OBSTETRICS IN GENERAL PRACTICE

Antenatal Care—2

C. J. DEWHURST,* M.B., F.R.C.S.ED., M.R.C.O.G.

The previous article on antenatal care surveyed the problem in general and dealt in detail with the patient's first visit. At this visit the diagnosis of pregnancy, selection of the most appropriate place for the confinement, and the general advice to be given to the patient were all discussed. In this article we shall consider antenatal care under the second and third headings—visits up to 32 weeks, and the last two months of pregnancy.

Visits up to 32 Weeks

As I mentioned in the first article, it is customary for a patient to be asked to attend monthly until the 28th week, fortnightly until the 36th week, and weekly thereafter until she is delivered. In cases in which there is no specific abnormality we will chiefly be concerned during this time with the prevention of toxæmia of pregnancy and anaemia as well as with any problems the patient may have. Toxaemia of pregnancy is the principal cause of maternal death at present. The second most common cause is haemorrhage, which is always more serious in the anaemic patient.

Detecting Toxaemia

Regular urine testing, weighing, blood-pressure recording, and examination to detect oedema will give warning and the early signs of pregnancy toxæmia. The patient's weight gain during pregnancy should not exceed about 1 lb. (0.48 kg.) per week; if less is gained so much the better. If a patient gains weight to the extent of 5 lb. (2.27 kg.) or over in the course of a month she should be warned that such an increase may be dangerous and advised that she should adjust her diet along the lines suggested in the last article. Excessive fluid storage, if not corrected, is likely to be followed shortly by the other signs of toxæmia. At this stage correction is better approached by modifying the diet and by increasing the amount of rest than by resorting to diuretic treatment. Diuretics are sometimes helpful in this type of case, but their use over any length of time may produce complications, and careful observation of the patient will be necessary.

Blood-pressure

The systolic blood-pressure may have been raised on the first visit, perhaps through nervousness, but normal levels should be recorded thereafter. A reading of 140/90 mm. of mercury must be regarded as abnormal, and rest is certainly called for. In some cases it will be sufficient to insist on further rest being taken at home without the need to resort to hospital treatment. There is much to be said for the practitioner being quite definite about the rest he advises, because unless the patient is instructed to go to bed each day—say, from 2 p.m. to 4 p.m.

—the tendency will be for her not to rest enough. With a good response to rest the practitioner may well retain such a patient under his care, but unless there is some improvement soon a specialist consultation is advisable, for an alteration in booking may be indicated. When the blood-pressure levels in early pregnancy have been much lower than 120/80 mm. of mercury—say, 100/60 or so—a rise to less than 140/90 should be considered significant.

Albuminuria and Oedema

Albuminuria is usually an indication of toxæmia of pregnancy or a urinary infection; however, a specimen of urine contaminated by vaginal discharge may give a positive test. The presence of albumin in the urine is always an important matter, and if it seems likely that the explanation is pregnancy toxæmia the patient should be referred to hospital without delay. Complete rest taken shortly after the appearance of albuminuria may result in its disappearance, but once albumin has been present in the urine for some time the progress of the toxæmia can seldom be reversed.

Oedema appearing before 32 weeks is usually a toxæmic manifestation and will call for increased rest and for consultation as well if the oedema is marked or is accompanied by other clear-cut signs of toxæmia.

Anaemia

A common occurrence during pregnancy is anaemia of a mild degree. This is usually a more or less simple iron-deficiency anaemia which occurs as a result of foetal demands for iron, especially if the mother's iron stocks are low owing to dietary faults. The haemoglobin percentage should be estimated in early pregnancy and on two or three occasions thereafter. The haemodilution which occurs during pregnancy will make the haemoglobin percentage a little lower than it would otherwise be. A haemoglobin of 80% or less is common enough in the North of England, and should always call for additional iron to be taken. The iron may be prescribed in the form of ferrous sulphate, 3 gr. (0.2 g.) three times a day. Some patients will take this preparation without demur, and in these circumstances it is likely to be almost as effective as anything else. A number, however, complain of gastro-intestinal upsets of one form or another while on this form of iron therapy, although they may accept a different iron tablet in comparable dosage quite well. Iron taken by mouth is often better tolerated if it is taken half-way through a meal rather than between meals. Even when iron is prescribed a regular check on the patient's blood picture is advisable, for although she is taking iron regularly it may not be well absorbed from the intestine.

Anaemia not responding well to oral iron therapy is better investigated more fully in hospital before parenteral iron is given. Megaloblastic anaemia, which appears to be more

* Consultant Obstetrician and Gynaecologist, United Sheffield Hospitals.

common than was previously supposed, may be present; folic acid, 10 mg. three times daily, should soon correct such an anaemia. If further investigation shows that the anaemia is of a typical iron-deficiency nature and if the patient cannot or will not take an oral preparation, parenteral iron may be given.

Glycosuria

An occasional positive test for sugar in the urine may be obtained during pregnancy. This is seldom a significant matter and if the amounts are small and only occasionally present they need not cause alarm. The probable explanation is a combination between a lowered renal threshold and a failure of the patient to assimilate carbohydrates as well as she did before pregnancy. When the sugar is present consistently, however, or larger amounts are detected, a fasting blood-sugar and sugar-tolerance test are indicated, and the patient should be referred to hospital for these.

