

A Study of the Success of Trial of Labour with Previous Caesarean Section in a Tertiary Care Hospital

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Abstract: Lower Segment Cesarean section is now the most common surgical procedure performed in many developed and developing nations.¹ Factors contributing to increased cesarean rate seen today are multiple.¹ Higher cesarean rates translate into higher health cost.² Increasing incidence of primary cesarean sections has led to increase in number of patients with previous 1 lower segment cesarean section.² Previous lower segment cesarean section (LSCS) predisposes to various complications antenatally, intrapartum, intraoperative and postnatally hence there is a need for intrapartum counselling and institutional delivery.² This study was conducted in Goa Medical College from October 2013 to June 2015. All women with pregnancy above 28 weeks of gestation,with a live fetus ,with a history of previous LSCS were enrolled. This study included 1302 pregnant women with history of one or more previous LSCS which fulfilled the inclusional criteria. Out of the 1302 patients, 918 cases (70%) ,including 236 subjects with previous 2 LSCS and 682 subjects with previous 1 LSCS were taken for repeat LSCS without trial of labour (ERCD),384 cases (30%) opted for Trial of Labour (TOLAC), of which 309 (23.7%) achieved successful vaginal delivery. VBAC Success rate was 80.5% (309/384).Percentage of repeat cesarean was 76.26% (993/1302).Previous LSCS should not always be followed by a LSCS. In cases of previous LSCS, delivery should be carried in a well equipped health care center. Complications if any should be diagnosed early thus preventing perinatal and neonatal morbidity.

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I. Introduction

Cesarean section is the most common surgical procedure carried out today.¹ The increase in Cesarean section (CS) rate may be due to increase in the number of primary caesareans.²

Studies showed that a first successful vaginal delivery, even if instrumental, increases the chances of vaginal delivery in the subsequent pregnancy, while a first delivery by Cesarean Section has been associated with an increased risk of repeat Cesarean Section in the subsequent pregnancies.² Reducing Cesarean Section rate in nulliparous women might contribute to reverse of the rising CS rate. Due to the fear of uterine rupture during trial of labour there is a rising in CS rate. Due to the fear of uterine rupture during trial of labour, repeat CS is being performed by many obstetricians, sometimes without clear indications. Repeat CS contributes to the increasing CS rate because future vaginal deliveries among these women will almost be impossible. This is why some authors have advised obstetricians to be patient during the second stage to labour in nulliparous women and the indication of the primary first cesarean section should be absolute one.

Complications of scarred uterus include an increased risk of uterine rupture, repeat CS, placenta accreta or increta³and post-partum haemorrhage.³Given that more CSs are increasingly being performed in our environment, especially among nulliparous women, we expect high repeat CS rate among women who had primary CS delivery. This study, therefore, aimed at evaluating the success rate of vaginal birth after previous LSCS.

II. Aim

To study the proportion of successful vaginal births after previous caesarean section

III. Material And Methods

Study Design: Prospective observational study

Study Location: This was a tertiary care teaching hospital based study done in Department of Obstetrics and Gynecology, at Goa Medical College and Hospital, Bambolim, Goa

Study Duration: October 2013 to June 2015

Sample size: 1302 patients.

Subjects & selection method: This study was conducted at Goa Medical College from October 2013 to June 2015. All pregnant women, both booked and unbooked cases above 28 weeks of gestation, with alive fetus, with a history of previous LSCS were enrolled.

The subjects were classified as:-

A) Women chosen for repeat cesarean section without a Trial of labour -ERCD

B) Women who were given a trial of labour and delivered vaginally –Successful VBAC

C) Women who were given a trial but due to failed trial had to be taken for repeat LSCS - failed LSCS

Procedure methodology

Ethical clearance was taken from the institutional ethics committee.

Informed consent was obtained after going through the record related to previous Cesarean Section and careful evaluation of the patient, a decision regarding VBAC or repeat cesarean section was taken. The cases selected for VBAC were monitored carefully during labour for any sign of impending rupture uterus. All the cases were provisionally prepared for emergency LSCS. Intrapartum monitoring was done by using the standard partograph. Internal examinations were performed to assess the progress, and special attention was paid toward the evidence of scar dehiscence or rupture.

Augmentation of labour was done with artificial rupture of membranes/ oxytocin infusion when indicated. Ventouse/ forceps were used in second stage of labour. Data was collected for each mode of delivery. Data analysis was done using various statistical tests.

IV. Result

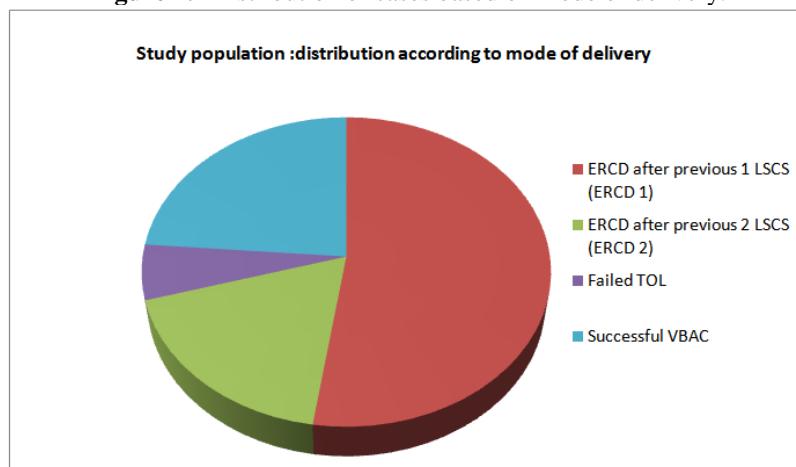
This study included 1302 pregnant women with history of one or more previous LSCS which fulfilled the inclusion criteria.

