OBJECTIVE: To assess the frequency of success of vaginal birth after one previous caesarean delivery and to assess safety in terms of maternal and perinatal complications in them.

STUDY DESIGN: A prospective observational study.

PLACE AND DURATION OF STUDY: Department of Obstetrics and Gynaecology Ziauddin Hospital Kemari campus, affiliated with Ziauddin University, from 1st June 2015 to 1st December 2015.

METHODOLOGY: All the births during the study period in women with one previous cesarean section and onset of spontaneous labor at 36-38 weeks gestation and ultrasound measured scar thickness of .2.5 cm were included in our study. Age, body mass index, scar thickness, previous vaginal delivery and time since last delivery were recorded. Study participants were followed for the mode of delivery, uterine rupture, maternal and perinatal mortality.

RESULT: A total of 118 patients were enrolled in our study. Successful vaginal birth after cesarean section was achieved in 67.8% of our study participants. None of the patients had uterine rupture. There was no case of maternal or perinatal mortality.

CONCLUSION: Trial of scar is a safe option in terms of maternal and perinatal morbidity and mortality in well selected cases in females with one prior cesarean section.

KEY WORDS: TOLAC: Trial of labor after cesarean, VBAC: Vaginal birth after cesarean, Previous one cesarean section, Maternal and perinatal complications, Uterine rupture.

INTRODUCTION

For more than a century, the optimum mode of subsequent delivery in patients who have undergone cesarean section has remained controversial and the debate continues even in the 21st century. Since 1916, the once well known statement of once a cesarean, always a cesarean has reflected the view and management of the obstetricians. The overall cesarean rate rose from 5% in early 1970s to 25% in 1988. Latest data from 150 countries revealed that cesarean birth accounts for 18.6% of all births worldwide. World wide vaginal delivery rate after previous cesarean section has gone down from 40-50% in 1996, to less than 10 % in 2005. The current trend globally is that cesarean rate is increasing while the VBAC rate is reducing. In Pakistan the concern of a higher cesarean rate after previous cesarean is even more significant due to prevalence of grandmultiparity. VBAC is on a decline because of fear of potential maternal and perinatal complications. Although SOGP has issued a guideline adopted from RCOG guideline on VBAC, obstetricians are generally fearful of the above mentioned reasons. Because of this recent trend of rising primary cesarean section rate a large numbers of women have to undergo repeat cesarean births. Although a lot has been published and recommended for attempting trial of labor after cesarean section (TOLAC), successful vaginal birth after cesarean sections (VBAC), as well as attempts to achieve VBAC, has decreased. The largest barrier is a fear of uterine scar dehiscence with consequent maternal and perinatal morbidity and mortality, which is a potentially dangerous complication of trial of vaginal delivery after prior cesarean section. Concerns about this complication have led to significant decline in attempts to achieve vaginal delivery after cesarean section (VBAC) globally, with a simultaneous increase of cesarean section rates. Furthermore even though the risk is very small, trial of scar is associated with higher perinatal morbidities like HIE and neonatal sepsis as compared to elective repeat cesarian.

On the contrary, VBAC is associated with increased cost effectiveness, as there are fewer maternal complications, reduced hospital stay and earlier return to routine work as compared to repeat elective cesarean sections. Although, numerous models have been designed to assess the predictability of successful VBAC but none is of proven value. Thus there is a need to have more studies and research work in order to have more effective planning strategy to decide the mode of birth in women with prior cesarean section. Therefore, we conducted our study to assess the success of trial of scar in women with one prior cesarean section, with the objective to assess the frequency of success of vaginal birth in women who are given trial for vaginal delivery after one previous cesarean delivery and to assess safety in terms of maternal and perinatal complications in them.

METHODOLOGY

We conducted a hospital based Prospective observational...
study, at Ziauddin Hospital Kemari campus which is affiliated with Ziauddin University Karachi, over a period of 6 months from 1st June 2015 to 1st December 2015. A total of 118 patients were included in the study. The criteria for inclusion in the study was taken as Patients presenting to Ziauddin Hospital labor room between 36-38 weeks of singleton pregnancy and estimated fetal weight less than 4 kg, with one previous cesarean section and ultrasound measured scar thickness of >2.5cm were included in this study. Women with multiple pregnancies, those who had undergone more than one previous cesarean section, women in whom scar thickness was found to be less than 2.5cm and those who had malpresentations or estimated fetal weight >4 kg were excluded as this could create bias in the study.

4 post graduate students were assigned to collect data All the patients who were included in our study were interviewed at the time of admission in the labor ward by one of the assigned doctors. The on duty doctors conducted the delivery and cesarean section was performed by the consultant on call. A thorough counseling regarding risks and benefits of trial of labor after cesarean section was done and patients were recruited in the study after informed consent. All relevant information such as age, parity, previous vaginal delivery, interval from last delivery, BMI, and scar thickness was entered on a predesigned Performa. The ultrasound that was done at 36weeks of gestation was reviewed for scar thickness. Outcome of the trial with regards to the mode of delivery i.e. vaginal delivery or cesarean section was recorded. A note was made if there was a ruptured scar at the time of emergency cesarean section. Perinatal outcome like alive, stillbirth or neonatal death and NICU admissions was also recorded.

After obtaining the complete information, data analysis was carried out using the SPSS version 16.

