

THE STUDY OF FOETOMATERNAL OUTCOME IN POST CAESAREAN PREGNANCY IN MKCG MEDICAL COLLEGE, BERHAMPUR, ODISHA

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ABSTRACT

BACKGROUND

Caesarean section has become a procedure of choice in high-risk situations to prevent perinatal morbidity and mortality. But repeat caesarean deliveries performed largely to benefit neonate often result in significant maternal morbidity and mortality.

MATERIALS AND METHODS

Present study was carried in the Department of Obstetrics and Gynaecology of MKCG Medical College, Berhampur, where 270 cases of post-caesarean pregnancies from June 2015 to May 2016 were studied. History was taken about previous section whether trial was given prior to operation or not. Detailed general examinations were done. Abdominal and Pelvic examinations were done. Relevant investigations were done. Patients were allowed to undergo spontaneous labour and monitored. Emergency repeat CS was done when indicated. Prophylactic low forceps and ventouse application was also done. Condition of baby and mother was noted.

RESULTS

In our study, repeat CS rate was 82.23% and VBAC rate was 17.77%. No TOL was given in 71.49% cases, while in those given successful VBAC rate was 62.3%. Elective CS was done in 14.07% cases and emergency CS was done in 57.4% cases. Repeat section after TOL was done in 10.74% cases. Among the indications of previous CS, CPD (37.03%) was the leading cause. In repeat CS after TOL leading cause was due to foetal distress (34.48%) cases as well as same figures in emergency CS. Most common third stage complication and intraoperative finding in RCS was adhesion, while in VBAC it was PPH. There was one neonatal death in VBAC, but none in repeat CS.

CONCLUSION

In our setting repeat CS rate is very high, as well very few patients have undergone TOL. To improve the maternal morbidity, attempts for successful VBAC should be done. This can be possible only if optimum resources for maternal and foetal monitoring are provided.

KEYWORDS

VBAC, RCS, TOL, PPH.

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BACKGROUND

Caesarean birth has been a major source of interest and concern over the last few decades. In the past 35 years, the rate of caesarean section has steadily increased from 5% to approximately 25%.^[1]

Caesarean section, an operation mainly evolved to save a maternal life during difficult childbirth, has now become increasingly the procedure of choice in high-risk situations to prevent perinatal morbidity and mortality. So pregnancy with history of previous caesarean section is prevalent in present day obstetric practice. Cragin's dictum of "once a caesarean always a caesarean" contributed to a 30% - 50% rise in caesarean rates in the United States, until it was later replaced by the dictum "once a caesarean trial of labour after selection."^[2]

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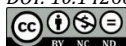
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In these studies in which the proportion of women who undertook a planned vaginal birth after previous caesarean varied from 20% to 80%, successful vaginal birth occurred in 67% to 84%, averaging about 80% of the women who made the attempt.^[3,4]

In a retrospective study, Cynthia Chazotte et al showed that 2.4% of the patients after one or more caesarean sections had an extremely serious complication like uterine rupture and placenta previa or accreta with accompanying haemorrhage.^[5] Other complications like impending rupture, bladder discomfort and injury, preterm delivery, operative interference and incidental morbidity can occur during pregnancy, labour and in repeat caesarean section.^[6]

This prospective study was so designed to find out the maternal antepartum and intrapartum complications as well as perinatal mortality and morbidity in patients with history of previous caesarean section. So, trial of labour in cases of previous caesarean section has been accepted as a way to reduce the overall caesarean rates. A large meta-analysis showed maternal mortality of 2.8 per 10000 for women undergoing planned VBAC and 2.4 per 10000 for women having an elective caesarean. Uterine dehiscence or ruptures occur in less than 2% of planned VBAC, the same proportion as is seen among women who have routine repeat

Caesareans. Most of these are asymptomatic and of no clinical importance.

