A British Medical Association Lecture

ON

FORETHOUGHT IN MIDWIFERY*

BY

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After a study of the immediate and underlying causes of death in 5,800 cases of childbirth the Maternal Mortality Committee reported that at least half could have been prevented had due forethought been exercised by the expectant mother and her attendant, a reasonable degree of skill been brought to bear upon the management of the case, and adequate facilities for treatment been provided and utilized. This statement, made to Parliament by a committee composed exclusively of doctors and including among its members professors of midwifery and general practitioners, after an exhaustive inquiry covering many aspects of the subject, is one which the profession can hardly pass over in silence. The first clause especially requires examination, for the doctor's main function in the whole range of medicine is surely to apply his knowledge of disease in forecasting danger to his patients and so to ward off or delay the event of death. The statement that this primary function is not being performed constitutes a most serious indictment of the midwifery practice of those practitioners concerned.

FORETHOUGHT IN GENERAL MEDICINE

Let us consider for a moment the scope of forethought in general medicine. The ideal way in which this can be applied is in preventing disease from attacking individuals, and so far as parasitic infections are concerned a fair degree of success has been attained by segregating infected persons, destroying the causal agent, conferring immunity, or by increasing the general resistance of the population. But it is only a few diseases which can be prevented in this way. Beyond giving general hygienic advice we can do nothing to prevent a healthy person from becoming attacked by cancer or bronchitis or arterial degeneration—maladies which together account for nearly half the deaths in the country. We have therefore been forced to extend our conception of preventive medicine to include the early diagnosis of disease after it has attacked the patient, in the hope that early treatment may effect a cure. This is the everyday work of the doctor, which he is doing to the best of his ability against great odds. Very little is known of the origins of disease, the attention of the student being directed to the diagnosis of established disease rather than to its early signs and symptoms. The complaints for which a doctor is consulted can very often not be assigned to any definite ailment. Attempts to sort out from the many symptoms that are due to fleeting indispositions the few that may betoken serious illness are not very successful. Many disorders give rise to no symptoms in their early stages, and in the absence of periodic examinations are not found out until too late. Years may elapse before the doctor can check his prognostications by the actual result: these and a dozen other circumstances often combine "in proving foresight may be vain." It is the medicine of the future. Sir James Mackenzie, who spent his life upon this quest, appreciated these difficulties, for shortly before his death he said: "I must warn you against any immediate expectation of achieving the chief aim of medicine, the prevention and cure of disease. A long and weary road has to be travelled, and many of us will fall out before that is achieved."

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FORETHOUGHT DURING PREGNANCY

But now consider the application of forethought to midwifery, and see how very different and less difficult are the conditions. Here we are dealing, not with a disease, but with a natural process, which begins at a known time, is due to a known cause, and gives rise to definite signs which are known to every woman, the vast majority of whom have for long been accustomed to inform the doctor of their condition. It is a process causing bodily strain and metabolic disturbance in half a million healthy young women every year, disease in a large number, and death to some three thousand. It is one in which departures from the normal can be comparatively easily found out, and, what is most important, their significance can be checked with certainty within nine months. Are not these ideal conditions in which to carry out clinical research?

It is doubtful whether Sir James Mackenzie would have made such great advances in the knowledge of the early signs and symptoms of cardiac strain had not his genius led him to study first of all the effect of pregnancy on the damaged heart. And yet this promising field was until quite lately entirely neglected. Even the prevention of mechanical difficulties was not considered. From time immemorial a foetus of unknown size had been allowed to enter a canal of unknown size in any way it liked—frontwards, backwards, or even sideways. Many complicated instruments and manipulative measures were devised to get the foetus out when it stuck; but it does not appear to have struck anybody that these difficulties could be avoided by careful examination and correction before labour began. It is true that the hygiene of pregnancy had been considered important from the time of Hippocrates, and that in some of the works of the older obstetricians there are passages which suggest that some thought of the prevention of abnormal conditions had crossed the author's mind; but it was not until the opening years of the twentieth century that the systematic examination of all pregnant women with a view to the discovery and treatment of abnormal conditions was first advocated.

