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# Vaginal Birth after Caesarean – A Partographic Analysis

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**Summary**

The escalating rates of caesarean section particularly repeat caesarean are alarming. To control them vaginal birth after caesarean has to be made into a viable alternative. The present study evaluated the effect of various factors influencing the out come of labour following caesarean section particularly in relation to the use of the partogram. It was found that of patients whose labour curve was to the left of the alert line 92.3% delivered vaginally while in patients whose curve was to the right of the action line only 48.4% had vaginal deliveries (more than half of these by forceps)

Oxytocin was found to be safe for both induction and acceleration after proper selection of cases – there being no case of scar dehiscence. Incidence of repeat LSCS was high in labours induced by oxytocin.

## Introduction

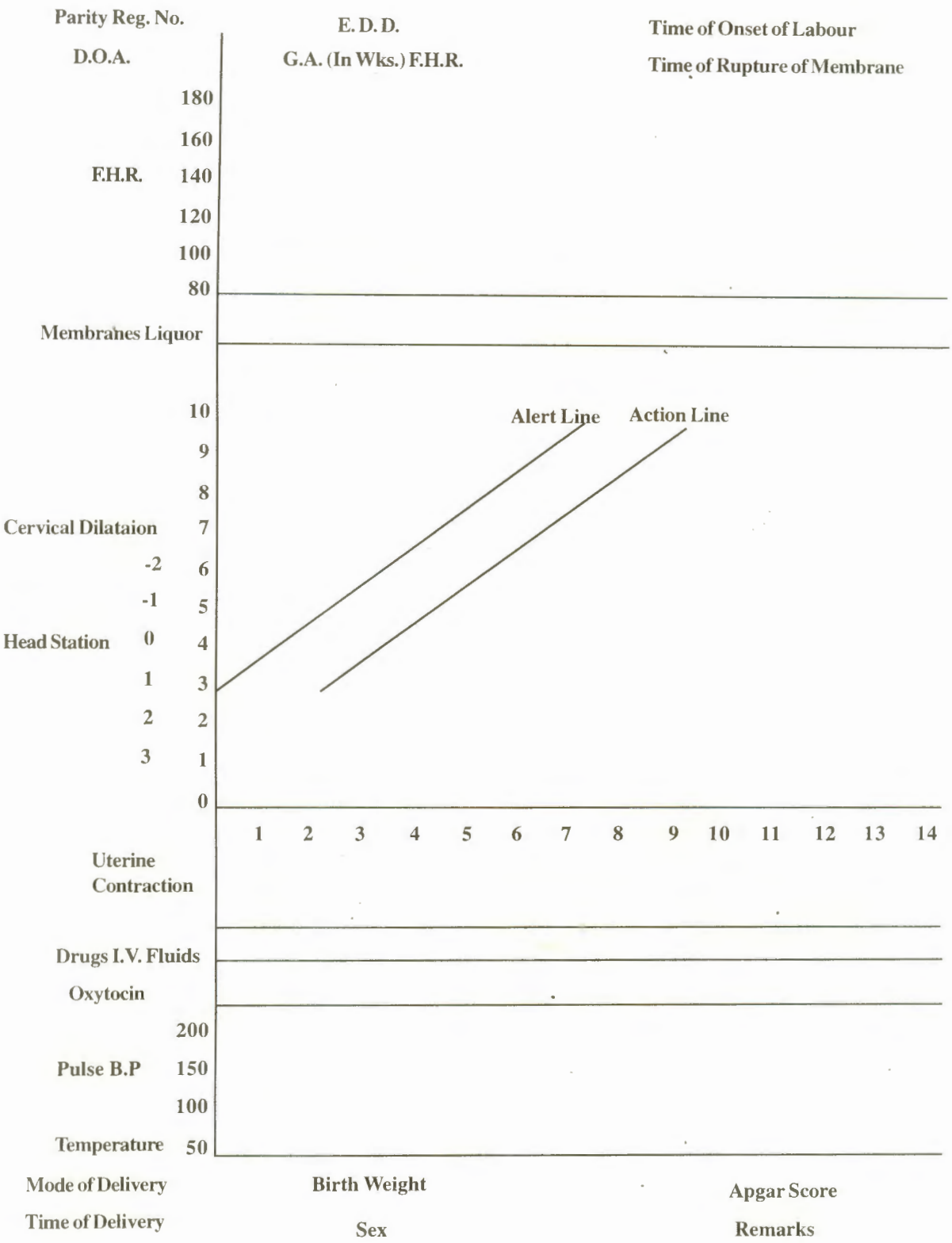
Repeat caesarean section is the commonest indication for caesarean section (Bolaji & Meehan 1993) Maternal mortality associated with caesarean section can be ten times than that of a woman delivered vaginally (Ritchie 1986) and one third of these deaths occur in cases of repeat caesarean section (Evrard & Gold 1977) Maternal Morbidity after caesarean section is also increased compared with vaginal delivery. These observations have led to world wide attempts to bring down caesarean section rates particularly those of repeat caesarean section but for this to be a safe alternative proper selection of cases and close monitoring of labour is required. The partogram is a very useful tool for this monitoring. A 1cm./hr. line is used as an alert line. The action line is plotted parallel to alert line with a lag time of 2 hrs. As long as the labour curve remains to the left of the alert line the patient is making satisfactory progress. When the labour curve comes between the alert and action lines then we have to be vigilant and if contractions are inadequate then acceleration by amniotomy & syntocinon drip is done. Once the labour curve crosses the action line then the patient is reassessed and if there is no improvement even after acceleration by amniotomy and syntocinon then labour is terminated.

