

# Fetomaternal Outcome of Single Previous Cesarean Section

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## ABSTRACT

**Objective** To document the maternal and fetal outcome among women undergoing vaginal birth after previous one caesarean section.

**Study design** Cross sectional study.

**Place & Duration of study** Department of Obstetrics & Gynecology, Abbasi Shaheed Hospital Karachi, from January 2020 to September 2020.

**Methodology** In this study 109 women with previous single cesarean section, single alive fetus, not having a contraindication to planned vaginal birth after cesarean section, at 37 completed weeks of gestation were included. Trial of vaginal birth after cesarean section (VBAC) was decided for those who fulfill the Royal College of Obstetrics and Gynaecology (RCOG) criteria for VBAC. Data were collected regarding demographic variables, maternal and fetal outcome. Data were analyzed by SPSS version20 with frequency and percentages.

**Results** A total number of 314 women were admitted with previous one caesarean section. Out of 109 women, 67 (61.47%) had vaginal delivery. Of these 63 (57.79%) had spontaneous vaginal delivery, and 4 (3.66%) required outlet forceps. Forty-two (38.53 %) women had repeat caesarean section. Among women who delivered vaginally, common indications for previous caesarean section were fetal distress (n=21, 19.26%) and non-progress of labor (n=11, 10.09 %). There was only single case (1., 0.91%) of scar dehiscence during the trial. Most of babies (n=95,87%) were born with Apgar score of >8.

**Conclusion** Trial of labor is safe and successful in well selected females with previous one caesarean section in tertiary care hospital under supervision of experienced obstetrician.

**Key words** Repeat caesarean section, VBAC, Fetomaternal outcome.

## INTRODUCTION:

The increasing cesarean section rate throughout the world is of concern. There is a wide variation in the rate of cesarean section. It is associated with adverse maternal and fetal complications.<sup>1,2</sup> Rising

rate of primary cesarean section has led to an increase in proportion of women who seek obstetrical care with a history of previous cesarean delivery.<sup>3</sup>

For women who have a previous one cesarean section, options for mode of delivery in their future pregnancy is either trial of vaginal birth after cesarean section or elective cesarean section (ECS). There is considerable variation in the proportion of women who are offered and attempt made for vaginal birth. Researchers report success rate of VBAC of 72-76%.<sup>4,5</sup> Trial of labor should be motivated after previous one caesarean section when there are no absolute contraindications. Although neither mode of delivery is risk free, the main issue is to ensure better maternal and fetal outcome. In tertiary care hospitals and well selected women for

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VBAC, a great benefit may occur by avoiding a repeat cesarean section. This approach minimizes the risk of surgical intervention, with short hospital stay along with cost-effectiveness.

The rate of repeat cesarean section with previous one cesarean section was 28.4% and 80 to 90% in recent studies.<sup>6,7</sup> Previous caesarean section is the major indication of repeat cesarean section.<sup>8</sup> The current study aimed at determining the fetomaternal outcome among women with previous one cesarean section. The objective was to find out the percentage of women undergoing trial of scar, the indications of previous caesarean section and outcome.

#### **METHODOLOGY:**

This was a prospective cross sectional study conducted in the Department of Obstetrics & Gynecology at Abbasi Shaheed Hospital Karachi from January 2022 to September 2020. Ethical approval was obtained from IRB. After taking an informed consent, 109 women with singleton term pregnancy with previous one cesarean section, having no contraindication to vaginal birth, were included.<sup>9</sup> All those women who underwent cesarean section because of preterm labor, medical complications, gross cephalopelvic disproportion, congenital pelvic deformity or previous pelvic surgery due to trauma, previous two lower segment cesarean sections, classical or T shaped uterine scar, unknown uterine incision, previous rupture, myomectomy in which cavity has been opened, multiple pregnancy, placenta previa, active genital herpes infection, were excluded.

Women selected for vaginal birth were observed for spontaneous onset of labor. On admission detailed history was taken. The plan for vaginal birth after cesarean section was decided according to the RCOG criteria for VBAC by senior obstetrician. Trial of scar was discontinued when adequate progress was not found after six hours in active phase of labor with good uterine contractions.

Data were collected on pre designed form. Variables collected were age of women, parity, gestational age, indication of previous cesarean section, and mode of delivery, indications of repeat cesarean section, maternal morbidity including scar dehiscence and postpartum hemorrhage (PPH), fetal outcome including Apgar score and death or serious fetal morbidity. Statistical analysis was done on SPSS version 20. The frequency and percentages were used for each variable.

