



"A DESCRIPTIVE STUDY OF FETAL OUTCOME FOLLOWING TRIAL OF LABOR AMONG PATIENTS WITH PREVIOUS CESAREAN SECTION"

Gynecology

Raj Kamal (Senior resident) JLN Medical College, Ajmer

Narayan Suchitra* (Assistant Professor) JLN Medical College, Ajmer *Corresponding Author

Sharma Manju (Professor) SMS Medical College, Jaipur

Mehta Seema (Professor) SMS Medical College, Jaipur

Singh Romil Mbbs

ABSTRACT

Aims: To assess the fetal outcome following trial of labor (TOL) after previous cesarean section (CS).

Materials and Methods: This was descriptive type of observational study conducted in SMS Medical College, Jaipur. 75 well dated pregnant ladies with singleton pregnancy were enrolled in the study as per inclusion/exclusion criteria. TOL was given to all selected cases and outcome was studied in relation to birth weight, apgar score with perinatal morbidity and mortality.

Results: In the present study, 73.33% cases had a successful vaginal delivery and 26.67% underwent a repeat CS due to failed TOL. 96% cases had newborns with a 5 minute apgar score >7 and 4% had apgar <7. Incidence of perinatal morbidity and mortality in present study was 4% and 1.33% respectively.

Conclusion: TOL after previous CS in selected cases has great importance in the present era of the rising rate of primary CS.

KEYWORDS

Cesarean section, Trial of labor

Introduction

Cesarean section is defined as "an operative procedure whereby the fetuses after the end of 28th week are delivered through an incision on the abdominal wall and uterine wall." Cesarean section originally evolved to save a maternal life during difficult child birth and is procedure of choice for delivery in high risk situations.

Cragin's much quoted phrase "once a cesarean, always a cesarean!" from the article "But this approach was questioned and challenged throughout the 20th century because with a classical incision, incidence of uterine rupture during trial of labor is about 4-9%.² But in modern obstetrics, because of improved technique of lower segment cesarean section, liberal use of antibiotics, effective blood banking, enhanced maternal and fetal surveillance and better judgment in the selection of cases, incidence of scar rupture are minimal about 0.2-1.5%.^{1,2} Due to the advanced health care system, incidence of cesarean section has greatly increased this has become considerable health issue due to increased morbidity and delivery cost. Hence Cragin dictum needs to be modified. The present day dictum revolves around "The optimum management after a previous cesarean section."

Various studies have proved the relative safety of trial of labor in most women after a low transverse cesarean section and show that 60-80% patients with previous cesarean section can be delivered vaginally, particularly if the previous cesarean section has been a low transverse section, for a non-recurrent indication and the patient has had a smooth postoperative recovery.^{1,2,3} Less morbidity is encountered in women with successful Vaginal birth after cesarean section (VBAC) versus those with elective repeat cesarean delivery. Patient who undergo successful trial of labor experience fewer blood transfusion, less postoperative morbidity, shorter hospital stays, financial savings, emotional and psychological satisfaction to the mother.⁴ VBAC also eliminate the possibility of iatrogenic prematurity and hyaline membrane disease which occurs more commonly in the patients delivered by cesarean section. Hence, the present study was undertaken to assess the success and safety of VBAC in selected cases of one previous lower segment cesarean section (LSCS) and to evaluate the fetal outcome in these cases.

Methods

This descriptive type of observational study was a hospital based study conducted in Department of Obstetrics and Gynaecology, SMS Medical College, Jaipur from April 2014 to November 2015. 75 well dated pregnant ladies with singleton pregnancy were recruited in the study as per inclusion / exclusion criteria after taking informed written consent. Sample size was calculated statistically at allowable error 10% at 95% confidence limit. Inclusion criteria: Cases with previous

one lower segment cesarean section, singleton live pregnancy, cephalic presentation, estimated fetal weight $\leq$ 3kg, gestational age $\geq$ 37 weeks, having spontaneous onset of labor. Exclusion criteria: Previous classical or inverted T-shaped incision on the uterus, history of previous uterine scar along with cesarean section, history of previous rupture uterus / perforation, contracted pelvis or cephalopelvic disproportion, cases with other medical or obstetrical complications associated with pregnancy. The information was collected using a structured questionnaire containing maternal socio demographic, past and present obstetric experience, mode of delivery and birth outcomes variables. General physical and systemic examination was done. The findings were confirmed by ultrasound. Cases were evaluated according to: previous obstetric history, interval between previous cesarean and present pregnancy, bishops score at the time of admission, estimated fetal weight, scar thickness. Trial of labor was given to all selected cases. Close intrapartum monitoring was done by plotting a partogram. Fetal outcome was assessed in terms of birth weight, apgar score at 1 and 5 minutes, NICU admission

Observations and discussion

Analysis was carried out from data of 75 patients. In the attempted trial of labor group, rate of successful trial of labor was 73.33% and 26.67% had failed to deliver vaginally. The incidence of successful TOL in our study 73.33% which is comparable to that of Troyer and paris⁵ et al 72.7% ,Vidyadhar B Bangal⁶ et al 85%, Cowen⁷ et al 81%. Baseline demographic characteristics, results for successful trial of labor in relation to apgar score at 5 minutes, perinatal morbidity have been depicted in table 1,2 and 3.

