

# Feto-Maternal Outcome in Pregnancy with Previous One Caesarean Section

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**Abstract:** *The obstetric and fetal outcome in pregnant women with a history of previous caesarean section are studied. All the following factors are observed and studied in this work. Factors studied are Route of delivery, Incidence of vaginal delivery following LSCS, Incidence of scar dehiscence/scar rupture, Maternal mortality and morbidity determined by any one or more of the following: Haemorrhage, blood transfusion requirement, viscus injury, wound infection, endometritis, hysterectomy and thromboembolism, Fetal outcome (as a consequence to intrapartum events): Admission to neonatal intensive care unit (including reason for admission), one and five minute Apgar score, perinatal mortality and coupled to other studies.*

**Keywords:** Caesarean Section, VBAC (vaginal birth after caesarian ), scar dehiscence , foetal monitoring, Doppler.

## 1. Introduction

In today's situation when the access to obstetric care is growing day by day, there has been a concern over the rising cesarean rates all over the world.<sup>[1]</sup>

The introduction of lower segment caesarean section gave a good and strong scar to the uterus, to hold and safely deliver a subsequent pregnancy.

The dictum, "once caesarean section always caesarean section" no longer holds true. Several studies suggest that in women with prior caesarean section for nonrecurring cause, a trial of labour is safer than elective repeat caesarean section. This tendency to resist caesarean section arose from the wish not to compromise a patient's obstetric future, because the dictum "twice a caesarean section always a caesarean section" holds true.

In an appropriate clinical setting and properly selected group of women, VBAC offers distinct advantages over a repeat caesarean section.

**Reasons to consider (advantages) vaginal birth after caesarean section**

- No abdominal surgery
- Shorter hospital stay
- Lower risk of infection
- Less blood loss
- Less need for blood transfusion
- Iatrogenic prematurity avoided
- Some women may feel more positive psychologically about having a vaginal delivery versus a caesarean section.

Although neither route is risk-free, the crucial issue is to ensure better maternal and perinatal outcome.

Deciding when to attempt VBAC is a major decision. It should be based on careful selection of patients after thorough counseling and estimation of patient's risk of

uterine rupture. There should be strict adherence to the most recent guidelines for managing labour and if complications arises, there should be units where facilities for immediate access to surgery are available.<sup>[2]</sup>

This study was carried out to assess the maternal and fetal outcome in post caesarean pregnancy.

## AIMS AND OBJECTIVES

**AIM:** To study the obstetric and fetal outcome in a pregnant patient with a history of previous one Lower segment caesarean section.

### **OBJECTIVE:**

- 1.To study incidence of vaginal delivery or repeat caesarean section in cases of previous one LSCS.
2. To study factors governing vaginal birth or caesarean section in case of previous one LSCS.
- 3.To study perinatal morbidity & mortality in cases of previous caesarean section.
- 4.To study maternal morbidity & mortality in cases of previous caesarean section.

## 2. Materials and Methods

### Study site:

The study was carried out at Dhiraj hospital in Obstetrics and Gynecology department, Piparia.

### Study design:

It is a prospective interventional study.

### Sample size:

Sample size= 50

### Study time period:

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The study duration was 4 months or whichever was earlier after clearance from departmental committee and ethics committee.

#### **Inclusion Criteria**

All cases of previous one lower segment cesarean section between 37 weeks to 42 weeks pregnancy.

#### **Exclusion Criteria**

- History of more than one LSCS, uterine rupture, hysterotomy, or previous uterine surgery (e.g. myomectomy) classical incision, inverted T shaped incision or lower segment vertical incision.
- Any medical complications like Hypertension, diabetes mellitus, anaemia, renal disease, cardiac disease.
- Patients not willing to participate in the study.

#### **Study procedure:**

This study was started after taking prior approval from the ethical committee of Sumandeep Vidhyapeeth.

A total 50 patients were enrolled in this study. Pregnant patients with previous one LSCS were taken in this study after applying inclusion and exclusion criteria. Patients were included in this study after taking prior written and informed consent.

