

"PROLONGED GESTATION."*

A CONSIDERATION OF THE ADVISABILITY OF INTERRUPTION IN
CERTAIN CASES.

BY

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THE average duration of pregnancy is 280 days, 40 weeks, 10 lunar, or 9 calendar months. That this time is subject to variations will be seen by a brief review of the literature on the subject.

Ahlfled¹ in an analysis of 425 cases in which the date of coitus was known, found an average of 269.91 days. Individual cases in this series presented differences varying from 231 to 329 days.

Hirst² thinks pregnancy is quite frequently prolonged beyond 280 days. He states that he has many times seen a pregnancy last 310 days, and it may have a duration of 320 days, or even longer.

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His estimate is that in about 6 per cent. of pregnant women the duration of pregnancy is over 300 days.

Schlichting⁸ investigated 456 cases and made the average to be 269.5, and yet the time varied from 240 to 334 days.

Winckel,⁴ in his 5,010 cases examined, found 70 whose duration of gestation was more than 300 days, and in 6.8 per cent. of those in which the exact date of impregnation was considered known, the duration was more than 300 days; in one case the duration was 314, and in another 318 days.

Lowenhardt,⁵ from 518 cases in which the women could give the date of the fruitful coitus, found that the average duration of pregnancy, from the date of conception, was 272.2 days, and also demonstrated the fact that two women may have a fruitful coitus on the same day, and yet the date of their deliveries may vary markedly.

Issmer,⁶ in an exhaustive paper upon the duration of pregnancy, based on a careful analysis of 464 cases, found the average duration to be 268 days from conception, or 278 days from the completion of last menstruation. A case is reported by Thomson⁷ in which gestation lasted 317 days from the last menstrual period, or 301 from the last sexual intercourse.

Krücke⁸ reported a case in which he believed the duration of pregnancy was 330 days. The latest period to which pregnancy may be protracted is stated by various authors as follows: Depaul, 300 days; Robert Barnes, 300 days; Issmer,⁹ 304 days; Winckel,⁴ 320 days; Schroder,¹⁰ 320 days; Schlichting,⁸ 334 days; Runge,¹¹ 320 days.

It is interesting to note that similar differences are reported by veterinarians, who usually date the beginning of pregnancy from a single coitus. Thus, according to Franck-Albrecht-Göring,¹² the average duration of pregnancy in the mare is 366 days, but in a large series of cases individual variations between 307 and 412 days were noted. In the cow the normal duration is placed at 280 days, with extremes of 240 and 311 days.

As to the legitimacy of offspring according to the duration of pregnancy, different countries possess different laws. In Austria¹³ the law recognizes the legitimacy of the child born within 240 to 307 days after the death of the father. In France¹⁴ the legitimacy of the infant born 300 days after dissolution of the marriage is liable to be contested. In England and America the light of the

courts in this matter is reflected light. Physicians must determine the matter, and the courts will readily follow the truth as it is made manifest. In view of the above facts, it must be concluded that the duration of pregnancy varies within rather wide limits, which probably depend upon individual peculiarities as well as certain conditions under which the woman is placed, which will be considered more in detail later.

In explaining these conditions, it will be necessary to refer to the various causes of labor at different times, and for that reason it is thought advisable to mention these, although space will not permit of a detailed description.

A. Periodicity, referring to tendency of labor to occur on the tenth menstrual epoch.

B. Overdistention of the uterus.

C. Increased irritability of the uterus.

D. Maturity of the ovum.

E. Senility of the placenta.

F. Excess of CO_2 in the blood.

G. Heredity.

H. Increased activity of the fetus.

I. Pressure of the presenting part in the cervix.

J. Physical and emotional conditions.

It is hardly probable that any one of the above-mentioned causes, acting alone, would bring on labor, but all acting together, and their influence being brought to bear at about the same time, the desired result is produced. As Hirst very aptly puts it, just as a single blow of a workman's hammer starts the launch of a ship, when everything is prepared for it, so here a little unusual exercise, or some excitement, a jar, or a jolt, may provoke muscular action in the uterus that results in the expulsion of the child. In a certain number of cases, however, these causes, or some of them, are absent, or are prevented from exerting their influence, and as a result the gestation is apt to be prolonged. The cases in which this is most liable to occur are those which for some reason are prevented from leading an active life, *e.g.* any physical disability or blindness (see below). Lack of exercise especially, if it be of long standing, results in weakness and atrophy of the muscles of the body, and it is natural to suppose that the uterus shares in this and will become less irritable and responsive to outside influences. In this connection, it is interesting to note the observations of Mme. Laurie,¹⁵ who found that pregnancy continued twenty days

