

EARLY RECOGNITION OF ABNORMAL LABOUR IN PRIMIGRAVIDAE

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SUMMARY

Cervimetric progress was observed and correlated with outcome of labour in 355 primigravidae in apparently normal labour. For women with cervical dilatation of 3 cms or more an 'alert line' was plotted on cervicogram at the rate of 1 cm/hr as suggested by Philpott. The patients crossing this line were reviewed and labour was augmented by oxytocin infusion with or without amniotomy in selected cases. 79.9% patients showed normal cervimetric progress in whom the caesarean section rate was 5.7%. Seventy five (21.1%) women crossed the alert line in whom the caesarean section rate was 26.7%. Augmentation was done in the 72% of these patients. 40 patients showing improvement in cervimetric progress had caesarean section rate of 5% while in 14 patients not showing improvement it was 85%. Phillipott's alert line on cervicograph appeared to be an appropriate indicator for early recognition of abnormal labour needing referrals in primigravidae.

INTRODUCTION

Late referrals of intrapartum cases from rural health centres has remained to be an important factor resulting in a significant number of avoidable perinatal deaths. In a rural setting after recognising the abnormal labour the intervention can not be locally implemented for want of the necessary expertise and the facilities, and referral to the apex hospital form the main intervention. Executing

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such intrapartum referrals involves problems of money, man power and transport arrangements resulting in a delay of around 2-4 hours until the patient seeks expert medical care at the apex hospital.

Under such circumstances it becomes necessary to foresee the abnormal situation and refer the patients before it becomes too late for the mother and the baby.

Faced with a similar situation, Philpott from Rhodesia has suggested and successfully implemented use of graphic records of progress of labour (Partogram) for the early

detection of abnormal labour. He has introduced the concept of Alert line and action line based on the rate of cervical dilatation of 10% slowest progressing primigravidae in African population. Drouin et al (1979) has shown a reduction in PNMR by 10/1000 from 41.3 in 1974 to 31.2/1000 in 1975 only through the use of partogram. Daftary & Mhatre (1977) have shown a similar rate of cervimetric progress in Indian women. It was therefore decided to study the predictive utility of Alert line in early detection of abnormal labour needing referral from rural areas.

MATERIAL AND METHODS

Three hundred fifty five full term primigravidae with spontaneous onset of labour were included in the study. Patients having vertex presentation who came in early labour and were thought to be suitable for vaginal delivery on initial vaginal examination were selected. Cervical dilatation was noted on admission and three hourly thereafter and recorded on cervicograph for each patient. At cervical dilatation of 3 cm an 'alert line' was drawn on the cervicogram at rate of 1 cm/hour and the progress of labour was assessed in relation to this line. The patients who were on left side of the alert line were considered to be having normal cervimetric progress, while those who crossed this line were considered to be exhibiting abnormal active phase.

The 'slow progressers' thus identified were reviewed and were augmented with oxytocin infusion and amniotomy depending upon suitability.

The outcome of labour was correlated with the cervimetric progress of labour.

RESULTS

Cervimetric progress and outcome

Table I shows that 280 (79.9%) primigravidae showed normal cervimetric progress

in whom the caesarean section rate was 5.7% as against 26.7% in 75 patients with abnormal active phase ($p < 0.001$).

TABLE I

Cervimetric progress and outcome of labour

Cervimetric progress	No.	%	CS No.	CS Rate	PND
Normal	280	(78.9)	16	5.7	2
Abnormal active phase	75	(21.2)	20	26.7	3
Total	355	(100.0)	36	10.1	5

Further analysis (Table II) of 280 patients with normal cervimetric progress showed that 239 patients having second stage duration upto 60 min. had significantly lower caesarean section rate (2.4%) when compared with 24.4% caesarean section rate amongst 41 patients showing second stage duration greater than 60 minutes ($P < 0.001$). Ten such patients landed in disorders related to decent of fetal head during second stage due to fetal malposition who were submitted to caesarean section.

