

**Vaginal birth after caesarean section - A measure to reduce caesarean section rate.**

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**Abstract**

Caesarean section has become the most performed major operation in obstetrics. The increasing rate of primary caesarean section worldwide is due to early detection of foetal and maternal complications. Repeated caesarean section is one of the major contributory factors for increasing rate of caesarean section. Vaginal birth after caesarean section (VBAC) describes a vaginal delivery in a woman who has given birth via caesarean section in a former pregnancy.

Patients desiring VBAC delivery undergo a trial of labour (TOL), also called trial of labour after caesarean section (TOLAC). It has been shown that the outcome of trial of labour in past caesarean delivery is acceptable, effective and safe for both mother and foetus, if the women are properly selected.

Serious potential complications include uterine rupture or uterine dehiscence and associated maternal and/or neonatal morbidity.

**Objective:** The purpose of this study was to determine the outcome of pregnancy in women with previous one caesarean section in relation to vaginal delivery and maternal complications

**Materials and methods:** A prospective inter ventional study carried out in Basaveshwar teaching and general hospital and Sangamesh war teaching hospital from January 2022 to September 2022.

Out of total 110 admitted pregnant women who had previous one caesarean section, 53 pregnant women were selected as study population. Patients with spontaneous onset labour but preterm pregnancy with any contraindication or prior caesarean section due to

recurrent causes, history of classical caesarean section, more than one caesarean section, multiple pregnancy, pregnancy with medical disorder were excluded in the study.

**Results:** Of the 53 women, 28 (52.83%) had vaginal birth after caesarean (VBAC) and 25 (47.1%) had a repeat caesarean section. 5 patients had scar dehiscence. 1 patient had uterine rupture. No significant maternal morbidity or mortality was observed.

**Conclusion:** In carefully selected cases, trial of labour (TOL) after a prior caesarean is safe and often successful. VBAC rate was significantly more in women who had prior vaginal deliveries, especially in those with previous VBAC.

By proper counselling of patients, we can convince them for VBAC and thus avoid a repeat caesarean section, in turn reducing the caesarean section rates.

**Keywords:** Caesarean Section, Vaginal Birth After Caesarean Section (VBAC), Trial of Labour (TOL), Trial Of Labour After Caesarean Section (TOLAC)

### **Introduction**

Women with previous caesarean sections constitute a high-risk group in obstetrics, with associated medical and legal implications. In past 20 years, the rate of CS has steadily increased from about 5% to more than 20%<sup>[1]</sup>. The policy- once a caesarean always a caesarean is no longer rational.

A planned vaginal birth after a previous CS should be recommended for women whose first CS was by lower segment transverse incision and who have no other indication for CS in present pregnancy. Vaginal birth after caesarean (VBAC) or trial of scar (TOS) represents a significant change in modern obstetric practice. However, the concern that a scarred uterus might end up in rupturing the uterus, leading to severe maternal and

perinatal morbidity, still prevents a large number of obstetricians and pregnant women worldwide, from adopting a TOS after previous one caesarean section. Both, attempting a vaginal birth and opting for an elective repeat caesarean section (ERCS) are associated with different risks for the mother and new born; and, deciding a delivery plan involves a difficult weighing of those cases<sup>[2]</sup>.

The ability to predict the outcome of an attempted trial of vaginal delivery plays an important role in initial counselling of pregnant women with previous one caesarean delivery.

In 1982, The American College of Obstetricians and Gynaecologists as a standard of care, recommended a trial of labour in selected cases of prior caesarean section. In 1988, the guidelines were expanded to include more women with previous caesarean births. Hence, there was a steady increase in vaginal births after caesarean in the late 1980's<sup>[3]</sup>.

In 1980s, the National Institute of Health Consensus Conference in USA recommended that otherwise in uncomplicated pregnant women with a prior lower segment transverse caesarean incision, the patients be encouraged to under a trial of labour<sup>[4]</sup>.

During 1980 to 1990s, many healthcare community and management care organization adopted the policy of attempting the trial labour in women with history of previous caesarean section, even in the face of unacceptable risk to the mother and to the foetal. From those initiatives, this practice is known as Vaginal Birth After Caesarean (VBAC).

An attempt of vaginal birth is preferred method of delivery management for most patients in whom the primary caesarean section was performed for non-

recurring causes, e.g., foetal distress, cephalopelvic disproportion (CPD) and non-progress of labour.

