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Original Research Article

Safety and efficacy of trial of labour after cesarean

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ABSTRACT

Background: In recent years, there are increasing numbers of cases which report for delivery after previous LSCS. Trial of labour after lower segment cesarean section can save them from repeat LSCS and its complications. Aim of study was conducted to evaluate the safety and efficacy of trial of labour after LSCS.

Methods: This is a prospective study carried out at Mahatma Gandhi Hospital. One hundred pregnant patients with previous LSCS giving informed consent for trial of labour after cesarean section (TOLAC) were enrolled. Case selection was done as per the ACOG guidelines. Continuous fetal and maternal monitoring done by WHO partograph and cardiotocography. If there appeared any indication for repeat cesarean then emergency LSCS was done.

Results: In this study, 80% of the enrolled patients delivered vaginally and 20% underwent repeat emergency LSCS. 2% of the enrolled patients underwent scar dehiscence. The patients in the active phase of labour on admission had more chances of successful vaginal birth after cesarean section (VBAC). Birth weight of more than 3000 grams is associated with lower rates of successful VBAC. There was no maternal mortality but 1% intrauterine fetal death due to scar rupture was there.

Conclusions: TOLAC is safe and the success rates are good. Proper selection of cases with adequate fetal and maternal monitoring is required. So, once cesarean always cesarean is not a true dictum.

Keywords: LSCS, Scars dehiscence, Trial of labour after cesarean section, Vaginal delivery after cesarean section

INTRODUCTION

“ONCE CAESAREAN ALWAYS A CAESAREAN” was the term given by CRAGIN in 1916.¹ That era was of classical Caesarean section. Now the scenario has been changed and today we are performing lower segment caesarean section. The lower segment caesarean section gives us the liberty to give trial of labour after cesarean.

The rates of primary LSCS in increasing steadily and there is decreasing trend of vaginal birth after caesarean (VBAC), to decrease the rate of LSCS ACOG recommends that most pregnant women with previous 1 LSCS should be counselled for VBAC and trial of labour after cesarean (TOLAC).²

Appropriate clinical settings and properly selected group

of patients can make the vaginal birth after caesarean (VBAC) safe and effective. Trial of labour after caesarean decreases rate of caesarean section and the morbidity associated with surgical intervention. In VBAC there is less blood loss, shorter duration of stay in hospital, less intrapartum and postpartum infections and it further decreases the economic burden on society and the individuals.

Aim

- To evaluate safety and efficacy of trial of labour after lower segment caesarean section.

Objectives

- To study and analyze various factors related to VBAC.

- To study fetal and maternal outcome in VBAC.

METHODS

This is a prospective observational study conducted in department of Obstetrics and Gynecology at Mahatma Gandhi hospital, Jaipur after approval from institutional ethical committee.

A total no. of 100 patients fulfilling the selection criterion were selected after taking the written informed consent. The patients were both booked and unbooked cases. The booked cases are those who were on regular antenatal visits and the unbooked cases are those to come to the labour room directly during labour pains and had no history previous ANC visits in hospital.

Advantages of vaginal birth after caesarean were explained. They were explained about the risk of uterine rupture, fetal distress and need of immediate emergency LSCS anytime during TOLAC. Hematological, Serological investigation and USG were done if required. Continuous electronic monitoring and WHO partograph was plotted which gives the regular and qualitative assessment of maternal and fetal status. Four hourly per vaginal examination was done to assess the progress of labour and per vaginal examination is done earlier if required.

The signs for the scar dehiscence were monitored. Patient is provisionally prepared for emergency LSCS and the TOLAC was continued till the progress of labour is satisfactory. The patient is shifted for emergency repeat LSCS if there is unsatisfactory progress scar tenderness fetal distress etc.

The patients were selected on the basis of ACOG guidelines.

Inclusion criteria

- Singleton pregnancy
- Gestational age >34 weeks
- Vertex presentation
- History of previous one LSCS
- Patient with spontaneous progress of labour.

Exclusion criteria

- Recurring indication for previous LSCS
- History of any other scar on uterus (myomectomy, hysterotomy)
- More than one LSCS
- Previous caesarean with vertical scar

Different factor responsible for VBAC were evaluated, the result was tabulated and statistically analyzed by using chi-square test.

