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A PROSPECTIVE STUDY OF TERM SPONTANEOUS VAGINAL DELIVERY AFTER PREVIOUS ONE LOWER SEGMENT CAESAREAN SECTION IN SMS MEDICAL COLLEGE, JAIPUR

Gynaecology

KEYWORDS: Vaginal birth after caesarean delivery, previous caesarean delivery, trial of labour after caesarean section

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ABSTRACT

Aims & Objectives : To assess the feto-maternal outcome of spontaneous term vaginal birth after a previous one lower segment caesarean delivery and to find out the predictors of spontaneous term vaginal birth after a previous one lower segment caesarean delivery.

Materials & Methods : A prospective study was conducted in the Department of Obstetrics & Gynaecology, SMS Medical College, Jaipur from March 2015 to October 2016. 120 pregnant women with a history of one previous LSCS were enrolled in the study.

Results : In our study, 60% cases had a successful VBAC and 40% underwent a repeat emergency LSCS for failed trial of labour after caesarean section. Anterior position of cervix cervical dilatation 3 cm, effacement 60-70%, vertex position at or below the ischial spine at the time of admission were significant factor in favour of a successful VBAC. The incidence of scar dehiscence was 5.83%. There was no maternal or neonatal mortality.

Conclusion : TOLAC can be given in selected cases with good monitoring of FHS and progress of labour under supervision of trained staff at a tertiary care hospital.

INTRODUCTION

The dictum "once a caesarean section always a caesarean section" no longer holds true. Several studies suggest that in women with prior lower segment caesarean section for non recurrent cause, a trial of labour is as safe as elective repeat Caesarean section.

This tendency to resist caesarean section arose from the wish not to compromise a patients Obstetric future, because the dictum "Twice a Caesarean section always a caesarean section" then holds true. There has been a steady rise in the rates of caesarean section throughout the world.1 More than 90% of women with a history of previous low transverse section are delivered by repeat caesarean section.[2]

For successful delivery after a previous caesarian section the Obstetrician requires to have the expertise to carefully select the patients for trial of labour because rupture of scar can endanger the life of both mother and her child. Successful trial of labour shortens the duration of hospital stay and gives more patients satisfaction[3] plus the complications associated with the surgical procedure are also eliminated.Hence, the present study was done to assess the feto-maternal outcome and to find out the predictors of spontaneous term vaginal birth after a previous one lower segment caesarean delivery.

MATERIAL & METHODS

This prospective study was done in the Department of Obstetrics & Gynaecology, SMS Medical College, Jaipur from March 2015 to October 2016

During study period we included women with a previous one lower segment caesarean section with cephalic presentation admitted in labour room with spontaneous labour. women with estimated fetal weight >3.5 kg, malpresentation, history of postoperative wound infection following previous LSCS and previous history of any unknown uterine surgery, contraindications to vaginal delivery like cephalopelvic disproportion, major degree placenta previa, abruptio placentae and transverse lie and previous preterm caesarean section<34 weeks were excluded from the study. A total of 120 cases that fulfilled the selection criteria were enrolled in the study.

All women were thoroughly evaluated regarding complete history, parity, indication for previous LSCS, thorough clinical examination, per-abdominal examination, pelvic examination and all risk factors were evaluated.

After taking informed consent labour was closely monitored. Strict Fetal heart monitoring was done (by cardiotocography). Progress of labour was monitored on regular basis by using standard WHO partograph and 4 hourly internal examination performed to assess progress of labour and when necessary labour was augmented with oxytocin. Patients were vigilantly monitored for scar tenderness or delay in progression of labour and if need arises immediate LSCS was done.

STATISTICAL ANALYSIS

Statistical analysis was performed with the SPSS, Trial version 23 for Windows statistical software package (SPSS inc., Chicago, il, USA) and Primer. The Categorical data were presented as numbers (percent) and were compared among groups using Chi-square test. Groups were compared for quantitative data were presented as mean and standard deviation and were compared using by students t-test Probability p-value <0.05 was considered statistically significant.

RESULTS

In our study TOLAC was applied on 120 cases, out of them 72 (60%) successful VBAC and 48 (40%) had emergency LSCS {Table-1}. Majority of cases were in the age group of 26-30 yrs.

Table – 1 ***Distribution of Cases According to Mode of Delivery***

Mode of Delivery	No.	%
LSCS	48	40.00
Successful VBAC	72	60.00
Total	**120**	**100.00**

It was observed that interval between previous LSCS and present pregnancy was more than 2 yrs in 80% cases (p > 0.05) {Table-2}.