### **3. Method of Collection**

Whenever patient with previous one LSCS comes in OPD, ward or LR, detailed history was taken. Discharge card and papers of previous cesarean section were examined for indication of previous cesarean section and intra operative / post operative complications if any.

Thorough general & systemic examination was carried out. Obstetric examination was done to note –gestational age (SFH, AG) Uterine contractions was noted. Lie, presentation, presenting part, position of fetus and engagement of presenting part was noted. FHS was noted for rate and rhythm. Scar was visualized for, type (vertical or transverse), thickness (whether healed by secondary intention) and palpated for tenderness. Per vaginal examination under all aseptic precautions was done only if patient is in labour to note the cervical dilatation, effacement, condition of membrane and station of presenting part. If the head is floating assessment of CPD was done by Muller -kerr method in a patient who was at or near term. Necessary relevant lab investigations were carried out. USG was done in all cases to assess maturity of fetus, amount of liquor, location and maturity of placenta and thickness of scar

Study group was divided into 2 sub-groups :

#### **A) Patients who can be allowed for trial of vaginal birth.**

Following are the criteria on which patients were selected for trial of scar

- Patient's consent i.e. willingness to take trial of scar after proper understanding of risks, benefits & success rate of VBAC and facilities for emergency operation, anesthesia

and neonatologist.

- Interpregnancy interval > 18 months.
- Nonrecurring indication for prior cesarean section.
- Uneventful postoperative period in previous surgery
- Vertex presentation with engaged head.
- No cephalopelvic disproportion in non-engaged head.
- Spontaneous onset of labor in the present pregnancy.
- Normal fetal heart rate.
- During labor no fetal distress or no variable deceleration or no scar tenderness develops.

#### **B) Patients requiring elective/emergency CS**

Following are the criteria for selecting the patients for repeat cesarean section.

- Interpregnancy interval less than 18 months
- Malpresentation or malposition
- Non engaged head with Cephalopelvic disproportion
- Multifetal pregnancy
- Placental abnormalities like placenta previa, accreta, increta, percreta or abruptio placenta
- Development of fetal distress or variable deceleration, scar tenderness during labor.

In both above groups, maternal morbidity and mortality and fetal morbidity and mortality were assessed and compared.

Patients were selected for trial of scar at the time of their enrollment in the study. Patients who were not in labor were explained for regular follow up and to come immediately when labour pains start, bleeding P/V and / or leaking P/V occurs and if there is decreased/loss of fetal movement or supra pubic pain.

#### **Management during trial of scar**

##### **First stage**

Once patient with previous one LSCS in labour selected for trial of scar, patient was allowed to go into spontaneous labour.

- Written informed consent for VBAC was taken (explaining patient and her relative about advantages and risk involved in trial of scar)
- IV line was secured, Blood was collected for cross match and necessary investigations and IV fluid were started and patient was kept nil orally.
- Fetal monitoring was done on continuous or intermittent basis on an electronic fetal monitor.
- Progress of labour was charted on partogram. (Progress of labour was assessed by Progressive increase in frequency, duration and intensity of uterine contractions, progressive dilatation and effacement of the cervix, progressive descent, rotation and flexion of presenting part)
- Close watch was kept on :

- 1) General condition of the mother
- 2) Scar tenderness and supra pubic pain for diagnosis of impending scar dehiscence or rupture.
- 3) Per-vaginal examination was done when the membrane ruptures to know color of liquor, station of head, dilatation and effacement of cervix and to rule out cord prolapse.
- 4) Fetal well being. ( Fetal heart rate).

**Trial of labour was discontinued when there was fetal or maternal distress, incoordinated uterine action, Scar tenderness suggesting impending rupture of the scar. These patients were immediately taken for cesarean section.**

#### Second Stage

Progress in 2nd stage was judged by progressive descent, rotation and flexion of presenting part. Second stage was shortened by episiotomy, outlet forceps or vacuum to prevent extra strain on the scar.

#### Third Stage

Placenta was allowed to separate spontaneously and was delivered with controlled cord traction.

