



MATERNAL AND FETAL OUTCOME IN VAGINAL BIRTH AFTER CAESAREAN SECTION IN A TERTIARY CARE TEACHING HOSPITAL IN SOUTH INDIA.

Gynaecology

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ABSTRACT

BACKGROUND: Caesarean section is the most common procedure performed during reproductive age group with rates continuing to rise worldwide. One of the most common indication for repeat caesarean section is previous caesarean birth. The proportion of women attempting a vaginal Birth after Caesarean section (VBAC) is reducing in many countries nowadays, because of negative thought of an increase in the risk of maternal and infant complications related to VBAC. Our aim was to study Maternal and Fetal Outcome in VBAC in a tertiary care teaching hospital.

MATERIALS AND METHODS: This is a cross sectional study conducted from the patients attending the labour room and outpatient in the department of Obstetrics and Gynecology for one year. Inclusion criteria included Women with one previous lower segment caesarean section, Singleton pregnancy, Cephalic presentation, Term gestation. Women having two or more caesarean sections, Teenage pregnancy, Previous uterine surgery like myomectomy, Estimated fetal weight >4 kg, Interdelivery interval <18 months, Classical section, Termination of pregnancy for anomalous baby were excluded. A total of 80 cases were selected either from the outpatient department (booked) or in labour (unbooked). The study was done after obtaining clearance from Institutional Ethics Committee and after getting informed consent from the study population.

RESULTS: In our study, among 80 study subjects, most people are in the age group of 20-25 (47.5%), 52 (65%) were booked case. The causes for primary caesarean section group were found to be fetal distress 18 (22.5%). Spontaneous onset of labour was seen in 87.5% of patients. Duration of labour was >4 hrs in 66(82.5%) patients. We had 77.5% of successful VBAC with spontaneous delivery in 42(52.5%) of VBAC group. The most common cause for failed VBAC is scar dehiscence. Among neonatal outcome, 12.5% had respiratory distress. 90% of baby had apgar score >7/10 at first minute, at 5th minute 97.5% had apgar of >7/10.

CONCLUSION: Our study revealed that VBAC is a safe method selected cases which has great importance in the present era of the rising rate of primary caesarean sections. Vaginal birth after one Caesarean section is safe with good antenatal care.

KEYWORDS

Vbac, Antenatal, Delivery

INTRODUCTION:

Caesarean section is the most common procedure performed during reproductive age group with rates continuing to rise worldwide. One of the most common indication for repeat caesarean section is previous caesarean birth.^{1,2}

Women who had previous caesarean, options for mode of birth in their next pregnancy is either a trial of vaginal birth after caesarean (VBAC) or an elective repeat caesarean (ERC). For women who attempt a VBAC, the success rate variably reported between 56% and 80%.¹ The proportion of women attempting a VBAC is reducing in many countries nowadays, because of negative thought of an increase in the risk of maternal and infant complications related to VBAC, including uterine rupture and perinatal death.¹

Benefit of vaginal over abdominal delivery include less postpartum morbidity, shorter hospital stay, fewer operative and anesthetic risks, financial savings and of immeasurable value is the earlier and easier neonatal –maternal interaction and bonding.³

From 1970 to 2007, the caesarean delivery rate in the United States rose from 4.5 percent to 31.8 percent, with the exception of the years between 1989 and 1996 when the annual rate of caesarean delivery actually decreased. This decrease was largely due to a significantly increased rate of VBAC. These trends were short lived, and in 2007, the primary caesarean delivery rate was above 30%, whereas VBAC rates dropped to 8%.⁴ Over the last decade, the dramatic rise in ERC has underscored the importance of offering appropriate candidates a Trial of Labour, given most of these women will go on to deliver successfully. With this background, we wished to study the Maternal and Fetal Outcome in VBAC.

MATERIAL AND METHODS:

This is a cross sectional study conducted from the patients attending

the labour room and outpatient in the department of Obstetrics and Gynecology for one year.

Inclusion criteria included Women with one previous lower segment caesarean section, Singleton pregnancy, Cephalic presentation, Term gestation. Women having two or more caesarean sections, Teenage pregnancy, Previous uterine surgery like myomectomy, Estimated fetal weight >4 kg, Interdelivery interval <18 months, Classical section, Termination of pregnancy for anomalous baby were excluded.

A total of 80 cases were selected either from the outpatient department (booked) or in labour (unbooked). Booked cases were regularly followed up in the antenatal clinic and the unbooked patients, who reported directly for labour, were then assessed for a trial of labour. Patient is explained about VBAC and repeat caesarean section mode of delivery and their consequence and advantage. Those who are willing for VBAC was allowed for vaginal delivery. Demographic data, details of obstetric history, intrapartum events, and postpartum events were recorded. Neonatal data was collected till the hospital stay and additional details were collected regarding clinical course of all neonates admitted to neonatal ICU. The study was done after obtaining clearance from Institutional Ethics Committee and after getting informed consent from the study population.

