Gynaecology. In co-operation with the Boards for the training of midwives, it will prove of value to the public health authorities in the future.

I have touched on many points of a controversial nature, but I only speak from the small area of my own experience.

REFERENCE.

¹ *British Medical Journal*, September 28th, 1929, p. 592.

THE PREVENTIVE ASPECT OF OBSTETRICS.*

BY

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THE importance of this branch of preventive medicine needs no stressing at this time of day, when a large and constantly increasing experience has demonstrated, not only to our profession but also to the lay public, the enormous value of preventive methods in obstetrics and the large amount of foetal and maternal life that can be saved by their appropriate application.

Much has been written on this subject, especially from the institutional point of view, but I wish to speak now more particularly of the methods which may be used in carrying out ante-natal investigation in domestic practice, either in the consulting room or in the patients' homes. It will be found, I think, that the matter is much less formidable than might at first sight appear, and that the application of common-sense rules will clear away the greater proportion of difficulties. I would recall that this was the main subject for discussion in the Obstetrical and Gynaecological Section at the Bradford Meeting of the Association in 1924, and the papers then read will well repay perusal.

Ante-natal examination may vary in extent and thoroughness, but what I want to indicate in this paper is the minimum which should be expected of any general practitioner, and which is expected under such a scheme as the National Maternity Service Scheme of the British Medical Association.

When a pregnant woman comes, either of her own free will or on the recommendation of a midwife, to consult her doctor, the first glance will tell him whether she is of a healthy appearance or poorly nourished, of normal stature or undersized, and whether she walks normally or with a limp, so that even now a definite number of important points can be noted.

The next thing is to take her history, and here again a few minutes' conversation will bring out several more important points. The duration of amenorrhoea and the date of the onset of the last menstrual period should be inquired about. It is remarkable how definite the majority of patients are on this point; this is fortunate, as the period of amenorrhoea still constitutes the most exact method we have of estimating the approximate date of confinement. The history of previous pregnancies and labours (if any) is also of great value. If one patient says that in the previous pregnancy the legs and face became very swollen, it would indicate the necessity for a very strict examination of the urine, while if another reports that, of several previous pregnancies, only one child is alive, the others being born dead after prolonged labours with instruments, a careful examination of the relative size of head and pelvis would be indicated. In the primigravida, of course, we have no previous history to guide us, and we have to form our own opinion from the beginning.

Other points to be inquired about are the condition of the bowels. Most women suffer from more or less constipation, and this has to be borne in mind when advising the patient about her habits. It has to be emphasized that if a satisfactory daily motion of the bowels is obtained, the likelihood of toxæmia or eclampsia is remote. The amount

of urine passed is best ascertained by asking if she passes about the usual amount, or more or less. The necessity for emptying the bladder during the night is often the first thing that will bring home to a patient the fact that she is passing more urine than normal. Oedema of legs or face, indigestion, sickness, headaches, interference with sight, and the occurrence of any bleeding should also be inquired into. Finally, and especially if she appears to be in the later months of pregnancy, the date when foetal movements were first felt should be inquired into, as this usually indicates mid-term and may, along with the period of amenorrhoea, give further information regarding the present duration of pregnancy. Usually, however, the patient is seldom so exact about this date as about the last menses.

Only after settling these points should we proceed to the physical examination. The first point to be determined now is this: *Is the patient pregnant?* While it can be taken for granted that, in the great majority of cases, when a woman says she is pregnant, she is pregnant, this is not always so. I have known a patient with a fibroid, who had several children, declare, even on the morning of operation; that she distinctly felt foetal movements; while in another case, a lady who was several weeks "post-mature" showed no signs of going into labour, merely a fat abdomen and a uterus ten months post-menopausal being found. Many other instances in both directions could be quoted. It is common knowledge that pregnancy may be very difficult to diagnose, and mistakes are often made in this way, but this is not evident to the lay public.

