THE CARE OF THE PREGNANT WOMAN.

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SINCE the war began there has been an increased interest manifested in the welfare of the future generation. Many articles and letters have been written in the medical journals and in the public press calling attention to the importance of increased care of the infant before birth, during birth, and in the early months of its life. I am in thorough agreement with the aims of these writers. But I think there is a risk that the public may be led to expect too much from "antenatal" treatment, and also that a good deal of energy may be directed on the wrong lines.

"ANTENATAL" TREATMENT.

The term "antenatal" is comparatively new, or has only been used freely within the last few years. It is an objectionable word, compounded of an adverb and an adjective, and is often used by those who are fond of it in an ambiguous way. "Antenatal treatment" means, I suppose, treatment of the unborn child, but "antenatal treatment of the expectant mother" means literally the care of the expectant mother before she is born. What is really meant is the care of the pregnant woman, but that is perhaps too vulgar an expression for use by officers of health.

The unborn child can only be influenced through the mother. Anything which improves the mother's health will probably give the child a better chance, although it does not always happen that conditions which cause deterioration in the mother's health affect the child to any great extent. The fetus is generally the last to suffer.

The care of the pregnant women in large towns has always been a feature in the work of maternity hospitals. Certainly in Manchester, the city of which I can speak from personal knowledge, this point has never been lost sight of. Even before the opening of a hospital with provision for the indoor treatment of a large number of maternity cases, St. Mary's Hospital always did work in this direction. Thirty years ago, when a woman applied to the hospital for a ticket which entitled her to attendance during her confinement, it was my duty, as obstetric assistant surgeon, to take notes of her obstetric history, and to inquire into her present health, and, if advisable, to examine her. If the conditions were found to be not satisfactory, the patient was admitted to hospital for care during her pregnancy; or if the case were less severe, she was put on a list to be visited at her own home by one of the medical officers. Further, there was a large out-patient department at which many of these patients reported from time to time. This system still continues, but with the increased number of beds many more cases are admitted as in-patients, and the systematic examination of primigravidae is carried out. It is not differentiated as a special department labelled "antenatal" or "pre-maternity," but is included as part of the work of a maternity hospital. A similar system holds in most of the cities and some of the larger towns.

We may inquire as to what are the points to which attention should be directed in the care of the pregnant woman. The fundamental needs, of course, are sufficient food, good sanitary conditions, and freedom from occupations which are unhealthy or too arduous. It is not necessary to dwell on the importance of these.

Special care may be needful in cases of abnormal pregnancy. These cases we may consider more particularly with the object of ascertaining what calls there are for supervision during pregnancy, and how far the regular supervision of all pregnant women would be useful in the saving of infant life. We must here distinguish between those cases in which the patient is almost certain to apply for help of her own accord and those in which she is not likely to do so.

The diseases of pregnancy may be classified thus:

1. Diseases Coexisting with Pregnancy.

(a) Diseases liable to affect the course of pregnancy. These include acute infectious illness

and some other infectious and general diseases, such as syphilis and kidney disease.

(b) Diseases aggravated by the coexistence of pregnancy, which include heart disease and kidney disease (nephritis, pyelitis), tubercle and diabetes.

2. Diseases due to Pregnancy.

(a) Toxaemias (excessive vomiting, albuminuria, chorea gravidarum and eclampsia).

(b) Abnormalities of uterus (retroversion and prolapse).

(c) Abnormalities of ovum (moles and diseases and anomalies of placenta).

In almost all of these diseases the symptoms will cause the patient to seek advice. She will almost certainly apply to a doctor or midwife for help in the following diseases—acute infectious illness, syphilis and gonorrhoea in their acute stages, tubercle, acute nephritis and pyelitis, and diabetes; also in excessive vomiting, chorea and eclampsia, in cases of retroversion with incarceration, and bad cases of prolapse, and in all cases of haemorrhage during pregnancy.

