

A STUDY OF VAGINAL BIRTH AFTER CAESAREANRatana Usham¹, Helen Kamei², Th. Digel Singh³, Y. Ajitkumar⁴, N. Nabakishore⁵**HOW TO CITE THIS ARTICLE**

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ABSTRACT: OBJECTIVE: To evaluate the efficacy and safety of attempted VBAC with a view to decrease the incidence of caesarean section. **METHODS:** A prospective study is carried out on women with one previous LSCS for a non-recurrent cause attending ANC & labour room of RIMS for 2 years from 1st Aug 2007 to 31st July 2009. **RESULTS:** 100 eligible PCS women agreed to undergo trial of labour. Of these 50 delivered vaginally and the remaining 50 had to undergo emergency repeat caesarean section due to fetal distress, scar tenderness or non-progress of labour resulting in a VBAC rate of 50%. **CONCLUSION:** A trial of labour in cases of previous caesarean section is the way to reduce the overall caesarean section rate. Physicians need to discuss the risks and benefits of VBAC following trial of labour or elective repeat caesarean section with patients and patients' choices must be considered.

KEYWORDS: Previous caesarean section, Trial of labour, Vaginal birth after caesarean section.

INTRODUCTION: Present day obstetric practice demand an ideal uncomplicated antenatal period, labour and post-partum period blessed with a healthy mother and newborn baby. In this day of small family norms, the baby's right of survival is increasingly recognized and consequently majority of the indications for the operation are solely in the interest of the baby. Practicing obstetricians encounter increasing number of post caesarean pregnancies because the number of primary caesarean section from non-recurrent causes is rapidly rising. There is a growing concern by the obstetricians managing these cases since there are medical as well as legal problems involved. All post caesarean pregnancies do not require repeat caesarean and a majority of them may have uncomplicated vaginal delivery. With the escalating rate of caesarean section suggestions were made that vaginal birth after caesarean section might help in reducing the rate of caesarean section. A trial of labor in cases of previous caesarean section has been accepted as a way to reduce the overall caesarean section rate. There is evidence of safety of trial of labor with or without induction of labor, with reduction in iatrogenic prematurity, and maternal morbidity and mortality.

METHODS: A prospective study is carried out on women with one previous lower segment caesarean section(LSCS) for a non-recurrent cause, attending the Antenatal clinic and labour room of Regional Institute of Medical Sciences, Manipur, for a period of 2(two)years from 1st Aug., 2007 to 31st July, 2009.

Exclusion Criteria for the study will be:

1. Two previous caesarean sections.
2. Previous caesarean section with other obstetric complications like breech presentation, transverse lie, twin pregnancy, major degree placenta previa, cephalopelvic disproportion, lethal foetal anomalies.
3. History of post-operative wound infection following previous LSCS.

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4. Estimated fetal weight > 4 Kg.
5. Associated anaemia (Hb<10g%), pregnancy induced hypertension, diabetes, heart disease and renal disease.
6. Previous vertical uterine scar and scar of other uterine surgery.

Plans of management, waiting for spontaneous onset or induction after looking into the indication of previous caesarean section, eventful/uneventful previous caesarean section, thinning of the uterine scar on ultrasonography, fetopelvic disproportion in the present pregnancy and other contra indications to induction and vaginal delivery will be recorded for all the study subjects. Trial of labour and vaginal delivery with induction or augmentation of labour was done whenever necessary.

During the period of trial each case was put in the observation bed attached to the labour room under strict monitoring of the foeto-maternal wellbeing and progress of labour. Oxytocin infusion drip was used whenever indicated either for induction or augmentation of labour. Prostaglandin E2 gel was applied in selected cases for cervical ripening or induction of labour.

Whether the labour was spontaneous or induced, it will be monitored with:

1. Hourly recording of vital parameters - temperature, pulse, respiration and blood pressure.
2. Foetal heart rate monitoring.
3. Monitoring of uterine contractions.
4. Partograph.
5. A close watch for the early recognition of scar dehiscence by identifying maternal tachycardia, vaginal bleeding, scar tenderness and foetal heart rate alterations.

