

Cervicograms of Normal Labour in Malaysian Women

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MODERN OBSTETRICS has reached a point that a clinical assessment of a patient's progress in labour can be plotted onto a partogram. These partograms aid in the recognition of abnormal labours by simplifying recordings and aid in the correct timing for facilitating labour and for obstetrical interference. Philpott makes use of "alert lines" and "action lines" based on cervical dilatation. These lines were constructed from data derived from the slowest 10% of African primigravidae.

Friedman's sigmoid curve (see Fig. 1) of labour is a valuable pictorial presentation of the progression of normal labour. Friedman's curve was constructed from mean values \pm S.D. for each point of dilatation, but the distribution of the various phases of labour was asymmetrical (Rodesch et al, 1965). Also the curve is inadequate for the management of individual patients because it starts at the undefinable time of the onset of labour of zero centimetre cervical dilatation. Furthermore, the latent period is prolonged and of varying length.

This paper discusses the construction of cervicogram curves showing cervical dilatation of normal labour amongst Malaysian women.

Methods and Patients:

A retrospective study of labour records of patients who delivered at the University Hospital over a 5 month period from November 1974 and March 1975 was made. The progress of labour was studied in patients of all ages and parities who were more than 4 feet 10 inches tall and who had a spontaneous vaginal delivery at 38-42 weeks

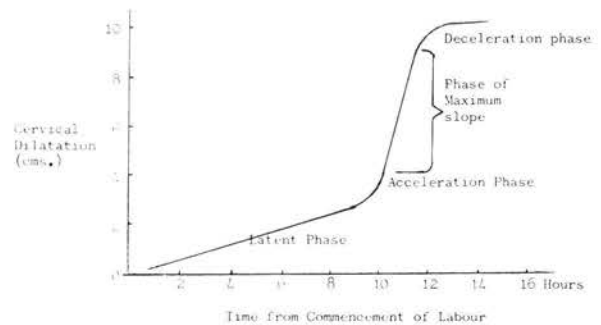


Fig. 1

Friedman's Curve

gestation, of a single baby weighing 2280-4100 grams, presenting by the vertex. The records of patients who had undergone any previous uterine operations, other than cervical dilatation and uterine curettage, were excluded. Sedation were similar in each group of patients. No epidural or caudal anaesthesia were used in these patients. After case-records scrutiny, there were 644 suitable records for evaluation. These consisted of 286 nulliparous patients on whom 352 vaginal examinations had been done and 358 multiparous patients on whom 411 vaginal examinations had been performed.

Cumulative - frequency tables of the dilatation/delivery intervals were prepared for each parity group. A probit analysis of each table was undertaken. Probits corresponding to cumulative - frequencies between 20% to 80% were plotted

against the logarithm of time. A regression line was then plotted and the labour duration equivalent to the probit of 80% was obtained for each cervical dilatation. A cervicogram for each parity was constructed by plotting the time – intervals against actual dilatation from 2 cm. to delivery. As there was no significant difference in the cervicograms obtained for the multiparous patients, all multiparae were lumped together and the progress of labour expressed on one graph.

A prospective study was then carried out and the course of labour of 50 primigravidae and 50 multigravidae were charted on the trial cervicograms. This confirmed the validity of the graphs to accurately chart the progress of labour.

Results:

Some of the clinical parameters of the patients studied were as follows:

		Primigravida	Multigravida
Age	Range	16 – 37 years	16 – 41 years
	Mean	23	26.2
Parity	Para 0	286	148
	Para 1		74
	Para 2		56
	Para 3		33
	Para 4 – 5		47
Social class	1 + 2	70	83
	3	82	92
	4 + 5	134	183
Membranes intake at V.E.		48	35
Spontaneous rupture or ARM		238 (83%)	323 (90%)
Birth weight		2300 – 3900	2280 – 4150
Mean birth weight		2795 gms	3150 gms

Discussion:

In view of the difficulty of determining the exact time of onset of labour, particularly in those patients admitted to the labour ward after the onset of their labour at home, it was decided to use the time of admission in labour to the labour ward as the starting point for charting cervical dilatation on the cervicogram. No reference is made to the other qualities of the cervix, namely effacement and

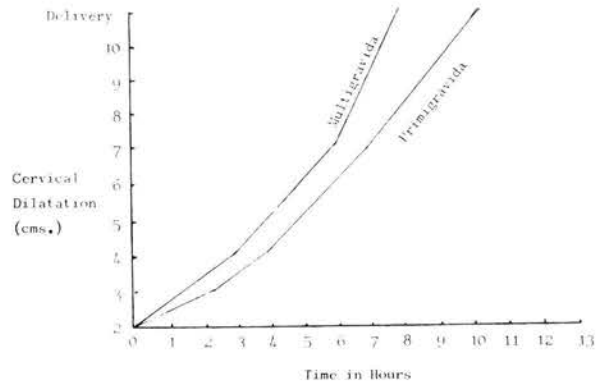


Fig. 2

Cervicograms of normal labour in Malaysian women

position, or the intensity and frequency of uterine contractions which may influence the progress of labour.

