A British Medical Association Lecture

ON

SOME ANTE-NATAL PROBLEMS*

BY

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A perusal of the now vast literature on ante-natal care, including tomes and textbooks, propaganda pamphlets and handbills, might lead the undiscerning to surmise that it was not until within recent years, or even months, that the general practitioner engaging in midwifery practice had become aware of the possible existence of, for example, contracted pelvis; of the significance of albuminuria in pregnancy, or of heart disease, or of tumour complications. Indeed, some of the less responsible of such publications, short, it is true, of actual delineation, would appear to imply a ludicrous picture of the general practitioner who, having casually accepted the responsibility of attendance, arrives all too late, bearing a small bag—usually faded black in exterior and indescribable in content—and is surprised and distressed to find the contracted pelvis case exhibiting the classical signs of ruptured uterus; or an albuminuria case in the throes of eclampsia; or the cardiac in *articulo mortis*. Let us extend to him, poor fellow, our heartfelt sympathy, for he has further to bear the reproachful demeanour of the ideal midwife and the fraternal greetings of the junior consultant, for whom, let us hasten to add, by way of giving a touch of colour to the unhappy scene, the enterprising local authority has provided a not unreasonable fee.

I have exaggerated this picture with the set purpose of saying that, whilst wise propaganda is undeniably essential to the much-needed wider submission of pregnant women to ante-natal examination, the kind of propaganda directed to undermining confidence in the general practitioner is as unwise as many or most of the allegations to that end are, emphatically, untrue. It is not thus that Ballantyne, perhaps the earliest and certainly one of the most distinguished of the pioneers in urging the necessity of ante-natal care in this country, initiated his mission, and it is assuredly not the manner in which he would have had it supported.

The truth is that as yet the sum total of knowledge concerning the causes of many of the ante-natal conditions which give us anxiety is limited, and that more effective lines of treatment can only be the product of further knowledge and of more experience in its application. This observation notably applies to the toxæmias of pregnancy, which afford, as a whole, a very complex biochemical problem, toward whose solution much intensive effort is now being directed. I was deeply interested to hear, for instance, in the course of a lecture recently delivered by Sir Frederick Gowland Hopkins, the distinguished President of the Royal Society, before the Cardiff Medical Society, that there is some hope of the identification of a certain vitamin which may be proved to play an important part in the toxæmias, and in the capacity of resistance to infection. But some of the day-to-day ante-natal problems lie much nearer to the surface than these biochemical delvings, hopeful and imperative though they be.

MINOR DEGREES OF PELVIC CONTRACTION

Let us take an illustrative case. A primigravida comes early in pregnancy to engage a medical man for her confinement. She presents none of the obvious signs of

rickets, the urine is normal, and the general health good. But with the thumbs on the anterior superior spines and the first and second fingers of each hand on the widest parts of the iliac crests, he gains the impression that there is less than the usual one inch of difference between the intercrystal and the interspinous diameters. There is, of course, nothing new in this preliminary thumb and finger estimate, but I constantly impress upon students, undergraduate and post-graduate, the importance and value of practising it whenever possible and on all kinds of cases, so that the individual examiner comes to establish a very helpful confidence in his initial impressions of the type of pelvis he has to deal with, and as to the further investigations which may be indicated.

In the case we are advancing for consideration he will check his impressions by the pelvimeter—preferably of the simpler type—and will find that the interspinous diameter is, let us say, $10\frac{1}{2}$ inches, the intercrystal 11 inches, and the external conjugate 7 inches instead of the normal $7\frac{1}{2}$. The transverse of the outlet may be rather more than the usual 4 inches. The key diameter is, of course, the true conjugate, and in order to estimate it the diagonal conjugate must in due course be measured. In the early months of pregnancy, and especially in primigravidae, this is by no means an easy matter, even under an anaesthetic, and without it the necessary manipulation is difficult and painful. A simple vaginal examination at this stage, however, will serve to reveal the comparative roominess of the pelvic cavity and the absence of any considerable forward encroachment by the sacrum. Should the sacrum be easily felt in the course of such an examination it would signify a degree of contraction considerably in excess of what we are now contemplating in our illustrative case, which no doubt has been recognized, so far as we have gone, as one, probably, of simple flat pelvis.

Beyond reminding ourselves that about the fourth month the possibility of incarceration of the gravid uterus, due mainly to the degree of overhang of the promontory of the sacrum, has to be guarded against, let us leave our case to develop, so to speak, toward the later months, and consider for a moment pelvimetry.

