proved as satisfactory as 70 specimens obtained by the more elaborate tube method described by Leather and Hutchings (1960). Furthermore, failure to obtain a specimen using the tube technique occurred in over 50% of the patients in whom it was attempted.

A technique for performing bacterial counts on surface plates using a fused platinum loop is described, and it compared with the standard pour-plate technique. Counts obtained by both methods agree in 89% of specimens examined, and all but one of the discrepancies were of a minor character. Thus the loop technique provides a simplified method of quantitative urine culture suitable for routine laboratories.

Bacterial counts have been compared with the independent routine laboratory reports on 100 consecutive urine specimens. The results agree in 90% of samples. In no case was significant bacteriuria overlooked by the routine laboratory. However, the use of bacterial counts halved the number of equivocal results. These findings cast doubt on the necessity for quantitative urine culture in routine practice.

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"A dean is, I suppose, like all others charged with authority over academic institutions. The list of qualities demanded of him by his colleagues will be varied and quite remarkably comprehensive. He will be fortunate if colleagues expect as the absolute minimum qualities something between the wisdom of Solomon, the patience of Job, the character of a saint, and the questionable knowledge of a sea lawyer. He will be unfortunate if he does not possess also the hide of a rhinoceros. He will be expected to swallow all the advice given to him by anybody at any time and yet make bold decisions with which nobody will disagree, and while being required to meet other conditions he must also act speedily and decisively. I sometimes think he is rather like the description of the Almighty by a Scottish preacher, who said: 'The Almighty is compelled to do many things in his official capacity which he would scorn to do as an individual.'" (Sir John Lockwood, inaugural address, 104th session, 1962-63, Royal Dental Hospital of London School of Dental Surgery.)

POSITIONS DURING LABOUR

BY

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Even though various positions of the mother during the second stage of labour have been described and their respective advantages and disadvantages discussed (Moir, 1956; Claye, 1959), her position during the first stage of labour has been given little consideration in most of the standard obstetrical textbooks. She is usually encouraged to walk about or sit in a chair in the early stage of labour and before the membranes rupture, but most of the time she is allowed to lie in bed either in the dorsal or in one of the lateral positions. Theoretically, however, the erect posture appears to possess some advantages over that of lying flat in bed. In the sitting or standing-up position, the fundus of the uterus is thrown forward and thus the longitudinal axis of the birth canal is more straightened out. The uterine force can work at a better advantage and may therefore be more efficient. Furthermore, the descent of the foetus and the progressive dilatation of the cervix may be encouraged or assisted by gravity. The risk of inhaling vomitus, and hence of aspiration pneumonia or even death, would be reduced should general anaesthesia be found necessary during labour. On the other hand, the erect (sitting or standing-up) posture may be uncomfortable or even intolerable to the mother, especially during the first stage, and inconvenient or even impossible to the obstetrician, particularly during the second stage of labour. An attempt has been made to determine clinically if the erect posture is of any advantage, and, secondly, whether the maintenance of the erect posture during the first and second stages of labour is practicable.

Material and Method

Alternate primigravidae, in whom elective caesarean section would not be done, were assigned at random to one of two groups, A and B. The patients in group A were kept in the erect position: they were allowed to walk about, to sit in a chair, or to sit up in bed propped up with a bed-rest. The patients in group B, the controls, were kept in bed in the supine or lateral position. During the second stage the patients in group A were propped up to 45-60 degrees in the delivery bed and

TABLE I.—General Features of the Two Groups of Patients

	Group A	Group B
Age { Range	17-36	16-35
Average	25.16	25.23
Maturity { Range	33 4/7-43 1/7	32 5/7-45 4/7
Before 36 weeks	10	11
36 weeks or more	90	89
Complications { Uncomplicated oedema	25	19
Pre-eclampsia	10	12
Anaemia	13	15
Contracted pelvis	7	7
Twin pregnancy	1	0
Others	6	11
Dilatation of cervix { Closed-< 3 cm.	47	44
on admission { 3-5 cm.	44	40
5 cm. or more	9	16
Condition of membranes { Intact	68	67
on admission { Leaking	26	26
Ruptured	6	7
Presentation of foetus { Occipito-anterior	97	91
on admission { Occipito-posterior	2	5
Breech	2	4

most of them were put in the lithotomy position with their buttocks overhanging the edge of the bed. The patients in group B were delivered in the dorsal position. It can be seen from Table I that the patients in the two groups are very much alike.