Certain points may be noted here. First, before the tenth week it is not possible to be certain that the uterus is pregnant, and often time has to be allowed for confirmation or the reverse. Secondly, before the uterus becomes an abdominal tumour it is felt on bimanual palpation as enlarged, of a peculiar doughy consistency, globular shape, and strongly anteverted, so that the cervix may be pushed far posteriorly. If it should be retroverted with the cervix anterior, incarceration must be suspected, and steps taken to lift the uterus clear of the sacral promontory, and if necessary to keep it up for a few weeks with a pessary. Thirdly, when the uterus comes up into the abdomen it forms a swelling whose outlines are characteristically vague, and in this way it is unlike even an ovarian cyst and much more so a fibroid, whose outlines are usually clear-cut.

There are certain points characteristic of the pregnant uterus, and among these may be mentioned the presence of a uterine bruit. This is caused by the distended uterine vessels, and is therefore heard at the sides of the uterus. Theoretically any uterine tumour—for example, a fibroid—may exhibit such a bruit, but in practice it is not usually found apart from the pregnant uterus. While the palpation of foetal parts and of a presenting part indicates a pregnancy and nothing else, the elicitation of foetal movements and of foetal heart sounds demonstrates not only pregnancy but a live pregnancy. These are all, therefore, positive signs, but one or more, seldom all, may be absent even in normal pregnancy.

The next point to determine is whether the patient is pregnant according to the duration of amenorrhoea. Often a patient with, let us say, three months' amenorrhoea, will show the uterus enlarged to the umbilicus—that is, to five months—and while in the majority of such cases the discrepancy is due to an error in the patient's dates, or possibly to some menstruation occurring in the first month or so of pregnancy, still the possibility of such a condition as hydatidiform mole or an associated pelvic tumour must be borne in mind. On the other hand, the uterus may be much smaller than for the duration of amenorrhoea, and may not increase in size even after waiting and several examinations. Such a condition would indicate death of the ovum without expulsion, the carneous or fleshy mole, and steps should be taken to evacuate the uterus.

But if all is normal here the pelvic measurements should be taken and should be noted. The interspinous, intercrestal, external, and diagonal conjugates can be taken with an ordinary pelvimeter in a very short time, and from the two last the true conjugate can be estimated. It is very useful to take also the transverse at the outlet,

* A paper read before the South-West Wales Division of the British Medical Association at Carmarthen, December 18th, 1929.

between the two ischial tuberosities and in a line just in front of the anal orifice. Blair Bell points out that in certain cases unsuspected contraction of this diameter will cause the head to be pushed posteriorly, with a severe perineal laceration.

Vaginal discharge should be looked for and its significance gauged. In the multipara it is usually due to a chronically infected cervix lacerated at a previous labour, but in a primipara, and especially if associated with inflammatory urethral and vulval signs, it is more likely to be gonorrhoeal. In the latter case special advice should be sought and the child's eyes treated with silver nitrate at labour. The danger to the mother is mainly puerperal and inflammatory, and frequent cleansing during pregnancy with a douche and absence of manipulation at labour are called for.

The tongue and teeth should be examined and the conjunctivae inspected for any anaemia, and finally a specimen of urine should be tested. This may be drawn off by catheter, but it usually suffices if the patient brings a specimen in a bottle, and this can be tested at leisure.

Now many and elaborate tests may be carried out on the urine, but much may be learned from the usual tests; it is advisable, however, to concentrate on two main points. The presence of albumin is obviously the most important of these, and it must be remembered that it is the presence more than the amount of albumin that matters. It must also be borne in mind that although eclampsia may follow albuminuria, the most common grave sequel is chronic nephritis, with all its later dangers, as has lately been shown by Young and Gibberd. If no albumin be present the next important point to determine is the specific gravity of the urine. A persistently low specific gravity below 1010 may be an even earlier sign than albuminuria of breakdown of renal function.