Value of Pelvimetry

The measurement of the pelvis is one of the most important factors in ante-natal examination, and especially in that of primigravidae. How often it is that in taking the history of obstetrical and gynaecological cases the first labour is quoted as the beginning of the troubles when intervention became a matter of emergency instead of election, with its implied previous examination.

It is not my purpose to go into details of methods and measurements, but I am convinced that the value of pelvimetry to the individual practitioner as a guide to the management and treatment of a given case depends upon the sense of perspective and judgement which aggregated examinations have established in his own mind, confirmed or corrected in the only effective way, by the "follow through" of his cases into the natal and post-natal phases. I advocate strongly this continuity in the interests of the practitioner and of his patients. Any scheme which fails to provide for its observance where possible will by so much—and it is a great deal—come short of success. In many areas where ante-natal clinics exist, otherwise doing good work, this virtual severance from the subsequent phases has, admittedly, minimized their value for the patient and their help to those in charge of the labour and puerperium. Poorly paid and anxious though much of midwifery practice may be, I would urge general practitioners, in view of the inevitable developments in the near future, to maintain a lively interest in ante-natal work in their own practices, and to

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keep in touch with clinics where they exist. Many of these clinics are attractive in facilities for examination and are well staffed, but the great bulk of the women confined in this country have never been near them.

It is, I am sure, the experience of all here that the essentials of ante-natal examination are readily carried out in the patient's home or in the consulting room.

A simple form of pelvimeter—I personally use Baude-locque's, though there are others equally good—will give the principal external diameters; and of the internal measurements, the diagonal conjugate from promontory to subpubic angle, which by deducting half an inch gives the available true conjugate, is of dominant importance. As regards other internal measurements, the results obtained by the use of the more or less complicated pelvimeters are rarely of much practical value and may even be misleading. Such, anyhow, has been my experience, and where in asymmetrical pelvises, for instance, the deformity is marked, the occasion for and the kind of intervention required are usually indicated by other and simpler means.

Management of Later Stages

To continue the running commentary on our primigravida with a minor degree of simple flat pelvis, now in the later months of pregnancy, say, the thirty-sixth week—a month from term. The preparatory redundancy and softening of the tissues has permitted a more accurate estimate of the diagonal conjugate and the deduction therefrom that the true conjugate is not less than $3\frac{1}{2}$ inches—possibly $3\frac{3}{4}$ inches. Abdominal palpation portrays a first vertex with the head rather above the brim, and with an inclination towards the left iliac fossa. Such cases are far too often marked down in ante-natal clinics as likely to become transverse presentations, for which Caesarean section should be indicated, or, at all events, considered. The usual happening, however, is that with the onset of labour at term the faulty lie is corrected and the head becomes accommodated to the brim. It is worth remarking, also, that too much importance may be attached to the fact that in the minor degrees of this type of pelvis the head may not descend into the pelvis in the last two weeks, as it normally does in first pregnancies.

We have now, at the thirty-sixth week, to decide whether induction should be performed. The answer to that is concerned with the size of the child, and, in particular, whether the head is depressible into the brim with firm pressure. With a foetus of normal stage development it *should* be—the rather flattened pelvis notwithstanding. Assuming normality in all else than the pelvis as described, the prospect is that, given time and patience on the part of everyone concerned, delivery at term will be spontaneous, and that the prognosis for the mother and child is good—a plea for the natural forces of labour being given a fair chance.

I have purposely presented a marginal case with the focus of clinical interest on a form of pelvis which is not infrequently met with, and which has too often been regarded as, in itself, an indication for induction or even Caesarean delivery. It is an illustration, therefore, of how the beneficent purposes of ante-natal examination may be abused and lead to meddlesome midwifery.

ALBUMINURIA OF PREGNANCY

In some of the pamphlets, and even in some of the recognized textbooks, it is stated or implied that if this condition is discovered ante-natally in a woman who subsequently dies of eclampsia it is a disgrace to the practitioner or to the institution concerned; that, with all we now know of the toxæmias and their evil companion-conditions, the item eclampsia should be caused to disappear from the

list of factors contributing to the total of maternal mortality. Now this is just exaggerated propaganda. It is a welcome fact that by careful observation and treatment a much larger proportion of our albuminuria cases do not so terminate, but, as I tried to show before, so long as our knowledge of the nature of the toxæmias remains so limited, eclampsias will still be with us. The contrasts and surprises they afford render them profoundly interesting.