Results

Table II shows that the incidence of spontaneous and operative delivery is almost the same in the two groups, lower-segment caesarean section (L.S.C.S.) being performed seven times in group A and five times in group B. The indications for caesarean section in group A were: foetal distress as evidenced by the slowing of foetal heart rate and presence of meconium in the liquor in four cases; prolonged labour due to uterine inertia in one; contracted pelvis and uterine inertia in one; and borderline pelvis, elderly primigravida, and uterine inertia in

case of post-partum eclampsia and a case of adherent placenta which necessitated manual removal.

Altogether 101 infants, including a pair of twins, were delivered by the mothers in group A. There was one neonatal death: the baby was delivered by caesarean section after a prolonged labour. Among the 100 infants in group B there were two neonatal deaths. Both babies weighed less than 2,500 g. One was delivered by caesarean section and the other spontaneously. The average birth weight of the 101 infants in group A was 2,967 g., and that of the 100 infants in group B 2,865.5 g.

Discussion

Study of this small series of cases suggests that the erect position during the first and second stages of labour does not, in practice, possess an advantage. The patients in the two groups are very much alike and therefore comparison can be made. The average duration of each of the three stages of labour is more or less similar in the two groups. The ratio between spontaneous and operative deliveries is also almost the same. While more analgesics had to be given and more catheterizations performed in patients in group A, there were two cases of third-stage abnormalities and the foetal loss was slightly greater among patients in group B. These differences, however, were very slight and therefore insignificant, and could well be accounted for by being just fortuitous.

Most patients preferred to lie flat in bed, especially during the latter part of the first stage. Not uncommonly, some patients, when they were not under constant supervision, tended to slip lower and lower down the bed-rest and were eventually found to lie curled or doubled up near the end of the bed. Eight patients did in fact complain quite bitterly of the erect position. It might appear that the maintenance of the erect position was impracticable. But a great deal of difficulty and discomfort could well be due to the use of bed-rests. One wonders whether the use of cardiac or surgical beds, whose head ends could be raised, instead of bed-rests may reduce or even eliminate the discomfort in the patients and make it easier for the nursing staff to ensure the patients being propped up in bed. The cost of such beds, however, may be considerable; and unless the erect position can be convincingly proved to be definitely advantageous such expenditure will not prove worth while.

This series is small and a larger series would be more informative.

Summary

The erect position of the mother during the first and second stages of labour carries certain theoretical advantages. An attempt was therefore made to find out if it is really advantageous and whether it is practicable.

Alternate cases of primigravidae were assigned at random to one of two groups: patients in one group were kept in the erect position and those in the other were kept in bed in the supine or lateral position. The patients in the two groups were very much alike and were therefore comparable. The details of labour in these two groups of patients were then analysed and no significant difference was found between them. However, the erect position has been found to be uncomfortable to the patient and inconvenient to the attendant on at least 15 occasions. From the study of this rather small series of cases, therefore, one observes that (1) the

TABLE II.—Results

	Group A	Group B
Mode of delivery		
Spontaneous	71	70
Low-forceps delivery	20	20
Mid-forceps	1	1
Assisted breech delivery	2	4
L.S.C.S.	7	5
Average duration of first stage (excluding L.S.C.S. cases)	8 hr. 37 min.	7 hr. 12 min.
Total amount of analgesics (pethidine) given	4,900 mg.	3,700 mg.
Total No. of catheterizations performed during first stage	22	16
Complaints due to discomfort of the position	8	0
Average duration of second stage (excluding L.S.C.S. cases)	29 min.	33 min.
Inconvenience and difficulties encountered as a result of position	7	0
Average duration of third stage (excluding L.S.C.S. cases and a case of adherent placenta in group B)	6.7 min.	7 min.
Foetal results		
Living	100	98
Stillbirth	0	0
Neonatal death	1	2

one. The indications for caesarean section in group B were: foetal distress alone in two; foetal distress and persistent occipito-posterior position in two, and cephalo-pelvic disproportion in one. Excluding the cases delivered by caesarean section, the average duration of the first stage of labour was longer, but not significantly so, in group A. While 45 patients in group A required one or more injections of pethidine during the first stage (totalling 4,900 mg.), 33 patients in group B needed analgesics (totalling 3,700 mg.). Catheterization was necessary in 18 patients in group A (among whom four required it twice) and in 16 patients in group B. Eight patients in group A complained bitterly of the discomfort in maintaining the erect position, and the medical and nursing staff found it no easy task to ensure that the patients maintained the erect position, especially when they were in bed.

