

of the membranes, but fetal asphyxia is readily possible in such cases.

In primiparae, however, such as the present case, with long rigid cervix, even if a diagnosis had been made, such slow methods would have been of no avail. Where the cord is inserted at the upper pole of the uterus, as in this instance, a diagnosis by palpation is, of course, impossible.

## REFERENCES

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23 EAST NINETY-THIRD STREET.

(For discussion see p. 664.)

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IS INTERFERENCE JUSTIFIABLE AFTER TWENTY-FOUR  
HOURS OF LABOR WHEN NO OTHER INDICATION  
IS PRESENT?\*

A STUDY BASED UPON A SERIES OF PROLONGED LABORS  
CONSERVATIVELY TREATED

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THE sense of security which is obtained by the use of the two flap, low incision cesarean section after a test of labor, has led us to resort more frequently to a thorough test of labor whenever relative disproportion exists. By this routine we mean one that has allowed sufficient time for complete dilatation and several hours of second stage pains, as we have learned that accurate conclusions concerning the need for suprapubic delivery can be obtained only after the patient has been permitted to completely dilate her cervix and have several hours of second stage pains with ruptured membranes. While the majority of the patients so treated have been delivered either spontaneously or by some relatively simple procedure, a number of them have been many hours in labor. The end results in these instances of prolonged labor were so satisfactory that we were led to question the value of many of the procedures which have been advised as a prophylaxis against prolonged and difficult labor. In order that we might test out this hypothesis we decided to abandon these measures and accordingly conducted a series of cases in which we paid no attention to the size of the child or the so-called danger of allowing the pregnancy to continue beyond the expected date of confinement. Occipitoposteriors were managed expectantly and no

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\*Read at the Forty-seventh Annual Meeting of the American Gynecological Society, Washington, D. C., May 1-3, 1922.

attempt was made to favor dilatation in dry labors. In this series we did not interfere in any way until the patient had at least two hours of good second stage pains unless a definite fetal or maternal indication arose. The use of this routine gave us a considerable number of prolonged labors. While such labors were trying to the patient and required no little courage on our part the results amply rewarded us for the many hours of worry that might have been avoided had we resorted more frequently to operative interference.

## INCIDENCE OF PROLONGED LABORS

Since the beginning of this study 1753 women have been confined in the Long Island College Hospital and by our out-patient depart-

TABLE I  
INCIDENCE OF LONG LABORS

Service cases	1138	Long labors	79
Private cases	615	Long labors	67
Total cases	1753	Long labors	146

TABLE II  
DURATION OF LONG LABORS

24 to 30 hours	63 cases		or 43.1%
30 to 36 hours	30 cases		
36 to 42 hours	15 cases	} 83	or 56.9%
42 to 48 hours	7 cases		
Over 48 hours	31 cases		

TABLE III  
INCIDENCE OF LONG LABORS IN VARIOUS CONDITIONS

PROLONGED LABOR OCCURRED IN	THIS WAS
62 or 27.7% of the 266 dry labors	42.4% of all long labors
108 " 19.2% " " 556 primiparae	74 % " " " "
22 " 35.4% " " 60 funnel pelves	15 % " " " "
15 " 24.9% " " 61 inlet contract.	10.2% " " " "
80 " 9.7% " " 825 occip. ant.	54.8% " " " "
47 " 21.4% " " 219 occip. post.	32.1% " " " "
9 " 13.2% " " 68 breech	6.1% " " " "
1 " 7.1% " " 14 twin	1.2% " " " "
1 " 11.1% " " 9 fibroid ut.	1.2% " " " "
13 " 10.2% " " 127 4000 gm. child	16.4% " " " "
2 " 20 % " " 5 bicornate ut.	2.5% " " " "

TABLE IV  
INCIDENCE OF LONG LABORS IN VARIOUS CONDITIONS, DRY LABORS EXCLUDED

PROLONGED LABOR OCCURRED IN	
8 or 15 % of the 53 Funnel pelves	10.1% of all long labors
4 " 7 % " " 54 inlet contractions	5 % " " " "
53 " 7.7% " " 798 occip. ant.	64 % " " " "
22 " 11.3% " " 194 occip. post.	26.1% " " " "
8 " 6.5% " " 122 4000 gm. child	10.1% " " " "
2 " 20 % " " 5 bicornate ut.	2.5% " " " "

ment. Of these labors 146 lasted over 24 hours. Of this number 43.1 per cent terminated in from 24 to 30 hours and 56.9 per cent continued for more than 30 hours. The frequency of this condition in private and service cases is shown in Table I. Table II presents a more detailed account of the duration of these long labors. The various conditions that might influence the length of labor were considered individually and collectively. In this analysis the out-patient cases were omitted. Of the 556 primiparae in the hospital series 108, or 19.2 per cent, were in labor more than 24 hours. Slightly over one-fourth of the 266 dry labors were prolonged (see Tables III and IV).