Perinatal mortality and morbidity rates were similar with planned vaginal birth after caesarean and elective repeat caesarean section in these studies.^[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.” Because repeat caesarean deliveries are performed largely to benefit the neonate, clinicians may often overlook maternal complications resulting in significant morbidity and mortality as a result of the repeat surgeries.^[8] The choice of VBAC over planned repeat caesarean section like virtually every other medical choice involves the balancing of risks and benefits. One point is clear though, “once a caesarean always a hospital delivery.”^[9] The purpose of this study was to evaluate the obstetric and foetal outcome of labour in cases of previous caesarean section in our teaching hospital. Vaginal birth after caesarean (VBAC) or trial of scar (TOS) represents a significant change in modern obstetric practice. However, the concern that a scarred uterus might end up in rupturing the uterus leading to severe maternal and perinatal morbidity still prevents a large number of obstetricians and pregnant women worldwide from adopting a TOS after previous one caesarean section. Both attempting a vaginal birth and opting for an elective repeat caesarean section (ERCS) are associated with different risks for the mother and the newborn and deciding a delivery plan involves a difficult weighing of those cases.^[10] The ability to predict the outcome of an attempted trial of vaginal delivery plays an important role in initial counselling of pregnant women with previous one caesarean delivery.

Aims and Objective

- To find out any antepartum maternal complication related to previous caesarean section.
- To find out intrapartum maternal and foetal complication.
- To find out the incidence of operative interference in the patients.
- To find out foetal outcome like prematurity, perinatal mortality and morbidity.

MATERIALS AND METHODS

The present study titled “the study of foetomaternal outcome in post-caesarean pregnancy; a prospective observational study” was carried out in the Department of Obstetrics and Gynaecology of MKCG Medical College, Berhampur. This study includes 270 cases of post-caesarean pregnancies, who had been admitted to this department from June 2015 to May 2016.

A detailed history of patients with special attention to past obstetric history was taken. Emphasis was given to number, indication, type, place, time and postoperative period of previous section, whether trial was given prior to operation or not. Number of vaginal delivery before or after CS was there or not, condition, sex, weight of baby whether alive or dead, if dead cause of death was ascertained.

A detailed history of present pregnancy is taken with emphasis on any complication in earlier trimester. If cases

were registered in early trimester, then they were followed up to term and delivery.

Detailed general examination of these patients were done including height and weight. Abdominal examination was done to find out the gestational age of the foetus. Condition of the scar was as a clue to the type of previous section and its post-op period. Height of fundus, abdominal girth, presentation, position, engagement and foetal heart rate were noted carefully. Scar was palpated to elicit scar tenderness.

Pelvis was assessed clinically and possible presence of CPD was also recorded. Presenting part of the foetus and state of the cervix were noted.

Based on history, general examination and pelvic examination patients were selected carefully to undergo TOL, where there was no other contraindication for vaginal delivery. Patients with history of previous two CS, marked contracted pelvis and abnormal presentation were not allowed for TOL. Relevant routine investigations were done in all cases. Most of the patients were allowed to undergo spontaneous labour. The progress of labour was monitored carefully using partograph, scar integrity was tested clinically, early detection of abnormal labour, scar dehiscence, maternal and foetal distress was done.

Emergency repeat CS was done when indicated. Prophylactic low forceps and ventouse application was done in 2nd stage of labour; 3rd stage of labour was managed actively and complication treated. Following delivery of the baby and placenta, uterus was explored to note the condition of the old uterine scar.

Condition of the baby such as living or dead, birth weight, Apgar score, sex and congenital anomaly were noted followed by any morbidity or mortality noted during hospital stay.

Maternal morbidity like PPH, fever, sepsis and mortality were recorded both in vaginal and repeat CS. During repeat CS adhesion, condition of scar, injury to viscera, placental situation and morbid adhesions were recorded.

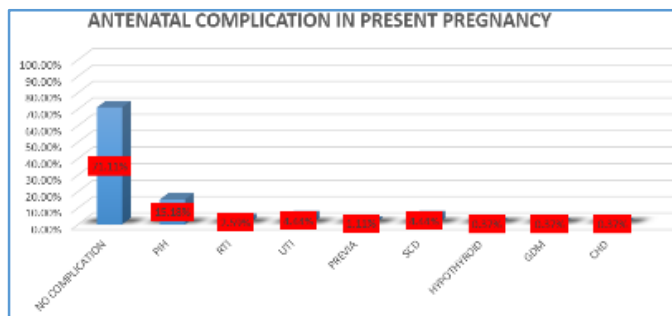
RESULTS

Table 1 shows that in our study group, maximum (43.3%) patients were in 21 - 25 years’ age group, were primipara (81.4%) and interpregnancy interval was 3 - 5 years.