RESULTS: During the period there were a total of 18858 deliveries with a caesarean rate of 25%. Post caesarean pregnancies were 7.5% making an overall 1414 pregnancies with two previous CS of 96 patients. 928 post caesarean cases were with recurrent indications and 390 patients were of non-recurrent indications. After screening the 390 patients with exclusion criteria and counseling for undergoing vaginal birth following lower segment caesarean section (VBAC), only 100 of the eligible agreed to undergo trial of labour. Of these patients 50 delivered vaginally and the remaining 50 patients had to undergo emergency repeat caesarean section (CS). The indications of the emergency CS were mostly of fetal distress, scar tenderness or non-progress in labour. There was only 50 VBAC.

The outcome of vaginal birth after caesarean (VBAC), repeat caesarean due to failed trial of labour and normal vaginal delivery (NVD) are compared for test of significance. Average age of NVD women was 29.5±5.555 years, VBAC -29.6±5.07 years and 30.9±4.91 years for repeat caesarean women. The duration of marriage ranges within 5-6 years. The mean period of gestation for VBAC was 37.86±5.89 weeks, 39.10±0.81 weeks for repeat caesarean women and 39.46±1.37 weeks for NVD women.

Parameter	NVD		VBAC		t-value	d.f.	P-value
	No. of cases	Mean±SD	No. of cases	Mean±SD			
Last child birth (duration in yr.)	50	2.5680±1.01528	50	3.1800±1.38932	2.515	98	0.014
Blood Transfusion	50	0.0400±0.19795	50	0.2000±0.69985	1.556	98	0.123

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Weight of baby in Kg	50	3.1820±0.48136	50	3.0980±0.40982	0.940	98	0.350
Duration of hospital stay in days	50	3.0800±0.98644	50	3.7400±1.84954	2.226	98	0.028

Table 1: Comparison of Mean ± SD of parameters between NVD and VBAC

Table 1 shows that duration of last child birth and duration of hospital stay for NVD are significantly lower than that for VBAC group. But amount of blood transfusion and weight of baby of both the groups do not differ significantly at 0.05 probability level.

Parameter	VBAC		Repeat CS		t-value	d.f.	P-value
	No. of cases	Mean±SD	No. of cases	Mean±SD			
Last child birth (Duration in yr.)	50	3.1800±1.38932	50	3.5320±1.87469	1.067	98	0.289
Blood Transfusion	50	0.2000±0.69985	50	0.1600±0.46773	0.336	98	0.738
Weight of baby in Kg	50	3.0980±0.40982	50	3.3640±0.30423	3.685	98	0.000
Duration of hospital stay in days	50	3.7400±1.84954	50	6.0600±1.03825	7.734	98	0.000

Table 2: Comparison of Mean±SD of parameters between VBAC and Repeat CS

Parameters	Type of groups		χ^2	d.f.	P-value	
	NVD	VBAC				
Parity	P0	1	0	2.92	3	0.50
	P1	36	39			
	P2	12	8			
	P3	1	3			
Admission	Routine	21	16	1.073	1	0.300
	Emergency	29	34			
Labor	Spontaneous	33	35	0.184	1	0.668
	Induced	17	15			
Mode of delivery	NVD	38	21	12.298	2	0.002
	Ventouse	12	28			
	Forceps	0	1			
Complication	Perineal tear	0	1	11.264	5	0.046
	Cervical tear	1	2			
	Fetal distress	0	5			

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	PPH	0	3			
	Hematoma	1	0			
	Nil	48	39			
Sex of baby	Male	29	27	0.162	1	0.687
	Female	21	23			
A/S	>7	38	43	1.624	1	0.202
	<7	12	7			
Resuscitation of baby	Absent	37	42	1.507	1	0.220
	Present	13	8			
Neonatal ICU	Absent	44	44	0.000	1	1.000
	Present	6	6			