It is hardly necessary to recapitulate the valuable information that has been gained by this examination. The patient is pregnant to a certain duration, the pelvis is full-sized, she is in general good health, there is no oedema or other toxic sign, and the urine is normal. Or the reverse of one or more of these points may be present.

The next thing is to advise the patient about her habits in pregnancy. This advice will often be disregarded, but it should always be given. It is important to give a few points of clear guidance which she will remember rather than much advice which will be blurred in memory and soon forgotten.

The first and most important is to guard against constipation; seldom will toxæmia develop if the bowels are acting daily. While purges may be necessary, the best usual means of overcoming constipation is by taking daily exercise, but not excessively or to the point of exhaustion, and by increasing the intake of fluids; a glass of warm water first thing in the morning and last thing at night is most beneficial, not only in this way but also in stimulating renal action. Green vegetables and fresh fruit may also be advised, but these are often relatively expensive. An occasional dose of magnesium sulphate is advisable, even if the bowels are reported as acting normally.

Regarding diet, the best thing is to tell the patient what she must not take. Red meat, because of the high protein content, should be taken sparingly and in the later months of pregnancy especially so, until the patient is allowed meat not more often than three times weekly. Pastry, highly spiced food, and fried dishes should also be forbidden, and, in general, boiled or stewed food is better than fried. The value of oatmeal as a cheap, nourishing, easily digested and bowel stimulating diet must not be forgotten.

Another appointment should now be made, the date depending on circumstances, but it should be impressed on the patient that if swelling of legs, scantiness of urine, indigestion, jaundice, headache, or disturbances of vision should occur at any time before that date she must come to see you or send for you at once.

When should the next visit be? This will, naturally, depend on circumstances, and it may be that several visits may be necessary. From a purely theoretical point of view it may be argued that even in a case progressing normally in pregnancy such visits and physical and urine examina-

tions should be frequent, in order that any mechanical or urinary abnormality may be detected in its earliest stage; while it may quite properly be laid down that in the second half of pregnancy the patient and the urine should be examined every month. In any event, if conditions are found which cause uncertainty or concern in the mind of the medical attendant, such as doubt of pregnancy or doubt regarding presentation, he should fix another examination after a time sufficient for these doubtful points to have resolved themselves, and in most cases an interval of one month will suffice for this. If grounds for doubt on any point still remain, consultation with an obstetrical specialist should be recommended.

Now on the one hand most pregnant women will want to be handled and examined as seldom as possible, while, on the other hand, from the practitioner's point of view, it is important that such examinations should take place at a time or times when the maximum of information can be obtained. It is safe to say, however, that every pregnant woman should be examined at least twice in pregnancy. At about the third month the general appearance, pelvic measurements, estimated date of labour, and the other points previously indicated can be ascertained; but a number of other points cannot as yet be determined, and a second and final examination to determine these should be carried out about four weeks before the estimated date of labour—that is, at the end of the thirty-sixth week. Most important final points can now be ascertained.

The condition of the bowel should again be carefully inquired into; also the general health, oedema, and the presence and duration of foetal movements. A glance at the abdomen may convey an almost subconscious impression that the uterine enlargement is not as high as might be expected, and that the abdomen is unduly bulging in the flanks. Such a state of affairs may indicate a transverse lie. In another case undue distension may lead one to suspect twin pregnancy or hydramnios. Generally the fundus, however, is felt at this stage up near the ensiform cartilage, with the long axis of the uterus in the line of the patient's trunk, and this part should be carefully palpated. If the consistency of the fundus is like that of the rest of the uterus it can be taken that the fundus is occupied by the breech of the foetus, and that it is a head first presentation, but if the hard and globular foetal head be felt here it is, of course, a breech presentation.