Age (years)	Value	Parity	Value	Interval between Last and Current Pregnancy	Value
15-20 yrs.	3 (1.11%)	P1	220 (81.48%)	1-2 years	33 (12.22%)
21-25 yrs.	117 (43.33%)	P2	41 (15.18%)	2-3 yrs.	64 (23.70)
26-30 yrs.	110 (40.74%)	P3	7 (2.59%)	3-5 yrs.	126 (46.66%)
31-35 yrs.	35 (12.96%)	P4	2 (0.74%)	>5 yrs.	47 (17.40%)
>36 yrs.	5 (1.85%)	>P4	0 (0%)	Total	270 (100%)
Total	270 (100%)	Total	270 (100%)		

Table 1. Age, Parity Distribution and Interval between Last and Current Pregnancy

Graph 1, given below depicts that 71.1% had no complication antenatally with most common (15.18%) being PIH and least common being GDM and CHD.



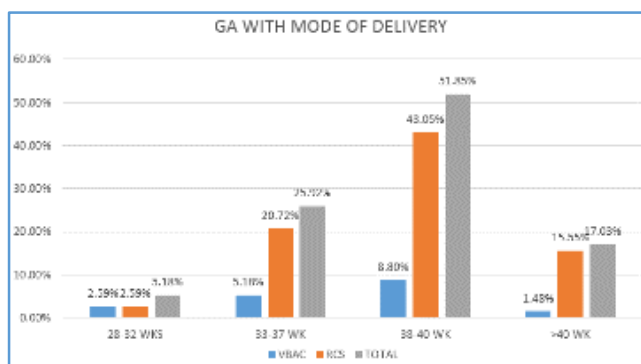
Graph 1. Showing Distribution of Antenatal Complication in Present Pregnancy

Group of Cases	No. of Cases	Percentage
Elective repeat caesarean section	38	14.07%
Emergency repeat caesarean section	155	57.40%
Selected for TOL	77	28.51%
Successful VBAC	48	17.77%
Repeat section after TOL	29	10.74%
Total	270	100%

Table 2. Shows that in Our Study TOL was done in 28.51% Cases with Successful VBAC in 17.77% of Cases

Table 2, Selection of patients and their mode of delivery.

Graph 2, shows maximum no. of patients (51.85%) belonged to 38 - 40 weeks gestation with successful VBAC in 8.8% cases and least no. of patients (5.18%) were in 28 - 32 weeks' age group with successful VBAC in 2.59%.



Graph 2. Showing GA with Mode of Delivery

Graph 3 shows that maximum number of patients gone for repeat caesarean section belonged to cephalopelvic disproportion, while maximum number of cases with successful VBAC belonged to foetal distress.



Graph 3. Showing Indication of Previous CS

Table 3 shows foetal distress was the main indication for repeat caesarean in failed TOL. Total number of cases undergoing trial of labour were 29.

Indication	No. of Cases Needed RCS	Percentage
Foetal distress	10	34.48%
Scar tenderness	9	31.03%
Impending rupture	4	13.79%
CPD	6	20.68%
Total	29	100%

Table 3. Showing Indication of RCS in Failed TOL

Table 4 shows more complications were seen in repeat caesarean groups (48) than VBAC groups (4) with main complication in RCS groups being diffuse intraoperative adhesion and PPH in VBAC patients.

Complication and Finding	RCS	VBAC
PPH	5 (2.25%)	2 (4.1%)
Adhesion	22(9.90%)	
Bladder injury	1(0.45%)	
Cong. anomaly	6(2.70%)	1 (2%)
Retained placenta		1(2%)
Placenta accreta	2 (0.9%)	
Scar rupture	8 (3.6%)	
Caesarean hysterectomy	4 (1.8%)	
Total	48 (21.66%)	4 (8.33%)

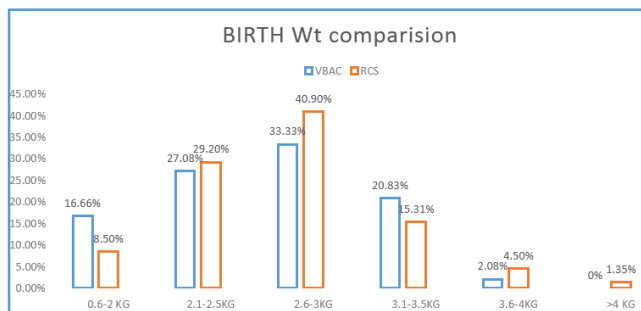
Table 4. Third Stage Complication and Intraop Finding

Table 5 shows that RCS cases had more postop complication than VBAC cases. Maximum RCS cases suffered from fever and UTI mainly.