This list, of course, includes the majority of the diseases of pregnancy, but there are some cases in which the patient may not realize that there is trouble which may prove to be serious. Experience shows that this happens in some cases of heart and kidney disease, and some of the toxaemias (albuminuria and pre-eclamptic toxaemia). These are the cases in which promptness of treatment during pregnancy is most likely to be followed by a good result. If we read the records of the diseases of pregnancy treated in maternity hospitals, we find that a large proportion of the cases are supplied by these diseases.

Cases of syphilis acquired before pregnancy come under a different category. As syphilis is probably the most common cause of abortion and premature labour it is most important that these patients should receive treatment, but the treatment has to be begun as soon as the diagnosis is made, whether the patient is pregnant or not. In view of the report of the Royal Commission on Venereal Diseases, these patients are not likely to be overlooked in the future.

It may be urged that, in addition to the diseases of pregnancy which require treatment, there are many conditions which, if left alone, will cause abnormal labour, and that these may be altered for the better before labour begins. It is very rarely we find that anything can be done before the onset of labour, except in cases of moderately contracted pelvis, in which it may seem advisable to induce labour. But it requires a great deal of experience to be able to recognize the slighter degrees of contraction, and still more experience to be able to predict the probable character of the labour. The history of previous pregnancies may help, but is not in itself sufficient.

As regards abnormal positions and presentations, these are practically only to be rectified after labour has begun. The diagnosis of placenta praevia is rarely made during pregnancy, and even in that case the treatment is only attempted during labour.

If we review all these conditions that have been passed under consideration, we will find that there is a comparatively small number of cases in which we can hope to influence the life of the child by "antenatal" treatment only, even under the best possible circumstances.

The diseases of pregnancy suitable for treatment in a maternity hospital resolve themselves into some of the toxaemias—namely, excessive vomiting, chorea, albuminuria and eclampsia—and perhaps some cases of haemorrhage in pregnancy, and certain forms of bad heart disease, but these are admitted more with the view of placing the mother under suitable surroundings, should dangerous haemorrhage or cardiac failure come on, than in the hope of saving the life of the child.

These diseases, after all, account for a very small proportion of stillbirths. If we inquire as to the causes of death *in utero* we shall find that abortion or miscarriage is by far the most important. It is estimated that there is one abortion to every six confinements. In most of these cases the cause of the abortion is something which existed before the pregnancy, and for which treatment during the pregnancy is useless. No doubt a large number are due to syphilis. There are many which are the result

of troubles which have been brought on by previous confinements. Others, again, are incapable of explanation in the present state of our knowledge. There are numbers of women who have habitual abortion, in whom no syphilitic mischief can be found.

The next important cause of stillbirth is undoubtedly abnormal or complicated labour. Many infants are sacrificed from want of sufficient knowledge or skill on the part of the attendant. But the mischief of unskilful attendance does not end there. Not only is the particular child sacrificed, but very often the mother is rendered incapable of having more children. This "one-child sterility," or acquired or relative sterility, has an important bearing on the birth-rate. One must not forget that it is really a more important thing that a young mother should make a good recovery, with the conditions normal afterwards, than that the particular child should be born alive.

Conclusions as to Antenatal Treatment.

To sum up, we arrive at the following conclusions:

I. That the supervision of all pregnant women would mean a great deal of unnecessary trouble, as in the majority of cases in which danger threatens during pregnancy the patient will voluntarily apply for help.

II. That, even if supervision were greatly increased, the results in the saving of infant life would be comparatively small.

III. That there are several much more important causes of fetal death than the diseases of pregnancy, and these would not be dealt with in a scheme of supervision during pregnancy. Under these we would mention particularly abortion and stillbirths caused during delivery. It must always be borne in mind that sterility, either absolute or relative, has a most important effect on the birth-rate.

THE COMPULSORY NOTIFICATION OF PREGNANCY.