Attempting VBAC decrease the risks associated with the surgical delivery. But VBAC attempts are not risk-free. Even among the best candidates, the risk of uterine rupture is between 0.2 to 1.5%. Impending rupture or wound dehiscence along with the old scar is usually not life threatening for mother and babies.

However, rupture uterus is significant cause of maternal morbidity, mortality and foetal death. Without knowing the type of previous scar, it is very much difficult to decide about the mode of the delivery. So, attempting VBAC with unknown uterine scar leads to significant increase in risk of uterine rupture and subsequent maternal and perinatal death.

A skilled sonographer has the ability to identify the scar, its direction, thickness and its abnormalities if existed. It was found that the thickness of the lower uterine segment decreases from 6.7 mm to 3 mm at the time of delivery, however it decreases to 2.3 mm in patients with previous caesarean section. The women with thickness of lower uterine segment <2mm had intrapartum uterine rupture [5]. There is a definite risk of uterine rupture in vaginal birth after caesarean delivery (VBAC) often leading to disasters which can be avoided by rapid diagnosis and prompt intervention.

The present study was undertaken to ascertain these facts with the hope that more women will be encouraged to avoid an unnecessary repeat caesarean section by opting for vaginal delivery. VBAC offers individual advantages over a repeat caesarean section since the operative morbidity and mortality are completely eliminated, the hospital stay is much shorter and expenses involved are much less [6-9].

The rate of caesarean section needs to be reduced and this can be achieved to a small extent by avoiding primary caesarean sections done without explicit indications and more importantly by resorting to a trial of vaginal delivery after previous caesarean section which is safe for the foetus [10-13].

The purpose of this study was to evaluate the efficacy and safety of VBAC. So, successful VBAC reduced the incident of post-partum morbidity, infection, blood transfusion and hospital stay. Therefore, all women with prior delivery by caesarean section need not necessarily be delivered by caesarean section during their next pregnancy. The main aims of our study were to determine the outcome of pregnancy in women with prior caesarean section in relation to vaginal delivery and maternal complications.

### Methodology

This was a prospective interventional study conducted at Basaveshwar teaching and general hospital and Sangameshwar teaching hospital attached to Mahadev Appa Rampure medical college, Kalaburagi from January 2022 to September 2022. A total of 110 patients were admitted with previous one caesarean section, out of which 53 patients who fulfilled the inclusion criteria were selected for TOLAC. 29 patients refused for trial of labour and were taken for repeat caesarean section.

Patients with spontaneous onset of labour but preterm pregnancy with any contraindication or prior caesarean section due to recurrent causes like cephalopelvic disproportion, major degree placenta praevia, transverse lie, history of classical caesarean section, associated medical disorder like anaemia, pregnancy induced hypertension, diabetes, heart disease, chronic renal disease, breech presentation, post-dated pregnancy with

unfavorable cervix, estimated fetal weight >3.5 kg and multiple pregnancy were excluded in the study.

Detailed history of the patient on admission was taken and the indication for previous caesarean section was asked. Patients in labour were monitored hourly by recording the vital parameters i.e. temperature, pulse, respiration, BP, continuous electronic foetal monitoring by cardiotocography, Partogram, uterine contractions monitoring, close watch for the early recognition of scar dehiscence by identifying maternal tachycardia in absence of fever, vaginal bleeding, scar tenderness and foetal heart rate alterations. Attempt at vaginal delivery was abandoned if there was any suspicion of scar dehiscence or sign of foetal distress or unsatisfactory progress of labour.

**Results**

Of the 53 women, 28 (52.83%) had vaginal birth after caesarean (VBAC) and 25 (47.1%) had a repeat caesarean section. Among 28 successful vaginal deliveries, 24 women had spontaneous vaginal delivery while 4 had assisted delivery with ventose. Of the 53 women who underwent trial of labour, 29 of them had repeat caesarean section.

Foetal distress was the main reason in 15 women while the second common cause was failure to progress, short inter-pregnancy interval was also one of the reasons. 15 patients had prior vaginal delivery among which 13 women had successful VBAC in our study. 5 patients had scar dehiscence and 1 patient had uterine rupture. There were 10 cases of postpartum haemorrhage, 4 in vaginal delivery group and 6 in repeat caesarean section group. There were 4 cases of second and third-degree perineal tear in the study group. No significant maternal morbidity or mortality was observed.