ETIOLOGY

Early rupture of the membranes seems to be the most frequent of the tangible etiological factors. About one-fourth of the dry labors

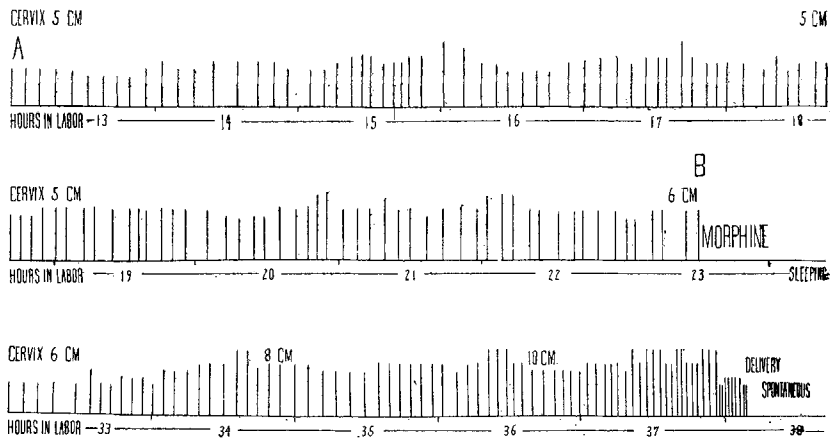


Chart I.—Graphic representation of the uterine contractions during the last 26 hours of a prolonged labor. Each perpendicular line represents a contraction. The height of the line shows the duration of the contraction. The spaces between the lines show the intervals between the contractions. From (A) to (B) the contractions were irregular in frequency and duration, i.e., those of a fatigued uterus and in the 11 hours represented by this part of the chart the cervical dilatation increased only one cm. Sufficient morphine was given at (B) to allow the patient to sleep. Following the resumption of labor the contractions progressively increased in frequency and intensity and the cervix was completely dilated in four hours and spontaneous delivery occurred.

were prolonged. It is difficult to account for the exact cause of the remainder of the long labors in this series. From a study of the individual cases we must conclude that the chief difficulty is one of faulty uterine contractions.

CONDUCT OF LABOR

In the conduct of all of our labors we aim to have the patient secure as much rest as possible. A senior student is required to remain in the delivery room throughout the entire labor. He keeps a record of the frequency, strength and duration of the uterine contractions. The mother's pulse and temperature as well as the fetal

heart rate are carefully observed. Nourishment is given not as often as the patient wishes it but as often as we can force her to take it. In the intervals between contractions she is urged to rest and, if possible, sleep. As soon as the membranes rupture, if the cervix is fully or almost fully dilated, a snug abdominal binder is adjusted and the voluntary efforts are encouraged. This routine which is followed in all of our cases is an excellent one for those that have long labors since it aims to conserve the patient's strength for the second stage. The only additional measure employed in a prolonged labor is the use of liberal doses of morphine. Whenever the character of the contractions shows that the uterus is fatigued, sufficient morphine is given to stop the labor and allow the patient to sleep. Chart I shows the duration and frequency of the contractions in a prolonged labor. Each perpendicular line represents a uterine contraction. The height of the lines shows graphically the duration of each labor pain and the space between each line represents the interval between contractions. From *A* to *B* the pains were weak and did not progressively increase in frequency. We believe that this is the picture of a fatigued uterus and our experience has taught us that very little dilatation is accomplished by such contractions. The patient received an injection of morphine at *B* and went to sleep. Complete dilatation followed soon after the resumption of labor and delivery was spontaneous. Maternal exhaustion seldom occurred when these long labors were handled in this manner and aside from the anxiety experienced by the attending obstetrician very little added difficulty was observed.

#### END RESULTS

As the private patients were treated by a number of different men and no definite plan was followed in the care of the prolonged labors in this group, the service cases only were considered from the standpoint of the end results. There were 79 long labors in the 1138 general service cases. All but 13 of these delivered spontaneously. Forceps were used in six either because of a marked change in the fetal heart rate or a prolonged second stage. Two breech extractions were done for the same reasons and five labors were terminated by cesarean section. The sections were employed in cases of relative disproportion that failed to engage after a thorough test of labor. Three stillbirths and three infant deaths on the first, fourth, and fifth days, respectively, gave us an infant mortality of 7.6 per cent. One mother died on the third day after a cesarean section. When we consider the fact that these 79 cases (Table V) were the difficult ones of the entire service series of 1138 cases, the end results speak well for the routine which has been followed. Additional proof of the value of conservatism is shown by the end results in the entire series. Of

TABLE V  
END RESULTS IN 79 SERVICE CASES

Prolonged labors	79
Stillbirths	3
Deaths under 14 days	3
Total infant deaths	6 or 7.6%
Maternal death	1 or 1 to 79 cases
Entire series in which these prolonged labors occurred	
Service cases	1138
Stillbirths	21
Deaths under 14 days	14
Total infant deaths	35 or 3%
Maternal deaths	2 or 1 to 568 cases

the 1138 deliveries in which this group of 79 prolonged labors occurred, 21 resulted in stillbirths and 14 infants died within the first two weeks, a total infant mortality of 35 or 3 per cent. Two mothers died, a maternal mortality of 1 to 569 cases.

Should we have resorted to the use of manual dilatation or incision of the cervix and forceps delivery in these instances of prolonged labor? From the fact that in many of these cases the head was not engaged after twenty-four or even thirty hours of labor we doubt very much whether our end results would have been as good had these procedures been used.

Should we have used bags or vaginal packs in our dry labor cases? As there were 138 cases in which the membranes ruptured early this type of interference would have been required that number of times.

Should we have induced labor prematurely in our cases of pelvic contractions? We believe that all but a few of the patients that show relative disproportion will deliver spontaneously if they are permitted to have a thorough test of labor. We therefore feel that a larger number of living infants will be born and that they will have a better chance to survive if we allow these patients to go to term and have a test of labor. We admit, however, that this routine occasionally subjects the mother to the risk of a cesarean section.

Should we have induced labor because of the fear of a large child? As 74 of the infants in the series weighed over 4000 grams, 74 inductions for this indication would have been necessary.

Should more cesarean sections have been done? The large number of spontaneous deliveries that occurred after a test of labor together with our low infant and maternal mortality proved that we were not negligent in the matter of cesarean section.

We doubt very much whether our end results would have been better had we interfered more frequently. Our only conclusion therefore against the routine advocated in this paper is that it calls for considerable courage and is accompanied by considerable worry on the part of the attending obstetrician.