EFFECT OF BIRTH WEIGHT ON SUCCESS OF VAGINAL BIRTH AFTER CAESAREAN DELIVERY

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Background: There is widespread concern about increasing proportion of births by caesarean section. Many factors can affect the likelihood of success of vaginal birth after caesarean section. The purpose of this study was to evaluate the effect of birth weight on the success of labour in women with previous one caesarean section.

Material & Methods: This cross-sectional study was carried out in department of Obstetrics & Gynaecology, Women and Children Hospital, Abbottabad, from March 2012 to March 2013. One hundred women were included who had previous one caesarean section and were now in their pregnancy with single fetus at term. These women were in spontaneous labor and consented to undergo trial of scar. Patients were grouped according to birth weight as Group-1 <3 Kg, Group-2 with 3.1-3.5 Kg and Group-3 with 3.6-4 Kg. Age in years, period of gestation in weeks and birth weight were recorded.

Results: The mean age of patients was 28.9 (range 25 to 40 years). The mean gestation was 38(37 to 41 weeks). Out of 100 parturient, 59 (59%) had birth weight 2.5-3 Kg while 25(25%) had 3.1-3.5 Kg and only 16(16%) had birth weight 3.6-4 Kg. The overall success rate for vaginal delivery after previous caesarean was highest for Group-1, and lowest for Group-3, suggesting a strong correlation of birth weight with success of vaginal birth after caesarean section.

Conclusion: The chances of success of vaginal birth after caesarean section increases with lowering birth weight.

KEY WORDS: Birth weight; Fetal weight; Cesarean section; Vaginal Birth after Cesarean section


INTRODUCTION

There is widespread public and professional concern about the increasing proportion of births by caesarean section.¹ Increasing rates of primary caesarean section have led to an increased proportion of the obstetric population who have a history of prior caesarean delivery. Pregnant women with a previous section may be offered either planned vaginal birth after caesarean (VBAC) or elective repeat caesarean (ERCS). The proportion of women who decline VBAC is, in turn, a significant determinant of overall rates of caesarean birth.² ⁶ New evidence is emerging to indicate that VBAC may not be as safe as originally thought and that vaginal delivery after previous caesarean section resulted in more maternal complications than a repeat caesarean delivery which identified VBAC as a high-risk delivery requiring the availability of an anesthesiologist, an obstetrician and an operating room on standby.⁶ ⁷ These factors, together with medico-legal fears, have led to a recent decline in clinicians offering and women accepting planned VBAC in the UK and North America.² ⁵

In March 2010, the National Institutes of Health met to consolidate and discuss the overall up-to-date body of VBAC scientific data and concluded, "Given the available evidence, trial of labor is a reasonable option for many pregnant women with one prior low transverse uterine incision."⁸ VBAC is a reasonable and safe choice for the majority of women with prior caesarean and that there is emerging evidence of serious harms relating to multiple caesareans.⁹

Approximately 60-80% of women opting for VBAC will successfully give birth vaginally.¹⁰ According to ACOG guidelines, factors reducing the likelihood of VBAC success are having two prior caesarean sections, suspected fetal macrosomia (fetus greater than 4000-4500 grams in weight), gestation beyond 40 weeks, twin gestation, and previous low vertical or unknown previous incision type, provided a classical incision is not suspected.¹¹ The purpose of this study was to evaluate the effect of birth weight on the success of trial of labor in women with previous caesarean section.

Gomal Journal of Medical Sciences January-March 2015, Vol. 13, No. 1 46
MATERIAL AND METHODS

It was a cross-sectional study carried out in department of Obstetrics and Gynaecology Women and children hospital Abbottabad. The study duration was one year from March 2012 to March 2013.

One hundred women were included randomly in study that had previous one caesarean section and now in their present pregnancy with single fetus at term. These women were in spontaneous labour and consented to undergo trial of scar. Patients were grouped according to birth weight in 3 groups, group 1 included birth weight less than 3 kg, group 2 included 3.1 to 3.5 kg and group 3 included 3.6 to 4.0 kg.

The selection criteria were subjects with normal pregnancy, adequate maternal pelvic dimensions, vertex presentation and spontaneous onset of labor with previous one uncomplicated LSCS. Patients with classical caesarean section, medical complications, multiple pregnancy, intrauterine growth retardation, placenta previa and previous myomectomy were excluded from the study. Informed consent was taken from all women and trial of scar was given with vigilance. Maternal and fetal monitoring was carried out with facility of operation theatre, anesthesia and pediatrician. Age in years, period of gestation in weeks and birth weight were variables. The data were analyzed as mean and percentage.

RESULTS

A total of 100 patients were included in study. The mean age of patients was 28.9 (25 to 40 years). The mean gestation age was 38 weeks (37 to 41 weeks). The mean birth weight was 2.79±0.61 Kg. Out of 100 parturient, 59 (59%) gave birth to neo-nates with birth weight 2.5 to 3 Kg while 25 (25%) had birth weight 3.1 to 3.5 Kg and only 16 neonate (16%) had birth weight 3.6 to 4 Kg. (Table 1)

In our study vaginal delivery after previous caesarean section was highest for Group-1, and lowest for Group-3, suggesting a strong correlation of fetal weight with repeat caesarean section.

DISCUSSION

Enhanced access to VBAC has been recommended based on the most recent scientific data on the safety of VBAC as compared to repeat caesarean section. Success of VBAC increases with low birth weight of the neonate. This is supported by the study conducted by Elkousy et al.12 There were 9960 women with a singleton gestation and a history of one previous caesarean. An analysis of neonatal birth weights of <4 kg, 4 to 4.24 kg, 4.25 to 4.5 kg, and >4.5 kg showed a reduction in vaginal birth after caesarean delivery success rates from 68%, 52%, 45%, and 38%, respectively. They concluded that those women with no history of a vaginal delivery should be counseled that the success rates may be <50% when the neonatal birth weight exceeds 4 kg and that the success rates may be even lower if the indication for the previous caesarean delivery was cephalo-pelvic disproportion or failure to progress or if the treatment requires either induction or augmentation of labor. The uterine rupture rate was 3.6% in women with a birth weight >4 kg.

Another study conducted by Zelop et al13 who compared the outcomes at term of a trial of labor in women with previous caesarean section who delivered neonates weighing >4 kg versus women with those weighing <4 kg. Of 2749 women, 13% (365) had infants with birth weights > 4kg. Caesarean delivery rate associated with birth weights ≤4 kg was 29% versus 40% for those with birth weights >4 kg. These results are comparable to our study.

Quinones et al14 studied the effect of preterm vaginal birth after caesarean delivery. Their analysis showed that the VBAC success was higher (adjusted odds ratio 1.54, 95% confidence interval 1.27-1.86) in preterm gestations due to low birth weight.

Similarly there are local studies conducted by Siddiqui SA15, who observed the obstetric risk factors for unsuccessful trial of labor following previous caesarean and found that success of VBAC decreases with increasing estimated fetal weight. Mansoor et al16 in services hospital evaluated the factors for successful outcome in VBAC and found that BMI <20, prior vaginal delivery, non-recurrent indication for previous caesarean, spontaneous onset of labour, cervical dilatation or favourable Bishop score, weight of baby <3.5 kg predict an individual’s likelihood of successful VBAC.

CONCLUSION

The chances of success of vaginal birth after caesarean section increases with lowering birth weight. Birth weight can be further statistically analyzed by its comparison with successful and unsuccessful vaginal deliveries with history of previous C-Section.

REFERENCES