Table 3: Comparison of cases between NVD and VBAC according parameters

Parameters		Type of group		χ^2	d.f.	P-value
		VBAC	Repeat CS			
Parity	P1	39	44	4.231	5	0.517
	P2	8	5			
	P3	3	1			
CS done before /after labor	Before	27	27	0.000	1	1.000
	After	23	23			
Admission	Routine	16	30	7.890	1	0.005
	Emergency	34	20			
Labor	Spontaneous	35	32	0.407	1	0.523
	Induced	15	18			
Complication	Perineal tear	1	0	9.131	4	0.058
	Cervical tear	2	0			
	Fetal distress	5	0			
	PPH	3	2			
	Nil	39	48			
Sex of baby	Male	27	29	0.162	1	0.687
	Female	23	21			
A/S	>7	43	40	0.638	1	0.424
	<7	7	10			
Resuscitation of baby	Absent	42	38	1.000	1	0.317
	Present	8	12			
Neonatal ICU	Absent	44	43	0.088	1	0.766
	Present	6	7			
Placenta	Adherent	2	3	0.211	1	0.646
	Normal	48	47			

Table 4: Comparison of cases between VBAC and Repeat CS according parameters

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DISCUSSION: Obstetrical practice today has liberalized vaginal birth after caesarean section (VBAC) in appropriately selected women with a previous caesarean pregnancy. This is done without compromising with the foeto maternal safety margins either in a vaginal birth or in a repeat caesarean section. The selection of women for VBAC is mainly influenced by women's desire and conditions favorable for vaginal delivery. The objective of this study is to evaluate the efficacy and safety of attempted VBAC with a view to decrease the caesarean rate.

The Regional Institute of Medical Sciences Hospital is the top ranked referral centre of Manipur where disproportionate mixtures of complicated and uncomplicated cases are dealt with. Therefore, variability of data on either side may be seen swinging from national and international scale of research and studies.

Lahousen M and Burmucic R¹ reported a VBAC rate of 55.3%, Mor- Yosef S. et al² had 55.1% and Matias JP et al³ had 58.1%. Shakti V et al⁴ and Tan PC et al⁵ reported higher rates of 72.1% and 71.2% respectively. The present study reports a VBAC rate of 50%. Placek PA⁶ found the VBAC rate to be 4.9% in the US in 1980-85. European countries have adopted VBAC demonstrated by rates of 43% in Norway and 39% in Scotland. Tripathi JB et al⁷ had a higher success rate of VBAC at 73% and Smith GCS⁸ with 74.2%.

The decision for a VBAC delivery is more influenced by traditional medical practice and the patient reluctance to consider VBAC, viewing labour pain as more severe than the pain of surgery (Placek PJ et al, 1988). To reduce the caesarean delivery rate, the number of trial of labour should be increased among women who have had caesarean section (Chuang JH et al⁹). Leeman LM et al¹⁰ reflected patient choice caesarean delivery is increasing in the US citing ethical premises of autonomy and informed consent, despite a lack of evidence of its safety. Goldman G et al¹¹ found the VBAC rate depend on the caesarean rate of the attending obstetrician.

But pregnancy after the age of 35 years is very much prevalent in our present day society and improved obstetrical care has made advanced maternal age compatible with successful pregnancy for such women, especially in the absence of pre-existing medical or obstetrical disorders. Matias JP et al (2007) found an association of older age with increasing repeat CS rate.

The mean weight of the babies born NVD was 3.18±0.48kg, that of VBAC was 3.09±0.409kg and that of repeat caesarean section was 3.36±0.304kg. A lighter baby in the current pregnancy favors a successful vaginal delivery and with heavier babies the vaginal rate is reduced.

Maximum number of patients had previous caesarean section for breech presentation of which 58.6% delivered vaginally. Proper selection of cases for trial of labour, including clinical examination of the patients, induction or augmentation in selected cases with proper monitoring of labour may bring about a good number of vaginal deliveries in the cases where the previous caesarean section was done even for CPD. A non-recurrent indication for previous CS such as breech presentation or foetal distress is associated with high successful VBAC rate than recurrent indications such as cephalo-pelvic disproportion (Brill Y and Windrim R.¹² Shakti V et al (2006) and Tripathi JB et al (2006) studied on women with one prior lower segment caesarean section for a non-recurrent indication to confirm the efficacy and safety of trial of labour. Lahousen M and Burmucic R (1986) found higher VBAC rate in breech presentation or foetal distress. The probable reason for a higher success rate of trial of labour seen in western countries may be due to the fact that the cases were screened properly. Caesarean section rates in many countries have risen 5-10 fold driven in part by a reliance on electronic foetal monitoring, pressure from health consumers to salvage small babies, fear