Table – 2 ***Distribution of Cases According to Interval Between Previous LSCS and Present Pregnancy***

Interval (in yrs)	Emergency LSCS		Successful VBAC		Total	
	No.	%	No.	%	No.	%
>2	37	38.54	59	61.45	96	80.00
2	11	45.83	13	54.16	24	20.00
Total	48	40.00	72	60.00	120	100.00

$\chi^2 = 0.176$ d.f. = 1 p = 0.675 NS

Of the 120 cases, indication of previous caesarean section was the fetal distress 30% cases, out of them 44.44% cases had successful VBAC. Malpresentation was the indication for 28.83% cases, out of them 56% had emergency LSCS and 42.31% cases had successful VBAC. Breech presentation was the indication for 13.33% cases and out of them 43.75% cases had successful VBAC and 56.25% cases had emergency LSCS. Severe pre-eclampsia was the indication for 12.5% cases of previous LSCS and out of them 33.33% cases had emergency LSCS and 66.67% cases had successful VBAC. So incidence of successful VBAC was 43.75% and 55.56% when the previous LSCS was for breech presentation and fetal distress {Table-3}.

Table – 3 ***Distribution of Cases According to Indication of Previous LSCS***

Indication of Previous LSCS	Emergency LSCS		Successful VBAC		Total		p-value, LS
	No.	%	No.	%	No.	%	
FD	16	44.44	20	55.56	36	30.00	0.65, NS
Malpresentation	14	56.00	11	44.00	25	28.83	0.108, NS
Oblique Lie	0	0.00	1	100.00	1	0.83	
Breech	9	56.25	7	43.75	16	13.33	
Transverse Lie	5	62.50	3	37.50	8	6.67	
Severe Preeclampsia	5	33.33	10	66.67	15	12.50	0.77, NS
Prolonged PROM	3	25.00	9	75.00	12	10.00	0.42, NS
NPOL	7	63.64	4	36.36	11	9.17	0.17 NS
Failed Induction	0	0.00	10	100.00	10	8.33	0.018, Sig
Multiple Gestation	2	33.33	4	66.67	6	5.00	0.92, NS
Cord Prolapse	0	0.00	2	100.00	2	1.67	0.66, NS
Placental Previa	0	0.00	2	100.00	2	1.67	0.66, NS
Unfavourable Cervix	1	100.00	0	0.00	1	0.83	0.83, NS
Total	48	40.00	72	60.00	120	100.00	

It was seen that women who presenting in labour room with anterior / posterior of cervix, cervical dilatation 3 cm, effacement 60-70%, vertex position at or below the ischial spine had a better chance 69.77%, 76.12%, 76.47%, 95.83% of successful VBAC {Table-4, 5, 6, 7}.

Table – 4 ***Distribution of Cases According to Position of Cervix***

Position of Cervix	Emergency LSCS		Successful VBAC		Total	
	No.	%	No.	%	No.	%
Anterior	26	30.23	60	69.77	86	71.67
Mid	22	64.71	12	35.29	34	28.33
Posterior	0	0.00	0	0.00	0	0.00
Total	48	40.00	72	60.00	120	100.00

2 = 10.672 d.f. = 1 p = 0.001 Sig

Table – 5 ***Distribution of Cases According to Cervical Dilatation***

Cervical Dilatation (in cm)	Emergency LSCS		Successful VBAC		Total	
	No.	%	No.	%	No.	%
2	4	57.14	3	42.86	7	5.83
3	28	60.87	18	39.13	46	38.33
4	15	34.09	29	65.91	44	36.67
5	1	5.88	16	94.12	17	14.17
6	0	0.00	6	100.00	6	5.00
Total	48	40.00	72	60.00	120	100.00
MeanSD	3.27±0.644		4.06±0.99		3.74±0.948	

2 = 22.090 d.f. = 4 p < 0.001 Sig

Table – 6 ***Distribution of Cases According to Effacement of Cervix***

Effacement of Cervix (in %)	Emergency LSCS		Successful VBAC		Total	
	No.	%	No.	%	No.	%
40 - 50	13	72.22	5	27.78	18	15.00
50 - 60	19	55.88	15	44.12	34	28.33
60 - 70	11	36.67	19	63.33	30	25.00
70 - 80	3	21.43	11	78.57	14	11.67
100	2	8.33	22	91.67	24	20.00
Total	48	40.00	72	60.00	120	100.00