Data collected were entered using Epidata 3.1 and coding was done. Data was imported into Microsoft Excel 2007. Data was rearranged and analyzed using IBM SPSS 20.0. Descriptive statistics like percentages, proportions, mean and standard deviation were used to comment on the results.

RESULTS:

In our study, among 80 study subjects, most people are in the age group of 20-25 (47.5%), 52 (65%) were booked case. The causes for primary caesarean section group were found to be fetal distress 18 (22.5%),

followed by meconium stained liquor 12(15%) oligohydramnios 12(15%) then breech 10(12.5%), non-progression of labour 10(12.5%) , malpresentation 6(5%), premature rupture of membrane 6(5%) , Antepartum hemorrhage 2(5%). Birth weight of baby in successful VBAC were 2.5-3kg (45%), 3-3.5kg (45%).

Among 80 study subjects, 42.5% was in active labour and the remaining was in latent labour at the time of admission. Spontaneous onset of labour was seen in 87.5% of patients, 12.5% had induced labour. Duration of labour was >4 hrs in 66(82.5%) patients. We had 77.5% of successful VBAC. Forceps delivery was done in 4(5%), vacuum delivery in 34(42.5%), and spontaneous delivery in 42(52.5%) of VBAC group. The most common cause for failed VBAC is scar dehiscence in 10 patients followed by deep transverse arrest and fetal distress (meconium stained liquor) in 4 patients each. Postpartum complications were 2 had anemia, 2 had postpartum hemorrhage, 2 had urinary tract infection, 4 had third degree perineal tear. There was no uterine rupture. Average hospital stay was 3.6 days .

Among neonatal outcome, 10 (12.5%) had respiratory distress, 6 (7.5%) was admitted in NICU . 90% of baby had apgar score >7/10 at first minute, at 5th minute 97.5% had apgar of >7/10 .

DISCUSSION :

In our study, most people are in the age group of 20-25 (47.5%) which is similar to Madi JM et al.⁵ Tessmer-Tuck JA et al found that VBAC success was independently associated with age <30 years.⁶ In our study, 40 % of people allowed for VBAC was 39 to 39+6 weeks. Yvonne W. Cheng et al found that as gestational age increases, the likelihood of VBAC is decreased, particularly when the pregnancy progresses beyond 41 weeks' gestation.⁷ Mitali Das et al., in UK found that gestational age <40weeks are favourable factor for VBAC.⁸ The most common cause for primary cesarean section was fetal distress (22.5%) in our study . Emma L. Barber et al., concluded that Non-reassuring fetal status (32%) was the common indication for primary cesarean section.⁹ In our study 77.5% had successful VBAC which was little higher when compared to Caroline SE Homer et al.¹⁰ and Jun ZHANG et al.¹¹

It was found that 42.5% was in active labour at the of admission. Yvonne W. Cheng,et al. found that Women admitted in active labour has two fold increased chance of VBAC.⁷ Macones GA et al found increase in chance of VBAC for patients in active labour in his study.¹² In our study, 87.5% of patient had spontaneous onset of labour , 12.5% had induced labour, 52.63% had spontaneous vaginal delivery. Mitali Das et al found that in spontaneous onset of labour, success rate of VBAC was 81% . In case of induced labour success rate of VBAC was 67%.⁸ Pratiksha Gupta et al., in Nigeria found that 52.63% of patient had spontaneous delivery.¹³ Mark B London et al reported that 80.6% was Spontaneous.¹⁴ The association between VBAC and duration of labour was >4 hrs in 82.5%. Madi JM et al found significant association between VBAC and duration of labour <12hrs.⁵ In our study population, 2.5% had anemia, 7.5% had febrile illness, 5% had episiotomy gaping. The 2010 National Institutes of Health consensus conference on VBAC highlighted high-grade evidence that maternal mortality risk is decreased by VBAC compared with a repeat cesarean (3.8 vs 13.4 of 100,000)¹⁵ . In our study, 5% had forceps delivery, 42.5% had vacuum delivery, and spontaneous delivery in 52.5%. Madi JM et al reported that 5.3% of the women had forceps delivery in his study.⁵ Pramod et al reported that 5.2% had vacuum delivery, 3.2% had forceps delivery and 68.4% had spontaneous delivery.³ In our study most common cause for failed VBAC is scar dehiscence. Pratiksha Gupta et al found that the incidence of scar dehiscence was higher following VBAC than elective repeat LSCS (9.62% Vs. 1.62%), which was statistically significant ($P = <0.005$)¹³ . Pramod et al found that nonprogress of labour is most common indication for failed VBAC³.

In our study 7.5% of the neonates had NICU admission. Caroline SE Homer et al concluded that Neonatal mortality rate was 24 per 10,000 for women who planned a VBAC.¹⁰ Mitali Das et al found that admission to the NICU, the incidence was 7.1% which included 9.3% of neonates born by intended elective repeat cesarean delivery and 4.9% of neonates born by intended VBAC.⁸ Jain and Dudell compared neonatal outcomes after ERC and VBAC and found significantly lower NICU admissions in VBAC¹⁶ .