The uterus should now be carefully palpated on each side to determine on which side is the foetal back and on which are the limbs, and great difficulty may be found here. In many cases few or no foetal limbs can be palpated with certainty on either side, and this is a good sign, as it indicates the great improbability of an occipito-posterior lie. In other cases the limbs can be palpated with ease, it may be with suspicious ease, and such a condition should always make us suspect this complication. In examining next the lower uterus our main object is to find out what is the presenting part, and, secondly, does that presenting part fit into the pelvic brim? Palpation on each side may show the bony skull, which cannot be completely followed down as it is entering the pelvis; or it may not yet be in the pelvis, and the two hands may be brought together above the symphysis and below the presenting part. Again, in a breech the presenting part will not be hard and globular, but of a softer consistency.

Before making a vaginal examination it is well to listen for the foetal heart, and the best place to begin is near the umbilicus. From here it may be followed in a radiating direction and the position of greatest intensity, above or below and to right or left, determined. If the foetal heart cannot be satisfactorily auscultated here it should be listened for in either flank. If heard distinctly in the flank and not in front, and if foetal limbs have been easily palpated, the suspicion of an occipito-posterior lie becomes almost a certainty.

A careful vaginal examination should now be carried out. The round globular vertex may be found here, and, if so, its size relative to the pelvic brim can be easily determined by Munro Kerr's manipulation. In carrying out this test the thumb of the pelvic hand is placed on the front of the symphysis, while the index

and middle fingers in the vagina touch the presenting head. With the other hand the head should be strongly pressed down into the pelvis. If the head fits the pelvis it will be felt to descend on to the vaginal fingers, while if there is just a little tight fit there will be no descent. If the pelvis should, however, be definitely contracted or the head enlarged, as in hydrocephalus, it will not only fail to descend, but on pressure from above will impinge on the thumb placed on the pubis, thus indicating the presence of definite overlapping. Sometimes, however, it will be difficult or even impossible to feel the presenting part at all, and in such a case, and especially in conjunction with abdominal findings, the suspicion of a malpresentation is greatly strengthened. Finally, in the case in which a head appeared to be palpated at the fundus, a head may also be palpated below. There are two possible explanations here: the first impression may have been a mistaken one, and it may be a normal vertex, or, again, it may be a case of twins. This may be the only sign of twin pregnancy, as in a large proportion of these cases no undue abdominal distension is to be found. In such a case it may be that two foetal hearts beating at different speeds can be auscultated, and this should always be sought for. In doubt in a case of this kind, or in other cases such as suspected breech or suspected extended legs, an x-ray plate should be ordered. X rays constitute an everyday and valuable adjunct to the other forms of physical diagnosis, but it must be used as an adjunct and never as a quick means of seeing that all is well without the trouble of detailed physical examination.

Finally, a complete urinary examination must never be omitted at this stage. If all is normal, good and well, but definite albuminuria may be present without any obvious symptoms, and may lead to an acute disaster such as eclampsia or to the even more formidable chronic nephritis.

I have said enough, I think, to indicate the large number of obstetrical abnormalities which can and should be discovered by ante-natal examination at a time when appropriate and deliberate steps can be taken for their rectification. The nature of the steps is, in many cases, obvious.

While many points and possibilities have been discussed, the examinations I have detailed can be carried out by any general practitioner in a few minutes, and if all is found normal his mind can be at rest with the practically certain knowledge that the labour will be normal, and this is surely worth having.

There are few branches of medicine in which preventive methods can be practised to such good effect as in obstetrics, and it is in this direction that the art is progressing and will continue to progress. How much foetal death can be prevented by the rectification of a breech, especially in a primipara? How much maternal death or morbidity from shock or sepsis can be prevented by the early recognition of a contracted pelvis? How much eclampsia and nephritis can be prevented by the early recognition of albuminuria, the first danger signal of toxæmia? These and other calamities can and should be prevented, and it is in this direction that the State and the public will expect more efficient service from us in the future.