Table 1: Distribution of cases with respect to age

Age (years)	No: of cases	Percentage
20-24	10	18.9
25-29	25	47.1
30-35	18	34

Graph 1:

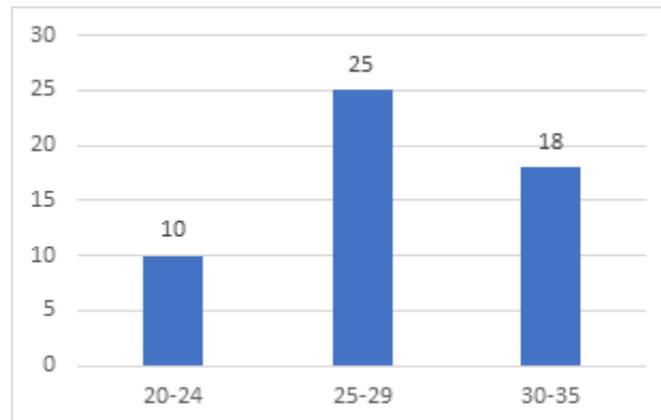


Table 2: Distribution of cases with respect to onset of labour

	Successful VBAC	Failed VBAC	Total
Spontaneous Labour	24	21	45
Induced labour	4	4	8

Graph 2:

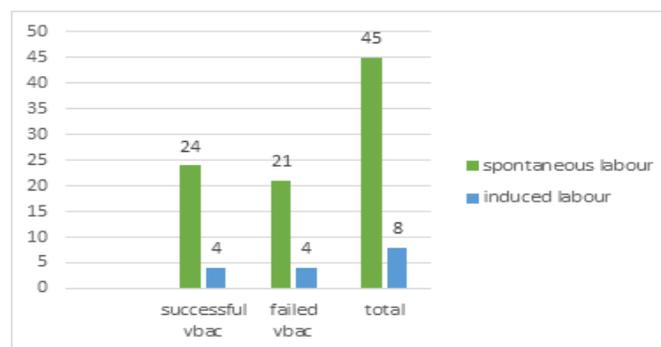


Table 3: Distribution of cases with respect to mode of delivery

Mode of delivery	No of cases	Percentage
VBAC	28	52.9
Repeat c section	29	47.1

Graph 3:

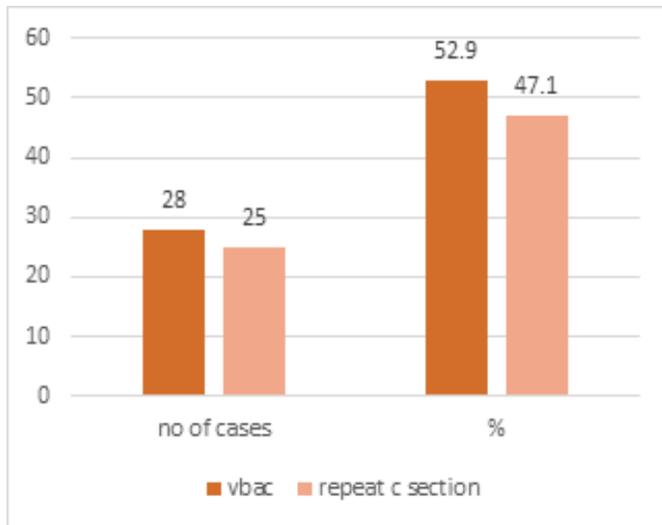


Table 4: Distribution of cases with respect to previous vaginal delivery

Previous vaginal delivery	Successful VBAC	Failed VBAC	Total
Yes	13	2	15
no	15	23	38

Graph 4:

