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FETOMATERNAL OUTCOME OF PREGNANCY WITH PREVIOUS CESAREAN SECTION AT TERTIARY CARE HOSPITAL.

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ABSTRACT

OBJECTIVE: The aim of the study is to evaluate the fetomaternal outcome of pregnancy with previous cesarean section.
METHODS: This is a retrospective observational study conducted in the Department of OBGYN, Government General Hospital, Ananthapuramu from October, 2016 to September, 2017, a period of one year. All the pregnant women who were admitted at term with previous one cesarean section with written consent for VBAC were included in the study.
RESULTS: Out of total 210 cases, a total of 124 cases (59.05%) were given trial of labor. Out of 124 patients given trial of labour, 50 patients (40.32%) had successful VBAC. Out of 50 patients who had successful VBAC, 6 patients (12%) had complications like episiotomy haemotoma, perineal tear and cervical tear. No patients had major complications. In present study, only one baby had APGAR score < 7 at 5 minutes (in emergency LSCS group) and no baby had APGAR score < 7 at 5 minutes in VBAC group.
CONCLUSION: With an increase in the proportion of patients with a history of previous LSCS, it is essential for health care institutions to have proper antenatal management protocol in an effort to increase the number of VBACs and bring down the overall cesarean rates. A successful VBAC is associated with a lower perinatal and maternal morbidity than repeat caesarean delivery.

KEYWORDS : VBAC – Vaginal birth after cesarean, TOLAC – trial of labor after cesarean, previous LSCS, Maternal outcomes, fetal outcomes.

INTRODUCTION:

There has been an increased incidence of cesarean section births over the last few decades. In the past 35 years, the section rate has steadily increased from 5% to approximately 25%[1]. Because of this, an increasing number of women face the issue of mode of delivery in their subsequent pregnancies[2,3,4]. Precise quantification of the risk attributable to a prior cesarean section is difficult.

In the series for which total data are available for both women who had elective cesarean and those who had a planned vaginal birth after cesarean section, nearly half of all women with previous cesarean gave birth vaginally[2,5].

Although maternal mortality after scar rupture is low, the major Arisk is to the fetus that can suffer from anoxic brain damage or die if not delivered urgently. Studies have shown that 30 – 80 % of women with one previous lower segment cesarean section can achieve vaginal delivery when trial of scar is done[1,6,7].

The most important event because of which obstetricians still hesitate to attempt planned VBAC is the uterine scar integrity and hence the terminology "Trial of Scar"[8].

The rate of cesarean section however can be reduced by offering trial of scar in carefully selected patients. Uterine dehiscence or ruptures occur in less than 2% of planned VBAC, the same proportions as is seen among women who have routine repeat cesarean[8].

The choice of VBAC over planned repeat cesarean section, like virtually every other medical choice, involves the balancing of risks and benefits. One point is clear though "once a cesarean, always a hospital delivery"[9,1], in contrast to the previous dictum " once a cesarean, always a cesarean". The purpose of our study is to evaluate the obstetric and fetal outcome of labour in cases of previous cesarean section in one teaching hospital.

MATERIALS AND METHODS:

A retrospective observational study was conducted at Ananthapuramu Government General Hospital, Andhra Pradesh between October, 2016 to September, 2017.

Inclusion criteria: All the patients booked at our center with a history of previous one LSCS, age less than 35 years, height of patient more than 5 feet, with cephalic presentation, pelvic adequacy confirmed.

Exclusion criteria: Women with previous two or more LSCS, age more than 35 years, twin pregnancy with previous cesarean section, pregnancy with previous classical cesarean section, systemic illness demanding LSCS, patients referred from other hospital for delivery are excluded.

Methods: All case sheets in which management protocol of department of obstetrics at Government General Hospital, Ananthapuramu for patients with a history of previous one LSCS was followed were included.

