

## CERVICAL PARTOGRAM IN PRIMIGRAVIDA AND ACCELERATED LABOUR

by

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It is rather unfortunate that there is as yet a world of ignorance about the various facets of labour. The difficulty begins with what causes labour pain, how to ascertain the precise onset of labour, what is the duration of normal labour and what constitutes prolonged labour and so on. However, it is known beyond doubt that longer the labour greater is the trouble, more so for the new born baby. The quality of the survivors is much more important than the quantity of the survivors. A baby born after prolonged labour subjected to intra-uterine anoxia may be resuscitated with difficulty but alas, what would be the predicament of the parents if the milestones of the life of the baby would develop slowly or the baby becomes mentally retarded or spastic in the years to come.

This is why some of the eminent gynaecologists maintain, "Of all the journeys ever we make, the most dangerous one is the very first one we take through the last 10 cm of the birth canal". That is why it is exceedingly important to see that this journey is made safe for the baby. It is in this context that the programme of ac-

celerated labour has been undertaken in this hospital. It would be a mistake to consider this for saving the time of the obstetrician or for his convenience. On the contrary, this method envisages an intensive monitoring of labour by strict vigilance.

### *Material and Methods*

At the onset, primigravida with average height and weight with term pregnancy between 37 to 41 completed weeks have been subjected to this study. All pregnancies were uncomplicated.

The admission in the hospital was considered as '0' hour. After taking the history in detail particularly with reference to the precise period of pregnancy, a detailed clinical examination was conducted to record the general condition of the patient, pulse and blood pressure.

The presentation, position, engagement or otherwise of the presenting part and the fetal sounds were noted.

Vaginal examination was carried out at admission under all aseptic precautions. In addition to the usual observation, a special note was taken about the cervical dilatation. By a specially designed instrument (Fig. 1) the cervical dilatation was measured.

The two blades of the instrument (Terminal ends) when closed measures 1 cm externally. The scale attached to the base

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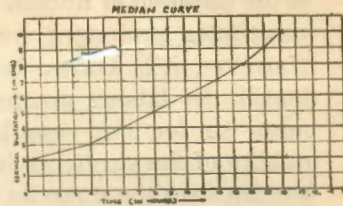
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RESEARCH PROFORMA  
ACCELERATED LABOUR

1. Serial No. <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 1-4	13. Menorrhagia in (Cm) <input type="checkbox"/> 11-21
Name .....	14. Station 1) Positive 2) Negative <input type="checkbox"/> 25
Address .....	15. Cervical Dilatation no admission <input type="checkbox"/> 16-27
Date .....	
2. Age ( years completed ) <input type="checkbox"/> 5-6	16. Level of Head on admission
3. Parity-1) Prim. 2) Mult <input type="checkbox"/> 5-6	1) above umb. spine <input type="checkbox"/> 28
4. Height (cm) <input type="checkbox"/> 9-10	2) at " " " "
5. Weight (kg) <input type="checkbox"/> 11-12	3) below " " " "
6. Menstr (Weeks) <input type="checkbox"/> 13-14	17. Membranes Ruptured
7. Religion 1) Hindu, 2) Muslim, 3) Christian, 4) Jewish, 5) Other. <input type="checkbox"/> 15	1) before admission <input type="checkbox"/> 29
8. Education (School years Completed) <input type="checkbox"/> 16-17	2) On " " " "
9. Total Live Births <input type="checkbox"/> 18-19	3) after " " " "
10. Children now living 8 or more = 8 <input type="checkbox"/> 20	18. Duration of observed 1st Stage (Hrs) <input type="checkbox"/> 30-31
11. Total no. of still births <input type="checkbox"/> 21	19. Duration of 2nd stage <input type="checkbox"/> 32
12. Total no. of Previous abortion 8 or more = 8 <input type="checkbox"/> 22	20. Nature of Labour <input type="checkbox"/> 33
	1) Vaginal 2) Forceps 3) Vacuum 4) Caeser.
	21. Duration of Labour (5 hr to Delivery) <input type="checkbox"/> 34-35
	Sex of Baby 1) Male 2) Female <input type="checkbox"/> 34
	22. Birth Weight (Cm) <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 36-39
	23. Apgar Score (1 min) <input type="checkbox"/> 40
	Apgar Score (5 min) <input type="checkbox"/> 41

CERVICAL DILATATION GRAPH :