#### **RESULTS:**

A total of 314 pregnant women with previous single cesarean section were admitted during the study period. Out of 314 cases, 109 women were selected for trial of scar as per RCOG criteria for VBAC. During trial of scar 67 (61.47%) women delivered vaginally out of these 63 (57.79%) had spontaneous vaginal delivery, and 4 (3.66%) delivered by outlet forceps due to prolonged second stage of labor. Most of the women belonged to the age group 25-30 years with gestation of 37-38 weeks.

The indications of for previous cesarean section were fetal distress in 21 (19.26%) and non-progress of labor in 11(10.09%) patients. Details are given in table I. Forty-two (38.53%) women had repeat cesarean section among those who underwent VBAC. The indications of repeat cesarean section were fetal distress in 24 (22.01%) women followed by non-progress of labor in 9 (8.25%) and scar tenderness in 9 (8.25%) patients. Scar dehiscence during trial of scar was observed in only one woman. Apgar score of more than 8 was observed in 95 (87%) babies. There was no case of post-partum hemorrhage and fetomaternal mortality.

#### **DISCUSSION:**

Vaginal birth after cesarean section is a safe and practical method resulting in reduction of caesarean section rate. This study presented valuable data from a tertiary care center on this important reproductive health issue. The success of vaginal birth after single cesarean section was 61.47% which similar to other studies form different countries.<sup>10-13</sup> In the present study there were four women in him forceps were used to assist delivery. No vacuum extraction was tried. In other studies higher rate of forceps /vacuum extraction was used in a range of 24.1% to 37.4% cases.<sup>14,15</sup>

Among the 67 women who delivered vaginally, the major indication for previous section was fetal distress followed by non-progress of labor. Almost similar observations were found in another study.<sup>16</sup> In this study the reason for increased frequency of cesarean section was related to the late referral in established labor. The complications related to comorbid medical conditions and obstetrical problems were additional factors.

In this study frequency of repeat cesarean section in patients with previous one cesarean section was 38.53% cases which is higher from other studies where a rate of 11% to 30% were reported.<sup>10,12</sup> The most common indication of repeat caesarean section in VBAC is fetal distress which was found in 22.01%

**Table I: Mode of Delivery during Trial of Scar and Indications of Previous Cesarean Section**

Indications in Previous Cesarean Section	Spontaneous vaginal Delivery n=63 (57.79%)	Instrumental Delivery n=4 (3.66%)	Repeat Cesarean Section n=42 (38.53%)
Fetal Distress	21 (19.26%)	-	17 (15.59%)
Non Progress of Labor	11 (10.09%)	02 (01.83%)	09 (08.25%)
High Blood Pressure	04 (03.66%)	-	02 (01.83%)
Mal-presentation	03 (02.75%)	-	04 (03.66%)
Failed induction	01 (00.91%)	-	02 (01.83%)
Mal-position	02 (01.83%)	-	02 (01.83%)
Ante partum Hemorrhage	02 (01.83%)	-	02 (01.83%)
Twin Pregnancy	02 (01.83%)	-	-
IUGR	01 (00.91%)	-	01 (00.91%)
Precious Pregnancy	01 (00.91%)	-	-
Leaking	02 (01.83%)	-	01 (00.91%)
Gestational Diabetes Mellitus	02 (01.83%)	01 (00.91%)	-
Unknown Cause	11 (10.09%)	01 (00.91%)	02 (1.83%)

cases. The frequency in other studies ranged from 7% to 15%.<sup>16,17</sup> The reason for increased frequency of fetal distress is because it was diagnosed on the basis of fetal heart auscultation by Pinard fetoscope, CTG and color of liquor because of non availability of fetal scalp pH sampling.

Apgar score in our study was more than 8 in majority of babies while Apgar score below 7 was observed in 5.45%. The proper evaluations of patients play a key role in the decision making and prevent unnecessary intervention. Use of fetal scalp PH sampling helps in diagnosis of fetal distress to minimize the rate of cesarean section. In our study non progress of labor accounted for 8.25% cases. These findings are different from other studies where higher frequency of 13.7% and 19.61% are reported.<sup>16,17</sup> The third less common indication of repeat cesarean section observed was scar tenderness and was found low as compared to another study.<sup>17</sup> The absolute risk of adverse outcome for VBAC is very small. In this study scar dehiscence occurred in only one patient. No case of PPH and maternal mortality observed in the index study. In term neonates rate of perinatal death reported varied from 0-2.8% while in our study good fetal outcome with no neonatal death was observed.

#### CONCLUSION:

Trial of labor is safe and successful in well selected women with previous single cesarean section in tertiary care hospital under supervision.

In this study 67 (61.47%) women had vaginal delivery. Trial of labor should be encouraged to minimize the rate of repeat caesarean section.

