Retrospective Study of VBAC in a Teaching Hospital

Manohar R.[1*], Kavyashree G.[2]

[1]Assistant professor, [2]Associate professor, Department of OBGY, Mandya Institute of Medical Science, Mandya, Karnataka., INDIA.

[*]Corresponding Address:

manoharrangaswamy@gmail.com

Research Article

Abstract: There is a rising trend in repeat caesarean section rates in the present day obstetrics. **Objectives:** To find out the various factors responsible for the success of VBAC and its impact on maternal and perinatal outcome. **Material and Methods:** In this retrospective study 147 pregnant women at term with one previous low transverse caesarean section without any antenatal complications that were given trial of labour in Mandya Institute of Medical Sciences, Mandya was studied during June 2011 to March 2012. Various factors like maternal age, parity, prior obstetric outcome, mode of delivery, Inter-delivery interval, bishops score and neonatal weight were analyzed. Maternal and perinatal morbidity and mortality were also analyzed. **Results:** There were total of 147 cases with one previous transverse caesarean section in the study, total number of VBAC was 116(78.9%) and failed trial of scar were 31(21.1%). Prior history of vaginal delivery before and after caesarean and bishops score of more than 7 were important predictors for success of VBAC. Average birth weight was about 3-3.5kg. There were 2 cases of perinatal mortality and no cases of maternal mortality. **Conclusion:** Success rate of VBAC was 78.9% in the present study. Trial of vaginal delivery must be encouraged in all patients with one previous low-transverse caesarean section after full discussion and disclosure of the possible complications, provided no obststetric contraindications exist.

Key Words: Previous LSCS, VBAC, Trial, delivery.

Introduction

Vaginal birth after caesarean (VBAC) has been an important tool in an attempt to decrease the caesarean rate[1].Despite extensive data on the safety & efficiency of vaginal birth after caesarean section, there still remains a relative paucity of information on how an attempted VBAC should be conducted. In 2010 ACOG guidelines, based on consensus and expert opinion recommend that trial of labour after caesarean section (TOLAC) should be undertaken in facilities capable of emergency deliveries because of the risk associated with TOLAC and complications such as uterine rupture that may be unpredictable, ACOG recommends that VBAC be undertaken in facilities with staff immediately available to provide emergency care. In most cases with careful monitoring, successful vaginal birth can be safely achieved for both mother and infant.

Material and Methods

In this retrospective study 147 pregnant women at term with one previous low transverse caesarean section without any antenatal complications who were given trial of labour in Mandya institute of medical sciences, Mandya was studied for a period of 9 months during JUN 2011 to MARCH 2012. Patients of post caesarean cases who were admitted to the labour room were analyzed from the case sheets. The study group consisted of booked and unbooked cases. History regarding maternal age and presenting complaints was taken. Detailed past obstetric history regarding the previous caesarean section like emergency/elective, term/preterm, whether patient was in labour/ not in labour and the stage of labour when section was done, the indication for LSCS, the post operative period and complications, if any, birth weight of the baby. History regarding vaginal delivery before or after caesarean section was elicited. Detailed physical examination was done to check the build and nourishment, to look for pallor, icterus, cyanosis, edema and lymphadenopathy. Vital signs were documented, cardiovascular and respiratory systems examined to rule out abnormalities. Obstetric examination was done to know the gestational age (clinically), lie, presentation and position of fetus. The duration and frequency of uterine contractions, scar tenderness and fetal heart sounds were recorded during labour. Per vaginal examination was done to assess bishop's score, pelvic adequacy and to rule out CPD. Blood grouping, Hemoglobin estimation, urine for albumin sugar and microscopy was done for all patients. Once the patient was admitted to the labour room informed consent was taken for VBAC after explaining the complications. An IV access was put and blood was drawn for cross matching. Maternal monitoring of blood pressure and pulse rate was done every 15 minutes and a close watch was kept for signs of uterine rupture like pain, tenderness over the scar, suprapubic bulge, dysuria or frequency of micturition or hematuria or excessive vaginal bleeding. Fetal monitoring was done by continuous CTG monitoring.

Labour was augmented by amniotomy and by oxytocin in few cases. Emergency low-transverse caesarean section was done if:

a) There was threatened scar rupture
b) There were signs of maternal or fetal distress.
c) There was no progress of labour inspite of good uterine contractions for about 6 hours.