ADVANTAGES AND LIMITATIONS OF ANTE-NATAL CARE

It was in 1902 that Ballantyne first brought obstetrics within the field of preventive medicine; but obstetricians were slow to follow his advice. The preventive aspect of midwifery was badly taught and treated very scurvily in the textbooks, and it is only during the last eight years or so that ante-natal care has been extensively practised, even in teaching hospitals. Sufficient experience, however, has been gained within that time to convince practically all obstetricians that it will diminish definitely many of the risks of childbirth. No one who has seen the dramatic change which can be brought about in a case of pre-eclampsia can possibly doubt its value. A patient admitted to hospital, waterlogged, with a blood pressure of over 200, and scanty urine solid with albumin, presents an entirely different picture after twenty-four hours' treatment. Though not so dramatic, of far greater value is the prevention of serious degrees of toxæmia by the early treatment of cases of albuminuria. Where ante-natal care is efficiently carried out transverse presentations, which formerly were not at all uncommon, are practically never seen; while craniotomy, and even high forceps operations, are almost things of the past.

As yet there is no apparent lessening in the maternal mortality rate of this country, but that can hardly be expected, since, as the committee's investigations show, in only a minority of expectant mothers is ante-natal care practised; and even when it is done it is often so

perfunctory as not to deserve the name. But the clinical experience of obstetricians is confirmed in the records of certain hospitals in the case of women who have submitted themselves to supervision during pregnancy. These show not only a remarkably low death rate, but also an almost complete elimination of eclampsia, a great reduction in the incidence of difficulty due to disproportion and similar causes, a decrease in the death rate from intercurrent disease, and a diminution in the stillbirth and neo-natal death rate.

Although recognizing its success, we must not fall into the error of looking upon forethought during pregnancy as providing more than a preparation for labour, or as in any way obviating the need for the careful management of labour and the puerperium. Ante-natal care is not the be-all and end-all of midwifery. Thus it does nothing to lessen the risk of sepsis following normal labour, which accounted for 15 per cent. of the deaths reviewed by the committee. It will have very little effect upon post-partum haemorrhage or upon embolism. In fact, care during labour is in a way more important, for a good obstetrician may be able to make up for careless ante-natal work by skilful treatment of labour; but faults committed during labour are too often irreparable. Unless properly carried out ante-natal care may even have some disadvantages. Until a ripe experience has been gained it may lead to a good deal of unnecessary intervention, and so actually increase the risks it is designed to diminish. Unless tact is used in handling the patient a sense of fear may be instilled into her mind which renders her a subject unfit to withstand the hardships and possible perils of labour. It is expedient to note these limitations and disadvantages lest we bring discredit upon ante-natal care by promising for it more than it can perform; in spite of them it is undoubtedly the greatest advance in midwifery of the present century.

TOO LITTLE ANTE-NATAL SUPERVISION

Yet the Maternal Mortality Committee found that there is still too little ante-natal supervision by general practitioners and midwives, and that what there is is often too perfunctory to deserve the name. This is a strongly worded expression of opinion, but those whose duty it was to scrutinize the reports know that it is entirely justified. Thus, in 277 out of 544 cases of death from eclampsia the urine had never been tested, and in a further 120 in which albumin had been found before the onset of eclampsia no treatment whatever had been given. That is to say, that in 71 per cent. of these cases the committee considered want of efficient care to be the primary avoidable factor causing death. In many other cases obvious abnormalities had been overlooked or untreated, and this neglect had led to death. Neglect of ante-natal care on the part of attendants who had the opportunity to carry it out was found in 526 cases. In addition to this, the experience of members of the committee and evidence taken from different bodies and individuals led them to believe that negligence was much more widespread than the figures showed. That they believed that many general practitioners are doing good ante-natal work and midwifery generally is shown by their advice that further duties should be given them in the projected national maternity service.

