Original Research Article

Influence of partograph tracing on management of labour

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Abstract

Introduction: The partograph, a graphic recording of labour and features in the mother and fetus has been used since 1970 to detect labour that is not progressing normally. The partograph serves early warning system and assist in early decision of transfer, augmentation and termination of labour. It also increases the quality and regularity of observing mother and fetus in labour.

Material and methods: It was a prospective observational study conducted in the Department of Obstetrics and Gynaecology at Dhiraj General Hospital, Pipariya, Waghodiya during the period of 6 months. Total 100 patients were enrolled in my study. Plotting on partogram was started at cervical dilation $\geq$ 4 cm dilation on alert line. Induction was done in needed cases. Augmentation was done as per requirement.

Results: 48% cases were Primigravida and 52% cases were multigravida. Mean gestational age was 38.8 weeks. In 88% cases delivered spontaneous and 12% cases required induction of labour. 18.2% of spontaneous onset patients crossed the alert line as compared to 66.66%in the induced group. 72.7% patients in spontaneous group had vaginal delivery, 23.86% had LSCS and 3.4% had instrumental delivery. 25% patients in induced group had vaginal delivery, 75% had LSCS. 96% neonate had no morbidity.

Conclusion: The proper use of partograph and application of the right decision at the right time that we can achieve the best for maternal and neonatal outcome.

Key words

Partograph, Neonatal Outcome, Alert line, Gestational age, Mode of Delivery.

Introduction

Every day, 1500 women die from pregnancy or childbirth related complications. Approximately half a million women lose their lives every year because of complications of pregnancy and about 99% of these occur in the developing countries due to non- monitored labour complications and accidents. A women's lifetime risk of intranatal death is 1 in 7300 in developed countries versus 1 in 75 in developing countries [1]. This can be effectively averted by partogram, of every woman in labour.

The partograph, a graphic recording of labour and features in the mother and fetus has been used since 1970 to detect labour that is not progressing normally. The partograph is simple, being based on the rate of cervical dilatation and fetal descent during specific period of labour. No complicated apparatus is required just the examining finger, a clock and single sheet paper. The partograph serves early warning system and assist in early decision of transfer, augmentation and termination of labour. It also increases the quality and regularity of observing mother and fetus in labour.

It has shown to be effective in preventing prolonged labour, in reducing operative interference in monitoring patients with premature rupture of membrane and in improving maternal and neonatal outcome [2]. It helps to recognize cephalopelvic disproportion long before labour becomes obstructed.

Many of the serious complication of pregnancy and most of the hazards of labour can be prevented. Their dangerous consequences could be anticipated earlier. Early detection of abnormal progress of labour and prevention of prolonged labour would significantly reduce the risk of complication and their consequences.

We have conducted this study to evaluate the effect of partograph in detection of abnormal labour and associated perinatal mortality and morbidity in those patients.

Materials and methods

It was a prospective observational study conducted in the Department of Obstetrics and Gynaecology at Dhiraj general Hospital, Pipariya Waghodiya during the period of 6 months. Institutional ethical committee approved the study. Informed written consent was taken from subjects recruited in the study.

100 cases who admitted in labour room with labour pains were enrolled in the study. A detailed history was taken according to predecided Performa. A complete general and systemic examination per abdomen and per vaginal examination was performed and was entered in the partogram accordingly. Plotting on partogram was started at cervical dilation $\geq$ 4 cm dilation on alert line. 4 hourly per vaginum examination was recommended but was done more frequently as per requirement. In some cases augmentation of labour was done by amniotomy or oxytocin or both. Induction of labour was done with T. Misoprostol 25 microgram vaginally, 4 hourly in indicated patient.

Inclusion criteria

- Term Pregnancy (beyond 37 weeks)
- Singleton pregnancy
- Vertex presentation

Exclusion criteria

- Central placenta previa
- Contracted pelvis
- Previous LSCS
- Malpresentation
- Multiple pregnancy

Results

Total 100 cases were taken in this study. 48% cases were primigavida and 52% cases were multigravida (**Table - 1**). Mean gestational age was 38.8 weeks (**Table - 2**). 88% patients has spontaneous onset of labour (**Table - 3**). Progress of labour assessed in both groups with various parameters (**Table - 4**). 77% patient delivered vaginally and 20% patient by caesarean section (**Table - 5**). Mode of delivery in spontaneous and

induced labour was as per **Table – 6**. Distribution of cases according to perinatal morbidity was as per **Table – 7**.