Again excluding the cases delivered by caesarean section, the average duration of the second stage of labour was slightly shorter, again not significantly so, in group A. The propping-up position was found to be awkward by the obstetrician in most of the cases and was said to be responsible for a great deal of inconvenience in seven instances.

As an intramuscular injection of 0.5 mg. of ergometrine was given as a routine in the second stage of labour (either at the crowning of the foetal head or at the delivery of the anterior shoulder), the average duration of the third stage was relatively short in both groups. Again there was no significant difference between the two. No third-stage abnormalities were encountered in group A patients. In group B, however, there was a

erect position does not possess any of its theoretical advantages and (2) it is impracticable as long as a bed-rest is being used to maintain the position.

It is, however, suggested that a further study of a larger series of cases with the use of cardiac or surgical beds may yield more precise information.

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THERMAL CHANGES IN THE NORMAL MENSTRUAL CYCLE

BY

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It is almost a century since the first successful attempt to correlate changes in basal temperature with events in the menstrual cycle was made (Squire, 1868). Since that time there have been a large number of contributions to the literature, and good historical reviews have been made by Barton (1940), Tompkins (1944), and Palmer (1949). Important among the contributions was that of van de Velde (1928), who indicated that the higher level of temperature which obtains in the later part of the menstrual cycle is due to the secretion of progesterone by the corpus luteum. Vollmann (1941) showed that the time from the beginning of the higher level of temperature to the onset of menstruation is independent of the length of the cycle. Finally, various authors (Martin, 1943; Buxton and Engle, 1950; Garcia and Rock, 1958) found that the change in the temperature level coincided with the appearance of the secretory phase in endometrial biopsies. The cumulative effect of this evidence has been to establish that the change in the level temperature is an indication that ovulation has occurred.

Despite the many studies which have appeared, we still lack knowledge of the parameters of the temperature changes which accompany the normal menstrual cycle. The large series of Halbrecht (1945), containing 271 cycles, and of Siegler and Siegler (1951), with 1,012 cycles, were composed of patients who were being investigated for sterility; and the series of Benjamin (1960), with 2,000 cycles, contained many such patients. The present study concerns only healthy fertile women, and was undertaken in order to establish what changes of temperature occur during the normal menstrual cycle.

Results

The series comprises 155 consecutive healthy women who adopted the thermal method of estimating the infertile period in order to regulate the size of their family. All were known to be fertile, or have subsequently proved themselves to be so. The patients come

from all social classes, and no selection was exercised. The temperature was recorded rectally with an ordinary clinical thermometer by the patient as soon as she woke in the morning, and before she left her bed or undertook any activity. The temperature was recorded by the patient on a standard chart which was supplied to her.

During the period of study the patients provided temperature charts of 1,134 cycles. The distribution of the number of cycles during which the temperature was recorded by each patient is given in Table I. The

TABLE I.—Distribution of Number of Cycles Contributed by Each Person

No. of cycles persons	1-5 86	6-10 26	11-15 23	16-20 11	21-25 5	26-30 2	31-35 2
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frequency distribution of the lengths of the menstrual cycles in this group is given in Fig. 1 which shows a mode of 28 days, though the difference in the number of 26-, 27-, and 28-day cycles is small. There were 532 cycles of less than 28 days, and 438 cycles of more than 28 days, though the greater number of cycles shorter than 28 days is largely accounted for by the high incidence of 26- and 27-day cycles. If the 26-, 27-, and 28-day cycles are grouped together as a common mode, then there are only 213 cycles of shorter duration and 438 longer cycles.

The number of cycles in which a clear biphasic temperature graph was obtained is given in Table II. The number of graphs (16) which could not be interpreted because of technical errors on the part of the patient constituted only 1.4% of the series, indicating that to keep a record of the basal temperature is well within the competence of the average patient. This confirms the experience of Benjamin (1960), who found

FIG. 1.—Histogram of distribution cycle lengths in 1,134 cycles

TABLE II

Cycles showing ovulatory rise in temperature ..	1,088
Anovulatory cycles ..	20
Record upset by illness or surgery ..	10
Technically inadequate record ..	16
	1,134

0.4% of the charts produced were uninterpretable, though he had found that 2% of patients persistently failed to produce records. In the present series all the patients were eventually able to produce reliable records.

A monophasic graph, which indicates an anovulatory cycle, was seen in only 1.7% of the cycles, as compared with 29% in the series of Siegler and Siegler (1951) and 12.2% in that of Halbrecht (1945), but this difference