Why is it that many doctors neglect this generally accepted safeguard? To say that it is just due to carelessness or to the impossibility of getting an extra fee for it is easy but incorrect. If a doctor contracts to attend a case for a given sum of money, he will earn it much more easily if he sees the woman four or five times comfortably in his consulting room before the labour comes off. There are some instances in which the mother

is definitely to blame, and yet the committee's figures show that only 10 per cent. of the cases investigated had been so negligent as not to make arrangements for confinement with their attendant beforehand. No doubt in sparsely populated areas the mother, after being told of its necessity, does not bother to come again. The doctor has not time to look her up, and the only thing for him to do is to keep pegging away at his patients until they learn better. Education by the practitioner has not the obvious disadvantages of public lectures or wireless talks, which, however carefully given, are likely to produce an exaggerated impression of the dangers, and may even lead women to refuse to bear children at all.

There are two reasons for the doctor not exercising ante-natal care that seem worthy of consideration. In the first place general practitioners do not yet realize its advantages. The explanation is simple. Nature has provided that about ninety women out of every hundred will have a more or less normal labour without it, and as few doctors attend more than twenty confinements a year it is quite possible for one man to go three or four years without having a case which brings the need of ante-natal care forcibly home to him. The fact that he is dealing throughout this time with disease having a much higher mortality, forty or even a hundred per thousand, causes him to think less seriously of a condition with a case mortality of only four per thousand. It is because there are so many pregnancies—half a million a year—that the total number of deaths is so large. An uncommon disease, even though its case mortality be high, does not constitute such a serious sociological problem. Since doctors are day by day exercising forethought in disease there is no doubt that they would do the same for childbirth if they realized that dangers are not absent and that they have it in their power to do much to prevent them.

CAN GENERAL PRACTITIONERS DO ANTE-NATAL WORK?

The second reason why ante-natal work is neglected is because so much mystery has been made of it. Doctors have been told, and they really think, that they cannot do it efficiently unless they have been trained as students or have attended a special course. This attitude of mind is founded upon an entire misapprehension of what the work entails. Think what has to be done: a general examination of the mother to discover diseases which may increase the risk of childbirth; the early discovery of toxæmia by frequent examination of the urine and estimation of the blood pressure; the treatment of these diseases, preferably in hospital; the occasional taking of a sample of blood for a Wassermann reaction; the discovery and treatment of vaginal discharge; the preparation of the breasts for the function of lactation; the treatment of constipation; giving directions as to diet and exercise; the gaining of the patient's confidence. All this is merely common sense combined with general medicine. It needs no special manual dexterity or any equipment beyond that in ordinary use by the general practitioner. The only knowledge of midwifery required until late in pregnancy is to be able to diagnose the fact of pregnancy when the mother books, usually after the twentieth week, and to foretell the probable date of confinement.

Presentation of Foetus

It is not until the approach of term that we have to concern ourselves with a problem peculiar to pregnancy. We have to find out whether labour is likely to be easy or difficult, and to take what steps we can to avoid difficulty. This is chiefly a mechanical problem depending partly on how the foetus is lying and partly upon its

size relative to that of the pelvis. The lie, presentation, and position of the foetus must therefore be ascertained by the ordinary methods of clinical examination—inspection, palpation, and auscultation of the abdomen—the most favourable time for this being about the thirty-second week of pregnancy. With a willing patient, warm and gentle hands, and the trained tactile sensibility of the general practitioner, no teaching beyond what is found in the standard works of midwifery is needed. It is only in the exceptional case that there will be difficulty. Most malpresentations may be corrected at this time. A transverse or oblique lie, or an occipito-posterior position, can be put right by simple manipulations and the application of pads and binders. If the presentation be a breech it is advised by most obstetricians that cephalic version be performed in the interests of the child. In some cases this is quite easy, but in others so difficult that even in those hospitals where it is more strongly advocated many breech deliveries still occur, so that the general practitioner must not be disappointed if he sometimes fails to turn. Leaving the attempt too late is a common cause of failure; extended legs in the foetus, another. The recurrence of malpresentations after rectification often implies a deformed pelvis.