TABLE II

Second stage duration in normal cervimetric progress

Second stage	No	%	Caesarean Section	
			No.	%
< 60 min	239	(67.4)	6	(2.4)
> 60 min	41	(22.5)	10	(24.4)
Total	280	(78.9)	16	(5.7)

The mean height of patients having prolongation of second stage was shorter by 3 cms and the mean birthweight of neonates was 400 gms. more than those completing second stage within 60 minutes.

Six normally progressing patients were submitted to caesarean section for clinical diagnosis of fetal distress during first stage of labour.

RESULTS OF AUGMENTATION

After reviewing, fifty four patients (72%) were augmented by oxytocin infusion with or without amniotomy and the cervimetric progress was monitored carefully.

Forty patients showed improvement in cervical dilatation rate in next four hours in whom the caesarean section rate was only 5% while in the fourteen patients not showing such improvement it was 85.7% This difference was highly significant ($P < 0.001$).

Twenty one patients were not augmented being either unsuitable for augmentation or augmentation was thought to be unnecessary in them. The caesarean section rate was 28.6% in these patients (Table III).

TABLE III

Results of augmentation in dysfunctional labour

	Caesarean section			
	No.	%	No.	%
Improved with oxytocin	40	(53.3)	2	(5.0)
Not improved	14	(18.7)	12	(85.7)
Not augmented	21	(28.0)	6	(28.6)
Total	75	(100.0)	20	(26.7)

Perinatal Loss

There were five neonatal deaths in the study. Two deaths occurred in women exhibiting normal cervimetric progress later show-

ing difficulty in decent of the presenting part during second stage. Three deaths occurred in dysfunctional labour group. All babies were severely asphyxiated at birth and had an additional risk factor contributing to the mishap.

Caesarean Section

The overall caesarean section rate was 10.1% Dystocia due to cephalo-pelvic disproportion (12 cases) and fetal malposition (11 cases) accounted for nearly 64% of the caesarean section, while clinically diagnosed fetal distress formed the indication for 19.5% patients. Six caesarean sections were performed for either oxytocin failure or incoordinate uterine action.

DISCUSSION

Analysis of avoidable factors in deaths among babies weighing 2 kg or more has revealed that 40% of deaths are due to late intrapartum referrals (Bhavasar & Shrotri 1989).

Late diagnosis of abnormal progress of labour in urban hospitals, can get compensated by immediate availability of expert care and facilities for operative delivery. Referral from rural centres involves many problems and hence it is essential to have an early prediction of abnormal labour.

Cervicographic record of labour progress can help in this matter as it is simple, pictorial record facilitating early recognition of slow progress.

It is feasible at peripheral level and medical practitioners as well as nurse midwives can be trained for maintaining and interpreting such records.

It is practicable as it does not require any sophisticated equipment or extra skill.

About 25% patients crossing the alert line do not require any intervention and deliver spontaneously in next two hours. These can be identified by noting the cervical dilatation slope and head station at alert line. A medical practitioner can easily identify these patients with definite progressive cervical dilatation and descent and continue vigilant observation while making arrangements for referral. This will avoid unnecessary referrals.

The overall incidence of oxytocin augmentation in primigravidae in present study was 15.2% which is comparable to observations of Philpott (1972) (11%) and Ledger (1972) (14%).

In protracted labour, most studies have reported an augmentation rate of around 70% which is comparable to our observation of 72%.

A trial of oxytocin augmentation at the periphery can minimise the referrals. However, oxytocin augmentation requires vigilant and intelligent supervision and also demands facility and expertise for operative delivery at hand. Hence medico-surgical interventions should be carried out at the apex hospital only.

Thus, graphic records of labour progress make early recognition of slow progress possible through its pictorial display of important events in labour.

Philpott's cervicogram and his concept of alert line and action line is appropriate for our population and will certainly facilitate timely referrals of cases of abnormal labour to the apex hospitals.

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