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ORIGINAL ARTICLE

Fetal and maternal outcomes of trial of Labour with uterine scar.

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ABSTRACT… Objective: To ascertain the vaginal birth rate following the trial of uterine scar and its outcomes. **Study Design:** Cross-sectional Observational study. **Setting:** Department of Gynecology Bakhtawar Amin Trust Teaching Hospital Multan. **Period:** 6th August 2020 to 6th August 2021. **Material & Methods:** After passing through selection criteria, all enrolled women underwent serial ultrasound including pelvis ultrasound to access scar thickness up to thirty-six gestation weeks. All women were evaluated for baseline investigations, clinical history, and underwent cardiotocography (CTG) which was then followed by a trial of labor (TOL). Women who experienced spontaneous labor after TOL were observed through partogram and intrapartum CTG. All maternal and fetal outcomes were observed. **Results:** Out of these 80 women, 51 (63.7%) had successfully given birth through the vaginal route while 29 (36.2%) underwent emergency CS following TOL. The majority of enrolled women, 62 (77.5%) had age less than 35 years, 45 (56.2%) had parity 1-4, and 74 (92.5%) had gestation age >36 weeks. 3 (5.8%) women had a history of VBAC and all had parity >4. Among the women with successful VBAC, the majority were younger than 35 years (88.2%), parity less than 4 (62.7%), and all were positive for previous successful VBAC. Postpartum hemorrhage was the most reported maternal complication (3.9%). Three (4.4%) experienced intra-uterine deaths which were the major fetal complications. **Conclusion:** Trial of vaginal birth following cesarean section could be a preferable option given its association with low fetal and maternal complications and considerable success rate.

Key words: Trial of Labor, Uterine Scar, Vaginal Birth, Perinatal Complications.

INTRODUCTION

Cesarean section (CS) is a significant obstetrical procedure which although serves as life-saving for both fetus and mother, but it is still suggested that this delivery mode should be decided by a senior obstetrician.[1] This may contribute to declining future CS rates in subsequent deliveries. In the US, the CS frequency has risen drastically from 5% to 25% between 1970-98.[2] Similarly, around 18.6% of childbirth across the world is through CS delivery.[3] It was previously considered impossible to achieve vaginal delivery following CS; however, studies have found the possibility of vaginal delivery with a consequent decline in the morbidity linked with subsequent elective CS.[4]

The literature considers the trial of labor safe following a CS and it not only reduces future CS rate but it is also a cost-effective procedure that limits related morbidity such as obstetrical hysterectomies, post-partum hemorrhage, uterine rupture[5] and reduces hospital stay.[6]

On contrary, vaginal birth after cesarean (VBAC) is also associated with a higher risk of intubation and mask ventilation due to neonatal sepsis and meconium-stained liquor while elective repeat cesarean delivery (ERCD) is likely to cause transient respiratory risk.[7] However, if cesarean scar pregnancy (CSP) presents with placenta abruption, macrosomia, and low-lying placenta, multiple gestations, repeat CS is mostly preferred to VBAC.[1]

In Pakistan, the rate of CS is on the rise and scar integrity in these patients cannot be effectively predicted by uterine scar measurement. Moreover, in 1-1.5% cases of repetitive lower

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uterine segment section scar rupture is reported.[8] Therefore, it is critical to understand outcomes of VBAC in women with a uterine scar to make an informed preference of VBAC to repeat CS. Thus, the study was designed to ascertain the vaginal birth rate following the trial of uterine scar and its outcomes.

MATERIAL & METHODS

A cross-sectional observational study was conducted at the Department of Gynecology, Bakhtawar Amin Trust Teaching hospital Multan for 1 year from August 2020 to August 2021 the study was approved by ethical committee of institution (15/120). A total of 80 28-week pregnant women with previous CS or scar were enrolled in the study. Whereas, the women with previous CS and history of postpartum hemorrhage, breech presentation, low lying placenta, and positivity for other comorbidities such as diabetes, hypertension, and anemia were excluded from the study. Similarly, women conceiving fetuses with an expected weight of less than 3.6 kgs at term and who underwent CS following prolonged labor were also excluded. All participating women were asked for informed consent and ethical approval was sought from the ethical committee of the hospital.

All women were given standard antenatal care and underwent serial ultrasound including pelvis ultrasound to access scar thickness up to thirty-six gestation weeks. A value of greater than 3.5mm was considered. All women were evaluated for baseline investigations, clinical history, and underwent cardiotocography (CTG) which was then followed by a trial of labor (TOL). Women who experienced spontaneous labor after TOL were observed through partogram and intrapartum CTG.

All the data including maternal and fetal outcomes were systematically recorded and presented as numbers and percentages and analyzed through SPSS (version 22).

