

Trial of Labour after caesarean delivery: Proper selection of the case is the key of success



Medical Sciences

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ABSTRACT

A policy of allowing selected women with a history of caesarean section, to attempt a vaginal delivery is now widely accepted in world as the standard of care. The high success rate and the relative safety of the procedure in that context are well established. Still women with a history of caesarean delivery have a reported caesarean rate between 18-44% and risk of scar rupture between 0.5 to 4.5% when undergoing a subsequent trial of labour. We conducted this study with the purpose to know the factors which may influence the probability of vaginal birth among women with history of caesarean delivery. In our study 148 patients underwent trial of labour of which 79 (53.37%) patients delivered by vaginal route, 22 (14.86%) patients underwent instrumental delivery; either forceps or vacuum and 47 (31.75%) patients had a emergency repeat LSCS. So total 101(68.23%) patients had a successful trial of labour.

Introduction--

This is a prospective observational study which included all women admitted to Tertiary Teaching Hospital with history of one lower segment cesarean delivery (LSCS) in the past with full term pregnancy.

Materials and Methods :-The study was conducted for six months in OBGY department of Tertiary Teaching Hospital which included full term pregnant patients with history of one previous lower segment cesarean delivery. The decision to undergo trial of scar is an individual one that should be based on careful, thorough counseling (1.) the American College of Obstetricians and Gynecologists (ACOG) stated explicitly that patients undergoing trial of labour require the presence of an obstetrician, an anesthesiologist, and/or a staff capable of performing an emergency cesarean delivery throughout the patient's active phase of labor. [2] Exclusion criteria included, having more than one cesarean delivery in past, preterm pregnancy and intrauterine death.

Each patient in study was followed in ward and labour room and data collected for following variables :-

- i) Maternal age
- ii) Parity & gestational age
- iii) Prior full term vaginal deliveries
- iv) Dilatation & effacement on admission in labour room..
- v) Indication of previous LSCS
- vi) Indication of repeat LSCS this time.
- vii) Induction and augmentation of
- viii) History of PROM labour
- ix) Mode of delivery.
- x) Duration of labour.
- xi) Birth weight in grams.
- xii) Maternal and perinatal morbidity & mortality.

For indication of previous caesarean section we relied on the information given by patient and wherever available papers of previous LSCS were checked. Patients in study with recurrent indications underwent elective cesarean delivery straightway. Patients with non-recurrent indications like foetal distress this time, who didn't undergo any trial of labour were also included in elective section group though they were taken as a emergency cases.

After excluding any contraindications, all remaining patients underwent trial of labour in labour room where facility of emergency cesarean section after decision making was available for 24 hours. All such patients were monitored for vital parameters like, pulse, blood pressure, foetal heart rate, uterine contractions and scar tenderness. Whole study population was divided into four groups depending on the type of delivery :-

- i) Vaginal delivery.
- ii) Instrumental vaginal delivery
- iii) Elective- caesarean section.
- iv) Emergency caesarean section.

Uterine scar separation was the condition which included both, uterine scar dehiscence and uterine rupture noted at the time of surgery. For assessing the effects of prior vaginal births on outcome of present pregnancy, the study population was also divided into four groups i.e.

- 1) No prior vaginal delivery.
- 2) Vaginal delivery before previous caesarean section (VBBC).
- 3) Vaginal delivery after Previous caesarean section (VBAC).
- 4) Vaginal delivery before and after caesarean section.

Whenever needed labour was induced either with oxytocin or cerviprime gel but for augmentation only oxytocin was used under strict monitoring. Every patient undergoing a LSCS was given a separate printed annexure sheet on discharge, with all details about the operative procedure so as to help the obstetrician if any further operative procedure needed in future.

Results :-

Out of the total 200 patients in the study, 52 (26%) patients straightway underwent elective LSCS. Remaining 148 patients underwent trial of labour of which 79 (53.37%) patients delivered normally by vaginal route, 22 (14.86%) patients underwent instrumental delivery; either forceps or vacuum and 47 (31.75%) patients had a emergency repeat LSCS. So total 101(68.23%) patients had a successful trial of labour. In a large study by Quinones et al, 12,463 attempted a trial of labor, and the VBAC success rates for the term and preterm groups were 74% and 82%, respectively. [3] Table 1

FTVD	79 (39.50%)
Instrumental Delivery	22 (11%)
Elective LSCS	52 (26%0
Emergency LSCS	47 (23.5%)
Total Cases	200

Out of 47 patients who underwent emergency LSCS for failed trial of labour, 23 (48.93%) were because of foetal distress, 14 (29.78%) due to failure to progress 5 (10.63%) due to failure to induce and 5 (10.63%) for impending scar separation.

