Journal of Muhammad Medical College
Website: jmmc.mmc.edu.pk

Original Article

Outcome of trial of labor and causes of its failure in patients with previous one lower segment caesarean section

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Abstract:

Introduction: As per guideline of American College of Obstetricians and Gynecologists, repeat cesarean section should be avoided unless there is absolute contraindication. However, in patients having previous c-section, the trial of oxytocin/ prostaglandin for induction of labor has controversial report.

Objectives: To determine the outcome of the trial of labor and causes of its failure in patients with a previous one lower segment cesarean section.

Methodology: This descriptive cross-sectional study was conducted at Department of Obstetrics & Gynecology at Peoples Medical College Hospital, Nawabshah for the period of six months from January 2021 to June 2021. During this period 100 patients, aged 20-45 years, with term gestation and history of previous lower segment cesarean section, having vertex presentation singleton pregnancy were included.

Results: The mean age of 100 enrolled patients was 34.69 ±1.44 years. Trial of labor found successful in 64 women; in 45 (70.3%) there was spontaneous vaginal delivery, 14(21.8%) had forceps delivery and 5 (7.8%) had vacuum delivery. Among 36 patients where trial of labor remained unsuccessful, cesarean section was performed. The trial of labor was failed secondary to failed progress of labor (n= 17, 47.2%), fetal distress (n=11, 30.5%), scar dehiscence (n=3, 8.3%) and antepartum hemorrhage (n=5,13.8%). There was no mortality of fetus or mother in our study.

Conclusion: Trial of labor should always be attempted in women with previous cesarean sections with continuous monitoring, provided there is no absolute contraindication, as it may be successful in most cases.

Keywords: Cesarean Section, Trial of Labor, Failure, lower segment

Introduction:

Caesarean sections (C-sections) are the most common procedures performed worldwide[1,2] In U.S, it accounts for around 32.8% of cases while in Asians this rate is 25% or above.[3] The highest reported (46%) rate is from China. In Pakistan, the rate of C-section has increased from 29.70% during 2003 to 36.96% in year 2020.[4] Reduction in the primary C-section is the single most important step in reducing the higher incidence of repeat C-sections which are causing an enormous consumption of health resources and are contributing to higher maternal morbidity and fetal complication rates.[5-7] Vaginal deliveries should be preferred over the C-sections; to avoid operative and anesthesia complications, to have less postpartum morbidity, less hospital stay, preservation of financial funds, and above all early neonatal-maternal contact and bonding. Women with previous singleton pregnancy should be given a trial of labor if they are healthy and have a good Bishop score. Studies have shown successful vaginal deliveries as

high as 74.3% after the previous C-section.[8,9] Updated guideline from American College of Obstetricians and Gynecologists also support approach to "avoid repeat C-section" unless there is any contraindication. [10,11] Recent obstetric opinion favors the utilization of oxytocin for initiation and augmentation of labor however the role of prostaglandins is controversial in women having had lower segment C-section.[12,13]

The common causes of unsuccessful trial of labor includes failure in progress (44.4%), fetal distress (25.9%), induction failure (23.4%), scar tenderness (4.9%), and antepartum hemorrhage (1.2%) 8. Kumar et al also showed almost identical results.[14] The percentage of uterine rupture in women after vaginal birth with previous C-cesarean reported to be 0.3-0.5%.[10-14]

The rationale of our study is to determine the frequency of outcomes of labor after lower segment C-sections in our set-up so that preventive measures should be taken to reduce this higher burden of morbidity and mortality associated with C-sections.

Objective:

To determine the outcome of the trial of labor and causes of its failure in patients with a previous one lower segment cesarean section.

Methodology:

This prospective study was conducted at Department of Obstetrics & Gynecology at Peoples Medical College Hospital, Nawabshah for 6 months (January 2021 to June 2021) on 100 patients. Using non-probability purposive sampling, pregnant ladies at term with vertex presentation patient aged 20-45years with history of previous lower segment C-section with singleton pregnancy confirmed on ultrasound were included. However patients with previous classical section and uterine rupture, malpresentation, high-risk pregnancy due to medical problems like diabetes, pregnancy-induced hypertension, and obstetrics complication like placenta previa, multiple gestations, intrauterine growth retardation were excluded.