Protocol followed was:

1. A detailed following of past obstetric history was noted:
a. Indication and place of previous cesarean section.
b. History of any full term vaginal deliveries prior to or following previous cesarean.
c. History of complications encountered in previous section such as need for blood transfusion and complications like following the cesarean section Viz., foul smelling lochia, high spiky fever, wound infection and systemic infection, requiring prolonged hospitalization.
2. A general physical examination and systemic examination was carried out.
3. Obstetric examination was done for fetal wellbeing.
4. Scar tenderness was elicited on admission and at onset of labour.
5. Pelvic adequacy was reconfirmed checked for a trial for VBAC. The points assessed were sacral curve, whether sacral promontory was reached or not, sacrosinatic notch, lateral pelvic walls, ischial spines and interspinous distance, subpubic angle, diagonal conjugate and transverse diameter of pelvic outlet.
6. Before an attempted VBAC all women willing for vaginal delivery, patient were informed the risks, benefits, potential complications and alternatives to a trial for a VBAC. Written consent to volunteer in trial was taken.
7. A single dose of PGE2 gel was used for ripening of cervix who did not spontaneously go into labour at 41 completed weeks and monitored for 6 hours in active labour.
8. During labour
a. Blood was sent for cross matching and kept ready.
b. Intra venous line was established.
c. Mother was closely monitored during labour with regular checking of the vital parameters.
d. Scar tenderness was looked for.
e. Fetal heart rate was recorded half hourly by Doppler.
f. Cervical dilatation, effacement and station of the head were monitored for progress of labour. Also character, duration and frequency of uterine contractions were monitored.
g. Mother monitored for scar dehiscence such as hypotension,

tachycardia, abdominal tenderness, fetal heart rate alteration, superficial palpation of fetal parts per abdomen.

h. Oxytonin was administered in 5% dextrose solution at the rate of 0.5 to 1 mu/min and increased till establishment of a satisfactory labour pattern, but not more than 2 mu/min.

i. The "six hour rule" was observed by partograph recording in active labour, where in planned VBAC was terminated after six hours of active labour, if vaginal delivery was not imminent or develops fetomaternal complications.

9. After delivery, all patients were monitored half hourly for 6 hours following delivery. Subsequent complications and condition of the mother and baby till discharge from the hospital were monitored.

RESULTS:

In present study of 210 cases, 150 cases (71.43%) were registered and 60 cases (28.57%) were unregistered (Table – I).

TABLE I: Registered vs unregistered previous LSCS cases.

Type	Number Of Cases	Percentage
Registered more than 3 visits	150	71.43 %
Unregistered one visit	60	28.57 %
TOTAL	210	100 %

In study group of 210 cases, 124 cases (59.05%) were given trial of labour. Rest all 86 cases (40.95%) were for elective repeat cesarean section. Out of 124 cases who were given trial of labour, 50 cases (40.32%) has successful VBAC (Table II), remaining 86 cases who were not given trial of labour, 9 cases (10.47%) came in labour were taken up for emergency LSCS and 77 (89.53%) who were not in labour, delivered by elective LSCS.

TABLE II: Outcome of trial of VBAC

Out Come Of Trial Of Labour	Number Of Cases	Percentage
Successful VBAC	50	40.32 %
Unsuccessful VBAC	74	59.68 %
Total number of patients who had a trial of VBAC	124	100 %

In present study out of 124 cases given trial of labour, 11 cases were induced with cerviprime gel and oxytocin according to bishop score. Out of which 2 cases (18.18%) had successful VBAC and 9 cases (81.82%) had unsuccessful VBAC (Table III), hence were posted for an emergency LSCS for various indications. From rest 113 cases that were given trial of labour all went spontaneously in labour, out of which 50 cases (44.25%) had successful VBAC.

TABLE III: Mode of delivery after induction of PGE2 gel in cases of patients with post datism.

Number Of Induced Cases	Mode Of Delivery: Vaginal (%)	Repeaat LSCS (%)
11	2 (18.18%)	9 (81.82%)

Of the patients who had a successful VBAC, 40 cases (80%) delivered spontaneously and remaining 10 cases (20%) has an assisted vaginal delivery with outlet forceps. (Table IV)

TABLE IV: Mode of Vaginal Deliveries (out of 50)

Nature Of Vaginal Deliveries	Number Of Cases	Percentage (%)
Spontaneous vaginal deliveries	40	80 %
Assisted vaginal deliveries (outlet forceps)	10	20 %
Total	50	100 %

In present study, patients with bishop score between 4 – 6 (8 cases) who required PGE2 for cervical ripening, all cases underwent emergency LSCS. Success rate was 100 % in group where pre induction cervical ripening was not required before induction with oxytocin i.e., bishop score > 6 (Table 5).

TABLE V: Bishop score wise distribution of induced cases of trial of labour group.