Table - 1: Distribution according to parity.

Parity	No. of patients (n=100)
Primigravida	48
Multigravida	52

Table - 2: Distribution according to gestational age.

Gestational age in weeks	No. of patients
37	21
38	30
39	37
40	10
41	00
42	02

Table - 3: Distribution of cases according onset of labour.

Onset of labour	No of patients
Spontaneous	88
Induced	12

Table - 4: Progress of labour in spontaneous and induced group.

Parameters	Spontaneous (n=88)	Induced (n=12)
Augmentation required	28 (31.8%)	9 (75%)
Mean duration of first stage (hrs)	6.19	5.28
Mean duration of second stage (min)	24.14	16.21
Patient crossing alert line	16 (18.2%)	8 (66.66%)

Table - 5: Distribution of cases according to mode of delivery.

Mode of delivery	No of patients
Vaginal	67
Instrumental Vaginal	03
Caesarean Section	30

Table – 6: Mode of delivery in spontaneous and induced labour.

Parameters	Spontaneous (n=88)	Induced (n=12)
Vaginal	64 (72.7%)	03 (25%)
LSCS	21 (23.86%)	09 (75%)
Instrumentation	03(3.4%)	00

Table - 7: Distribution of cases according to perinatal morbidity.

Neonatal Outcome	No of patients
No Morbidity	96
Respiratory distress	03
Birth asphyxia	01
sepsis	00
Need of ventilator	01

Discussion

Partograph serves as early warning system and assist in early decision of augmentation and termination of labour. It has shown to be effective in preventing prolonged labour, in reducing operative interference, in monitoring patients with premature rupture of membrane.

In our study 100 patients were enrolled. Among all cases 48% cases were primigravida and 52% cases were multigravida.

Only full term patients were included. 88% patients were delivered before expected date of delivery and only 2% patients delivered one week after 40 weeks. Mean gestational age was 38.8 weeks. Among all cases 88% patients has spontaneous onset of labour and 12% patients were induced. Indications of induction were PROM (83.33%) and prolonged pregnancy (16.66%).

Rijal P. Regmi, et al. [3] stated that prolonged pregnancy and hypertensive disorders are the common indication for induction of labour. In the present study 31.8% of patients who had spontaneous labour required augmentation as compared to 75% patients in the induced group.

Mean duration of first stage of labour 6.19 hours in the spontaneous group and 5.28 hours in the induced group. Mean duration of second stage of labour 24.14 minutes in the spontaneous group and 16.21minutes in the induced group. 18.2% of spontaneous onset patients crossed the alert line as compared to 66.66%in the induced group.

Hoffman Matthew K [4] stated that those women who experienced electively induced labour had a shorter active phase of labour than did those admitted in spontaneous labour.

Total 67% patients delivered vaginally, 30%by caesarean section and 3% had instrumental delivery. In patients where the partograph findings crossed the action line and in the patients who developed fetal distress, emergency caesarean section was done.

Different rate of caesarean section in various studies [5, 6] were as per **Table - 8**.

Table – 8: Different rate of caesarean section in various studies.

Composite WHO partograph [5]	4.5%
Mathews and Mathai, on simplified partograph [6]	3.2%
Present study	30%

The rate of caesarean sections varies widely in various studies due to reasons of varied study population, parity, labour management protocols.

72.7% patients in spontaneous group had vaginal delivery, 23.86% had LSCS and 3.4% had instrumental delivery.25% patients in induced group had vaginal delivery, 75% had LSCS and no patient required instrumentation. Incidence of operative delivery increased in patients who were induced as compared to patients who had spontaneous onset of labour. Although the using of partograph, the neonatal outcome is improved. 96% neonates do not have any morbidity. Though 3% neonates had respiratory distress and 1% had birth asphyxia. One neonate developed transient tachypnoea of newborn so ventilator support was given. In these patients meconium stained liquor was present.

Conclusion

The proper use of partograph and by application of the right decision at the right time, we can achieve the best for maternal and neonatal outcome. Implementation of partograph for assessment of labour has improved neonatal outcome but caesarean section rate was increased. A new gadget should be such reduces the caesarean section rate but in my study the rate of caesarean was increased.

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