#### Fourth Stage

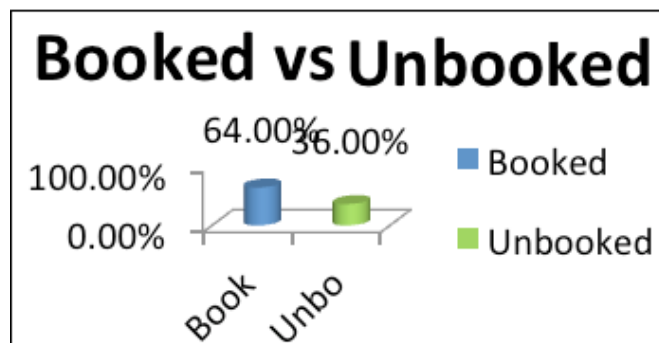
Patient was observed for two hours after delivery in the recovery room.

### 4. Results

**Table 1:** Booked vs. Unbooked Cases

Type	Number of patients N=50	Percentage
Booked	32	64.00%
Unbooked	18	36.00%

In the present study, 64% of cases were booked cases and 36% of cases were unbooked cases. Patients with at least three visits at the antenatal clinic were considered under booked category and the rest under unbooked category.

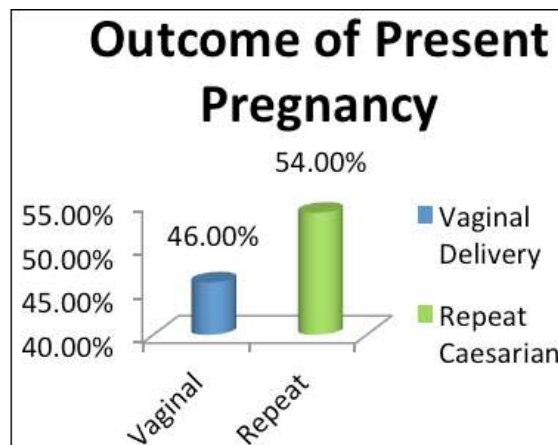


**Graph 1:** Booked vs. Unbooked Cases

**Table 2:** Outcome of Present Pregnancy

Outcome of Present Pregnancy	Number of patients N=50	Percentage
Vaginal Delivery with episiotomy	23	46.00%
Repeat Caesarean	27	54.00%

In present study, 23 patients (46%) delivered vaginally and 27 patients (54%) delivered by repeat caesarean section.

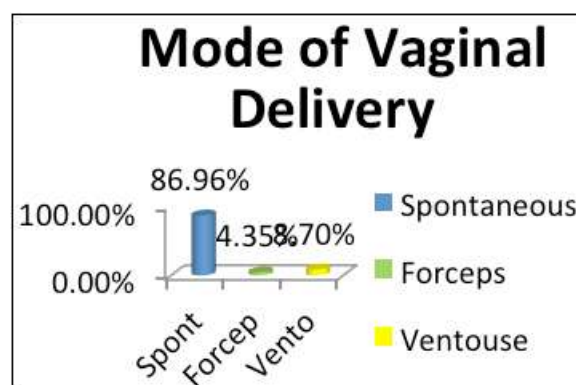


**Graph 2:** Outcome of Present Pregnancy

**Table 3:** Mode of vaginal delivery

Mode of Vaginal Delivery	Number of patients N=23	Percentage
Spontaneous	20	86.96%
Forceps	1	4.35%
Ventouse	2	8.70%

In present study, of the patients who had successful VBAC, 20 patients (86.96%) were delivered spontaneously, 1 patient (4.35%) had forceps delivery and 2 patients (8.70%) delivered by ventouse.