RESULT

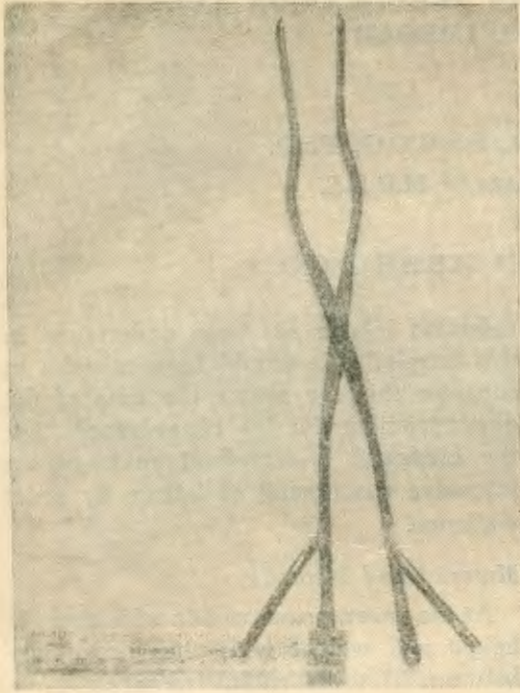


Fig. 1. Specially designed caliper to record the progressive cervical dilatation.

Fig. 2. Labour Curve; showing the mean progressive cervical dilatation.

of the handle records the measurement. When the handle of the instrument are opened the blades also opens up. Thus accurate measurement of the cervical dilatation was recorded in centimeters.

The graduation by the sides of the blades also helped to measure the shortening (taken up) of the cervix in labour.

Vaginal examination was repeated 2-4 hourly to note the pattern of cervical dilatation.

The above findings were all plotted in a research proforma (Fig. II) specially designed for the study.

**Control Group**

Initially a group of 98 primigravida women at term with uncomplicated pregnancy having spontaneous labour pains

were subjected to the study.

The age of these primigravida women ranged from 15 to 27 years with term pregnancy (between 37 to 41 completed weeks).

The height of the women ranged from 143 to 157 cms and the body weight ranged from 45 to 55 Kg.

**Study Group**

This composed of 135 cases. These were all primigravida conforming to the control group studied earlier.

In this group, the cervical dilatation was measured by fingers by one of us (\*\*). When the cervix admitted 1 finger, the dilatation was 1.5 cms 2, 3, and 4 fingers dilatation meant 3.5, 5.5 and 7.5 cms dilatation respectively. When no rim of



the cervix was felt around the presenting part, the cervix was considered to be fully dilated (10 cms).

The station of the head was considered to be at '0' level if the lower level of the head reached the level of the ischial spine.

The level of the presenting part below or above the ischial spine were considered (+) or (-) level expressed in centimeters.

During each labour, the maternal condition, the fetal condition, the uterine contractions, descent of the presenting part per abdomen were also noted as routine in addition to repeated vaginal examination carried out every 2-4 hourly depending upon the necessity.

### Results

Total number of cases were 98. The progressive dilatation of the cervix could be observed from Table I and the median curve thus obtained is shown in (Fig. 2).

TABLE I  
Showing Progressive Cervical Dilatation

Cervical dilatation in centimeters	Median hours
2-3	4.0
3-4	2.0
4-5	2.0
5-6	2.0
6-7	2.0
7-8	1.7
8-9	1.3
9-10	1.2

The Table I and the median curve suggests the progressive dilatation of the cervix over hours following admission to the hospital. The abscissa of the median curve suggested the time in hours and the ordinate indicate the cervical dilatation in centimeters. It is seen that the progressive dilatation of the cervix is rela-

tively slow before 7 cms dilatation and fast after 7 cms dilatation.

The median curve also suggested that the full dilatation is achieved (10 cms) within 16 hours and the mean dilatation of the cervix is 5.2 cms at '0' hour (the hour of admission). The median of hours required for confinement in this series was 5.9 hours.

The median curve of cervical dilatation obtained by this was compared with that of cases in the study group. Thus the cases of slow dilatation of the cervix which is the most important parameter in the progress of labour, were spotted out very early.

In our present study, if by two successive vaginal examinations slow dilatation of the cervix (i.e. the deviation of the curve to the right of the median curve) and thereby slow progress of labour was established, the cases needed acceleration.

The acceleration was done by simultaneous rupture of the membrane and oxytocin drip. The syntocinon given was 2 units in 500 ml of 5% Dextrose and the drip was started at a rate of 20 drops/min and adjusted according to the necessity. The maximum rate at which the drip was given was 60 drops per minute.

Of the total of 135 cases observed in this study group, 113 cases (83.7%) needed no acceleration at all and delivered within 16 hours of admission.

Twenty-two cases (i.e. 16.3%) required acceleration. Table II suggests the '0' hour (the hour of admission) dilatation of the cervix in 22 cases, which needed acceleration. It is evident that 15 (68.01%) cases came to the hospital with less than 3 cm dilatation and the rest (31.99%) cases between 4 to 5 cm dilatation.