RESULTS

A total of 80 women were enrolled in the study after passing through the participation criteria. Out of these 80 women, 51 (63.7%) had successfully given birth through the vaginal route while 29 (36.2%) underwent emergency CS following TOL. The majority of enrolled women, 62 (77.5%) had age less than 35 years, 45 (56.2%) had parity 1-4, and 74 (92.5%) had gestation age >36 weeks. 3 (5.8%) women had a history of VBAC and all had parity >4 (Table-I). No women with a gestation period between 28-32 weeks had successful VBAC whereas 3 out of 4 (75%) at 32-36 (weeks) gestation period and 48 out of 74 (64.8%) at >36-38 weeks gestation period successfully given vaginal birth (Table-I). Among the women with successful VBAC, the majority were younger than 35 years (88.2%), parity less than 4 (62.7%), and all were positive for previous successful VBAC.

Postpartum hemorrhage was the most reported maternal complication (3.9%). One (1.9%) women individually suffered from scar dehiscence and morbidly adherent placenta (Table-II). No women had reported suffering from postpartum hemorrhage or uterine hemorrhage.

Out of 53 births, 37 (69.8%) were preterm. Three (4.4%) fetuses had intra-uterine deaths among which 1 was a case of intrapartum asphyxia and the other 2 were during.

Obstetrical Factors	Frequency (%)
Maternal age	
<35	62 (77.5%)
>35	18 (22.5%)
Parity	
1-4	45 (56.2%)
>4	37 (46.2%)
Gestational age	
> 28-32 weeks	2 (2.5%)
32-36 weeks	4 (5%)
>36-38 weeks	74 (92.5%)
Previous VBAC	5 (6.2%)

Table-I. Obstetrical factors of women who underwent TOL

Maternal outcomes	Frequency (%)
Scar Dehiscence	1 (1.9%)
Postpartum Hemorrhage	2 (3.9%)
Uterine Rupture	0
Obstetrical Hysterectomy	0
Morbidly Adherent Placenta	1 (1.9%)

Table-II. Maternal outcomes of women who had VBAC (n=51)

Fetal Outcomes	Frequency (%)
IUD	3 (5.8%)
ENND	0 (0)
Preterm (SGA)	2 (3.9%)
IUGR at term (=37 weeks)	0 (0)
Meconium Aspiration	1 (1.9%)

Table-III. Fetal outcomes of women who had VBAC (n=53)

IUD: intrauterine death, IUGR: intrauterine growth restriction, ENND: early neonatal death, SGA: small for gestational age.

DISCUSSION

Vaginal birth is generally considered as a preferred route of delivery given its association with shorter hospital stay and lower maternal morbidity and mortality rate than that of repeat elective CS.[9] VBAC is linked with both positive and negative aspects. However, it remains well-accepted that a successful vaginal birth after previous LSCS enhances the prospects of future vaginal deliveries. It is therefore guided to adopt such selection criteria of women for TOL following cesarean that favors maximum successful vaginal birth and limits feto-maternal mortality. This approach will diminish the risk of emergency CS upon the failure of VBAC.[10]

In our study, 63.7% of women had given vaginal birth successfully. However, in literature, the success rate varies from study to study. A USA-based study reported successful VBAC in 73% of the studied population.[11] Our results comply with a local Pakistani study[6] which validated the accuracy of our results to a certain extend.

Age is assumed to be a significant prognostic factor in predicting the success of VBAC[11] which is also reflected in our study since VBAC was more common in a study group of women younger than 35 years. However, since the majority of enrolled women in our study were younger than 35 years, it could have resulted in following the trend. In another VBAC in younger women was found to be associated with lesser complication.[12] Similarly, the low parity characteristic of successful VBAC in our study complements an international report published from Ethiopia.[13] Similarly, the history of previous successful VBAC is also considered as a significant predictor of the success of subsequent vaginal deliveries.[14,15]

In our study, maternal complications such as post-partum hemorrhage, scar dehiscence, and adherent placenta were reported. However, no uterine rupture was found. Whereas, in another study, 0.5% of women experienced uterine rupture.[16] The risk of uterine rupture is unpredictable therefore it is suggested that (Trial of Labor After Cesarean) should be conducted in a well-equipped facility by an experienced obstetrician who is capable to perform emergency CS during active labor phase.[17]

Out of births through the vaginal route 69.8% were preterm, after 28 weeks of gestation but before 36 weeks. All fetal complications were associated with these preterm deliveries. Two cases in our study had instrumental vaginal deliveries resulting in meconium aspiration in babies who had to be taken to NICU but both survived. According to a systemic review, a uterine rupture in VBAC majorly contributes to perinatal mortality.[18] Therefore, given no uterine rupture in our study, perinatal mortality was very low in contrast to another study which reported 25% intrapartum stillbirth.[19]

CONCLUSION

Trial of vaginal birth following cesarean section could be a preferable option given its association with low fetal and maternal complications and considerable success rate.

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4	Gul Fatima	Complication of mansucript writing.	
5	Taqwa Ferdos	Analysis, Drafting and Data collection.	
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