Majority of neonate birth weight ranged from 2.6-3.0kg (45%) ,and 3.1-3.5kg,(45%). Yvonne W. Cheng et al found that women whose

infant weighed more than 4000 g, the probability of VBAC was reduced by 39% to 51% relative to that of women who had smaller infants⁷ . 1st minute APGAR score in our study 10% had apgar <7/10. George O Ugwu et al found that Apgar scores of less than 7 in the first minute were significantly more frequent in VBAC.¹⁷ Pramod et al found that in VBAC group with apgar <6 was found in 1.3%, 6-8 in 24.8%.³ Madi JM et al., in Portuguese found that Apgar score lower than seven at 5th minute in common in VBAC group ($p<0.05$).⁵

CONCLUSION

Our study revealed that VBAC is a safe method selected cases which has great importance in the present era of the rising rate of primary caesarean sections. Vaginal birth after one Caesarean section is safe with good antenatal care, strict selection of cases and close supervision during labor. For all women who had one previous lower segment caesarean section, physician should give the option of VBAC unless contraindicated, all risk and benefits has to be explain to them. Personnel able to rapidly intervene in cases of failed VBAC requiring emergent cesarean should be available, given the benefit of prompt intervention on neonatal morbidity.

REFERENCES:

1. Birara M, Gebrehiwot Y. Factors associated with success of vaginal birth after one caesarean section (VBAC) at three teaching hospitals in Addis Ababa, Ethiopia: a case control study. *BMC Pregnancy Childbirth*. 2013;13:31.
2. Crowther C, Dodd J, Hiller J, Haslam R, Robinson J. Planned Vaginal Birth or Elective Repeat Caesarean: Patient Preference Restricted Cohort with Nested Randomised Trial. *PLoS Med*. 2012;9(3):e1001192.
3. Pramod Kumar, Poonam Varma, Shivkumar, Arpitajaiswal. Subjective assessment of LSCS scar site for vaginal birth after caesarean trial and outcome in MGIMS. *Int J Biol Med Res*. 2012;3:1825-9
4. Cunningham F, Williams J. Williams obstetrics. New York: McGraw-Hill Professional; 2005.
5. The American College of Obstetricians and Gynecologists, Washington, DC. Vaginal Birth After Previous Cesarean Delivery. *Obstetric Anesthesia Digest*. 2011;31:142-143.
6. Tessmer-Tuck J, El-Nashar S, Racek A, Lohse C, Famuyide A, Wick M. Predicting Vaginal Birth after Cesarean Section: A Cohort Study. *Gynecologic and Obstetric Investigation*. 2014;77:121-126.
7. Cheng YW, Eden KB, Marshall N, Pereira L, Caughey AB, Guise J-M. Delivery After Prior Cesarean: Maternal Morbidity and Mortality. *Clinics in perinatology*. 2011;38:297-309.
8. Das M, Varma R. Vaginal birth after caesarean section: a practical evidence-based approach. *Obstetrics, Gynaecology & Reproductive Medicine*. 2012;22:177-85.
9. Barber E, Lundsberg L, Belanger K, Pettker C, Funai E, Illuzzi J. Indications Contributing to the Increasing Cesarean Delivery Rate. *Obstetrics & Gynecology*. 2011;118:29-38.
10. Homer C, Besley K, Bell J, Davis D, Adams J, Porteous A et al. Does continuity of care impact decision making in the next birth after a caesarean section (VBAC)? a randomised controlled trial. *BMC Pregnancy Childbirth*. 2013;13:140.
11. Chestnut D. Contemporary cesarean delivery practice in the United States. *Yearbook of Anesthesiology and Pain Management*. 2011;275.
12. Macones G, Hausman N, Edelstein R, Stamilio D, Marder S. Predicting outcomes of trials of labor in women attempting vaginal birth after cesarean delivery: A comparison of multivariate methods with neural networks. *American Journal of Obstetrics and Gynecology*. 2001;184:409-413.
13. Gupta P, Jahan I, Jograjya G. Is vaginal delivery safe after previous lower segment caesarean section in developing country? *Nigerian Medical Journal*. 2014;55:260-65.
14. Landon M. Vaginal Birth After Cesarean Delivery. *Clinics in Perinatology*. 2008;35:491-504.
15. Deline J, Varnes-Epstein L, Dresang L, Gideonsen M, Lynch L, Frey J. Low Primary Cesarean Rate and High VBAC Rate With Good Outcomes in an Amish Birthing Center. *The Annals of Family Medicine*. 2012;10:530-37.
16. Patel R, Jain L. Delivery After Previous Cesarean: Short-Term Perinatal Outcomes. *Seminars in Perinatology*. 2010;34:272-280.
17. Ugwu G, Iyoke C, ONAH H, Egwuatu V, EZUGWU F. Maternal and perinatal outcomes of delivery after a previous Cesarean section in Enugu, Southeast Nigeria: a prospective observational study. *International Journal of Women's Health*. 2014;6:301-5.