

INFLUENCE OF FETAL STATION ON CERVIMETRIC PROGRESS IN PRIMIGRAVIDAE

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SUMMARY

The cervimetric progress of labour was observed in 136 fullterm primigravid patients in early labour with different stations of vertex at admission. Cases with obvious CPD and premature rupture of membranes were excluded. The mean duration of latent phase and acceleration phase was longer with higher station, however, the mean duration of maximum slope did not differ significantly. The mean cervical dilatation rate in active phase was 1.19 cm/hr for -3 station as against 1.71 cm/hr for 0 station group. The incidence of dysfunctional labour was higher with higher station, however, majority of slow progressors responded to amniotomy. Only 10% patients required oxytocin augmentation and the overall caesarean section rate was 4.4%. The observations indicate that the primigravid mothers with unengaged head at the onset of labour in absence of obvious CPD can be expected to deliver vaginally under vigilant supervision and judicious use of oxytocin.

INTRODUCTION

A significant proportion of primigravid patients do present with unengaged head at the onset of labour. Although the durations of different phases of

labour are somewhat longer in them in comparison to the patients with engaged heads, a substantial proportion of them deliver vaginally. The present study has been carried out to find out the relationship of fetal station at the onset of labour with cervimetric progress in primigravid mothers.

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MATERIAL AND METHODS

136 fullterm primigravid patients presenting by vertex*admitted in early labour with different stations of vertex at admission were included in the study. The cases having obvious cephalopelvic disproportion and those giving history of premature rupture of membranes were excluded. The cervimetric progress was observed by doing a vaginal examination every 2 hours. Dysfunctional labour was identified by following criteria suggested by Studd et al. (1982)

- Prolonged latent phase - more than 6 hours from time of admission to time of beginning of active phase.
- Primary dysfunctional labour - cervical dilatation rate (COR) < 1 cm/hour in active phase.
- Secondary arrest - cessation of cervimetric progress for 2 hours or more in an established active phase.

The durations of different phases of labour and the proportions of cases exhibiting dysfunctional labour was noted in all groups. The neonatal condition

at birth and mode of delivery were correlated with the fetal station at the time of admission.

OBSERVATIONS

Table I shows the fetal stationwise distribution of cases and the number of cases requiring caesarean section.

In all, the caesarean section rate was 4.4%. 2.9% patients were delivered by forceps while 92.6% delivered vaginally. With station 0 at admission, the only caesarean section was done for clinically diagnosed fetal distress in late active phase of labour.

In 113 patients with station -1 and above, 3 caesarean sections were done for deep transverse arrest and two for fetal distress in first stage of labour.

Table II shows the mean duration of different phases of labour.

The mean duration of latent phase and acceleration phase was longer with higher station. The latent phase was more than 6 hours since admission in 90% cases of station -3, 55% of station -2 and only 7.6% of station -1 or below on admission. Mean duration of maxi-

Table I
Mode of Delivery

Foetal Station	Number	Caesarean Section	
		Number	Percentage
- 3	31	2	6.5
- 2	56	2	3.6
- 1	26	1	3.8
0	23	1	4.3
Total	136	6	4.4

Table II

Mean Duration of Different Phases of Labour

Station	Latent Phase hr.	Acceleration Phase hr.	Maximum Slope hr.	Active Phase hr.	2nd stage (min)	CDR cm/hr
- 3	9.24	1.79	4.72	6.51	41	1.19
- 2	6.09	1.42	4.10	5.45	34	1.39
- 1	4.25	1.34	4.30	4.69	26.6	1.68
0	3.25	1.00	4.00	4.10	22.5	1.71

imum slope was similar for all groups. The mean CDR in active phase was 1.19 cms/hour for -3 station as against 1.71 for 0 station group.

Table III shows the incidence of dysfunctional labour in different groups.

Only 9.7% of cases from station -3 group exhibited normal cervimetric progress as against nearly 80% of -1 and 0 station. The incidence of different types of dysfunctional labour was much more with higher station groups as compared to the lower one.

Out of 62 patients with prolonged latent phase 47 patients (75.8%) pro-

gressed smoothly and delivered vaginally without any active intervention. Rest 15 patients later developed primary dysfunctional labour.