Measurement of Head and Pelvis

The next part of the mechanical problem—finding out the relative size of head and pelvis—presents much difficulty in many cases, but even here a great deal may be done without previous experience. We have no means of direct measurement of the foetal head or of the true pelvis through which it has to pass. Nevertheless, the external measurements of the pelvis should be taken, as they may give a hint that we must look out for trouble, especially if the external conjugate diameter is less than the normal 7.5 inches. Conversely, normal measurements are no absolute criterion that there will be no mechanical difficulty. Fortunately nature has provided us with a sure test, for in a normal primigravida the foetal head descends into the pelvis about the end of the thirty-sixth week of pregnancy and remains there until labour. That this has taken place is easily ascertained. The head will now be no longer in contact with the abdominal wall. In order to feel it the fingers must be placed above the middle of Poupart's ligament and dipped downwards and inwards as if to enter the pelvis from above. Any doubt that the head is in the pelvis can be confirmed by vaginal examination. If the mother is healthy, the presentation normal, and the head in the pelvis by the end of the thirty-sixth week, it is as certain as anything can be in medicine that she will be able to have her baby either spontaneously or with the aid of low forceps. If all these conditions are not satisfied there may be trouble. In multigravidae the solution of the problem is somewhat different, as with them the head does not usually enter the pelvis until the beginning of labour, and so forms no guide; but we may safely assume that, other things being normal, where the pioneer has safely passed others may safely follow. Caution must be used with the "elderly multipara," as with successive pregnancies the uterus becomes weaker, the pelvic bones more fixed, and the foetus larger.

The Doubtful Case

By acting on these lines any doctor with well-trained powers of observation may divide the patients who have booked with him into two classes—those who are reasonably sure to have no serious mechanical difficulty, and those in whom this is doubtful. The recognition that there is a doubtful class requiring special management, and that they can, and should, pick them out before

labour begins, will mark a great advance in the midwifery practice of many practitioners. To do more than this needs judgement, which can only be gained by personal experience of cases which have been examined during pregnancy and followed through labour; and until he has it the doctor would be wise to get an experienced obstetrician to see all doubtful cases.

It will help the general practitioner to obtain further experience if, in addition to his own booked patients, he is also enabled to examine ante-natally patients booked by midwives, under the arrangements set out below. He should at first make a vaginal examination in all cases in order that he may become familiar with the size and configuration of the normal pelvic basin, and he should also in every instance make an attempt to judge the weight of the foetus while it is still *in utero*. It is impossible in this paper to go into the further management of the cases we have classed as doubtful. Their correct treatment is difficult to decide upon: obstetric specialists differ in their opinions and, like all of us, sometimes make mistakes. One thing is certain, that all cases in which difficulty is expected are better delivered in hospital, where facilities such as efficient help, a good light, and a delivery table of convenient height may be obtained. Normal patients can be safely attended in their own homes. By "weeding out" the doubtful ones, we have attended on the district attached to my hospital 5,376 consecutive patients in the last seven years without a death from obstetric causes. (Two died from general disease.)