Out of the 1302 patients, 918 cases (70%), including 236 subjects with previous 2 LSCS and 682 subjects with previous 1 LSCS were taken for repeat LSCS without trial of labour (ERCD).

384 cases (30%) opted for Trial of Labour (TOLAC), of which 309 (23.7%) achieved successful vaginal delivery. VBAC Success rate was 80.5% (309/384).

Percentage of repeat cesarean was 76.26% (993/1302).

Figure 1:- Distribution of cases based on mode of delivery.



V. Discussion

Increase in caesarean section (CS) rate during the last three decades has been the cause for concern. Variation exists in rates of caesarean delivery across countries; currently the rate ranges from 10% to 40%.⁴

According to revised guidelines of ACOG regarding VBAC in 2017 Error! Bookmark not defined., the success rate of VBAC ranges between 60 to 80% and 72-75% according to RCOG⁵. However, the demographic and obstetric characteristics of the mother can influence the likelihood of achieving VBAC.

In a tertiary care hospital in South India a study conducted by George et al.⁶, the success rate of VBAC was 60% and Sen et al.⁷ conducted a study in North India and reported the rate of successful VBAC to be 63.5%.

Table 1:-VBAC Success rates in other studies

Study	VBAC success rate
George et al. ⁶	60%
Sen et al. ⁷	63.5%
Present Study	80.5%

However in our study the VBAC success rate was found to be 80.5%, this high rate might be due to the stringent selection of patients in the institute. In western countries the success rate ranging between 70% to 80%.⁸ The VBAC success rate was found to be lower in India as compared to western nations, this could have been due to the lack of resources required for emergency obstetric care in India, leading to a higher rate of elective Cesarean sections.⁹ In the capital Delhi, caesarean section (CS) rate in teaching institutes currently ranges between 19- 35%. Such a high caesarean section rate has put burden on the economy.¹⁰

Because of rising rates of caesarean section, suggestions were made that vaginal birth after caesarean section (VBAC) might help in reducing this rate.¹¹ Because of the safety of VBAC as well as fewer maternal complications as compared to cesarean, VBAC has become a preferred strategy in selected group of patients.¹² Trial of labor is a safe alternative for those patients with a single lower uterine segment scar.

Vaginal birth after cesarean section (VBAC) is associated with fewer complications and a shorter hospital stay, lesser blood loss and transfusion of blood and blood products and a smaller risk of wound infections as compared to cesarean.⁶

Planned VBAC has a (1/200) 0.5% chance of rupture.⁵ A successful VBAC has fewer complications than an elective repeat caesarean.⁵ A 60 to 80% success rate of vaginal birth after previous caesarean section has been reported by many authors if the primary caesarean was done for nonrecurring indications.^{13,14} In the present study ,the success of VBAC was in 80.5% cases ,which does not co relate well with the findings of other studies in India, this may be due to stringent selection of patients in the institute. Patients's choice is the most important single factor while offering trial of labor. Women should be given information regarding mode of delivery, risks, complications and advantages of both. This knowledge would help while counseling mothers for VBAC.¹⁴

While there is increased maternal and perinatal morbidity associated with the failure of trial of vaginal birth after cesarean section (VBAC), a successful trial of VBAC has few complications which are comparable to nulliparous women. Studies in patients attempting VBAC have shown that the highest rate of maternal complications occur in patients, who have a failed attempt at VBAC, intermediate in those who have an elective repeat cesarean section and lowest in those who have a successful VBAC.¹⁵

Assessment of individual likelihood of VBAC can help determine and choose appropriate candidates for trial of labor. Screening tools consider the relative effect of multiple factors to predict an individual's likelihood of successful vaginal delivery.¹⁶ Majority of the scoring systems have used indication of previous cesarean, Bishops score and history of VBAC in their screening tools. Some have used other factors like maternal age, maternal BMI, inter-delivery period, estimated fetal weight and history of term/preterm cesarean section.¹⁷ Although all these factors have been shown to influence VBAC trial outcome they have not achieved statistical significance and hence these factors have not been collectively included in various screening tools.¹⁷

Even those factors found to be associated with successful VBAC, may vary from centre to centre. Currently, therefore, there is no single validated tool which holds true for all to predict successful vaginal birth among women with a prior cesarean delivery.In the present study, the common predictors for successful VBAC were, history of previous successful VBAC, normal body mass index, favorable Bishop's score, spontaneous onset of labor and average baby weight.⁵

VI. Conclusion

Stringent selection of patients for trial and meticulous intra-partum maternal and fetal monitoring for VBAC often leads to successful VBAC as shown in this study. It helps in reduction of rate of elective as well as emergency caesarean section, thereby reducing maternal mortality and morbidity associated with repeat LSCS.

Proper counselling for trial of labour and evaluation of the case of prior caesarean section has been considered a key method of reducing the caesarean section rate. Higher morbidity and health care cost of repeat lower segment caesarean section makes VBAC, a better and safer option in carefully selected women with previous uterine scar. This has also can decrease the burden on the economy. The present study shows that trial of vaginal delivery in properly selected patients is safe as long as trials are conducted in an institution where continuous intrapartum care and monitoring, facilities for emergency LSCS and advanced neonatal resuscitation are available.

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