Table1. Distribution of cases according to demographic parameters

Demographic Parameters	Failed TOL	Successful TOL	Statistical Significance	
Age	<21	3 (42.86%)	4 (57.14%)	Non Significant
	22-29	16 (27.58%)	42 (72.42%)	
	30-33	7 (14.29%)	6 (85.71)	
	34 & above	0 (0%)	3 (100%)	
Residence	Rural	7(29.17%)	17(70.83%)	Non Significant
	Urban	13(25.49%)	38(74.51%)	
Religion	Hindu	17(30.36%)	39(69.64%)	Non Significant
	Muslim	3(15.79%)	16(84.21%)	
	Others	03 (4.29%)	16(84.21%)	
Literacy status	Literate	17(33.33%)	34(66.67%)	Non Significant
	Illiterate	3(12.50%)	21(87.50%)	

Socio-economic status	Upper (I)	2(50.00%)	2(50.00%)	Non Significant
	Upper Middle (II)	2(50.00%)	2(50.00%)	
	Middle/ Lower Middle(III)	11(30.56%)	25(69.44%)	
	Upper Lower (IV)	2(20.00%)	8(80.00%)	
	Lower (V)	3(14.29%)	18(85.00%)	

Table 2. Distribution of cases according to Apgar score(at 5 min)

Apgar score (at 5 min.)	Failed TOL(n=20)	Successful TOL(n=55)	Total (n=75)
0	1(5.00%)	0(0.00%)	1(1.33%)
1-3	1(5.00%)	0(0.00%)	1(1.33%)
4-6	0(0.00%)	1(1.82%)	1(1.33%)
7-10	18(90.00%)	54(98.18%)	72(96.00%)

$\chi^2 = 8.883$ with 3 degrees of freedom; $P = 0.040$

Table number 2 shows the distribution of cases according to Apgar score. Above table shows that in study population 72(96.00%) cases had infants with a 5 minute Apgar score >7 , 2(2.67%) had Apgar score <7 and 1(1.33%) had 0 Apgar score. Among newborns delivered by vaginal route 54(98.18%) had Apgar score >7 and 1 (1.82%) had <7 Apgar score at 5 minute. Similar results (97% v/s 3%) were reported by Cowen⁷ et al. In failed trial of labor group 18(90.00%) had >7 Apgar score and 1(5.00%) had <7 Apgar score at 5 minute. Blanchette⁸ et al noted the similar results of <7 Apgar score (.9% v/s 4.0%) as in present study (1.82% v/s 5.00%) in successful trial of labor and failed trial of labor respectively. Higher incidence of low Apgar score in the failed trial of labor as compared to successful trial of labor was because of high risk fetuses in this group.

Table 3. Distribution of the cases according to Perinatal Morbidity

Cause	Failed TOL (n=20)	Successful TOL(n=55)	Total (n=75)
Meconium aspiration	1(5.00%)	0(0.00%)	1(1.33%)
Congenital Pneumonia	1(5.00%)	0(0.00%)	1(1.33%)
Neonatal Jaundice	0(0.00%)	1(1.81%)	1(1.33%)
Total	2(10.00%)	1(1.81%)	3(4.00%)

Table number 3 shows distribution of the cases according to perinatal morbidity. The overall perinatal morbidity in present study was (4.00%). The main causes of morbidity were meconium aspiration (5%), neonatal jaundice (1.81%) and congenital pneumonia (5%).

Neonatal morbidity in successful and failed trial of labor were (1.81%), (10.00%) respectively. Risk of neonatal complications was higher in failed trial of labor than in successful trial of labor. Similar results were reported by Paul⁹ et al noted that (6.50%) of perinatal morbidity but Flamm¹⁰ et al reported a very low incidence of (.90%) as compared to present study. Regarding to overall incidence of perinatal mortality in present study was 1.33%, cause was Congenital Pneumonia.

These observation indicates that the mortality in cesarean section was higher as compared to those infants who have been delivered vaginally. High mortality in this group is explained by the fact that fetal distress was the commonest cause for which cesarean section had done.

CONCLUSION

“Once a cesarean, always a cesarean” is no longer an appropriate dictum, perhaps it should be “once a cesarean, always a hospital delivery.” Hence a proper selection, counseling and monitoring for successful trial of labor after cesarean section, that takes into account the different significant parameters concerning current pregnancy and past cesarean section is very effective in reducing the rate of repeat cesarean section, without increasing the rate of perinatal morbidity and mortality.

REFERENCES

- Mastrobattista JM: Vaginal birth after cesarean delivery. Obstet. Gynecol Clin. North

- Am. 1999;26(2):295-304.
- Daftary S, Patki A: Cesarean section in present day practice: Krishna U & Daftary S. eds. Pregnancy at risk: Current concepts. FOGSI 2001;446-450.
- Flamm BL, Goings JR, Liu Y, et al: Elective repeat cesarean delivery versus trial of labor. A prospective multicenter study. Obstet. Gynecol 1994;83:927-932.
- McMahon MJ: Vaginal birth after cesarean. Clin. Obstet. Gynecol 1998;41:369-371.
- Troyer LR, Parisi VM: Obstetric parameters affecting success in a trial of labor: Designation of a scoring system. Am J Obstet Gynecol 1992;167:1099-1104.
- Vidyadhar B Bangal, Purushottam A Giri, Kunaal K Shinde, and Satyajit P Gavhane: Vaginal Birth after Cesarean Section. N Am J Med Sci. Feb 2013; 5(2): 140-144.
- Cowan RK, Kinch RAH, Ellis B, et al: Trial of labor following cesarean delivery. Obstet Gynecol 1994;83:933-936.
- Blanchette H, Blanchette M, McCabe J, et al :Is vaginal birth after cesarean safe ? Experience at a community hospital. AJOG 2001;184:1478-87.
- Paul RH, Phelan JP, Yeh SY : Trial of labor in the patient with a previous cesarean birth. AJOG 1985;151:297-304.
- Flamm BL, Lim OW, Jones C. et al: Vaginal birth after cesarean section. Results of a multicenter study. AJOG 1988;158:1079-1084.