RESULTS

In this study, 80% of the enrolled patients delivered vaginally amongst them 78 (97.5%) delivered by spontaneous normal delivery and 2 (2.5%) delivered by vacuum assisted vaginal delivery. 20% underwent repeat emergency LSCS. The most common cause of repeat emergency LSCS was non-progress of labour contributing in 50% of the cases.

Table 1: Effect of indication of previous LSCS on successful VBAC.

Indication of previous LSCS	Successful VBAC	Emergency LSCS	Chi Square (df)	P-value
Maternal causes	39	14	2.110 (1)	0.146
Fetal causes	41	6		

The p value is >0.005 thus there is no significance of the cause of previous LSCS in success of VBAC.

The patients in the active phase of labour on admission had more chances of successful VBAC (Vaginal Birth after Cesarean Section). 90.76% of the patient admitted in active stage of labour delivered by successful VBAC. Only 60% of the patients in latent phase of labour delivered by VBAC.

Table 2: Effect of stage of labour on successful VBAC.

Stage of labour	Successful VBAC	Emergency LSCS	Chi Square (df)	P-value
Latent phase	21	14	11.607 (1)	0.000
Active phase	59	6		

The patient admitted in active phase of labour have more chances to deliver vaginally. p value is <0.005 that shows significance of stage of labour in success of VBAC.

93.4% of the patients with new born weight 3 kg delivered by successful VBAC and the rates decreased with increasing new born weight to 50% in patients with newborn weight 3 to 3.5 kg and 12.5% in patient with newborn weight 3.5 to 4 kg.

Table 3: Effect of neonatal weight on successful VBAC.

Neonatal weight	Successful VBAC	Emergency LSCS	Chi Square (df)	P-value
≤ 3 Kg	71	5	32.240 (1)	0.000
> 3 Kg	9	15		

Birth weight of more than 3000 grams is associated with lower rates of successful VBAC. p value is <0.005 that shows significance of birth weight in success of VBAC.

The most appropriate interval between two deliveries for successful VBAC is 2 to 4 years when success rate is about 90%. When interval decrease to 2 years. The successful VBAC rate decrease to 61.9%.

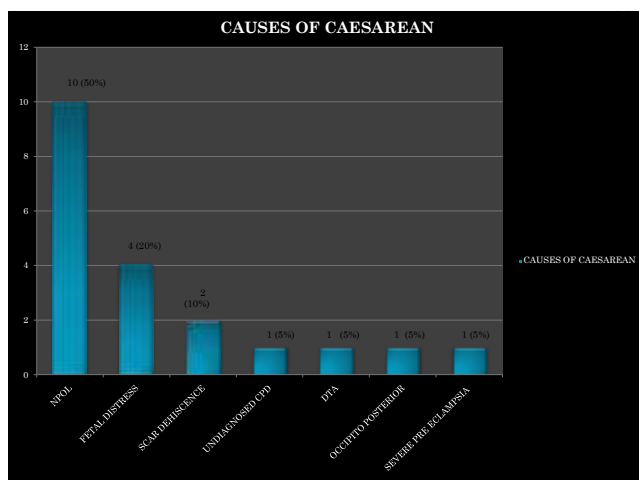


Figure 1: Causes of repeat emergency LSCS.

2% of the enrolled patients underwent scar dehiscence. There was no maternal mortality but 1% intrauterine fetal death due to scar rupture was observed.

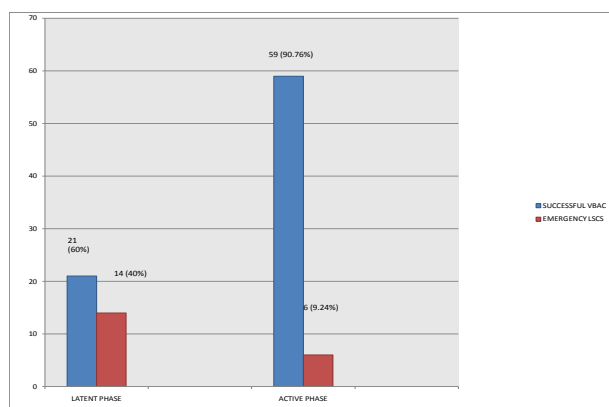


Figure 2: Stage of labour and success of VBAC.