The present study was designed to evaluate the role of partogram for early detection of labour abnormalities in women undergoing labour following caesarean section. Our aim is to reduce the rate of repeat caesarean section without increasing the rate of scar dehiscence and maternal mortality and morbidity.

## Materials and Methods

A total of 275 patients with previous one LSCS were admitted in Dept. of Obst. & Gynae, K.G's Medical

Fig I
Partogram



College, Lucknow during the study period (Jan-Dec 98). Out of these 155 only were included in the study, the remaining undergoing an elective repeat or an emergency Caesarean at the time of admission.

Of the 155 patients with H/o previous one LSCS for non-recurrent indication, a thorough history and examination was undertaken to exclude any contraindication for a trial of labour. The partogram was plotted from the time patients entered into active phase of labour i.e. at 3 cm dilatation. The following observations were made (Fig. 1).

General details – Name, Age, Reg. No., Parity, Date of admision, Expected date of delivery, Gestational age, Fundal height, time of onset of labour, Time of rupture of membrane.

- Foetal heart rate
- Membranes and Liquor
- Dilatation and effacement of cervix
- Station of head
- Uterine Contractions
- Drug administered
- Vitals of the patients
- Details of delivery – Mode, time, birth weight, sex and Apgar score of the baby.

**Results**

The outcome of the 155 study group patients is shown in Table I. 49 cases (i.e. 31.6%) underwent a repeat LSCS, 22 (14.2%) had a forceps delivery, while 84 (54.2%) had a normal vaginal delivery. Thus a total of 106 (68.4%) cases had a vaginal delivery.

**Table I**
**Outcome of labour in patients undergoing Trial of labour**

| | No. | % |
|---|---|---|
| 1. Total patients | 155 | |
| 2. Repeat caesarean section | 49 | 31.6% |
| 3. Forceps application | 22 | 14.2% |
| 4. FTND | 84 | 54.2% |

The commonest indication of Caeserean section was Fetal distress in both the latent and active phase. The next common indication was non-progress of labour (Table II). Similarly the commonest indication of forceps delivery was again second stage fetal distress in 11(50%) cases. Next common indication was prolonged second stage of labour. Routine prophylactic forceps was not applied in cases of previous LSCS without any other indication.

Out of the 49 cases undergoing LSCS, 26 were operated in the latent phase and 23 were operated in the active phase. Partogram could be charted only in the cases undergoing repeat Caeserean in the active phase. Out of these 23 cases, only 6(26%) were operated when the labour curve was to the left of alert line, the remaining 17 were all operated after crossing the action line, most of which were due to non-progress of labour (Table III). In the forceps delivery group 8 i.e. 36.3% delivered to left of alert line and only 9(41%) to right of action line. In the

**Table II**
**Indication of operative deliveries (LSCS / Forceps)**

| Mode of delivery | Indication | No. of cases |
|---|---|---|
| LSCS (n=49) | Fetal distress | 28 |
| | Non progress of labour | 17 |
| | Scar tenderness | 1 (Intra op no. dehiscence) |
| | Severe (PIH) | 3 |
| Forceps (n=22) | Fetal distress | 11 |
| | Prolonged second stage | 9 |
| | Prophylactic (heart disease) | 2 |

**Table III**
**Distribution of patients in relation to alert and action lines**

| Time of Delivery | Mode of delivery | | |
|---|---|---|---|
| | Repeat LSCS (n=23) | Forceps (n=22) | FTND (n=84) |
| Left of alert line (n=79) | 6 (26%) | 8 (36.3%) | 65 (77.4%) |
| Between alert and action line (n=17) | Nil (0%) | 5 (22.7%) | 12 (14.3%) |
| Right of action line (n=33) | 17 (74%) | 9 (41%) | 7 (8.3%) |

FTND group 65(77%) delivered left of alert line and only 7(8.3%) to right of action line.