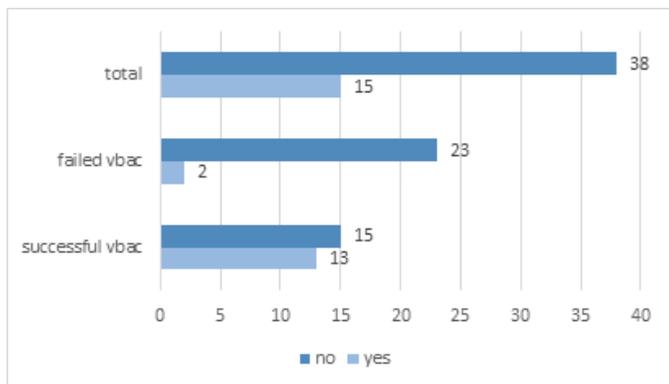
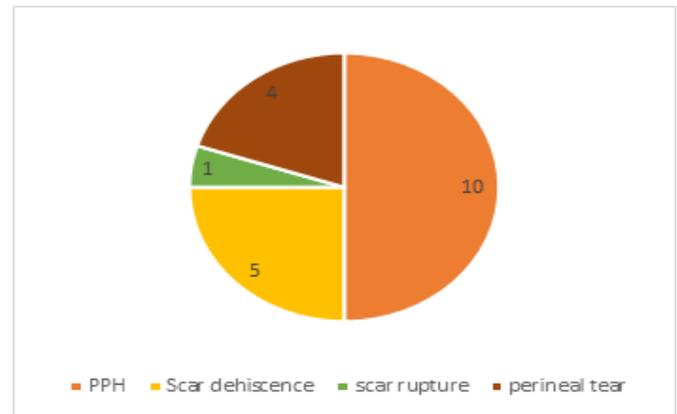


Table 5: Distribution of cases with respect to maternal complications

Maternal complications	No of cases
Postpartum haemorrhage	10
Scar dehiscence	5
Scar rupture	1
Perineal tears	4

Graph 5:



### Discussion

Caesarean section has become the most performed major operation in obstetrics. The increasing rate of primary caesarean section is due to early detection of foetal and maternal complication. Repeat caesarean section is one of the major contributory factors for increasing rate of caesarean section. It accounts for one third of all caesarean deliveries. Current medical evidence indicates that 60-80% of women can achieve a vaginal delivery following a previous lower uterine segment caesarean delivery. The decrease in the incidence of women with a previous caesarean section undergoing a trial of labour reflects patient's choice as much as obstetrician's decision. The way in which a woman is counselled will influence this choice.

Of the 110 women, TOLAC was attempted in 53 women out of which 28 (52.9%) had successful VBAC. This rate is almost similar to that reported in the literature. Most published series of women attempting TOS have demonstrated a probability of VBAC of 60–80%. There is consistent evidence to show that a prior vaginal delivery and, particularly, a prior VBAC are associated with a higher rate of successful trial of labour (TOL) compared with patients with no prior vaginal delivery. Our results correlate well with the study by Landon et al who concluded that previous vaginal delivery including

previous VBAC is the greatest predictor for successful TOL. They also reported a reduced success rate for women with induced labour which is similar to our study where 50% of cases in induced group had failed trial and underwent repeat caesarean section.

In this study, most of the women had intact uterine scar 47 (88.7%), which is similar to the study conducted by Sultana et al. Most of the large studies in literature on VBAC trial have shown a higher incidence of maternal morbidity associated with TOS and failed trial. However, our study did not reveal any significant rate of maternal morbidity associated with TOS other than a 9% incidence of scar dehiscence and 1.8% incidence of uterine scar rupture in the trial group, which is the same as that reported worldwide.

The duration of hospital stay for VBAC was lesser compared to repeat C-section group. Benson *et al* carried out a survey of the benefits of a successful VBAC and found out that a shorter hospital stay in a VBAC delivery has a positive impact on the psychology of the woman and decreases the total cost of hospitalization.

Many women do not accept sterilization even during the second CS. This decision exposes them to the development of complications related to scar rupture in subsequent pregnancy and labour. If women are explained about the option of VBAC and told about the risk associated with a repeat CS, many CSs can be avoided. They also need to be educated about the long-term implications of preferring repeat CSs over VBAC deliveries.

### Conclusion

Now a days, vaginal delivery of pregnant women with history of previous one caesarean section with nonrecurring indication is established. It has been showed that the outcome of trial of labour in past

caesarean delivery is acceptable, effective and safe for both mother and foetus, if the women is properly selected. This has been possible because of modern surgical technique, safe anaesthesia, facilities for blood transfusion and modern electronic equipment's for monitoring of the foetus during intra partum period. Proper counselling for trial labour and evaluation of the women with prior caesarean section has been considered a key method of reducing the caesarean section rate. In developing countries, it is better to give trial of labour in patients who do not have absolute contraindications for vaginal delivery. A prior vaginal delivery, particularly a prior VBAC are associated with a higher rate of success compared to patients with no prior vaginal delivery. Spontaneous onset of labour, average-sized babies and increasing parity are other factors having a positive impact on the successful outcome of TOLAC. By proper counselling of patients, we can convince them for VBAC and thus avoid a repeat caesarean section, in turn reducing the caesarean section rates.

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