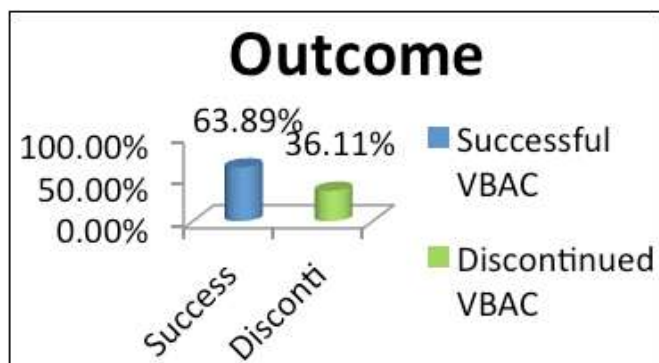
**Graph 3:** Mode of Vaginal Delivery

**Table 4:** Outcome of Trial of VBAC in Recent Pregnancy

Outcome	Number of patients, N=36	Percentage
Successful VBAC	23	63.8%
Discontinued VBAC	13	36.11%

Out of patients selected for VBAC, 23 patients (63.8%) had successful VBAC and 13 patients (36.11%) had discontinued trial of scar. Reasons for discontinuation of the trial of scar were;

1) Fetal distress (25.93%) 2) scar tenderness (14.81%) and 3) Non progress of labor (11.11%).

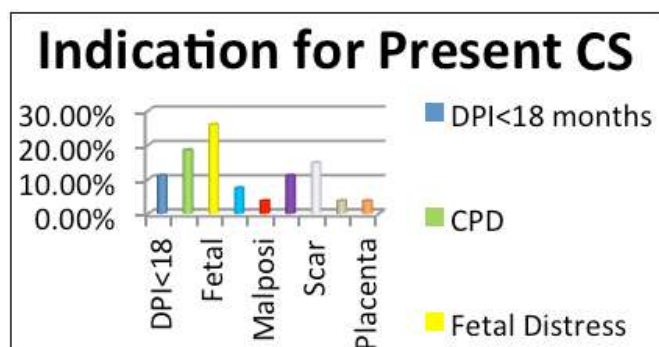


Graph 4: Outcome of Trial of VBAC in Recent Pregnancy

Table 5: Indication for present caesarean

Indication for present CS		Number of patients, N=27	Percentage
Elective caesarean	IPI<18 months	3	11.11%
	CPD	5	18.52%
	Twins	1	3.70%
	Malpresentation	2	7.41%
	Refusal for trial of scar	3	3.70%
	Placenta Previa	1	3.70%
Emergency caesarean	NPOL	3	11.11%
	Scar Tenderness	4	14.81%
	Fetal distress	6	25.93%

In present study, Most common cause of present caesarean section was Fetal distress (25.93%), followed by CPD (18.52%) and scar tenderness (14.81%).

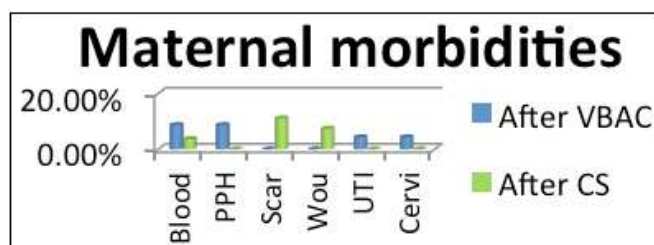


Graph 5: Indication for present CS

Table 6: Maternal morbidities in study group

Maternal morbidities	VBAC subgroup (n=23)		Repeat caesarean (n=27)	
	Number	Percentage	Number	Percentage
PPH requiring Blood transfusion	2	8.70%	0	0.00%
Scar dehiscence	0	0.00%	3	11.11%
Uterine Rupture	0	0.00%	0	0.00%
Placenta Accreta	0	0.00%	0	0.00%
Wound Infection	0	0.00%	2	7.41%
UTI	1	4.35%	0	0.00%
Cervical Tear	1	4.35%	0	0.00%

In present study, In VBAC group 2 patients (8.70%) had PPH, 1 patient (4.35%) had UTI and 1 patient (4.35%) had cervical tear. In Caesarean group 3 patients (11.11%) had scar dehiscence and 2 patients (7.41%) had wound infection.

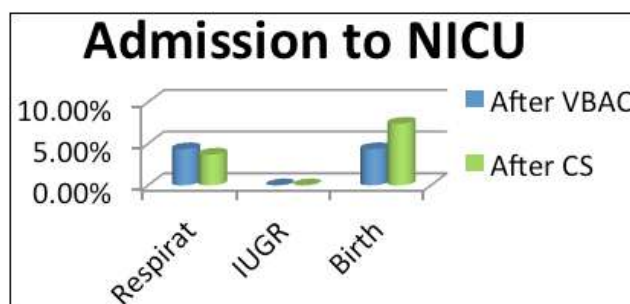


Graph 6: Maternal morbidities in study group.