Abdominal Examination

During these months abdominal examination is seldom a matter of great moment. Provided steady uterine enlargement is taking place in accordance with the period of amenorrhoea, and provided foetal movements are felt, all is well. Indeed it may not be necessary for the patient to undress at each visit. A note about dates on which foetal movements are first felt may be helpful later if the duration of pregnancy is in question. This date is usually around 20 weeks in a primigravida, but may be a little earlier in a multigravida.

The Last Two Months

During the last two months of pregnancy, in addition to continued concern with the matters just discussed, attention must be focused on the foetus and its relationship to the mother's pelvis. Regular palpation of the abdomen now becomes important. The lie and presentation of the foetus should be determined at each visit and the foetal heart should be listened to.

Around 32 weeks the foetus may well be found presenting by the breech, but spontaneous version to vertex usually occurs shortly afterwards. It is seldom necessary to be concerned about the breech presentation before, say, 34 weeks, but at that time external version may gently be employed. Failure to turn the foetus easily at this time, or later, will certainly call for consultation.

Twins

If the abdomen is much larger than expected for the period of amenorrhoea, the possibility of twins arises. The clinical diagnosis of a twin pregnancy is not always easy. The recognition of a small foetal head in a large abdomen is one suspicious finding. When a large firm head is found with well-defined foetal limbs it is perhaps more likely that the estimation of duration of pregnancy is incorrect and that the patient is further advanced than she supposes.

Hydramnios, also a cause of a uterus enlarged beyond expectation, can usually be recognized by a well-defined fluid thrill. This condition is commonly associated with a multiple pregnancy, which cannot therefore be ruled out because hydramnios is present. When there is doubt a specialist consultation or an *x*-ray examination should be arranged, depending on the circumstances. While *x*-ray examinations should never be entered into lightly during pregnancy, they should always be employed when a definite indication exists. In this instance the recognition of a possible foetal abnormality, or the absolute

confirmation of a multiple pregnancy—with the assurance again that the foetuses were normal—provides clear indications for *x* rays to be used.

The presence of a twin or triplet pregnancy will call for the patient to be confined in a maternity unit where medical help is instantly available, for complications are more common before and during delivery and dangerous post-partum haemorrhage may occur. Similarly with hydramnios, there is far greater liability to an abnormal presentation at the onset of labour, and to prolapse of the cord: again hospital confinement is to be preferred.

Antepartum Haemorrhage

An antepartum haemorrhage, however small, will always call for specialist consultation or immediate admission to hospital. Sometimes the presence of a presenting part which is very high indeed may raise the suspicion of placenta praevia before any haemorrhage has occurred.

Foetal Head and Pelvic Brim

When the pregnancy has reached 36–37 weeks the relationship of the foetal head to the pelvic brim becomes a most important matter. In primigravid patients the child's head should be settling into the brim by this time. Abdominal examination may reveal that the head is already engaged in the pelvis; disproportion can then be ruled out. When the head is not fully engaged it can sometimes be engaged by abdominal pressure. A bimanual pelvic examination is advisable at this time, however, to investigate the possibility of disproportion. With one hand examining per vaginam and the other palpating the head above the symphysis pubis a fairly accurate estimate of the relationship between head and brim can usually be obtained.

Unless disproportion can firmly be excluded by this method it is advisable to request specialist consultation. Examination, and if necessary *x*-ray studies, at hospital may indicate that disproportion is not present and that the patient's arrangements do not need to be changed. When doubt cannot be resolved it will generally be better for her to be delivered in hospital, although if all is well she can be discharged home again a day or so later.

In a multiparous patient the head is seldom engaged around 36–37 weeks as it is in the primigravida. A bimanual pelvic examination should be performed in these patients also, for disproportion must be excluded in each individual pregnancy; the size of the child in different pregnancies varies very greatly in some patients, and some unusual lesion such as an ovarian cyst in the pouch of Douglas may be discovered. In late pregnancy, in some multiparous patients, repeated changes of lie may prove troublesome—the child may be found a transverse lie on one examination, a breech presentation at another, an oblique lie at another. In most of these cases the lie becomes longitudinal with the head presenting towards term, but unless this happens by 38–39 weeks there is a serious risk that the lie will be abnormal when labour begins and prolapse of cord or obstructed labour may result. Little else can be done in these circumstances but to refer the patient to hospital, where she will remain until labour actually begins. The lie may then be corrected at once.

Indications for Induction of Labour

When labour has not begun and the expected date of confinement has passed a decision should be reached on whether an attempt should be made to induce labour or not. It has already been mentioned that in estimating the date of confinement an allowance must always be made for irregularity in the

patient's previous menstrual rhythm. A reconsideration of this aspect may show that no such allowance has been made, and consequently that the patient is not overdue and that induction is unnecessary. Further help in assessing the probable duration of pregnancy may be obtained from the date of quickening if this was noted on the history sheet, and by the records of the size of the uterus, which may consistently have been a little behind the size expected for the duration of amenorrhoea.