The cervicogram is only applicable after the cervix has dilated to at least 2 cm. It ends at delivery and not full dilatation of the cervix, this being a difficult point in time to assess. In the construction of the cervicograms, we have chosen probit of 80% as a highly probable point of normality of the patients reviewed. This was confirmed by the prospective study of 50 primigravidae and 50 multigravidae fulfilling the criteria laid out for the retrospective study.

From the cervicograms constructed, the rate of dilatation of the cervix from 4 cm. to 7 cm. appears similar in both primigravid and multigravid patients. The major difference between the length of labour in primigravid and multigravid patients seemed to be due to a longer latent phase and a longer final phase (i.e. after 7 cm. dilatation) in the primigravid patients. The latter could be related to the failure of the primigravid patients to use her secondary powers to effect delivery of the baby.

Progress of labour can be charted against the cervicograms presented so that any deviation from the normal progress in labour is detected early and appropriate measures instituted (See Fig. 3, 4 & 5). It is hoped that with the introduction of cervicograms in small midwifery centres, abnormal progress of labour can be detected early, even by nursing personnel and referred to adequately equipped Obstetric units for appropriate management, long before fetal demise, and even maternal demise in some cases.

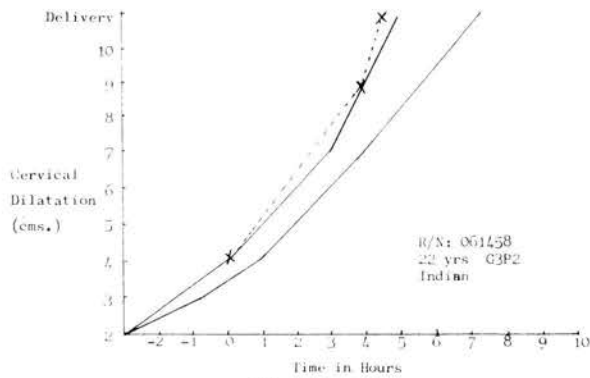


Fig. 3

Normal progress of labour: spontaneous vertex delivery

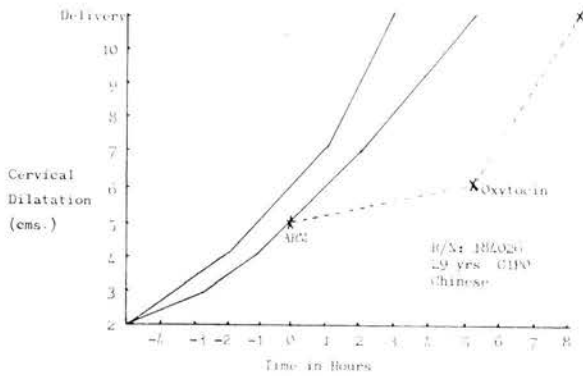


Fig. 4

Slow progress of labour: spontaneous vertex delivery after acceleration with I.V. oxytocin

Summary:

1. Cervicograms showing the rate of cervical dilatation of normal labour amongst Malaysian women are presented in this study.

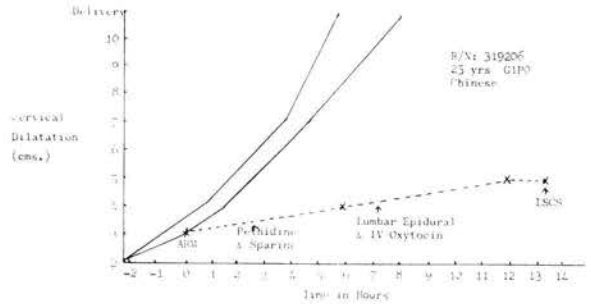


Fig. 5

Poor progress in labour: L.S.C.S. delivery

2. A probit of 80% was used in the construction of these cervicograms.
3. Major differences between the length of labour in primigravid and multigravid women were seen in the initial latent and the final phases.
4. In the active phase of labour, between 4 cm. and 7 cm. cervical dilatation, the rate of cervical dilatation appears similar in both primigravid and multigravid patients.

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