The cases fulfilling the inclusion criteria admitted through the emergency department with labor pains were included in the study. Post graduate trainee on duty obtained written informed consent; and proforma filled with detailed history and findings of clinical examination and baseline investigations were noted. The trial of labor was given to each patient and progress noticed in terms of cervical dilatation with good uterine contractions, presumed fetal compromise, and if there is clinical suspicion of impending uterine rupture or uterine scar dehiscence/rupture then managed by laparotomy and repair. Using SPSS.20, statistical analysis performed. Mean ±SD was calculated for the age of the patient, and duration of labor pains. The qualitative variables were expressed as frequencies and percentages.

Results:

The mean age of patients with previous C-section who underwent trial of labor was 34.69 ±1.44 years. Most of the women (56%) were aged between 20-35 years and 44% were between 36-45 years of age. The mean duration of labor pains after trial of labor was 7.39 ±1.18 hours as shown in table no 1. After a trial of labor, 64 women delivered successfully vaginal delivery while the remaining 36 had an unsuccessful outcome resulting in cesarean section (fig no 1). Out of 64 women delivered after successful trial, there 45 (70.3%) spontaneous vaginal delivery after trial of labor, 14(21.8%) had undergone forceps delivery and 5 (7.8%) had undergone vacuum delivery (table 2). While the remaining 36 had cesarean section due to failure of trial. The causes identified includes of failed progress of labor (n= 17, 47.2%), fetal distress (n=11,30.5%), scar dehiscence (n=3, 8.3%) and ante partum hemorrhage (n=5, 3.8%) as shown in table no 3. There was no mortality of fetus or mother in our study. However, the duration of hospital stay was increased in mothers after cesarean sections in patients with antepartum hemorrhage but they were discharged home.

Table 1: Distribution of study participants according to age and duration of labor pains

Demographic Variables	Frequency	percentage
Age in years (Mean± SD)	34.69± 1.44	
Age range 20-35 years 36-45 years	 56 44	 56% 44%
Duration of Labor Pains in hours(Mean± SD)	7.39 ± 1.18	

Table 2: Mode of delivery after successful trial

	Frequency n=64	Percentage
Spontaneous vaginal delivery	45	70.3%
Forceps delivery	14	21.8%
Vacuum delivery	5	7.8%

Table 3: Causes of unsuccessful trial of labor

Failure of Trial	Frequency n= 36	%
Failed progress	17	47.2%
Fetal distress	11	30.5%
Scar dehiscence	3	8.3%
Antepartum hemorrhage	5	13.8%

Discussion:

In US 33% of women had C-sections varying between 23-40% and out of this 90% have repeat procedures in their subsequent pregnancies.[15- 16] While in Pakistan the rate of repeat cesarean deliveries estimated in 2013 is 40.6%,[17] while it was 9.96% in 2010[18] and this shows a tremendous increased rate. Reduction in rise for cesarean sections is a major concern nowadays. Governments and Health organizations of various countries are developing strategies to reduce the overuse of cesarean section in accord of vaginal delivery. The World Health Organization has withdrawn its recommendation of 15% C-section and suggests only in cases that merit in view of indication.[19] The women included in our study had a mean age of around 34 years while most of them belong to the age group ranged from 20-35 years. This is also consistent with a reported range in different studies. [20, 21]

In our study 64% of the women with previous cesarean delivery when given a trial of labor had a successful vaginal delivery. Of this 64%, most of them were delivered spontaneously per vaginally while the few required assisted vaginal delivery. This is consistent with previous studies.[22] Thapsamuthdechakorn A et al reported 60% success rate[23], Manzoor et al reported that trial of labor found successful in 74.3% women having one previous lower uterine segment.[24] In our study repeat cesarean section rate was 36% while Manzoor et al reported repeat C-section rate of 25.7%. The repeat C-section, during current study, was performed once trial of labor failed; the causes include failure to progress of labor, fetal distress, scar dehiscence, and antepartum hemorrhage. A meta analysis[25] had shown that conversion to cesarean may also be due to imminent uterine rupture and different fetal risk; these were not identified during current study. which is not found in our study.

Conclusion:

We conclude that trial of labor; under strict direct observation should be encouraged in women with previous cesarean sections provided no contraindication is present.

Financial disclosure statement:

This research did not receive any specific grant from

Conflict of interest: The authors declare none.

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