#### REFERENCES:

- Denham SH, Humphrey T, deLabrusse C, Dougall N. Mode of birth after caesarean section: individual prediction scores using Scottish population data. *BMC Pregnancy Childbirth*. 2019;19(1):84. Doi: 10.1186/s12884-019-2226-6.
- Chien P. Global rising rates of caesarean sections. *BJOG*. 2021; 128:781-2. Doi: 10.1111/1471-0528.16666.
- Uno K, Mayama M, Yoshihara M, Takeda T, Tano S, Suzuki T, et al. Reasons for previous cesarean deliveries impact a women's independent decision of delivery mode and the success of trial of labor after cesarean section. *BMC Pregnancy Childbirth*. 2020; 20(1):170. Doi: 10.1186/s12884-020-2833-2.
- Wingert A, Johnson C, Featherstone R, Sebastianski M, Hartling L, Douglas Wilson R. Adjunct clinical interventions that influence vaginal birth after cesarean rates: systematic review. *BMC Pregnancy Childbirth*. 2018; 18(1):452. Doi: 10.1186/s12884-018-2065-

5. Li YX, Bai Z, Long DJ, Wang HB, Wu YF, Reilly KH, et al. Predicting the success of vaginal birth after caesarean delivery: a retrospective cohort study in China. *BMJ Open*. 2019; 9(5):e027807. Doi: 10.1136/bmjopen-2018-027807.
6. Shaheen N, Khalil S, Iftikhar P. Prediction of successful trial of labour in patients with a previous caesarean section. *J Pak Med Assoc*. 2014; 64:542-5.
7. Sharma J, Tiwari S, Padhye SM, Mahato B. Prevalence of repeat caesarean section in a tertiary care hospital. *J Nepal Med Assoc*. 2020; 58:650-3. Doi: 10.31729/jnma.5375.
8. Alshehri KA, Ammar AA, Aldhubabian MA, Al-Zanbaqi MS, Felimban AA, Alshuaibi MK, et al. Outcomes and complications after repeat caesarean sections among King Abdulaziz University Hospital patients. *Mater Sociomed*. 2019; 31:119-24. Doi: 10.5455/msm.2019.31.119-124.
9. Patel S, Kansara V, Patel R, Anand N. Obstetric and perinatal outcome in previous one caesarean section. *Int J Reprod Contracept Obstet Gynecol*. 2016; 5:3141-6. DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20163002>.
10. Mi Y, Qu P, Guo N, Bai R, Gao J, Ma Z, et al. Evaluation of factors that predict the success rate of trial of labor after the caesarean section. *BMC Pregnancy Childbirth*. 2021; 21:527. <https://doi.org/10.1186/s12884-021-04004-z>
11. Tasnim N, Masoom K, Asif R, Masood S, Naeem S. Vaginal birth after caesarean section (VBAC) success rate and predictors of success in a tertiary care hospital. *J SOGP*. 2021; 11:2307-115.
12. Misgan E, Gedefaw A, Negash S, Asefa A. Validation of a vaginal birth after caesarean delivery prediction model in teaching hospitals of Addis Ababa University: A cross-sectional study. *BioMed Res Int*. 2020; <https://doi.org/10.1155/2020/1540460>
13. Kashif S, Mansoor M, Tariq R, Tahira T. Vaginal birth caesarean section; To evaluate factors for successful outcome. *Professional Med J*. 2010; 17:665-9.
14. Sakiyeva KZ, Abdelazim IA, Farghali M, Zhumagulova SS, Dossimbetova MB, Sarsenbaev MS, et al. Outcome of the vaginal birth after caesarean section during the second birth order in West Kazakhstan. *J Fam Med Prim Care*. 2018; 7:1542-7. <https://www.jfmpc.com/text.asp?2018/7/6/1542/246502>
15. Minh TV, Phuoc HN. The success rate and associate factors of vaginal birth after caesarean section at Tu Du Hospital in Vietnam. *Int J Pregn Chi Birth*. 2018; 4:125-9. DOI: 10.15406/ipcb.2018.04.00096
16. Bangal VB, Giri PA, Shinde KK, Gavhane SP. Vaginal birth after caesarean section. *N Am J Med Sci*. 2013; 5:140-4. Doi: 10.4103/1947-2714.107537.
17. Haider G, Zehra N, Munir AA, Haider A. Frequency and indications of caesarean section in a tertiary care hospital. *Pak J Med Sci*. 2009; 25:791-6.

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**Author's Contributions:**

Shaista Rashid: Principal investigator, conceived the idea, collected the data, references and wrote the initial manuscript.

Shabnam Nadeem: Collected the references and helped in interpretation of the result.

Aisha Khatoon: Went through the complete article and advised useful changes.

Zaira Batool: Data and references collection.

All authors approved final version of the manuscript.

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**Competing interest:**

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