Second stage of labour was cut short by vaccum in most cases. Episiotomy was given after perineal infiltration with 2% xylocaine in most cases. Third stage was managed by injection oxytocin 10units im and tab misoprostol 600mcg orally as per WHO guidelines. Routine scar exploration was not done. Patients were observed for 2 hours after delivery of the placenta. A watch was kept on the patients vital signs and unexplained vaginal bleeding or suprapubic bulge were checked for during these 2 hours. The patient and their babies were followed for 5 days post partum and discharged.

Observations

There were a total of 147 cases of one previous low transverse caesarean section during june 2011 to march 2012 in our MIMS hospital who were allowed for VBAC. Total numbers of VBAC during this period were 116(78.9%) and total numbers of repeat caesarean sections were 31(21.1%).

Among the 147 cases 140 were booked and 7 were unbooked.

Table 1: Age distribution

Age(year)	Number of cases
<20	01
20-25	99
26-30	36
31-35	09
>35	02

Majority of case were between 20-25 years of age

Table 2: Gravida

Age(year)	Number of cases
02	112
03	29
04	05
05	01

Majority of the cases were second gravidas with previous low-transverse caesarean section.

Table 3: Para

Age(year)	Number of cases
01	128
02	18
03	01

Of the 147 cases taken for study, 128 cases were primipara and 19 cases were multipara

Table 4: Outcome of TOLAC

Total previous caesarean cases	147
Vaginal deliveries	116
Repeated caesarean section	31

Out of the 147 cases of previous low transverse caesarean section that were given trial of vaginal delivery 116 had successful VBAC and 31 underwent repeat caesarean section.

Table 5: Mode of delivery

Mode of delivery	Number of cases
FTND	06
FTND with RMLE	67
Outlet forceps	02
vaccum	41
LSCS	31

Of the 116 cases who delivered vaginally 6 had FTND, 67 had FTND with RMLE in 43 cases II stage was cut short by vaccum and outlet forceps delivery.

Table 6: Previous indication for LSCS

Indication	Number of patients	VBAC	%
Fetal distress	81	60	74.07
Breech presentation	11	09	81.00
CPD/FTP	24	16	66.6
PROM	15	10	66.6
Eclampsia/imminent eclampsia	08	06	75.00
Transverse lie	04	04	100.0
Cord presentation	01	01	100.0
Abruption placentae	01	01	100.0
Placenta praevia	02	02	100.0

In this study the primary caesarean was done for fetal distress in the majority of cases(81) followed by CPD/ failure to progress(24), PROM(15), breech presentation (11), and hypertension in pregnancy(8). There were 04 cases who had previous caesarean for transverse lie and 03 cases for antepartum hemorrhage.

Table 7: Number of vaginal deliveries prior to/after caesarean section

Vaginal delivery prior to after C/S	Number of patients	Vaginal delivery	%
vaginal delivery prior to C/S	04	03	75
Vaginal delivery after C/S	11	10	90.9

11 of the cases who had history of vaginal delivery after caesarean section had 90.9% VBAC success. 3 cases out of 4 who had history of vaginal delivery prior to the caesarean section had full term normal deliveries.

Failed Trial of Labour

Out of the 147 cases which were given trial for vaginal delivery, 31 cases ended up in emergency LSCS for fetal distress (16),failure to progress(9cases) & threatened scar rupture(6cases). Out of the 6 cases who

were taken up for threatened scar rupture, 2 patients had rupture uterus, 2 patients had scar dehiscence, 1 patient had bladder injury and there was 2 perinatal mortality.

Table 8: Bishops score at onset of labour

Bishop's score	Number of cases
4-6	60
7-10	87

In the study conducted on 147patients who were allowed for trial of vaginal delivery, the modified bishop's score was between 4 to 6 in 60cases and between 7 to 10 in 87cases.

Table 9: Current birth weight of babies

Present birth weight (in kg)	Number of cases
2-2.5kg	06
2.51-3kg	35
3.01-3.5kg	69
3.51-4kg	33
>4kg	04

Among the 147 women with previous low transverse caesarean section most of them had babies weighing between 3.01to 3.5kg.

Discussion

In the present study 147 patients were allowed for trial of vaginal delivery, 116 cases had a successful vaginal delivery & 31 cases failed & were taken up for caesarean section for fetal distress (16 cases), failure to progress (9 cases) & threatened scar rupture (6), out of the 6 cases who were taken up for threatened scar rupture 2 patient had complete rupture uterus & other 2 had scar dehiscence.

Meier & Porreco reported a VBAC success rate of 84.5%[2]

In Our study, VBAC success rate of 78.9% was reported.