The mean duration of labour was 6.07 hrs and the mean rate of cervical dilatation was 0.3 cm/hr in repeat Caesarean cases as compared to 4.6 hrs and 1.6 cm/hr respectively in the FTND group (Table IV).

**Table IV**
**Labour details**

| | Repeat LSCS | Forceps | FTND |
|---|---|---|---|
| Duration of active phase (hr.) | 6.07 | 7.67 | 4.6 |
| Rate of cervical dilatation in active Phase (cm/hr.) | 0.3 | 1.08 | 1.6 |

Amniotomy was done for acceleration of labour in almost equal no. of patients (55%) in repeat LSCS and FTND group (Table V) but in 86.4% of patients delivered by forceps. Syntocinon induction was required in only 4.5% of forceps and 4.8% of normal deliveries in contrast to 43.5% of patients delivering by Caesarean section (Table V).

Table VI shows that out of the 49 babies delivered by LSCS only one had Apgar score <=6 at 5 mts (Indication – Fetal distress with thick Meconium). All other babies had Apgar score >=8 at 5 mts. In the forceps group 3 babies had Apgar score <=6 at 5 mts. Out of which one had multiple congenital anomalies and expired on 3rd day and 2 had fetal distress. In the FTND group no baby had Apgar Score <=6 at 5 mts. But there was one unexplained intrapartum still birth.

There were no maternal mortality or significant morbidity in any of the cases undergoing trial of labour.

**Discussion**

The present study was undertaken to analyse the utility of a partogram in the management of labour subsequent to a Lower Segment Caesarean Section.

Out of the 275 patients of previous LSCS admitted in the study period 155 were left for trial of labour, of which 106 had a vaginal delivery i.e. 38.5% of total admissions and 68.4% of patients undergoing trial of labour.

It was found that of the patients whose labour curve was to the left of alert line 82.2% had a FTND, 10.1% had a forceps delivery (i.e. 92.3% vaginal deliveries) and only 7.6% had a repeat LSCS; in contrast out of 33 patients whose labour curve crossed the action line 51.5% had a repeat LSCS, 27.2% had a forceps delivery and only 21.2% had FTND. These findings are similar to those of Khan & Rizvi (1995). Thus the labour curve was a useful predictor of labour outcome. Once the action line is crossed chances of a vaginal delivery fall dramatically and chances of scar dehiscence increase.

Flamm et al (1987) and Paul et al (1985) found no difference in rates of scar dehiscence, fetal and maternal mortality and morbidity in patients of previous LSCS who were administered oxytocin with proper monitoring in comparison to those who were not given oxytocin. In our study, findings were similar but

**Table V**
**Use of Oxytocics and amniotomy in study group**

| Nature of acceleration | Mode of delivery | | |
|---|---|---|---|
| | Repeat LSCS | Forceps | FTND |
| Amniotomy | 12 (52.2%) | 19 (86.4%) | 48 (55.6%) |
| Syntocinon Induction | 10 (43.5%) | 1 (4.5%) | 4 (4.8%) |
| Syntocinon Acceleration | 7 (30.5%) | 20 (91%) | 47 (56%) |
| Amniotomy and Syntocinon | 5 (21.7%) | 18 (81.8%) | 32 (38%) |

**Table VI**
**Perinatal Outcome**

| | Repeat LSCS | Forceps | FTND |
|---|---|---|---|
| Mean birth Wt. | 3 Kg. | 2.96 Kg. | 2.75 Kg. |
| Still birth | Nil | Nil | 1 |
| Early neonatal deaths | Nil | 1 | Nil |
| Apgar score > 6 at 5 mts. | 48 | 19 | 83 |
| Apgar score < 6 at 5 mts. | 1 | 3 | Nil. |

incidence of patients requiring repeat LSCS was higher in the group where oxytocin was used for induction (66.7%) as compared to FTND (26.7% of patients induced with oxytocin). In cases where oxytocin was used for acceleration there was no such difference and 63.6% had a FTND and 27% delivered by forceps (i.e. a total of 90.6% vaginal deliveries). Scar rupture appears to be associated with prolonged infusion of oxytocin for 6 hours despite poor progress of labour (Arulkumaran et al 1992). The partogram helps in early detection of such poor progress and assists early decision making.

## Conclusion

The partogram is useful for early detection of labour problems and for predicting labour outcome in patients with previous LSCS.

Oxytocin if used judiciously is a safe agent for induction and acceleration of labour in cases of previous LSCS.

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