A few weeks ago I had under my care a young primigravida who had been admitted to the Maternity Hospital in a profoundly comatose state, having had several eclamptic seizures before and during a long ambulance journey from the country. She was cyanosed, the temperature about 102° F., the pulse of wretched quality and almost uncountable; the urine scanty and coffee-coloured, and giving a practically solid albumin reaction, with other derivatives of acidosis. The blood pressure approached 200 mm. She delivered herself of a dead-born child some hours after admission. At intervals the eclamptic fits continued. So far as was possible routine treatment was given, including colon wash-outs and moderate doses of morphine. I demonstrated this case to the students as one with hopeless prognosis. In a few days, however, we met again at her bedside, and the clinical picture was a very different one. Some mental hebetude remained, but was rapidly clearing. The pulse, temperature, and blood pressure were much reduced. The urine was of fair quantity, and the albumin reaction much less marked. Thence onward recovery was uninterrupted.

In contrast to this was a previous case, another young primigravida sent in from the ante-natal clinic when about five months pregnant, with albuminuria—no previous history of scarlet fever or other illness likely to have caused nephritis. There was no oedema, no headache, no dimness of vision. Temperature and pulse were normal. The albumin reaction was moderate, and was the only abnormality detected in the urine; under low diet, aperients, and diuretics this cleared up, and the patient was allowed to return home and to report at the clinic. She was readmitted two months or so later with a recurrent albuminuria, and again responded, though not so completely, to similar treatment. In the course of a week or so adverse symptoms appeared, and developed in number and degree until she presented the typical picture of pre-eclamptic toxæmia. Induction was effected with no specially untoward incident; but, notwithstanding the employment of anti-eclamptic treatment and regimen in full measure, with skilled nursing, the dreaded seizures supervened and continued in increasingly rapid sequence until the patient died.

What may be the essential difference between cases, so similar clinically and so different in their outcome, we may hope that one day the biochemists will tell us.

HEART DISEASE AND PREGNANCY

The fact that normally slight dilatation and hypertrophy of the heart occur during pregnancy is sufficient indication that where the association exists with a damaged heart some anxiety must necessarily be felt. While it is happily true that the majority of the cases, with care, win through, there are others in which the closest observance of careful treatment is essential before, during, and after labour. The order of gravity of cardiac default associated with pregnancy is commonly accepted to be as follows: rheumatic myocarditis, aortic regurgitation, mitral stenosis, and mitral regurgitation. The most critical phases of test are the acme of labour pains; the profound circulatory adjustment called for on the delivery of the child, and the completion of the third stage; and the more steady strain of the early puerperium. The case I refer to under this heading especially illustrated the difficulty, so often experienced, of deciding as to the advisability of inducing labour.

The patient was a primigravida, aged 27, giving a history of having had chorea when she was 12 years old and pneumonia when 23. On admission she was four months

pregnant, and complained of breathlessness on exertion, such as walking upstairs, during the previous four weeks. She had unmistakable mitral stenosis, with a few extrasystoles, but no fibrillation—the pulse 120 and of indifferent volume and tension—no oedema, and no liver enlargement. She responded satisfactorily to treatment, which included complete rest, light diet, aperients, 10 minim doses of tinct. digitalis, sometimes combined with 5 grains of sodium bromide, and was allowed, after six weeks in hospital, to return home with strict injunctions as to rest and suitable regimen.

She returned to hospital in her thirty-fourth week. The general condition was fair—pulse 94, no auricular fibrillation; but there was some oedema of the legs, and she also complained of a recurrence of the breathlessness on even slight exertion. Under similar treatment, including 10 minims of tinct. digitalis every six hours, the oedema cleared up in a few days and, all things considered, her condition once more became satisfactory.

Although there was no indication for it from the pelvic side, I decided to induce labour mainly for two reasons: to take advantage of a favourable phase, and to avoid the possibility of a prolonged strenuous labour. Watson's medical method failing, as it so often does, bougies were introduced under general anaesthesia. The reaction was very unfavourable, and in the course of twenty-four to thirty-six hours most of the signs and symptoms of cardiac distress appeared—pulse 120, fibrillation, precordial pain, oedema, cyanosis, dyspnoea. But labour pains came on and were accelerated by small doses of pituitrin. Large doses of digitalis again controlled the pulse, reducing it to 80 a minute. The head being now well into the pelvis, forceps delivery under anaesthesia was effected, and was followed by a rather prolonged third stage, but with no undue haemorrhage. The 5 lb. infant survived, and the mother achieved a remarkable rally in three days, with a pulse of 92 and a sense of comparative well-being. A relapse followed, and again a still more marked recovery, only to be followed by a further relapse on all points, to which, on the eighth day, she succumbed.