The notification of pregnancy has been discussed in two recent articles. There is a note on the subject by Dr. J. W. Ballantyne,¹ who endeavours to sum up the "pros" and "cons." After carefully studying the "pros," I find that they practically amount to this:

(1) "Under compulsory notification we should have figures showing the number of infants on the way, which, when compared with the number of births of living children, would give us the antenatal losses."

This, however, is not quite correct. We should have to find out and deduct the "natal" or "intra-natal" losses—or, in other words, all those cases in which the infant was alive when labour began but perished during delivery. Even then the statistics which we would obtain would be of no use unless the system were universal and compulsory. Further, if we did get statistics, they would not be of any great value. I must confess that I think this desire for statistics can be overdone.

(2) "It would impress upon the general public the emphasis which is now being laid upon pregnancy."

That, I think, can be done without compulsory notification, and with much less trouble.

(3) "It would be a stimulus to the study of all matters relating to the hygiene and pathology of pregnancy and antenatal life."

As far as the medical profession is concerned, I do not believe it would be anything of the kind. Those who specialize in these matters are sufficiently alive to the importance of this subject, and I do not believe that the mere fact of having to notify cases of pregnancy would stimulate the general practitioner to study these cases more carefully.

(4) "It might serve to check the frequency of abortions and the use of abortifacients means."

If this means that careful treatment at an early stage might prevent some miscarriages, I admit the possibility. If it means that compulsory notification would prevent a woman trying to induce abortion, I disagree. This sort of woman would not notify her condition.

Dr. Ballantyne recognizes the following difficulties of compulsory notification:

(1) The interference with the privacy in intimate home affairs.

(2) The difficulties in details and methods of the notification.

(3) The introduction of many new difficulties into health matters.

He thinks that for the notification to be of any value it would have to be made early, so as to check third and fourth month abortions. He is evidently in favour of some sort of notification, but not of compulsory notification, unless it "comes spontaneously from the women's organizations."

Dr. Moore, Medical Officer of Health for Huddersfield, in his Milroy Lecture,² advocates universal notification of pregnancy. He has been much impressed by the work which has been done by M. Morel de Villiers at Villiers-le-Duc, reported by Dr. Pinard in the *Bulletin de l'Académie de Médecine*. Dr. Moore quotes the Order of the Council, which consists of ten articles. The first declares that every pregnant woman in the village who is not in possession of sufficient means to allow her to meet the necessary expense should have the right to require the assistance of the village authority. The second states that if she wishes to have this help she must declare her condition before the seventh month, at the office of the mayor. A midwife (chosen by the patient) is then requested to visit the patient "to ascertain that there is present neither albuminuria nor dystocia either of the child or of the mother, nor dangerous presentation." The third article provides that if the midwife considers it necessary to call in a medical man she must at once notify the authority, who shall then request a medical man, at the choice of the patient, "to take the measures necessary to bring about the confinement successfully." The other articles are concerned with the payment of fees and grants, with provision of milk sterilizing apparatus, instructions for weighing children, etc.

Dr. Moore anticipates criticism by pointing out that Villiers-le-Duc is a small place, and that we must not expect the same results from larger communities. As a matter of fact the population of the village was 447 in 1804 and 230 in 1903. There were 43 stillbirths from 1804 to 1878 and only 2 from 1878 till 1903. Of course these figures, alone and without explanation, mean nothing at all. The 43 stillbirths might well be the result of half a dozen unhealthy people in the community, or even of one or two unskilled midwives or medical men.

Dr. Moore has now established a system for the voluntary notification of pregnancy, and gives an outline of the procedure adopted by the Huddersfield sanitary authority. The first step is the notification of pregnancy. This is followed by a visit of the assistant medical officer of health (female), and a long list of the matters which she must inquire into is given. Some of these are general, such as the conditions of the patient's home, her economic condition, and the medical history of the patient and her husband. After this the assistant M.O.H. has to draw up an elaborate report on the obstetric history and on the present condition of the patient. In the case of any abnormality she must communicate by letter with the general practitioner indicated by the woman, stating the facts, and leaving the case to him. It is not definitely stated, but apparently the assistant M.O.H. has to make the diagnosis and forward it to the doctor.

