ORIGINAL ARTICLE

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 $\leq$3 Kg, Group-2 with 3.1-3.5 Kg and Group-3 with 3.6-0 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

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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.[2-5] 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

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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 neonates 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 recom- mended 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.

Table 1: Birth weight in patients with vaginal birth after caesarean section.

Birth weight	Frequency	Percentage
2.5-3.0 kg	59	59%
3.1-3.5 kg	25	25%
3.6-4.0 kg	16	16%
2.5 to 4.0 kg	100	100%

Another study conducted by Zelop et al[13] 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 al[14] 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 SA[15], 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 al[16] in services hospital evaluated the factors for suc cessful 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 un-successful vaginal deliveries with history of previous C-Section.

REFERENCES

1. Guise JM, Berlin M, McDonagh M, Osterweil P, Chan B, Helfand M. Safety of vaginal birth after cesarean: a systematic review. Obstet Gynecol 2004;103:420–9.

2. Gyamfi C, Juhasz G, Gyamfi P, Stone JL. Increased success of trial of labor after previous vaginal birth after cesarean. Obstet Gynecol 2004;104:715–9.

3. Liu S, Rusen ID, Joseph KS, Liston R, Kramer MS, Wen SW, et al. Recent trends in caesarean delivery rates and indications for caesarean delivery in Canada. J Obstet Gynaecol Can 2004;26:735–42.

4. Black C, Kaye JA, Jick H. Caesarean delivery in the United Kingdom: time trends in the general practice research database. Obstet Gynecol 2005;106:151–5.

5. Yeh J, Wactawski-Wende J, Shelton JA, Reschke J. Temporal trends in the rates of trial of labor in low-risk pregnancies and their impact on the rates and success of vaginal birth after caesarean delivery. Am J Obstet Gynecol 2006;194:144.

6. Landon MB, Hauth JC, Leveno KJ, Spong CY, Leindecker S, Varner MW, et al. Maternal and perinatal outcomes associated with a trial of labor after prior caesarean delivery. N Engl J Med 2004;351:2581–9.

7. Smith GC, Pell JP, Cameron AD, Dobbie R. Risk of perinatal death associated with labor after previous caesarean delivery in uncomplicated term pregnancies. JAMA 2002; 287:2684–90.

8. Landon MB, Leindecker S, Spong CY, Hauth JC, Bloom S, Varner MW, et al. The MFMU Cesarean Registry: factors affecting the success of trial of labor after previous cesarean delivery. Am J Obstet Gynecol 2005;193:1016–23.

9. Hibbard JU, Gilbert S, Landon MB, Hauth JC, Leveno KJ, Spong CY, et al. Trial of labor or repeat cesarean delivery in women with morbid obesity and previous cesarean delivery. Obstet Gynecol 2006;108:125–33.

10. Mozurkewich EL, Hutton EK. Elective repeat cesarean delivery versus trial of labor: a meta–analysis of the literature from 1989 to 1999. Am J Obstet Gynecol 2000;183:1187–97.

11. Wen SW, Rusen ID, Walker M, Liston R, Kramer MS, Baskett T, et al. Comparison of maternal mortality and morbidity between trial of labor and elective caesarean section among women with previous caesarean delivery. Am J Obstet Gynecol 2004;191:1263–9.

12. Elkousy MA, Sammel M, Stevens E, Peipert JF, Macones G. The effect of birth weight on vaginal birth after caesarean delivery success rates. Am J Obstet Gynecol 2003;188:824-30.

13. Zelop CM, Shipp TD, Repk JT, Cohen A, Lieberman E. Outcomes of trial of labor following previous caesarean delivery among women with fetuses weighing >4000 g. Am J Obstet Gynecol 2001;185:903-5.

14. Quinones JN, Stamilio DM, Pare E, Stevens E, Macones GA. The effect of prematurity on vaginal birth after caesarean delivey: success and maternal morbidity. Obstet Gynecol 2005;105:519-24.

15. Siddiqui SA. Obstetric factors for unsuccessful trial of labor in second – order birth following previous caesarean. Ann Saudi Med 2013;33:356-62.

16. Mansoor M, Kashif S, Tariq R. To evaluate factors for successful outcome in VBAC. Pak J Med Health Sci 2010;4:322-5.

CONFLICT OF INTEREST
Authors declare no conflict of interest.
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None declared.