2 = 25.539 d.f. = 4 p < 0.001 Sig

Table – 7 ***Distribution of Cases According to Station of Head***

State of Head	Emergency LSCS		Successful VBAC		Total	
	No.	%	No.	%	No.	%
-3	32	54.24	27	45.76	59	49.17
-2	12	41.38	17	58.62	29	24.17
-1	3	37.50	5	62.50	8	6.67
0	1	10.00	9	90.00	10	8.32
1	0	0.00	12	100.00	12	10.00
2	0	0.00	2	100.00	2	1.67
Total	48	40.00	72	60.00	120	100.00

2 = 18.110 d.f. = 5 p = 0.003 Sig

The indications of a emergency LSCS in present pregnancy were fetal distress (52.08%), scar tenderness (22.91%), NPOL (16.67%), cord prolapse (4.17%) and prolonged PROM (4.17%) {Table-8}.

Table – 8 ***Distribution of Cases According to Indication of Emergency LSCS in Present Pregnancy***

Indication of LSCS in Present Pregnancy	No.	%
Fetal Distress	25	52.08
1. Irregular FHS	14	29.17
2. MSL	11	22.91
Scar Tenderness	11	22.91
NPOL	8	16.67
Cord Prolapse	2	4.17
Prolonged PROM	2	4.17
Total	48	100.00

The mean duration of hospital stay for women having a successful VBCA was lower (2.39 days) than women who required a repeat LSCS (5.67 days) {Table-9}.

Table – 9 ***Distribution of Cases According to Duration of Hospital Stay***

Duration of Hospital Stay (in days)	Emergency LSCS	Successful VBAC	Total
2 - 5	37	70	107
6 - 8	8	2	10
9 - 11	3	0	3
Mean ± SD	5.67±1.389	2.39± 1.095	3.70± 2.019

2 = 12.477 d.f. = 2 p = 0.002 Sig

OBSERVATIONS & DISCUSSION

With the significant rise in the incidence of primary CS for various indications, an increasing proportion of the pregnant women coming for antenatal care report with a history of a previous CS. In our study, we included only those women that came in the labour room with good Apgar score and fulfilled the selection criteria. The mean age of this study was 26.88 ± 2.42 yrs. The interval between previous LSCS and present pregnancy was more than two years in 80% cases, whereas it was less than two years in 20% of the cases.

Bangal VB et al (2013)4 shows the similar results that interval between previous LSCS and present pregnancy was more than two years in 77% cases and 23% cases had interval of less than 2 years. In our study, the commonest indication for a previous caesarean section was the fetal distress. In our study incidence of successful VBAC was 43.75% and 55.56% when the previous LSCS was for breech presentation and fetal distress. Wing DA et al (1999)5 stated that successful VBAC varies with the indication of previous LSCS and reported 91% and 84% when the previous LSCS was for breech presentation and fetal distress. Shakti V et al (2006)6 stated that success of VBAC was 91% for breech and 8.8% for fetal distress as indication of previous caesarean section. So in our study success rate of VBAC for indication like fetal distress, malpresentation, pre-eclampsia, premature rupture of membrane, cord prolapse, failed induction, multiple gestation was in the range of 50 to 90% while indication like non-progress of labour was 37%. Bangal VB et al (2013)4 study shows that the success rate of vaginal birth after a previous caesarean section done for indication like fetal distress, malpresentation, pre-eclampsia, premature rupture of membranes was in the range of 80 to 90% and indication like non-progress of labour was 66%.

The success rate of VBAC was significantly higher (76.12 as against 39.62%) in cases with cervical dilatation of more than 3 cm at the time of admission than with a dilatation of less than 3 cm. Bangal VB et al (2013)4 study shows higher results (of successful VBAC) than our study 90% and 60%, if cervical dilatation more than 3 cm and less than 3 cm respectively. The rate of successful VBAC was higher for women that had effacement 60-70%, vertex position at or below the ischial spine at the time of admission.