It would appear that under Dr. Moore's scheme notification is not required before the seventh month, as he takes the experience of Villiers-le-Duc as a model, and as his assistant does not visit the patient until she is able to make out the fetal head through the abdominal wall. In this he differs from Dr. Ballantyne, who says that if notification is to be of any value it must be early—that is, before the third or fourth month. It is true that notification in the later months would mean that many of the cases of the diseases due to pregnancy in which good can be done would be overlooked until it was too late. But the diagnosis of early pregnancy is by no means a simple affair, and if notification were required there would be many cases notified as pregnancy which would turn out to be something else; while, on the other hand, cases of pregnancy which existed would not be notified. If a patient or a doctor were in doubt probably no notification would be made.

It is hardly necessary to criticise in detail the procedure which, on the advice of Dr. Moore, the Huddersfield sanitary authority has adopted. In order to fill up the schedule

with any degree of accuracy, the assistant M.O.H. must have had exceptional training in midwifery. Even then I think it would be difficult for her to fill up answers to some of the questions. As an example, she must inquire into the causes of previous miscarriages, and must enter them under the following heads: "Cardiac, diabetic, nephritic; traumatic, displacements, abortifacients; lead, alcohol, specific disease."

Then there is the examination of the "expectant mother," which is of a most thorough description, beginning with the heart and lungs and going on to the abdominal examination, by which the expert assistant M.O.H. diagnoses the presentation of the child and the relationship of the head to the abdominal parietes. Finally (if necessary) she takes the pelvic measurements, examines the urine, and investigates abnormal reactions (urine and vaginal).

If this scheme should be made universal, there are not enough experts to go round.

These two writers I have quoted no doubt view the subject from different aspects. Dr. Ballantyne is well known for his researches into the pathology of the unborn child, and has been an enthusiastic advocate of *ante-partum* clinics, and no doubt he regards notification as a means of increasing the numbers in these clinics.

Dr. Moore is a medical officer of health, and apparently would like to extend the power of officials in a new direction. Every one must admit that the work done by medical officers of health and by public health departments has been most valuable. In general matters, such as are connected with the homes and the occupations of the people, they have done wonders. In the notification of various infectious diseases they have limited and stamped out many epidemics which would otherwise have been disastrous. But there is a different principle underlying the notification of pregnancy to all previous notifications. The object up till now has been to prevent the spread of disease and to safeguard, not the patient, but those with whom the patient comes in contact. In the notification of pregnancy the object is to look after the patient herself. If this principle is accepted, there seems to be no reason why notification should not be extended much further. Any one who has had an attack of appendicitis is liable to have another, and it may be argued that the first attack should be notified and the patient kept under supervision in his or her own interest. If it is said that in the case of the pregnant woman the object is to save the life of the child, it is open to reply that every adult man or woman is a potential father or mother, and therefore ought to be supervised. It might be argued that it is more important that every woman who was sterile (absolutely or relatively) should be compelled to notify the fact. This is perhaps a *reductio ad absurdum*, but I think that the introduction of this new principle into notification would threaten the community with an undue interference and supervision by the State or municipality. It is contrary to the spirit of this country, and I feel certain could never be carried out uniformly. The State might make it compulsory that pregnancy should be notified, but it could not compel a woman to receive a visit from a female assistant M.O.H. with her preposterous schedule.

PRACTICAL SUGGESTIONS.