longer in 1,550 women who lived comfortably in a hospital for several months prior to delivery, as compared with the same number of women who entered at the onset of labor. Conditions may arise during pregnancy to interfere with the activity of the patient, such as marked edema of the lower extremities or looseness of pelvic joints, etc. Again in the case of contracted pelvis, where the head is not allowed to enter the pelvis, there is an absence of the stimulus caused by the pressure of the head in the cervix, and, as a result, often gestation is prolonged. The history of these cases is that about the usual time labor pains of an irregular character will begin and last for twelve to eighteen hours and then die away, the woman resuming her usual household duties. This is ordinarily termed a missed labor. In the case of old primiparæ, gestation is very apt to be prolonged. The uterine muscle, owing to lack of exercise, associated with atrophy of the abdominal muscles, is not as active as it should be. If this old primipara has a husband as old, or, as in the usual case, older than she is, the head of the fetus is apt to be abnormally hard and large. The hardness is a result of a more complete ossification of the skull bones, due to the age of the parents, as is also the larger size, *i.e.* the older the parents the larger the child is apt to be. If in addition to the greater age of the parents, the father is the possessor of a large head, the size of the child's head is apt to be still more increased. And, finally, in a certain number of cases where gestation is prolonged, it is impossible to say what is the cause, probably due more than anything else to a lack of proper nerve supply to the uterus; and occasionally one finds a woman who, for no reason that can be found out, seems to always have large children.

Before taking up the management of these cases, it will be necessary to mention briefly the methods of estimating the date of confinement. Because of the statement made above, that pregnancy extends over a greater period in some cases than in others, as well as the lack of ability to recognize when fertilization takes place, even when the time of coitus is known, it is impossible to estimate the exact date of confinement. Everyone who has practised obstetrics has had the unpleasant, and sometimes embarrassing experience of having advised the patient to procure a nurse at a certain time, the doctor being forced to postpone his vacation, or it may be give it up entirely, and the confinement occurs from two to four weeks later than was expected. The

method in general use advised by Naegele, is based upon the belief that labor occurs 280 days from the beginning of the last menstrual period. The calculation is made by adding seven days to the date at which the last menstrual period first appeared and counting back three months. Generally the confinement will occur within a few days or a week of this date, but there are exceptions. Occasionally conception may occur during a period of amenorrhea, as in a nursing woman, when of course this rule is of no value, and we must resort to other means. It is generally thought that active fetal movements first occur at the twentieth week, or about the middle of gestation, and this fact has given rise to the method of adding to this date twenty weeks. This method has proven very unsatisfactory, owing to the fact that the occurrence of this symptom is not at all regular, and may appear very much earlier or later than the estimated time. Another method of calculation is based upon the enlargement of the abdomen and the height of the fundus uteri. The latter method the author has found to give very satisfactory results, but it must be borne in mind that on account of an excessive amount of amniotic fluid or twins, the uterus may be much higher than it should be at a given period of pregnancy, which is misleading, and for that reason the size of the fetus should always be taken into consideration. As the position of the umbilicus is subject to variations, better results will be obtained by measuring from symphysis pubis or ensiform cartilage. Of course, all methods available should be taken advantage of, but what the author considers as more important than the estimated time of a woman's confinement by menstrual history, etc., is an estimation made according to the conditions existing in a particular case, which means, of course, the size of the fetus and its relation to the pelvis. In other words, in the management of a case that we have reason to believe will go over the usual time, care should be used in noting whether or not the head engages in the pelvis at the proper time, and, if not, whether the failure to engage is due to lax abdominal walls, or to the size of the head. If the head is not too large, do not interfere, but palpate again in a week, and continue to do this until the labor begins, or, in your judgment, the fetus is getting too large. If the hand is applied low down over the abdomen, just above the symphysis, and the unengaged head is pressed back against the spinal column and does not project out in front of the symphysis, generally such a head will pass through the pelvis, although artifi-

cial force may be necessary. If the fetus seems large, and especially if the head seems to be getting too large for the pelvis, it is advisable to bring on labor. To obtain this result the patient is given a capsule containing quinine grs. v, strychnine gr. 1/30 every four hours, the uterus is massaged briskly for five or ten minutes, and the patient is told to go out in the evening and take a long walk, and upon her return a hot bath. If labor is not started the first night, the medicine is kept up and the same treatment as is advised above is repeated the second evening. If the above treatment fails, the rupture of the membranes will always produce the desired result, and, contrary to the ordinary belief, has no harmful effect in the labor. By carrying out this method of treatment, carefully and conservatively, I believe that quite a number of difficult labors, made so by a large overgrown child, can be prevented.

In expressing the above views, the author is well aware of the criticisms that might be offered. One will say that it is interfering with nature, and for that reason should not be done, but we know that it sometimes becomes necessary to assist nature. Others will say that it is impossible to state what the size of the child is, and, while this is true in a general way, any one who has had a fair experience in abdominal palpation can recognize this and many other conditions. It must be admitted that it is difficult in some cases, but a little experience and care in the examination will usually clear up all difficulties. Of course, care and conservatism must be used in managing such cases. To advise the interruption of pregnancy simply because it has been prolonged a little beyond the expected time cannot be too severely condemned, but in certain selected cases it is undoubtedly good treatment. The cases reported below will be found interesting, and serve to confirm the opinions expressed above.

