases	%age
0	42	37.5%	74	75.51%
1	64	57.14%	22	22.45%
2	6	5.36%	2	2.04%
Total	112	100%	98	100%
χ^2	35.96			
p-value	0.000			

The above table describes the presence of prior vaginal delivery after caesarean section was associated with increased success of VBAC as seen in this study. Out of 112, 64 cases (57.14%) had prior one vaginal delivery and underwent successful VBAC in the present pregnancy. In the other group of emergency repeat caesarean section, 75.51% cases had no previous history of vaginal delivery. The above stated results were statistically significant.

DISCUSSION

In this study we concluded that out of 210 patients who were willing for TOLAC, 112 cases underwent successful VBAC. We found that rate of VBAC was more in those cases who had prior history of 1 successful VBAC. In present study 57.14% of the successful VBAC group had vaginal delivery in their last confinement. Rate of emergency repeat caesarean section (75.51%) was more in patients who had no history of previous VBAC. The results were comparable with the study conducted by Zaitounetal[9] (2013), who also observed 61.9% of the successful VBAC group had vaginal delivery in their last conception vs. 26.8% of the ERCS group. Similar results were seen in the study of Bangal et al[6] (2017) as they also reported higher success rate of TOLAC in women who had history of previous VBAC (91.67%). In a study of 318 women by Iyer et al[11] (2001), it was stated that there were more chances of VBAC (84.8%) in women with history of previous vaginal delivery compared to ones without (62.7%). Thus we conclude that prior vaginal delivery subsequent to LSCS was associated with higher chances of VBAC.

Singh et al[1] (2014) showed ERCS due to fetal distress in 47.9% cases and 11% cases underwent ERCS due to scar tenderness. Singh et al (2015) showed maximum number of ERCS was done due to scar tenderness (42.86%) followed by failure to progress of labor (35.71%). Devkare et al[10] (2017) showed scar tenderness and failure to progress as the most common indication of ERCS. Thus the results of our study were comparable with other studies and we found two most

common indications of ERCS were scar tenderness and fetal distress.

In the present study we found that maternal complications were lower in vaginal delivery group in form of blood transfusion which was seen in 1.79% cases and wound sepsis in 2.68% cases, whereas in ERCS group blood transfusion rate was 19.39%, caesarean hysterectomy rate was 5.10% and wound sepsis was seen in 13.26%. Scar dehiscence was seen in 32.65% cases of emergency repeat caesarean section. These results were comparable with the study done showed lower maternal complications in the VBAC group in form of fever 9.5% and blood transfusion 7.1% cases whereas in ERCS group, they reported wound infection in 30.76% and blood transfusion in 34.61%. Thus we conclude that maternal morbidity is more in emergency caesarean group as compared to vaginal delivery.

STRENGTHS OF THE STUDY

1. The study was conducted prospectively in a tertiary care hospital, allowing systematic assessment of women with one previous caesarean section.
2. The study included a relatively large cohort of 210 women who were willing to undergo trial of labor after caesarean section (TOLAC).
3. The study evaluated important factors associated with successful vaginal birth after caesarean section (VBAC), particularly previous vaginal delivery and booking status.

4. Maternal and perinatal outcomes were assessed among women undergoing TOLAC, providing clinically relevant information regarding the safety and feasibility of VBAC.
5. Clearly defined inclusion and exclusion criteria were used to select the study participants and maintain a relatively uniform study population.
6. The study was conducted with close intrapartum monitoring, including maternal vital signs, uterine contractions, cardiotocography and partograph monitoring, with early identification of possible scar dehiscence and fetal distress.

LIMITATIONS OF THE STUDY

1. The study was conducted at a single tertiary care centre; therefore, the findings may not be directly generalizable to other healthcare settings.
2. The study included only women with one previous caesarean section and therefore the findings cannot be generalized to women with two or more previous caesarean sections.
3. Several high-risk maternal and obstetric conditions were excluded according to the study criteria, which may have resulted in a selected study population.
4. The study primarily evaluated short-term maternal and perinatal outcomes, while long-term maternal and neonatal outcomes were not assessed.
5. The study did not comprehensively evaluate all factors that may influence VBAC success, such as maternal body mass index, cervical status at admission, inter-delivery interval, and details of induction or augmentation of labour.
6. As the study was observational in nature, the possibility of selection bias and residual confounding cannot be completely excluded.

CONCLUSION

In the present study number of booked cases were 53.84% and unbooked were 46.15%. Rate of vaginal delivery was more in booked cases i.e. 74.10% than in unbooked cases 25.89%. Substantial reduction in the caesarean rates can be achieved safely and efficiently by encouraging the trial of labor in women with a single previous LSCS. Successful trial of labor in previous caesarean section is associated with better maternal and perinatal outcomes. We further proved that in the cases of non recurrent causes of previous LSCS, a fair trial of labor can be given. Caesarean section should not be always followed by repeat caesarean section but patients must have regular ANC visits and have hospital delivery in well equipped hospital and complications should be

diagnosed at an early stage so that we can prevent maternal and perinatal morbidity and mortality.

DECLARATIONS

Ethics Approval and Consent to Participate

The study was conducted in accordance with the ethical principles applicable to research involving human participants. Ethical approval was obtained from the Institutional Ethics Committee of the concerned institution prior to commencement of the study. Written informed consent was obtained from all participants before their inclusion in the study.

Consent for Publication

Not applicable, as no individually identifiable personal information or images of participants are included in this manuscript.

Competing Interests

The authors declare that they have no competing interests.

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Authors' Contributions

All authors contributed to the conception and design of the study, data collection, analysis and interpretation of the findings, preparation and critical revision of the manuscript, and approved the final version for publication.

Data Availability

The data generated and/or analyzed during the current study are available from the corresponding author on reasonable request, subject to applicable ethical and institutional restrictions.

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