In majority of the 147 cases studied, the previous indication for LSCS was fetal distress (81 cases) & the next was CPD/FTP (24 cases) & malpresentation (15 cases). Among mal presentations 11 were for breech & 4 were for transverse lie.

a) In patient who had undergone previous LSCS for fetal distress (81 cases) 75% delivered vaginally. This correlates with a study conducted by Troyer & Parisi, hich showed 80.7% VBAC success rate for cases with previous LSCS done for fetal distress.[3]

b) In patients who had undergone previous for CPD/FTP (24 cases),66.6% delivered vaginally. Sheshi Iyer *et al*, showed a VBAC success rate of 64.1% in cases with previous LSCS for dysfunctional labour.[4]

c) In patients who had undergone previous LSCS for breech presentation (11 cases) 81% delivered vaginally.

d) Cases for whom previous LSCS was done for PROM (15) showed a 66% successful VBAC rate. Weinstein *et al*, had 26 cases of PROM as the primary indication for caesarean among whom 76.9% had successful VBAC.[5]

e) In patients for whom previous LSCS was done for APH (3 cases), 100% delivered vaginally. It correlates well with a study by Troyer & Parisi, who demonstrated 100% VBAC success in cases of previous LSCS done for APH.

f) In my study 4cases of previous LSCS done for transverse lie were given TOL of 100% delivered vaginally. It correlates with a study conducted by Peter Jakobi *et al*, who inferred that the findings on the vaginal examination at admission for trail of labour correlates significantly with successful VBAC.[6]

g) Among the 147cases studied, 6 had FTND, 67cases had FTND with RMLE, 41 had vaccum delivery, 2 had outlet forceps delivery& 31cases underwent emergency LSCS for failed trialof labour.

h) Among the 147cases studied those cases that had a vaginal delivery either before or after the caesarean section had a highest chance of having a successful vaginal delivery. Out of the 11 cases with a vaginal delivery after C/S 90.90% had a vaginal delivery.Elkousy *et al* conducted a study which showed 65% VBAC success among those without prior vaginal deliveries 83% success in those with vaginal delivery after caesarean section.[7]

i) In this study patient who had a higher bishop's score had more chances of having a successful vaginal delivery. It correlates with the study conducted by Joseph A Adashek inferred that the findings on the vaginal examination at admission for trial of labour correlates significantly with successful VBAC.[8]

j) In my study most of the neonates born had birth weight between 3-3.5 kg. 4 newborns had birth weight more than 4 kg. The success of VBAC is not significantly dependent on the birth weight of the neonates according to Elkousy *et al*.[7]

k) Inter delivery interval of less than 18 months were 4 cases, out of which 3 delivered normally and one underwent LSCS. Doshi Hareshet *al* evaluated that the rate of uterine rupture was 2.3% in women with inter delivery interval of 18 months[9]. In our study there were no cases of uterine rupture.

Reason for Repeat Caesarean Section

The majority of cases taken up for emergency caesarean section for fetal distress(16 cases), failure to progress (9 cases) and threatened scar rupture (6 cases) In the present study there was 2 case of complete uterine rupture, 2 scar dehiscence, and 1 case of bladder injury. First case of uterine rupture was a case of G2P1L1 with previous low transverse caesarean section done for CPD and she had an interval of 2 years and was taken for LSCS for failure to progress. On table, baby was in the peritoneal cavity and was still born. Second case of uterine rupture was diagnosed in immediate post partum following vaccum delivery, patient had suprapubic bulge 15 minutes after the delivery and her pulse rate was 120/min and systolic blood pressure was 90mmHg. She was treated with 2 pints of blood and was immediately taken for emergency lapratomy. There was a complete rupture of the previous scar extending into the right broad ligament forming a broad ligament haematoma and retroperitoneal haematoma extending upto the lumbar vertebra. Closure of the ruptured site was done using vicryl no.1 and right uterine artery ligation was done. Patient was discharged on the 14th day. There were no maternal deaths in the present study.

In the present study 2 babies had perinatal mortality, 1 following rupture uterus and 1 following repeat caesarean for foetal distress (cause of death –meconium aspiration syndrome). Robert K Cowan had 97% infants with five minute APGAR score above 8 of the 3% who had five minutes APGAR score less than 8, there was no neonatal mortality.[10]

Conclusion

Success rate of vaginal delivery after trial was 78.9% in the present study.

Trial of vaginal delivery must be encouraged in all patients with one previous low-transverse caesarean section after full discussion and disclosure of the possible complications, provided no obststetric contraindications exist. Positive predictors for successful VBAC from our study were younger age group, higher Bishops score at onset of labour, vaginal delivery prior to or after caesarean section. Successful trial of vaginal delivery reduces both the cost and duration of hospital study but failed trial increases maternal morbidity and perinatal mortality.

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