Complications	RCS	VBAC
Fever	24 (10.81)	2(4.16%)
Wound infection	8(3.61)	0
Abdominal distension	2 (0.9%)	0
UTI	15(6.75%)	1(2%)
UVF	1 (0.45%)	0
Death	1(0.45%)	0
Total	51 (22.97%)	3(6.16%)

Table 5. Shows Postop Complications

Graph 4 shows as the foetal weight increase, the probability of repeat caesarean increase with weight ≥ 4 kg, almost 100% repeat caesarean section.



Graph 4. Shows Birth Wt. Comparison between VBAC and RCS

Table 6 shows out of 48 VBAC, 38 babies were normal and 10 babies suffered complication with asphyxia, still birth, IUGR being most common. While in RCS out of 270, 173 were normal, while 38 suffered complication out of which 11 were still birth.

Condition of Baby	VBAC	RCS	Total
Normal	38 (14.07%)	173(64.07%)	211(78.14%)
Asphyxia	3(1.11%)	13(4.81%)	16 (5.92%)
IUGR	2(.74%)	14 (5.18%)	16(5.92%)
Still birth	3(1.11%)	11(4.07%)	14 (5.18%)
Jaundice	1 (.37%)	8 (2.96%)	9 (3.33%)
Infection	0	2 (.74%)	2 (.74%)
Cong. anomaly	0	1 (.37%)	1 (.37%)
Neonatal death	1 (.37%)	0	1 (.37%)
Total	48 (17.77%)	222 (82.22%)	270 (100%)

Table 6. Shows Perinatal Outcome in VBAC and RCS

DISCUSSION

With increase of primary CS, there has been a concomitant rise in post caesarean pregnancies. These cases comprise a high-risk group for obstetric care.

The dictum “once a caesarean always a caesarean” was reframed later and suggestions were made that VBAC might reduce rates of CS. Literature showed that the success rate of a TOL after previous CS ranges between 50% and 85%. In our study, repeat CS rate is 82.23% and VBAC rate is 17.77%.

TOL given in our study is only in 28.51% cases, which is very low compared to other studies below.

Authors	Trial of Labour
Singh UK et al (2004) ¹¹	51.3%
Obara et al (1998) ^{12,13}	69.0%
Flamm et al (1994) ¹⁴	69.4%
McMahon et al (1996) ^{15,16}	52.9%
Shah et al (2009) ¹⁷	51.2%

In our study, successful VBAC rate among TOL is 62.3% which is comparable to other studies.

Authors	Success Rate of TOL
Singh UK et al (2004) ¹¹	65.3%
Eriksen et al (1989) ¹⁸	81.0%
Flamm et al (1994) ¹⁴	75.0%
Shah et al (2009) ¹⁷	72.1%

No TOL given in 71.49% cases, which are very high compared to 49.7%.

Maximum no. of cases belonged to 21 - 25 age group (43.33%) followed by 26 - 30 age group (40.74%), which was low compared to study by Shah et al 2009 which showed 63.5% cases belonged to age group 26 - 30.¹⁷ Para one constitutes 81.48% cases, which correlates well with study by SN Goswami et al.¹⁹ Indication for previous CS is the most important factor in deciding the mode of delivery in subsequent pregnancies. The indications are foetal distress in 23.33% cases, which is comparable to 21.8% cases as seen in study by Shah et al.¹⁷ Indications of CPD was seen in 37.03% cases as compared to 42.2% cases in the above study by Shah et al.¹⁷ Abnormal presentation was seen in 9.9% cases as compared to 13.3% cases in study by Shah et al.^{17,20} Oligohydramnios are seen in 9.62% cases as compared to 1% seen by Jha M et al.²⁰ Eclampsia are seen in 37% cases as comparable to 1% as study by Jha M et al.²⁰ Previa occurred in 0.74% cases, which is less compared to 5.6% as study by Shah et al.¹⁷ BOH was seen in 1.11% cases as compared to 2% as study by Jha M et al.²⁰ Non-recurrent indications of previous CS are given TOL. All the indications of RCS in failed TOL are foetal distress in 34.48% cases, scar tenderness seen in 31.03% cases, CPD seen in 20.68% cases and impending rupture in 13.79%.