X-ray examination is only occasionally helpful and should not be used as a routine. In those cases in which the dates are not in question and no inconsistency has been noted induction of labour is probably advisable some ten days or so after the estimated date of confinement. Various factors may suggest a modification of this practice. A slightly raised blood-pressure, not as yet sufficient in itself to call for a patient's attendance at hospital, may now make it inadvisable for her to go very far beyond the estimated date of confinement; in these circumstances induction at term may be the wisest course. Earlier induction might similarly be indicated if the patient were an older primigravida or if the baby were unusually large.

To stimulate labour, a patient at home may be given castor-oil or an enema; no other methods of induction can be recommended for use there. Digital dilatation of the cervix with separation of the membranes from the lower segment or artificial rupture of the membranes demand strict aseptic precautions and should be performed only in a well-equipped maternity

unit. Oxytocin to stimulate contractions can be used with safety only in low concentration and by slow intravenous drip, and when a suitable medical attendant can remain almost constantly with the patient.

When labour begins prematurely and the foetus is likely to be less than 5 lb. (2.2 kg.) in weight, or less than 36 or so weeks mature, it is better for the patient to be sent to hospital without delay in order that the child may be given the best possible chance of survival.

Conclusion

In these two articles I have tried to give a survey of antenatal care in its widest sense. Many of the conditions that have been mentioned are discussed fully in other articles in the series. Such abnormalities as have been dwelt on a little have been considered from the point of view of their prevention, recognition, and early management while the patient remains under the care of her family doctor. Our aim must always be to prevent abnormalities or to recognize them at once if they cannot be prevented. Once a clear fault exists it must be our aim to put the patient under suitable conditions for correct treatment.

I would like to acknowledge the help of my general-practitioner obstetrician colleague, Dr. H. N. Skelton, who kindly read the manuscript and made many valuable suggestions.

TO-DAY'S DRUGS

Digitalis

It is a remarkable fact that although 180 years have passed since Withering first described the use of extracts of foxglove for the treatment of patients with congestive cardiac failure digitalis is still the most useful drug which we have for the treatment of heart disease. In spite of all the recent discoveries of the pharmaceutical chemist digitalis preparations are still in common use. Instead of the extract of foxglove which Withering used we now give either a standardized preparation of digitalis leaf or one of the pure glycosides derived therefrom, but no adequate synthetic substitute for digitalis has yet been discovered.

Preparations of Digitalis

The official preparations of digitalis (see Table) are *prepared digitalis* (which is standardized biologically by its effect on the heart of the guinea-pig), *digitoxin*, and *digoxin*. Digitoxin and digoxin are pure chemical substances of constant composition which do not require biological standardization and are therefore to be preferred in most instances. The action of all these drugs is similar. The main difference between them is that digoxin acts more rapidly and is excreted more rapidly than digitoxin and several of the other active glycosides. For these reasons digoxin is less cumulative in its action than the other

two. Other cardiac glycosides such as lanatoside C, ouabain (strophanthin G), and strophanthin K have not been convincingly shown to have any marked therapeutic advantage over the official preparations.

Pharmacology

Although a great deal of research work has been done on the use of digitalis, the precise mode of action of the drug upon the heart is not yet understood. It used to be thought that the drug was selectively concentrated in cardiac muscle, but recent studies¹ using digitoxin labelled with ¹⁴C have shown that this is not so, and that its unique action upon the heart is probably due to some special properties of cardiac muscle. The effects of digitalis upon the heart have recently been well reviewed by McMichael.² One of the extraordinary things about digitalis is that in the usual therapeutic dosage it has virtually no effect upon the normal heart; thus its effects can only be studied either on patients who have heart disease or in animals whose hearts have been disturbed in some way by the pharmacologist. It is now accepted that the main action of digitalis is direct stimulation of the failing myocardium, which leads to greater force of cardiac contraction, increased cardiac output, and a diminution in the size of the heart.

The clinical effects of this are a fall in the elevated venous pressure and an improvement in the other signs of cardiac failure. Slowing of the heart rate is best seen in patients who have atrial fibrillation with a rapid ventricular rate. In these patients slowing occurs soon after the drug is given and is initially due to a vagal inhibition of the conduction of impulses from the atrium to the ventricle by the bundle of His. This effect can be abolished by atropine. Later, slowing of the heart rate is also due to a direct block in the conducting tissues of the heart; this effect is slower in its onset, is not affected by atropine, and is the reason for the more gradual

Digitalis Preparations. B.P. 1963

Preparation	Tablet Strength	Dose	
		For Rapid Digitalization	Maintenance
Prepared digitalis ..	60 mg.	900 mg.-1.5 g.	90-180 mg.
Digitoxin ..	0.1 mg. (100 µg.)	1-1.5 mg.	0.05-0.2 mg. (50-200 µg.)
Digoxin ..	0.25 mg. (250 µg.)	1-1.5 mg.	0.25 mg. (250 µg.)
Digoxin injection ..	25 mg. in 100 ml.*	2-4 ml.	—

* Injection strength.