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of litigation, decreasing expertise in operative vaginal deliveries and in lifestyle choices (Ugwumadu A).¹³

Zweefler J et al¹⁴ found a decrease in the VBAC rate after the American College of Obstetricians and Gynaecologists (ACOG) revised the guidelines to allow VBAC to be attempted in institutions equipped to respond to emergency with physicians immediately available to provide emergency care. Iglesias S. et al¹⁵ recommended that hospitals providing obstetric care have units of blood, operating rooms, neonatal resuscitation equipment and nursing, anaesthetic and surgical personnel available so that, if necessary, a VBAC can be performed within 30 minutes for any women including those undergoing VBAC.

In the present study, there is no routine exploration of the scar or uterus following vaginal delivery and placental expulsion in haemodynamically stable patients. So dehiscence was not seen in those patients who delivered vaginally. There was no associated neo natal or maternal morbidity and mortality.

15 cases underwent repeat CS due to scar tenderness and found 4 cases to be having scar dehiscence during operation and needed just simple repair. This shows that only scar tenderness does not give a final diagnostic point of scar rupture, but it is an important sign to be observed in all the patients. Smith GCS et al (2004) obtained an overall proportion of 74.2% vaginal birth and a uterine rupture rate of 0.35%.

In our study maternal mortality is zero. The maternal morbidity after vaginal delivery is definitely low in comparison to that after repeat caesarean. The VBAC group showed more postpartum hemorrhage (6%) than the repeat CS group (4%). The normal delivery group did not show any postpartum haemorrhage. The maternal morbidity is shown by the number of days in hospital admission. It was 3.08 ± 0.98 days in NVD, 3.74 ± 1.849 days in VBAC and 6.06 ± 1.038 days in the case of repeat caesarean. This shows the maternal morbidity to be more in the case of those undergoing repeat caesarean section. The mean length of hospital stay was similar to the findings of Placek PJ et al (1988). Iglesias S et al (1991) and Tan PC et al (2007) found the increased rate of VBAC accompanied by a tendency towards an overall decrease in the maternal length of hospital stay.

There was no perinatal mortality in the present study. And the perinatal morbidity was similar in all the cases, with neonatal intensive care unit (NICU) admission at 12% in normal cases, 12% in VBAC cases and 14% in repeat CS cases. Resuscitation was necessitated in 26% of the NVD cases but only 12% needed NICU admission, 16% of VBAC cases were resuscitated with 12% NICU admission and 24% of repeat CS were resuscitated with 14% NICU admission. Therefore, slightly increased percentage of NICU admission is seen in the case of repeat CS group. Shakti V et al (2006) found the perinatal morbidity of VBAC cases and repeat CS cases comparable to that for other normal deliveries. Smith GCS et al (2004) viewed that the risk of perinatal death due to uterine rupture was significantly higher in hospitals with < 3000 births a year than in hospitals with \geq 3000 births a year. The neonatal and maternal mortality rates did not improve despite increasing rates of repeat CS during the years after the AICOG, 1999 VBAC guideline revision (John Zweefler, 2006). The strongest prediction for neonatal admission was emergency caesarean delivery, further emphasizing the need of careful case selection in a trial of labour to minimize the risk of failure (Tan PC¹⁶).

CONCLUSION: Practicing obstetricians encounter increasing number of post caesarean pregnancies because the number of primary caesarean section from non-recurrent causes is rapidly rising. A trial of labor in cases of previous caesarean section is the way to reduce the overall caesarean section rate.

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Physicians need to discuss the risks and benefits of VBAC following trial of labour or elective repeat caesarean section with patients and patients' choices must be considered. Intensive study and research is deemed necessary to outline the optimum management of post caesarean pregnancies and make an endeavour to decrease the overall caesarean rate.

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