Out of 39 patients with primary dysfunctional labour, majority had higher stations at admission (-3 or -2). Artificial rupture of membrane was done in all of them, following which 75% i.e. 29 patients progressed smoothly and delivered vaginally. Oxytocin augmentation was done in remaining 25% (10) patients. Cervical dilatation rate improved in six patients who delivered vaginally. While four patients sub-

Table III

Fetal Station and Dysfunctional Labour

Fetal station	Prolonged latent Phase		Primary Dysfunctional labour		Secondary Arrest		Normal	
	No.	%	No.	%	No.	%	No.	%
- 3	28 ^c	90.0	17	54.8	4	13.2	3	9.7
- 2	31	55.4	11	30.6	3	5.3	25	44.6
- 1	02	7.6	08	20.1	1	3.8	16	79.9
0	01	4.3	03	13.1	0	0	19	82.1

sequently landed in secondary arrest of cervical dilatation.

In addition to these four patients, four more patients developed secondary arrest of cervical dilatation after having an initial satisfactory progress.

Oxytocin augmentation was done in 7 cases of whom 3 progressed and delivered vaginally while 4 were submitted to caesarean section (3 for deep transverse arrest and 1 for fetal distress) in first stage of labour.

Table IV shows the birthweight of the babies and number of asphyxiated newborns.

The proportion of neonates born with apgar score of 5 or less was significantly higher for station -3 (54.8%) as compared to 3.8% for station - 1.

The mean birthweight in -3 station group was 2850 gms as compared to 2500 gms. in station 0 group. 29% babies from -3 station group weighed more than 3 kg at birth while all babies from station 0 group weighed less than 3 kg at birth.

DISCUSSION

Friedman & Sachtleben (1965) have

reported that the mean durations of latent phase and acceleration phase were longer for station -3 and -2 as compared to station -1 or 0. The mean duration of maximum slope however was similar in all cases. The findings of the present study also are similar indicating that the fetal station influences the cervimetric progress only upto cervical dilatation of 4 cms, the labour progress thereafter being uninfluenced. This could be because of delay in the preparatory division of labour which could be related to poor formation of lower segment and poor preparation of cervix accounting for some cases of nonengagement of fetal head of primigravid patients.

The labour was slow in majority of patients arriving at labour room with -3 station. Only 9.7% patients from station -3 group had normal cervimetric progress as compared to 82% from station 0 group.

Prolonged latent phase was the most common disorder in 90% from -3 station group and 55% from -2 group. Those figures are considerably higher than those reported by Friedman & Sachtleben (1965) which is due to differences

Table IV
Neonatal Outcome

Station	Apgar \leq 5		Mean birth wt. gms	Birth wt. above 3 kg.	
	No.	%		No.	%
- 3	17	54.8	2850	9	29.9
- 2	6	10.7	2750	3	5.3
- 1	1	3.8	2700	1	3.8
0	0	0.0	2500	0	0.0

in criteria followed for defining latent phase prolongation.

Protracted cervical dilatation has been reported in 14.7% cases of -2 station group by Friedman & Sachtleben (1965) while in present study it is 30.6%.

Mostly the slow progressors responded to amniotomy. However, 25% required oxytocin augmentation for satisfactory progress. Secondary arrest of cervical dilatation has also been observed more often in higher station groups.

The cause of dysfunctional labour in most cases was relatively large size of fetal head and occipito posterior position in others.

The overall oxytocin augmentation rate in present study was 10% which compared well with observations by Philpott & Castle (1972) (11%).

Different observers have reported different incidence of unengaged head at the onset of labour in primigravid patients. Labour appears to be slow in a substantial proportion of these patients. However, in present study only

4.4% mothers with unengaged head at admission required caesarean section while others delivered vaginally. This clearly indicated that although the unengaged head at the onset of labour is a risk factor for prolongation of labour in a risk factor for prolongation of labour in primigravid mothers, in absence of obvious CPD, surgical intervention is necessary only in a small proportion of them.

It can thus be concluded that the primigravid patients with unengaged head at the onset of labour in absence of obvious CPD can certainly be expected to deliver normally vaginally under vigilant supervision and judicious use of oxytocin.

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