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Original Research Article

Role of Partogram in Management of Labor in Patients with Previous LSCS: An Observational Study

Niharika Anand[1], Padmini Ghosh[2], Anupama Sinha[3]

[1]Senior Resident, Department of Obstetrics & Gynaecology Jawaharlal Nehru medical college & Hospital, Bhagalpur, Bihar, India

[2]Senior Resident, Department of Obstetrics & Gynaecology Jawaharlal Nehru medical college & Hospital, Bhagalpur, Bihar, India

[3]Professor and HOD, Department of Obstetrics & Gynaecology Jawaharlal Nehru medical college & Hospital, Bhagalpur, Bihar, India

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Corresponding Author: Dr. Padmini Ghosh
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Abstract

Aim: To investigate the effectiveness of using a partogram in the management of labor in patients with a history of prior lower segment cesarean section (LSCS).

Material and Methods: A retrospective observational study was study was carried out in the Department of Obstetrics & Gynaecology Jawaharlal Nehru medical college & Hospital, Bhagalpur, Bihar, India. 25 patients with previous LSCS for trial of labor who fulfilled the inclusion criteria. Detailed history regarding age, parity, duration of pregnancy and labour pain was taken from every patient. Examination was done including general physical examination, abdominal examination for fundal height, lie, presentation, engagement, amount of liquor, palpable uterine contraction and fetal heart rate. Pelvic examination was done for pelvic assessment and Bishop score.

Results: Our study included a total of 25 patients with average age 24.04 years with minimum age of a patient being 19 years while the maximum age was 33 years. In present study 21 out of 25 patients delivered at the gestational age of 37-40 weeks (84%). Out of these the patients who underwent repeat LSCS were 13 (52%) and those who delivered vaginally were 8 (32%). 4 patients delivered at gestational age of more than 40 weeks (16%). Out of which 2 patients undergone LSCS (8%) and 2 delivered vaginally (8%). There was no statistically significant association between gestational age and mode of delivery. Out of 15 patients who undergone repeat LSCS, 2 patients had scar dehiscence (13.33%), 3 patients were taken for LSCS due to non-progression of labor (20%) and 10 patients had fetal distress (66.66%). Out of 10 patients who delivered vaginally, 2 underwent instrumental delivery (20%).

Conclusion: The partogram was able to reduce feto-maternal complications and help in early detection of deviation from normal labor thus guiding in timely intervention. The subjects who crossed alert line in partogram were taken for LSCS thus indicating higher efficacy of partogram. Thus with a careful selection of cases for trial of labour in patients with previous LSCS it resulted in successful vaginal delivery. And with the better infrastructure and antenatal and postnatal care of these patients, the chances of maternal and perinatal morbidity and mortality can also be reduced successfully.

Keywords: LSCS, Partogram, Labor

Introduction

The partogram, a graphical representation of the progress of labor, has become an indispensable tool in the management of labor, particularly for patients with a history of lower segment cesarean section (LSCS). The World Health Organization (WHO) and other health bodies endorse its use to monitor labor progression and guide timely interventions to prevent adverse maternal and neonatal outcomes. This introduction explores the importance and effectiveness of the partogram in managing labor for women with previous LSCS, emphasizing recent research and clinical guidelines. [1-3] The partogram is designed to provide a comprehensive overview of the various stages of labor, capturing critical data such as cervical dilation, fetal heart rate, uterine contractions, and maternal vital signs. This visual tool aids clinicians in detecting deviations from normal labor progression, facilitating timely

interventions that can prevent complications. For women with a history of LSCS, the partogram is particularly valuable, as it helps in making crucial decisions about the mode of delivery and timing of interventions to minimize the risk of uterine rupture and other complications. [4,5] Women with a prior LSCS are at an increased risk of complications during subsequent pregnancies and labor, including uterine rupture, placenta previa, and placenta accreta. The use of a partogram in these patients allows for meticulous monitoring and early detection of abnormal labor patterns, which is critical for deciding whether to attempt a vaginal birth after cesarean (VBAC) or proceed with a repeat cesarean section. Studies have shown that the structured use of a partogram can significantly improve labor outcomes in these high-risk patients. [6] The American College of Obstetricians and Gynecologists (ACOG) also supports the use of partograms in managing labor for women with prior cesarean deliveries. According to their guidelines, the partogram should be used as a part of a comprehensive approach to labor management, incorporating regular assessments of cervical dilation, fetal heart rate monitoring, and maternal well-being. ACOG emphasizes that meticulous monitoring is crucial for optimizing outcomes and reducing the risk of uterine rupture and other complications associated with VBAC. [7] One of the primary advantages of the partogram is its ability to provide a clear, real-time visual representation of labor progress, enabling healthcare providers to make informed decisions quickly. For patients with a previous LSCS, this tool is invaluable in monitoring for signs of uterine rupture, which can be life-threatening for both the mother and the fetus. By tracking cervical dilation and uterine contractions, clinicians can identify abnormal labor patterns early and decide on the safest course of action, whether it be continuing with VBAC or opting for a repeat cesarean section. [8-12] Effective implementation of the partogram requires training and adherence to established protocols. Healthcare providers must be proficient in interpreting the data recorded on the partogram and making timely decisions based on the information. This includes recognizing signs of labor progression or arrest and understanding the implications of various fetal heart rate patterns and contraction frequencies. In facilities where partograms are used routinely, there tends to be a more systematic approach to labor management, leading to improved maternal and neonatal outcomes. [13-15] Despite its benefits, the use of the partogram is not without challenges. Accurate and consistent use requires regular training and quality control measures to ensure that all healthcare providers are competent in its application. Additionally, there can be variability in how the partogram is interpreted, leading to differences in clinical decisions. Therefore, ongoing education and standardization of partogram use are essential to maximize its effectiveness in managing labor for patients with previous LSCS.