I have already pointed out that the care of the pregnant woman is a matter which has not been altogether overlooked in this country, and I think if any improvement is to take place as regards the diminution of stillbirths, it ought to be on the lines of the further development of those institutions which already exist. In all large cities we have maternity hospitals, and these do more than merely treat patients. They act as centres of education for nurses, for midwives, for students, and even for qualified medical men. In Manchester and district the amount of work done is very large, but it could be greatly increased and developed if larger funds were available.

I thoroughly agree with Dr. Moore that the co-operation of the medical officers of health and the health authorities generally with the medical profession is most important, but I believe that much more good would be done at much less cost if the cities were to subsidize maternity hospitals instead of creating a new system. If found advisable, smaller centres might be established under the hospital control in various

parts of the town. This was done by St. Mary's Hospital, but its system of hostels had to be given up for want of funds. But, after all, it is perhaps better to have one large central institution in which expert help can always be obtained, rather than a number of small places at which the attendance of experts is only occasional. In the country districts I think it would be well that various villages should be grouped together and some sort of maternity hospital established.

Most important of all, however, is that the treatment should be in the hands of those who are really skilful. This means that the greatest stress should be laid upon education.

1. The pregnant woman should be taught how to take care of herself and warned of certain dangers that may arise. In this direction I regard those agencies which have been established with this object, such as are known as schools for mothers, as institutions which ought to be encouraged.

2. The education, both theoretical and practical, of midwives has been much improved lately, but there is still much room for improvement in some districts. The routine examination of the urine is most important and would reveal many of the cases of toxæmia which require treatment.

3. The medical students throughout the country should receive a more thorough training in practical midwifery than is at present the case. In Manchester the medical student is compelled to live in the maternity hospital for a period of four weeks while "taking out" his practical midwifery.

4. More facilities should be given for medical practitioners to have post-graduate instruction. A week or two spent in a modern maternity hospital would bring many of them up to date in methods of diagnosis, of aseptic precautions, and of treatment generally.

5. The study of the pathological problems connected with abortion and stillbirth should be stimulated by the provision of well equipped clinical laboratories in connexion with maternity hospitals.

The large cities are now provided with maternity hospitals, and this system should be extended to the smaller towns, and even to the country districts. Hospitals should be established in different areas, and should be visited from time to time by an obstetric surgeon of experience, whose services should be available, if required, for consultation with the local medical men, or for the more serious emergencies. In this way the medical men in the district who would be attached to the hospital would have their interest increased not only in the care of the pregnant woman, but also in her confinement and in the care of the newborn child.

The solution of the matter, I feel sure, is not in statistics and notification, but in education and research.

The medical officers of health can do a great deal for the future generations if they will use their influence to try and persuade the health committees throughout the country to pursue this work through the institutions that are already in existence, and to extend the same system to the less densely populated parts of the country.

I have said nothing as to the case of the newborn child. This opens up another large subject, which is outside the scope of this paper.

REFERENCES.

¹ BRITISH MEDICAL JOURNAL, April 22nd, 1916, p. 594. ² *Lancet*, May 6th, 1916; abstract with quotations in BRITISH MEDICAL JOURNAL, May 13th, 1916, pp. 693-4.

SYMMERS (*Journal Amer. Med. Assoc.*, May 6th, 1916) has studied 314 cases of anatomical lesions in late acquired syphilis at Bellevue Hospital, New York, as detected at 4,880 necropsies. Syphilitic aortitis occurred 175 times, or in 55.7 per cent. of the total number of syphilitic cases; the arch alone was involved in 63 per cent., dilatation of the aorta was detected in 22.3 per cent., aneurysm of the aorta in 45 cases (25.6 per cent.), the arch being the part involved in 34 cases, or just over three-quarters of this subseries. The aortic valves were sclerotic in 64 cases, and definitely retracted in 27, or 42.2 per cent. In 71 per cent. of the 175 cases of syphilitic aortitis, associated syphilitic changes beyond the vascular system were noted, many of them being in the skin and visible mucous membranes. The coronary arteries were sclerotic in 26 per cent.