Emergency LSCS due to Failed trial n=47

Table no.2

foetal distress 23 (48.93%)
failure to progress 14 (29.78%)
failure to induce 5 (10.63%)
impending scar separation. 5 (10.63%)

Indications of emergency LSCS

Out of 5 emergency LSCS done for impending scar separation, intraoperative scar separation was seen only in 3 patients (2-scar dehiscence and 1 scar rupture). In several large retrospective cohort studies, the reported rate of uterine rupture is 0.3-1% SUPER[4,5,6,7,8,9] Thus the scar dehiscence rate in our study was 1% and scar rupture rate was 0.5% only. In 36 patients delivery was augmented with oxytocin and 29 (80.50%) patients delivered vaginally successfully. Keeping in mind that most common indication for emergency LSCS in our study was foetal distress, there was no significant increase in rate of emergency LSCS associated with use of oxytocin.

Out of 166 patients (Table 3) without any prior vaginal delivery 118 underwent trial of labour and 77 (65.25%) delivered vaginally successfully. Out of 15 patients with prior VBBC, 12 underwent trial of labour and 8 (66.66%) delivered vaginally. Out of 17 patients with prior VBAC, 15 (88.23%) delivered vaginally. Though our sample size was not adequate to show significant difference (P = 0.2507) in the rate of successful trial of labour in patients with prior VBAC, this finding attracted attention when compared with the performance of VBAC group.

Table no 3

Group	Total Cases	Trial given	Successful trial of labour	% of successful trial of labour
No vaginal delivery before	166	118	77	65.25%
Prior VBBC	15	12	8	66.66%
Prior VBAC	17	17	15	88.23%
Prior vaginal delivery before and after LSCS	2	1	1	100%
Total	200	148	101	68.24%

There were total 27 cases of premature rupture of membranes (PROM) of which 25 underwent trial of labour, when compared with remaining cases who underwent trial of labour (123) this was statistically significant increase in failure of trial (56%) in PROM group (P=0.004). Though no association was found between duration of labour and duration of PROM in hours, maximum cases of failed trial in PROM patients were either due to failure to induce or failure to progress as seen in table no 4.

Table no 4: Trial of labour in cases of PROM (P=0.0044, X² =8.10)

Group	Total Cases	Trial Given	Failed trial of labour	% of failure
No PROM	173	123	33	26.87%
PROM	27	25	14	56%
Total	200	148	47	30.76%

When dilatation of cervix on admission in labour room is considered then a statistically significant (P = 0.0002) increase in rate of successful trial of labour was found when dilatation was ≥ 4 cms(table no 5). Flamm et al study demonstrated that patients presenting with dilation greater than or equal to 4 cm had an 86% rate of VBAC.[10].Also when effacement of cervix on admission in labour room is considered and grouped into 0 to 25%, 26 to 75% & 76-100% then the percentage of successful trial of labour was 21%, 69% and 100% respectively.(table no 6)

Table no 5: Dilatation x successful trial of labour

Dilation in cms	Total cases	Trial Given	Successful trial of labour	% of successful trial of labour
<4 cm	145	97	60	61.84%
≥ 4 cm	55	51	41	80.39%
Total	200	148	101	---

Table no 6: Effacement x successful trial of labour

Effacement in %	Total cases	Trial Given	Successful trial of labour	% of successful trial of labour
0.25%	55	19	4	21%
26-75%	114	101	69	68.92%
76-100%	31	28	28	100%
Total	200	148	101	---

Average baby weight in the study was 2726 gms, average duration of labour in successful trial was 6.8 hrs and average patient in stud was 24.6 yrs. None of these factors were statistically significant to affect the outcome of study.

There was no significant perinatal mortality except one stillbirth due to uterine rupture. Two babies needed. NICU care for few days but revived. Considering maternal morbidity, there was no maternal death, bladder-bowel injuries but one patient needed obstetric hysterectomy for postpartum haemorrhage (PPH) after a emergency LSCS for foetal distress. It was a atonic PPH.

Surprisingly not a single case of placenta previa was found in whole study population.

Conclusion:-

This study confirms the results of numerous other studies that found vaginal birth after cesarean to be the safe and likely to succeed. History of prior VBAC and Bishop's score > 5 were the most favorable factors for successful trial of labour. History of PROM was significantly associated with failed trial. So in short we can say that in properly selected cases under strict monitoring the chances of scar separation (1.5%) as well as maternal and fetal morbidity and mortality is very low and we can take chance for vaginal delivery in these patients with history of previous LSCS and can avoid the operative morbidity related to cesarean section.

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