Material and Methods

A retrospective observational study was study was carried out in the Department of Obstetrics & Gynaecology Jawaharlal Nehru medical college & Hospital, Bhagalpur, Bihar, India for one year. 25 patients with previous LSCS for trial of labor who fulfilled the inclusion criteria. Detailed history regarding age, parity, duration of pregnancy and labour pain was taken from every patient. Examination was done including general physical examination, abdominal examination for fundal height, lie, presentation, engagement, amount of liquor, palpable uterine contraction and fetal heart rate. Pelvic examination was done for pelvic assessment and Bishop score. All the data were entered in a predesigned proforma. The course of labour in all the patients were recorded on WHO modified partograph. Individual partograph was studied to know the various aspects related to the course of labour and the role of partograph in influencing decision making in abnormal progress of labour was assessed.

Results

Our study included a total of 25 patients with average age 24.04 years with minimum age of a patient being 19 years while the maximum age was 33 years. In present study 21 out of 25 patients delivered at the gestational age of 37-40 weeks (84%). Out of these the patients who underwent repeat LSCS were 13 (52%) and those who delivered vaginally were 8 (32%). 4 patients delivered at gestational age of more than 40 weeks (16%). Out of which 2 patients undergone LSCS (8%) and 2 delivered vaginally (8%). There was no statistically significant association between gestational age and mode of delivery. Out of 15 patients who undergone repeat LSCS, 2 patients had scar dehiscence (13.33%), 3 patients were taken for LSCS due to non-progression of labor (20%) and 10 patients had fetal distress (66.66%). Out of 10 patients who delivered vaginally, 2 underwent instrumental delivery (20%).

Table 1 Age of the participants

Age	Number	%
18-24	14	56
25-29	9	36
30-35	2	8
Total	25	100

Table 2 GESTATIONAL AGE IN WEEKS AT THE TIME OF DELIVERY

GESTATIONAL AGE IN WEEKS AT THE TIME OF DELIVERY	Number
37-40	21
>40	4
Total	25

Table 3 MODE OF DELIVERY

MODE OF DELIVERY	Number	%
LSCS	15	60
NORMAL VAGINAL DELIVERY	8	32
INSRUMENTAL DELIVERY	2	8
Total	25	100

Table 4 Indication Of LSCS

Indication Of LSCS	**No**
FETAL DISTRESS	10
NON-PROGRESSION OF LABOR	3
SCAR DEHISCENCE	2
TOTAL	15

Maternal complications: From among 10 vaginal deliveries, 1 patient had cervical tear and 1 had vaginal lacerations due to instrumental delivery. There was incidence of PPH in 2 cases.
Neonatal complications: There were no neonatal complications like birth asphyxia or meconium aspiration.

Discussion

Ever since 1920 when lower segment transverse caesarean section came into favor, trials on vaginal delivery after a prior caesarean section have flooded the world's obstetric literature convincing that vaginal delivery is the optimal mode of delivery in subsequent pregnancy unless contraindicated. In this study there were 25 patients selected for a trial of labour. Of these 25 patients 10 delivered vaginally yielding an overall incidence of 40% in patients with previous LSCS undergoing trial of labor. This result was quite similar to study done by Souza JP et al [10] No mentionable incidence of maternal morbidity was found to be in the study group. No maternal mortality took place in our study. PPH was seen in 2 cases (8%) whereas in the study done by Lavin JP et al. [15] there was incidence of PPH in 4% cases. No stillbirth or perinatal mortality took place in our study and there were no other neonatal complications whereas in a study done by Lavin JP et al. [15] there was 2% incidence of birth asphyxia and 2% incidence of meconium aspiration. In our study there was no case of scar rupture but there were 2 cases (8%) in whom scar dehiscence was diagnosed and hence they underwent repeat LSCS. In the study done by Kwast BE et al [12] there was incidence of scar dehiscence in 1.2% cases.

Conclusion

The partogram was able to reduce feto-maternal complications and help in early detection of deviation from normal labor thus guiding in timely intervention. The subjects who crossed alert line in partogram were taken for LSCS thus indicating higher efficacy of partogram. With the use of partogram maternal complications in patients with previous LSCS like obstructed labor, prolonged labor, scar dehiscence and scar rupture and other complications like PPH, cervical tears/vaginal lacerations etc. can be prevented. The neonatal morbidity increases as the labour curve moves to the right of the alert line and it is significantly increased as the labour curve crosses the action line. Thus, the alert line on the partograph indicates a high risk for the fetus to develop respiratory distress. Use of partograph reduces the incidence of fresh still birth and perinatal mortality. Thus, with a careful selection of cases for trial of labour in patients with previous LSCS it resulted in successful vaginal delivery. And with the better infrastructure and antenatal and postnatal care of these patients, the chances of maternal and perinatal morbidity and mortality can also be reduced successfully.

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