Bishop Score	VBAC		Emergency LSCS		TOTAL	
	Number	Percentage	Number	Percentage	Number	Percentage
4 - <= 6	0	0 %	9	100 %	9	81.82 %
> 6	2	100 %	0	0 %	2	18.18 %
Total	2	18.18 %	9	81.82 %	11	100 %

Out of 160 cases who underwent cesarean section, 83 cases had emergency LSCS and 77 cases had elective LSCS (Table VI).

TABLE VI: Emergency vs Elective LSCS

Nature Of LSCS	Number Of Cases
Emergency LSCS (after VBAC)	83
Elective LSCS (no VBAC)	77
Total	160

Repeat LSCS was done in 160 cases, of which difficulty in opening the abdomen due to adhesions was encountered in 20 cases (12.50 %). Adhesions between omentum, bowel & bladder was seen in 41 cases (25.62 %). Incidence of adhesions was 38.96% in patients with elective LSCS, 13.25% in emergency LSCS. Occipito transverse/lateral position, loops of cord around neck & meconium stained liquor constituted 16.86% patients with emergency LSCS (Table VII).

Table VII: Intraoperative finding besides scar dehiscence in repeat LSCS

INTRAOPERATIVE FINDINGS	NUMBER OF CASES		ELECTIVE LSCS (77)		EMERGENCY LSCS (83)	
	NUMBER	PERCENTAGE	NUMBER	PERCENTAGE	NUMBER	PERCENTAGE
No complications	80	50 %	43	55.84 %	37	44.58 %
Meconium stained liquor	8	5 %	0	0 %	8	09.64 %
Omental, bowel and bladder adhesions	41	25.62 %	30	38.96 %	11	13.25 %
Difficulty in opening of abdomen due to adhesions	20	12.50 %	1	01.30 %	19	22.89 %
Occipito tranverse / lateral position	3	01.88 %	0	0 %	3	03.61 %
Loop of cord round the neck	4	02.50 %	1	01.30 %	3	03.61 %
Others	4	02.50 %	2	02.60 %	2	02.42 %

Out of 160 patients in whom repeat LSCS was performed 20 patients (12.50%) had complications. Out of which 10 cases (6.25%) had wound gape, 4 cases had PPH (1.88 %), 2 cases had post op ileus (1.25 %). One patient who had central placenta previa with bleeding per vagina underwent obstetric hysterectomy and needed blood transfusion for placenta accreta confirmed on histopathology (Table VIII).

TABLE VIII: Maternal morbidity in repeat cesarean section (160 cases).

Morbidity	Number Of Cases	Percentage
Wound gape	10	06.25 %
Puerperal pyrexia	4	02.50 %
PPH	3	01.88 %
Ileus	2	01.25 %
Obstetric hysterectomy + BT	1	00.62 %
Total	20	12.50 %

Out of 50 patients who had successful VBAC, 6 patients (12%) had complications as shown in Table IX. No patients had major complications.

TABLE IX: Maternal morbidity in VBAC patients (50 cases).

Morbidity	Number Of Cases	Percentage
Hematoma of episiotomy	1	02 %
Cervical tear	2	04 %
Perineal tear	3	06 %
Total	6	12 %

In present study as per APGAR score, birth asphyxia with APGAR < 7 at 1 minute seen in 2 cases of elective LSCS, 10 cases of emergency LSCS and 3 VBAC cases. No baby had APGAR score < 7 at 5 minutes in elective LSCS group and VBAC group. Only 1 case in emergency LSCS had APGAR < 7 even at 5 minutes. So risk of perinatal morbidity is more in emergency LSCS (Table X).

DISCUSSION:

Out of the 210 patients in present study, 59.05%, were given a trial of

TABLE X: APGAR score association with mode of delivery.

APGAR Score		Elective LSCS (77 Cases)		Emergency LSCS (83 Cases)		VBAC (50 CASES)	
		Number	Percentage	Number	Percentage	Number	Percentage
After 1 minutes	4 - < 7	2	2.60 %	10	12.04 %	3	6 %
	> = 7	75	97.40 %	73	87.96 %	47	94 %
After 5 minutes	4 - < 7	0	0 %	1	1.20 %	0	0 %
	> = 7	77	100 %	82	98.80 %	50	100 %

In our study 26 babies (12.83%) developed complications. Among them 6 babies were delivered by preterm emergency LSCS. 9 babies developed neonatal hyperbilirubinemia - 4 in emergency LSCS, 3 in elective LSCS and 2 in VBAC group. 6 babies developed tachypnea, out of which 4 were delivered by elective LSCS. Hypoglycemia is seen in 3 babies as mother had gestational diabetes mellitus. 2 cases of IUGR seen, 1 in elective LSCS and 1 in VBAC group (Table XI).