CASE I.—E. R., white, age 30, husband age 34. 1 para. Menstruated last June 1; confinement expected March 7; confined April 9. Head never engaged in pelvis. Examination under anesthetic revealed the fact that the head was too large for the pelvis. Patient removed to hospital for Cesarean section, but after arrival, on account of condition of feeble heart sound, and passage of meconium, it was decided best to perform a destructive operation, which was done with the basiotribe. Child weighed 10 pounds 3 ounces.

CASE II.—Mrs. A.; white, age 38; 2-para. Husband, age 39, slight, general contraction of the pelvis, but not enough under ordinary circumstances to cause any trouble. Delivered by the author six years previously of a normal size child by medium forceps operation. At this time girl still living. Menstruated last May 13. Confinement expected about February 20. Labor began during night of March 23. Seen morning of March 24 after good labor of 8 hours. Examined under anesthetic. Head very large and hard; not engaged. Impossible to force into pelvis. Mother and fetus in good condition. Taken to the University Hospital and Cesarean section performed. Child: Weight, 9 pounds 7 ounces. Head very large and hard. Measurements: Bi. p. 10.5 cm.; Bi. T. 9 cm.; S. O. B. 10.5 cm.; O. F. 13 cm.; O. M. 14.5 cm. Sutures entirely closed. Anterior fontanelle very small. Both patients discharged in good condition.

CASE III.—S. M., white; 1 para; age 23; blind for 10 years. Menstruated last September 7. Confinement expected June 14. Labor began July 19. Continued very slowly and irregularly for several days. Head never engaged. Delivered by internal pedalic version. Child lost in delivery, which was very difficult. Child: Weight 10 pounds, 2 ounces. Head was not measured, but was very large and hard. Anterior fontanelle very small. Sutures almost completely ossified. This woman was unable to get any exercise at all, and had led this sedentary life since her affliction.

CASE IV.—E. F., white, age 37. Husband age 40. Seen in consultation September 20. Menstruated last December 1. Confinement expected September 7. Examination showed large head, not engaged. Taking into consideration the age of parents and the size of the fetus, advised the induction of labor. Advice not accepted. September 29 saw her a second time. Labor had been in progress about twelve hours with no advancement. Allowed to continue until signs of exhaustion manifest, at which time cervix was only partially dilated; head not yet engaged. Forceps applied and the delivery was effected after a very difficult operation. Child: Asphyxiated, but was revived. Death occurred thirty-six hours later from malena neonatorum. Weight 10 pounds 11 ounces. Head very large and extremely hard. Measurements: Bi. p. 10.3 cm.; Bi. T. 9 cm.; S. O. B. 10 cm.; O. F. 12.75 cm.; O. M. 15 cm.

CASE V.—W. H., white; 1 para; age 36. Husband age 44. Menstruated last April 1. Confinement expected January 9.

Having in mind the above history, the patient was watched carefully. Palpation latter part of December revealed a well developed fetus. Head not engaged. January 12, head not yet engaged and apparently quite large and hard. Induction of labor advised, but advice refused. January 29, labor began and continued for 24 hours. Head not yet engaged. Forceps applied and a dead child delivered after an extremely difficult operation. Weight 9 pounds 10 ounces. Head almost entirely ossified. No moulding possible.

CASE VI.—E. McD., white; age 26; 2-para. Husband age 35. Menstruated last August 28. Confinement expected June 5. Slight general contraction of the pelvis. History of former confinement: Four years ago, apparently at about normal time, but very large child, and extremely difficult forceps delivery. With this history and the woman very solicitous as to the outcome, she was watched very carefully. May 28, palpation revealed a large fetus; head large and not engaged. Advised induction of labor, which advice was gladly accepted. Treatment began on 29th. Irregular pains on 30th. Good labor on 31st, but with very little effect. Head not yet engaged. Forceps applied. Delivery effected with no difficulty. Child: Weight 8 pounds 2 ounces. Head quite hard, but still mouldable. Bi. p. 9.5; Bi. T. 9 cm.; O. C. F. 12 cm.; O. C. M. 14 cm.; S. O. B. 10 cm. Condition excellent.

Since making the above report, Case I. of the series has passed through a normal confinement, following the artificial induction of labor. A brief resumé of the case is as follows:

Since last confinement menses has occurred very irregularly. Last seen on January 1, 1906. On May 1 vaginal examination revealed a uterus about two and one-half months pregnant. Patient seen at frequent intervals and palpated carefully. On November 1 the fetus having reached nearly the normal size, it was decided that if labor did not occur by November 15 it would be artificially induced. When the date arrived, there being no signs of its onset, the membranes were ruptured and quinine grs. v, strychnine gr. 1/30, were administered every four hours internally. Labor began November 17, 5 P.M., and without any unusual occurrence was terminated naturally at 5 the next morning. Child weighed 6 pounds 14 ounces and was strong and vigorous. The mother made an uneventful recovery and at the present time, two and one-half months later, both are in splendid condition.

Of course, it may be said that labor might have begun naturally

at the proper time, but having in mind the previous unfortunate experience, I considered it safer to induce labor, when there was every reason to believe that the child was sufficiently large to live independent of its mother, and not too large to offer a serious obstruction to its natural birth.

Whether the result justified the procedure is left to the decision of the reader.

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