During Antenatal Period

No complications are seen in 71.11% cases. However, among the complications, PIH are seen in 15.18% cases, UTI are seen in 4.44% cases, SCD are seen in 4.44% cases, RTI are seen in 2.59% cases and placenta previa are seen in 1.11% cases. Hypothyroidism, GDM and CHD are also seen in 0.37% each.

Complications are seen in 3rd Stage of Labour and Interoperation Stage

Among RCS, complications are seen in 21.66% cases. Out of which extensive adhesions are seen in 9.90% cases, scar rupture in 3.6% cases, cong. anomaly of uterus in 2.7% cases, PPH in 2.25% cases, caesarean hysterectomy in 1.8% cases, placenta accreta in 0.9% cases and bladder injury in 0.45% cases.

Among VBAC cases, complications occurred in 8.33% cases. Out of which, PPH are seen in 4.1% cases, retained placenta in 2% cases and cong. anomaly of uterus in 2% cases. Post-operative complications are also seen.

Among the RCS cases, complications are seen in 22.97% cases. Out of which, pyrexia in 10.81% cases, UTI in 6.75% cases, wound infection in 3.6% cases, abdominal distension in 0.9% cases, UVF in 0.45% cases and maternal mortality are seen in 0.45% cases.

Among VBAC cases, complications are seen in 6.16% cases. Out of which, pyrexia in 4.16% cases and UTI seen in 2% cases.

Birth weight of babies between 2.6 - 3.0 kg are seen in 39.62% cases, between 2.1 - 2.5 kg are seen in 28.88% cases and 3.1 - 3.5 kg are seen in 16.29% cases. Our study does not match with one study, in which 36.3% cases babies belonged to 3.5 - 4 kg, 30.8% of babies belonged to 3 - 3.5 kg and 16.1% of babies had birth wt. > 4 kg.

Perinatal outcome are normal in 78.14% cases. Birth asphyxia are seen in 5.92% cases, out of which 4.81% cases

are seen in RCS and 1.11% are seen in VBAC. IUGR are seen in 5.92% cases, out of which 5.18% cases are seen in RCS and 0.74% are seen in VBAC. Stillborn are seen in 5.18% cases, out of which 4.07% cases are seen in RCS and 1.11% cases are seen in VBAC.

CONCLUSION

Caesarean section, an operation mainly evolved to save a maternal life during difficult childbirth has now become increasingly the procedure of choice in high-risk situations to prevent perinatal morbidity and mortality. So pregnancy with history of previous caesarean section is prevalent in present day obstetric practice. Cragin's dictum of "Once a caesarean always a caesarean" contributed to a 30% - 50% rise in caesarean rates in the United States until it was later replaced by the dictum "Once a caesarean trial of labour after selection" of patient had an extremely serious complication like uterine rupture and placenta previa or accreta with accompanying haemorrhage. Other complications like impending rupture, bladder discomfort and injury, preterm delivery, operative interference and incidental morbidity can occur during pregnancy and labour in repeat caesarean section. TOL in previous caesarean section has been accepted to reduce the overall caesarean rates. The most important event because of which obstetricians still hesitate to attempt planned VBAC is uterine scar integrity and hence terminology "trial of scar" has evolved. Because repeat caesarean deliveries are performed largely to benefit neonate, clinicians often overlook maternal complications resulting in significant morbidity and mortality as a result of the repeat surgeries. One point is clear though, "once a caesarean always a hospital delivery." Vaginal birth after caesarean (VBAC) or trial of scar (TOS) represents a significant change in modern obstetric practice. Thus, the ability to predict outcome of an attempted VBAC plays an important role in reducing morbidity and mortality with pregnant women with previous one caesarean delivery.

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