Table 7: Neonatal morbidities

Neonatal morbidities	VBAC subgroup (n=23)		Repeat caesarean (n=27)	
	Number	Percentage	Number	Percentage
Respiratory distress syndrome	1	4.35%	1	3.70%
Birth asphyxia	1	4.35%	2	7.41%
IUGR	0	0.00%	0	0.00%

In present study, 2 neonates from VBAC group and 3 neonates from repeat caesarean group were admitted to NICU. In VBAC group 1 neonate for respiratory distress syndrome and 1 neonate for birth asphyxia were admitted to NICU. In caesarean group, 1 neonate for respiratory distress syndrome and 2 neonates for birth asphyxia were admitted to NICU.



Graph 7: Neonatal morbidities

## 5. Discussion

Cesarean birth has been a major source of interest and concern over the last few decades. In the past 35 years the rate of cesarean section has steadily increased from 5% to approximately 25%. Previous cesarean section is one of the major reasons, which have contributed greatly to high cesarean section rate. However, current medical evidence indicates that 60 – 80 percent women can achieve vaginal delivery after a previous one lower segment cesarean section.

In our study incidence of vaginal delivery after previous one cesarean section was 46% and incidence of repeat cesarean section was 54%. In a study done by Agarwal A. et al<sup>2</sup> shows that 27.7% women had successful vaginal delivery while 72.3% had a repeat cesarean section. In contrast, in another study by Mc Mohan MJ et al<sup>3</sup> success rate of VBAC was as high as 60% with no fetal or maternal complication. Martin J N Jr et al<sup>4</sup> reported an incidence of 82% successful vaginal delivery following trial of labour for a previous cesarean delivery. In our study incidence of forceps delivery and vacuum delivery was 4.35% and 8.70% respectively of all women delivered vaginally. According to Sing et al<sup>5</sup> the incidence of forceps delivery was 6% and that of vacuum



extraction was 5%.

Out of 27 cases of repeat cesarean section, the most common indication of repeat elective cesarean section was CPD (18.51%), refusal for trial of scar (11.11%) and short inter pregnancy interval (11.11%). Discontinuation of trial of scar due to fetal distress (25.93%) scar tenderness (14.81%) and non progress of labour (11.11%) were the reasons that forced us to go for repeat cesarean.

In present study, rate of VBAC is low compared to some studies. Some repeat elective cesarean sections had to be done for refusal of the patient for trial of scar. This emphasizes that the enthusiasm of patients for VBAC has waned. Consent for VBAC was refused when risks like uterine rupture, scar dehiscence and bleeding due to morbidly adherent placenta associated with it were conveyed to women. Perfect assessment of uterine scar & forecasting its intactness during labor is the real challenge for achieving the goal of enhancing success and optimizing outcome of VBAC. The key is the proper selection of women for a trial of vaginal delivery. Another important reason, which contributed to increase in the rate of repeat elective cesarean section, was inter-delivery interval of <18 months. Therefore the overall rate of cesarean section could be reduced by encouraging women to accept a reliable method of contraception to ensure adequate birth spacing.

Maternal morbidity noted in the present study was in the form of postpartum hemorrhage 2 (4%), scar dehiscence 3 (6%), wound infection 2(4%), UTI 1(2%) and cervical tear 1(2%). Kore et al have reported an incidence of 1.4% PPH and 0.5% rupture uterus.

The total neonatal admissions were 5 of which 2 (4%) were in the vaginal delivery group, & 3 (6%) were in cesarean group.

## 6. Conclusion

Women with a previous cesarean are at increased risk for repeat cesarean section. Vigilance regarding indication of primary cesarean section, proper patient selection and counseling for trial of scar, careful observation through out labour in a well-equipped unit are key to reduce the cesarean section rate

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