Out of these 22 cases who needed acceleration, 15 had head engaged at '0' hour. It has also been found that out of



TABLE II  
Showing Dilatation of Cervix of 22 Cases at 'O' hour

Os in Cms	No. of cases
1	3
2	6
3	6
4	4
5	3
Total	22

those 22 cases 15 had normal vaginal delivery, 3 had low forceps delivery, 2 cases had ventouse delivery and only 2 cases needed caesarean section which is shown in Table III. The two cases who needed

TABLE III  
Showing Modes of Delivery of 22 Cases Who Needed Acceleration

Modes of delivery	No. of cases
Normal vaginal delivery	15
Low forceps	3
Ventouse	2
L.U.C.S.	2

caesarean section developed fetal distress within 1 hour of acceleration.

The time taken for 20 cases who delivered vaginally after acceleration was shown in Table IV. It is seen from this

TABLE IV  
Showing the Time Taken by 20 Cases for Vaginal Delivery after Acceleration

Time taken	No. of cases	Time taken	No. of cases
1 hour	3	4 hours	7
1½ hour	1	5 hours	3
3 hours	2	7 hours	2
3½ hours	2		

Table that all of them delivered within 7 hours after acceleration. Of the 20 cases delivered vaginally the second stage was

completed within 1 hour in 17 cases and only in 3 cases second stage was more than 1 hour.

The condition of the baby at birth was ascertained from Apgar score at 1 minute and 5 minutes after birth of the baby which is shown in Table V. From this

TABLE V  
Showing Apgar Score at 1 Min and 5 Minutes

No. of cases	1 min.	5 mins.
5	7	9
9	8	9
6	9	-

Table it would be seen that no baby was born with Apgar score below 7.

The birth weight of the babies delivered per vagina after acceleration is listed in Table VI. It is seen from this Table that

TABLE VI  
Showing the Birth Weight of the Babies

Birth weight	2.0 to 2.5	2.5 to 3.0	3.0 Kg & above
No. of cases	8	8	4

out of 20 babies delivered vaginally, 8 had birth weight between 2.0 to 2.5 kg, 8 had birth weight between 2.5 to 3.0 kg and 4 had birth weight above 3.0 kgs.

#### Discussion

The whole idea of any labour programme including the accelerated one is to see that the method is safe for both mother and fetus and this must be result oriented, if such method is going to have an wider applicability. To this end the present study is highly selective, consisting of primigravida only, both for the control and the study group.

The accelerated labour programme is self explanatory. It means the diagnosis of



labour is mandatory and then the cases of slow labour are diagnosed at the earliest opportunity with a view to acceleration.

All the parameters of labour are monitored as an intensive care programme. The maternal condition, fetal condition, the nature of uterine contraction, presentation, position and engagement of the presenting part and fetal heart sounds are assessed every 2 hourly.

The progressive cervical dilatation and the descent of the presenting part are specially considered.

A number of authors such as Friedmann *et al*, 1963; O'Driscoll *et al*, 1969; Charles H. Hendricks, 1970; Philpott and Castle, 1972 and others are mainly responsible for propagating the idea of accelerated labour. From their results it was apparent that the duration of labour is much shorter than what we used to think. Furthermore, the results were very gratifying. The only objection labelled against the accelerated labour programme is the need for frequent vaginal examination with possible increased risk of infection. This is supposed to increase the maternal and perinatal morbidity. The present study conducted on a study group of 135 cases *visa vie* the control group of 98 cases is very encouraging.

#### Summary

1. There is no maternal and fetal mortality in the whole series.

2. Accelerated labour programme was conducted as an intensive care programme with great deal of close vigilance during labour.

3. Cases suggesting slow labour by slow dilatation of the cervix are spotted. Out early in labour and by accelerated labour programme the labour was accelerated by combined medico-surgical

stimulation, the end results are very satisfactory.

4. The belief that the accelerated labour is associated with high caesarean rate is not substantiated by this study. Only 1.48% cases required caesarean section and 98.52% cases delivered per vagina.

5. It should be unjust to consider that the accelerated labour programme is initiated for the convenience of the obstetrician, on the contrary it calls for greater vigilance which offers the advantage of early detection of abnormality which could be tackled in good time to avoid a great deal of damage to the mother and the baby by late intervention.

6. Some people are concerned about the risk of infection following repeated vaginal examination. The incidence of puerperal infection in the series is nil which is very reassuring in spite of no prophylactic antibiotic.

7. Finally it is worth observing from this small series that only a limited number of women required acceleration.

The observation is still on and report of large series would be more representative.

#### References

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