RESULTS

In our study we found that out of 118 study participants, 80(67.8%) had successful VBAC while 38(32.2%) patients had to undergo repeat cesarean delivery as a result of failed TOLAC. 21 patients (17.7%) had history of prior vaginal birth either before or after the previous cesarean, whereas the remaining 97(82.3%) women had no prior history of vaginal birth. Out of those who had a prior successful vaginal birth, 1 had successful trial of scar, while 20 patients (52.6%) in the failed TOLAC had previous vaginal delivery.

All of the 38 women who had to undergo repeat cesarean due to failed TOLAC were aged above 30 years. Among those who had a successful VBAC 22 (27.5%) were less than 30 years old while 58(72.5%) were above 30 years.

Table - I shows the BMI comparison of both categories. 90% (n=72) patients with VBAC were overweight with BMI 25-30 and 10% (n=8) had a normal BMI<25.In the patients in whom TOLAC failed 44.7% (n=17) were overweight (BMI 25-30) and obese (BMI 31-35) each while 10.5% (n=4) were very obese (BMI >35).

Interestingly 98.8% (n=79) of the participants in VBAC group were Para 1 with no previous vaginal delivery while in 1.2% (n=1) parity was 2. In the failed TOLAC group 42.1% (n=16) were para1, 44.7% (n=17) were Para 2, 10.5% (n= 4) were Para 3 and 2.6% (n=1)was Para 4.

In all the 80 patients of VBAC group (100%) inter delivery interval was >18 months. On the contrary in the failed TOLAC group 50%(19)patients had an antecedent pregnancy within 18 months of current delivery,36.8%(14)had previous delivery at > 18 months interval, while in 13.2%(5) of women no record could be obtained regarding the inter pregnancy interval.

There was no case of uterine rupture, maternal or perinatal mortality, or neonatal ICU admission in any of our study participant.

| TABLE - I: EFFECT OF BMI ON SUCCESS OF VAGINAL BIRTH AFTER CESAREAN (n=118) |
|----------------------|----------------------|----------------------|
| BMI                  | VBAC---n =80          | FAILED TOLAC-n =38   |
| <25                  | 8(10%)               | 0 (0%)              |
| 25-35                | 72(90%)              | 34(89.47%)          |
| >35                  | 0 (0%)               | 4(10.5%)            |

FIGURE-1: SUCCESS OF VAGINAL BIRTH AFTER CESAREAN SECTION (n=118)

FIGURE-2: AGE COMPARISON BETWEEN SUCCESSFUL VBAC AND FAILED TOLAC. (n=118)
DISCUSSION

Vaginal delivery after cesarean section was once considered an impossible task, however the dictum “once a cesarean, always a cesarean” has been challenged and studies have shown that vaginal delivery can be achieved with consequent reduction in the morbidity associated with elective repeat cesarean section. However, this approach is considered to be associated with an increased risk of maternal and perinatal morbidity and mortality. Several systematic reviews and guidelines consider trial of labor relatively safe after 1 previous cesarean section. Furthermore, vaginal delivery after cesarean is also associated with decreased morbidities in future pregnancies. Concerns however continue regarding maternal as well as perinatal risks inherent with TOLAC especially uterine rupture. Factors that are potentially considered to be associated with increase in risk of uterine scar dehiscence include maternal age >40 years, pregnancy beyond term, less than 12 months since last delivery, obesity, macromic babies and decreased scar thickness of previous cesarean scar.

Majority of studies on women attempting trial of vaginal delivery after cesarean section report 60 to 80% success. In our study we had successful vaginal births after previous cesarean section in 67.8% of patients. Our results closely relate to the results of meta-analysis in which Guise JM and Mozurkewich reported a 74% and the NICHD study a 73% VBAC success in their TOLAC. However, Crowt has reported a success rate of 43% although after excluding women who opted for VBAC but were candidates for elective repeat cesarean section his success rates increased to 59%. A local study conducted at Lahore General Hospital by Ghazala Taj also reported 70% success rate of VBAC in Pakistani females. Prior successful vaginal delivery is considered as the single most important predictor of successful trial of vaginal birth after cesarean. Landon reported 85-90% success in such cases. Interestingly our study showed that out of the successful VBACS only one mother had a history of prior vaginal birth. Does this questions the long held belief of previous successful vaginal delivery as a positive predictor of VBAC success, needs further research. The ethnic group may be a possible factor as majority of our patients were pathans with strong built.

In our study, all the patients who failed TOLAC were above 30 years. This is in accordance with other studies in which increasing age is a predictor of failed TOLAC. 10.5% of patients in whom attempt at vaginal delivery failed were very obese (BMI>35), 44.7% were overweight (BMI25-30) and 44.87% obese (BMI 31-35). Several other studies also report similar effect of BMI on success of TOLAC. 100% of our patients who had VBAC had an inter delivery interval of >18months. On the contrary those who failed TOLAC 50% patients had an antecedent pregnancy within 18 months of current delivery. In an analysis, 86% of women with inter pregnancy interval of greater than eighteen months had a successful delivery. This is also in accordance with ACOG guidelines for VBAC.

According to the NICHD research, planned vaginal birth after cesarean is associated with a four per ten thousand risk of term perinatal mortality. There was no case of uterine rupture, maternal or perinatal death in any of our study participants. This is probably because we included only those females in our study, which had a scar thickness more than 2.5cm. Furthermore, the overall rate of uterine rupture is 0.5%. Kessoushas reported in his study that even short inter pregnancy interval has no association with increase in uterine scar rupture.

CONCLUSION

Trial of scar is a safe option in terms of maternal and perinatal morbidity and mortality in well selected cases in females with one prior cesarean section.

Contribution of Author:
Dr. Urooj Malik: Analysis and Interpretation
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