But when labour comes on, in spite of the most careful supervision, unforeseen complications may occur. Rarely, for instance, is a face presentation diagnosed before labour, and often the necessary extension of the head occurs only with the onset of uterine contractions. Again, the gush of liquor amnii at rupture of the membranes may wash down a loop of the cord. Or a case which by all criteria seemed occipito-anterior is found at labour to be occipito-posterior.

These points are mentioned merely to emphasize the fact that extended use of preventive ante-natal methods must never allow our manual dexterity at the actual labour to lack efficiency. Attendance at confinement and the relief which we can give at that time is the sheet anchor of the faith which the pregnant woman has in us, and while our skill in emergency obstetrics of this sort should be supplemented by the acquiring of ante-natal skill, it is to be hoped that the time will never come to the general practitioner when his hand has lost its cunning.

ANTE-NATAL, NATAL, AND POST-NATAL PROBLEMS.*

BY

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AFTER working for many years at prophylaxis applied to midwifery, I feel convinced that no great progress will be made in this comparatively newly developed art until it is recognized by the profession and impressed upon our governing bodies that the co-operation of all concerned—doctor, midwife, and patient—is necessary. And in our profession itself all branches have their special part to play: the General Medical Council, to see that the student is properly educated; the obstetric specialist, to do the teaching and to help the general practitioner in difficult cases; the members of the public health service, to educate the mother in mothercraft and in the need for taking advantage of the facilities provided for her; and, lastly, the general practitioner, whose duty it is to be ready at all hours of the day and night to help the midwife and to guide back to the physiological path all mothers who show the slightest tendency to deviate therefrom.

The official maternal death rate has been stationary for many years, and many causes which are beyond the control of the profession are responsible for this—social, such as the reduction in the size of families since the war, and the consequent higher proportion of first labours with their added risk; administrative, such as differences in classification adopted by the Registrar-General from time to time. I have no doubt that such factors mask a fall which has in fact taken place. There is no doubt, however, that avoidable clinical factors are also at work, and I hope to indicate some ways in which improvement in these may be brought about.

The medical student has had in the past, and still has, insufficient practical experience, however good the theoretical teaching may be; and therefore, when he comes into private practice, and is forced by economic pressure to do midwifery under adverse conditions, he is unable to use his knowledge to the best advantage. Nay, more; I would say that the importunities of the patient and of her relations and the handy-woman, the doctor's tiredness of the case through having had many unnecessary calls, his expectation of a busy time next morning, and the many other trials which we all know well, would lead any man who had not an iron will to get the case over, even if doing so should imply a certain lapse from the strictest professional rectitude. I feel convinced that this is the true reason for the many cases of "failed forceps" which are reported in the journals. If that is so, we must see that the teaching is of such a kind as to imbue the student with what may be called an obstetric conscience, and that he will, when qualified, be able to take his part in a national midwifery service, his special duties in which will be defined and the means provided for carrying them out efficiently.

I am lucky in that I have had the advantage of working for many years under such a system as is envisaged in the British Medical Association's national scheme, and I think it may be useful to indicate briefly what this has been able to accomplish.

The East End Maternity Hospital was founded in a small way in 1884, and since then has increased until we now have 56 beds and attend 2,000 cases yearly, about half of which are in-patients and the other half attended in their own homes. There is no resident doctor. The hospital is under the direct management of the lady superintendent, who is a midwife, and the routine work is done by midwives. Doctors selected from among the general practitioners of the neighbourhood form the medical staff, the senior member of which pays daily visits, conducts a clinic for abnormal ante-natal cases, and he or one of the junior men is called by the midwives for abnormalities.

The cases are unselected, no patient is refused except on the ground that she is able to pay for her own doctor, and no patient is sent elsewhere on account of obstetric abnormality. That is to say, it is worked on pretty much the same basis as the service recommended by the British Medical Association and by the Midwives Committee of the Ministry of Health.

* A British Medical Association Lecture delivered to the Gateshead Division of the Association on December 10th, 1929.