The problem is, would this patient have had a better chance of pulling through if I had decided to allow her to go to term? In such a case it is, at best, a question of chances either way, but my impression is that the question should be answered in the affirmative.

TUMOURS COMPLICATING PREGNANCY

My final problem case is concerned with tumour conditions complicating pregnancy.

A farmer's wife, accustomed to the strenuous duties of her outdoor occupation, and pregnant for the first time at the age of 40, was sent to me by a country practitioner with the statement that the pregnancy was advanced to about the sixth month, and appeared to be complicated by a multinodulated fibroid condition of the uterus; that the patient and her husband were very anxious to have a living child; and that, if deemed to be indicated, they would agree to the performance of Caesarean section at term.

I concurred in the tentative diagnosis. There had been no menorrhagia before the onset of pregnancy, but that is not uncommon where the multinodular variety of fibroid is predominant. The abdomen was very large, and occupied by many irregularly shaped lumps. The patient had habitually enjoyed good health. Her main trouble had always been constipation, the bowels being copiously evacuated at weekly or longer intervals.

I agreed also to the line of treatment suggested, particularly as per vaginam one or two of the nodules could be felt in the pelvic cavity with the cervix partly raised above them, a condition which could effectively block the transit of the foetus. I explained, however, that it was possible that as the pregnancy advanced to the later months the enlarging uterus might pull these nodules upward out of the pelvis, even to the extent of rendering a Caesarean operation unnecessary. I had no further opportunity of checking the diagnosis because, although the patient promised to come later for another examination, she did not do so, and the next I heard of the case was over the telephone after midnight from the

doctor, to the effect that labour was well on its course and that, moreover, the patient was already on her way by transport to the nursing home. I arrived at the home just in time to supervise the completion of a normal breech delivery. As was to be expected the abdominal masses were post-natally much less in evidence.

The puerperium was normal, excepting that when on the third day the action of the bowels had, in addition to aperients, to be solicited by enemata, the nurse reported that the copious result per anum was supplemented by some faecal matter coming per vaginam. Much concerned, I made a most careful examination, and could find no trace of vaginal fistula communicating with the bowel. With that temptation to complacency to which clinicians sometimes yield, I expressed the view that the nurse must have been mistaken. She, being a competent and well-trained person, said no more, but no doubt held to her opinion, although the phenomenon did not again occur.

Some months later the patient came to see me complaining that the abdominal lumps were causing her much discomfort, and that she wanted them removed. Examination showed that though altered in shape and dimensions they were still present, and in due course I performed a laparotomy, and the nature of the problem was revealed. An enormous megacolon extended almost from flank to flank and from the pelvis to well above the level of the umbilicus. A well-involved uterus with appendages complete was *in situ*, and most of the small intestines were packed away towards the left hypochondrium. The "tumours" were partly consolidated scybala and stercoliths—one of the latter was so large and hard that I deemed it proper to remove it by excision through the colonic wall—an analogue of Caesarean section to save the poor lady the pangs of its delivery *per vias naturales*.

A very interesting case; and though it may only be in the form of a postscript to its record, I think it is due to that nurse to say that her observation was surely correct, because the patient on further inquiry recalled that one of her early childish troubles was that fluid faecal matter in small quantities occasionally came per vaginam. A rare complication of this variety of megacolon is the persistence of a communication between the bowel and the cervical canal. The conditions obtaining in the early days of the puerperium would tend to increase its patency, and so permit of the passage of some of the fluid or semifluid contents of the bowel into the genital passage. The anatomical position of the opening would account for its non-discovery by ordinary vaginal examination.

TREATMENT OF "PERNICIOUS ANAEMIA OF PREGNANCY" AND "TROPICAL ANAEMIA"

WITH SPECIAL REFERENCE TO YEAST EXTRACT AS A CURATIVE AGENT*

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The anaemias mentioned in the heading of this paper might well be described under the common title of tropical macrocytic anaemia; as, except for the accident of pregnancy, they are indistinguishable from one another, but can be separated from the numerous other anaemias occurring in the Tropics by the large size of the red cells, and by the presence, at some stage of the disease, of megaloblasts. In fact, these anaemias have the blood picture of Addison's or true pernicious anaemia, but differ from this condition in that the typical blood

* A full report of this work, and of the experimental work done in connexion with it, will appear in the *Indian Journal of Medical Research*.