TABLE XI: Correlation of neonatal morbidity with mode of delivery.

COMPLICATIONS	ELECTIVE LSCS		EMERGENCY LSCS		VBAC	
	NUMBNER	PERCENTAGE	NUMBNER	PERCENTAGE	NUMBER	PERCENTAGE
Hyper bilirubenemia	3	1.43 %	4	1.90 %	2	0.95 %
Tachypnea	2	0.95 %	4	1.90 %	0	0 %
Hypoglycemia	0	0 %	2	0.95 %	1	0.48 %
Prematurity	0	0 %	6	2.86 %	0	0 %
IUGR	1	0.48 %	0	0 %	1	0.48 %

labour as against 39.90% of the patients in the study by Landon et al[6] and 30.66% of the patients in the study by Nigamananda mishra and colleagues[8]. The proportion of women with one previous cesarean section undergoing trial of scar is increased due to increased awareness in patients and improvement in obstetric care at tertiary care hospital as shown by increased registration of out patients of 71.43% in our study.

In present study out of total, 23.81% patients underwent VBAC, which is much higher than VBAC rate of 8.5% according to Hamilton BE et al[10] and 16% according to Nigamananda Mishra et al[8]. In present study 40.32% of patients had a successful VBAC, which is lower than that in other studies. Landon and associates reported a success rate for vaginal delivery of 73.41%[6] and Gonem et al reported a success rate of 79.66%11, Nigamananda Mishra et al reported a success rate of 52.17%[8]. The probable reason for low rate of successful VBAC in our study was that very few patients who opted for a trial of labour had a history of prior vaginal deliveries.

In present study out of 124 patients given trial of labour, 11 patients were induced for some obstetric or medical indication. 2 (18.18%) patients had successful VBAC and only 1 patient had scar dehiscence, no cases of uterine rupture. Gonen et al reported that 68.33% of the patients who were induced[11], delivered vaginally and there were no cases of uterine rupture following induction. Nigamananda Mishra et al[8] also showed (73.91%) nearing Gomen et al study.

In present study patients with Bishop score between 4 – 6 (9 cases) who required PGE2 for cervical ripening, no cases has successful VBAC and 2 cases with Bishop score (>6) had successful VBAC giving 100% success rate with induction in cases with favorable Bishop score.

The main difficulties in the present study while doing a repeat cesarean section were, adhesions between omentum, peritoneum and bladder in 25.62% of the cases which is comparable to Nigamananda Mishra et al[8] study (26.98%). Difficulty in separation of the bladder, difficulty in opening the abdomen due to adhesion is seen in 12.5% cases, Parikh et al reported excessive adhesions in 36% of the patients for LSCS in his study[12].

Here important complications were wound gape (6.25%), puerperal pyrexia (2.5%), PPH (1.88%), Ileus (1.25%), obstetric hysterectomy (0.62%) etc. The rate of complications in this study is comparable to Nigamananda Mishra et al study[8].

The present study had no major complications like hysterectomy, blood transfusion, PPH, pyrexia in patients who had successful VBAC. Only 3 cases had minor morbidities like hematoma of episiotomy site, cervical tear and perineal tear. It has generally been accepted that vaginal delivery is associated with lower maternal morbidity and mortality rates than repeat cesarean section. Our results are comparable to an earlier meta-analysis comparing ERCS vs trial for VBAC.

CONCLUSION:

Based on current study, there is no doubt that a trial of labour is a relatively safe procedure, but it is not risk free. Therefore, patient selection prior to trial of labour after cesarean section after proper evaluation and careful monitoring throughout labour in a well-equipped unit with around the clock services for emergency LSCS and availability of expertize is the key for successful VBAC.

A large number of patients declined VBAC in spite of being eligible for it. Hence, the need for extensive counselling ideally during the antenatal period regarding the benefits and risks (both maternal and perinatal) of a VBAC and assurance for emergency intervention if required. This enables them to make an informed choice early and probably bring down the repeat cesarean rate, with a low maternal and perinatal morbidity. VBAC has much safer outcome than repeat cesarean deliveries.

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