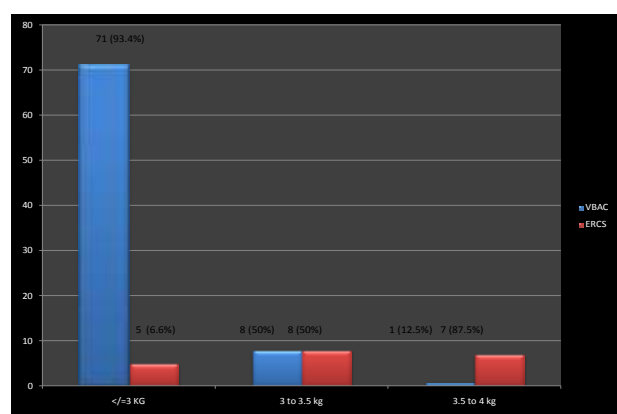


Figure 3: Neonatal weight and success of VBAC.

Table 4: Effect of birth interval on successful VBAC.

Birth interval	Successful VBAC	Emergency LSCS	Chi Square (df)	P-value
≤2 years	21	13	9.049	0.003
>2 years	59	7	(1)	

The most appropriate interval between two deliveries for successful VBAC is 2 to 4 years. p value <0.005 that shows significance birth interval on success of VBAC.

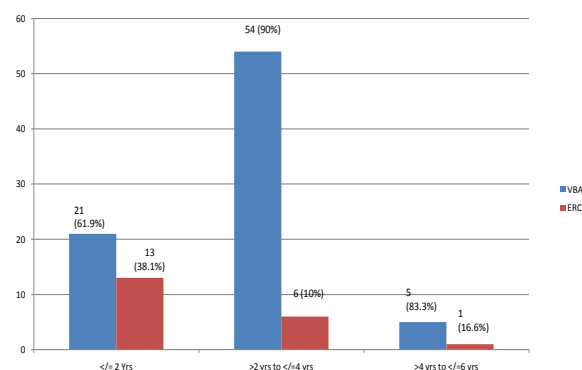


Figure 4: Interval between two deliveries and success of VBAC.

Table 5: Causes of previous LSCS and success of VBAC.

Indication of previous LSCS	No. of cases	Emergency LSCS	Successful VBAC
NPOL	35	25 (71%)	10 (29%)
Fetal distress	27	25 (93%)	2 (7%)
Malpresentation	10	8 (80%)	2 (20%)
n breech other	5	4 (80%)	1 (20%)
Pre-eclampsia	7	7 (100%)	0
Eclampsia	1	0	1 (100%)
Severe oligohydramnios	5	4 (80%)	1 (20%)
Cephalopelvic disproportion	10	7 (70%)	3 (30%)

DISCUSSION

As the rates of cesarean sections are increasing day by day a large number of patients come with the pregnancy after one or more cesarean delivery. These cases come under high risk group as they have scarred uterus and the scar is at risk of rupture during pregnancy and during labour and this can lead to serious complications to mother and fetus.

In this study, 80% of selected patients delivered vaginally that is consistent with Riva and Teich, Dayal V, Allahabadia, Phelan et al and O Sullivan.³⁻⁷

The study shows that the commonest indication of elective repeat cesarean section was non progress of labour (50% which is consistent with Archana Maurya et al. (48%).⁸ The study shows the cause of previous LSCS do not make a significant difference in success of trial of labour after cesarean p value >0.146.

Patient admitted in active phase of labour as more chances of successful VBAC p value < 0.05 which shows stage of labour making significant difference in success of VBAC. In 1997 Flamm et al study demonstrated the patient with the dilation 4 cm. had an 86% rate of VBAC.⁹ In the present study neonatal rate had significance role in success of trial of labour after cesarean p value <0.05 which is consistent with Archana Maurya et al.⁸ Doshi et al. p value <0.02 whereas study done by birara and geberhibot shows that there is no association between birth weight of baby in success of VBAC.¹⁰

In the present study interval between two deliveries had significant role in success of TOLAC p value <0.003 if the interval is less than 2 years the rate of LSCS were high and if the interval is more than 2 years the rate of elective repeat cesarean section were less the result were consistent Archana Maurya et al p value <0.001 and Doshi et al p value <0.01.^{8,10}

So there is no such rule that the patient can be delivered vaginally or should go for elective repeat LSCS after primary LSCS, each and every patient should be evaluated and line of treatment should be individualised.

Present study shows that appropriate clinical settings and properly selected group of patients can make the trial of labour after cesarean safe and effective.

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