In our study commonest indication for repeat caesarean section was fetal distress in (52.08%) cases and percentage of repeat caesarean section was 40% which was higher than other studies eg Shakti V et al (2006)6 27%, Bengal VB et al (2013)4 15% and similar rate was observed in Gupta P et al (2014)7 study 40%. High rate of repeat caesarean section in our study was due to referred subjects coming from rural areas usually came in late labour without prior antenatal check-ups. Maximum number of subjects had no documentation of their previous caesarean section which make decision for trial of labour difficult and usually trial eliminated in caesarean section after a short period because most of them had taken trial at home. Our study shows 60% successful VBAC cases and 40% emergency LSCS cases. Shakti V et al (2006)6 shows 72% successful VBAC cases and 28% emergency LSCS cases and Bangal VB et al (2013)4 shows rate of emergency LSCS 15% and 85% successful VBAC. Gupta P et al (2014)7 shows 59% successful VBAC cases and 41% emergency LSCS cases.

Our study shows maternal morbidity in the form of 1o perineal tear in 2 (1.67%) cases, 2o perineal tear in 3 (2.5%) cases, atonic PPH in 3 (2.5%) cases, cervical tear in 1 (0.83%) case and scar dehiscence was present in 7 (5.8%) cases and In our study no maternal mortality was present. Incidence of maternal morbidity was 13.33%. Incidence of morbidity in successful VBAC cases (11.11%) was less than in emergency LSCS cases (16.67%). Farmer RM et al (1991)8 give 0.7% incidence of scar dehiscence in normal infant deliveries. In our study scar dehiscence was significantly more in emergency LSCS cases (14.58%) than successful VBAC cases (0%) {p-value < 0.05}. Shakti V et al (2006)6 study shows that one case of scar dehiscence (0.5%), three cases of cervical tear (1.5%) and one case of second degree perineal tear (0.5%) was present in successful VBAC cases. While in our study 2 cases of one degree perineal tear (2.78%), 3 cases of second degree perineal tear (4.17%), 2 cases of atonic PPH (2.78%) and one case of cervical tear was present in successful VBAC cases. Gupta P et al (2014)7 study shows that maternal morbidity was more in emergency LSCS cases than successful VBAC cases. In our study 102 (85%) babies had birth weight ≥ 2.5 kg, out of them 43 (42.16%) babies delivered by emergency LSCS and 59 (57.84%) babies delivered vaginally ($\chi 2 = 0.787$, d.f=1, p=0.375). Bangal VB et al (2013)4 shows that birth weight more than 3 kg was associated with a lower success rate of VBAC (18.7%). Similar observations were made by Irani FF et al (1971)9, Whiteside DC et al (1983)10, Ollendorff DA et al (1988)11, Landon MB et al (2005)12 and Zelop CM et al (2001)13.

In our study 18 (15%) babies had APGAR score 6/10, out of them 8 babies had delayed cry and these babies were kept under observation in nursery for 2 hours. Out of 18 babies, 3 babies had septicemia and 7 babies had birth asphyxia. These babies were kept in ICU until recovery. 3 (2.5%) babies had APGAR score 5/10 out of them, 2 babies had birth asphyxia and one baby had meconium aspiration syndrome. Babies were kept in ICU until period of recovery. Bangal VB et al (2013)4 study reported APGAR score less than 6/10 in 4% babies. Babies delivered by emergency LSCS had low APGAR score than delivered vaginally (x^2 =22.694, d.f=2, p<0.001). There was no neonatal mortality in our study. In our study neonatal morbidity significantly higher in emergency LSCS cases as compared to VBAC cases (20.83% v/s 4.17%). Similar observations were reported in Bangal VB et al (2013)4, Dayal V (1985)14 and Obara H et al (1998)15 studies. The mean duration of hospital stay for emergency LSCS cases was 5.67days while for successful VBAC cases was 2.39 days.Similar observations were made by Bangal VB et al (2013)4, Gibbs CE et al (1980)16 and Traynor JD et al (1998)17. Horowitz BJ et al (1981)18 carried out a survey of the benefits of a successful VBAC and found out that a shorter hospital stay in a VBAC delivery has a positive impact on the psychology of the women and decrease the total cost of hospitalisation. In our study incidence of scar dehiscence was 5.83% and for scar rupture 0%. Similar observations were made by Dayal V et al (1985)14 and Bangal VB et al (2013)4.

CONCLUSION

Women who presenting in labour room with previous one LSCS with full term pregnancy with cephalic presentation and have Anterior position of cervix, cervical dilatation ≥ 3cm, effacement ≥ 60-70%, vertex position at or below the ischial spine with no complain of scar tenderness TOLAC can be given in selected cases with good monitoring of FHS and progress of labour under supervision of trained staff at a tertiary care hospital.

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