PREVENTION OF CONTRACTED PELVIS

Since the difficulty in deciding upon the correct treatment of these doubtful cases arises chiefly through minor degrees of pelvic contraction, cannot we go a stage further back in the exercise of forethought and prevent their occurrence? Nothing more impressed those members of the committee who visited Holland and Scandinavia than the extreme rarity of obstetric difficulty due to contracted pelvis in these countries. It is nearly all due to rickets, a preventable disease. They summed up the position as follows:

"Careful consideration of the data, together with the general consensus of opinion of all the obstetricians we interviewed, left little doubt in our minds that the size and configuration of the female pelvis are more favourable to easy parturition in the countries we visited than in England and Wales. If that be so, we have a hopeful corollary to draw. There is no evidence that these differences are racial characteristics—according to anthropologists we are descended from the same stock—rather do they appear to depend upon the better conditions obtaining in these countries during the period of life when the pelvis is developing, and it would seem that the provision of a better balanced and more adequate diet, increased fresh air and sunlight, and sufficient open-air exercise during the whole of childhood, are means open to us as a nation which will help in bringing about a considerable reduction in maternal mortality."

Since any measures taken now will not fructify for twenty years it is a matter of urgent necessity to apply widely the new knowledge available for the prevention of rickets. This is a matter for the State, but the attendant can help by encouraging breast-feeding, and seeing that the nursing mothers and children under his care are advised to take articles of diet which are rich in vitamin D, calcium, and phosphates—such as milk, butter, egg yolks, fat fish, and fish livers.

ANTE-NATAL CARE IN MIDWIVES' CASES

So far we have only considered the practitioner, but midwives also came within the indictment of the committee. The present position with regard to them is as follows. Midwives attend about twice as many cases as

do doctors, and nearly all of them are booked. The Central Midwives Board has issued a form to be used by them as an ante-natal record, and, although many of the recently trained midwives are both doing the work and filling up the form, a large number are quite unable to do either. Knowing that the ante-natal supervision of midwives' cases was being to a great extent left undone, public health authorities, encouraged by the very real success of child welfare clinics, opened ante-natal clinics in the hope of making up the deficiency. There are now some 1,200 of them, and no doubt they are doing good work, especially in educating women in mothercraft; but it is doubtful whether they will ever prove an efficient substitute for careful supervision by the expectant mother's own midwife and doctor, for the following reasons. (a) Many mothers object to attending ante-natal clinics, and in rural areas find it impossible to do so. (b) There is a tendency for midwives to rely on the clinic to do their ante-natal work instead of improving themselves in it. (c) The members of the staff are often not engaged in the active practice of midwifery: not being present at the labour they have not the opportunity of learning from their mistakes. (d) The records of the clinic are not available to the doctor called by the midwife for emergencies: it is a handicap to the doctor to have no previous knowledge of the case. (e) It is no part of the duty of the clinic to treat abnormal cases, so that with responsibility divided between clinic, doctor, and midwife the patient remains untreated.

The committee considered this question very carefully, and advised that public health authorities should be enabled to make arrangements for the ante-natal care of midwives' cases (apart from women insured under the National Health Insurance Acts) by general practitioners,

and authority to do this was immediately given by the Ministry of Health. Under the scheme midwives would do the routine examinations and bring or send their patients to a doctor on at least two occasions—the first, early in pregnancy; and the second at about the thirty-sixth week. The obligation of the midwife to send the patient to a doctor if she discovers any abnormality during pregnancy would still remain as at present. In some areas the scheme is already working; in some it is modified by an arbitrary selection of general practitioners; in some it has not been started owing to financial pressure. For its effective working there must be co-operation between the medical officer of health and the general practitioners; unfortunately in some areas this is lacking. It is clear that, when such a scheme is adopted and working, many of the disadvantages to which we have drawn attention in connexion with ante-natal clinics will disappear.

CONCLUSIONS

1. Forethought during pregnancy and during the early life of the future mother can materially reduce the risks of childbirth.
2. Many doctors neglect ante-natal care because they do not realize its value or because they imagine they cannot do it effectively.
3. Ante-natal clinics suffer under many serious disadvantages.
4. More use should be made of the general practitioner for the ante-natal care of midwives' cases.
5. Contracted pelvis should be prevented.

REFERENCE

- ¹ Oxley: The Role of the General Practitioner in Ante-natal Work, *British Medical Journal*, January 3rd, 1931.

THE CHOICE OF ANAESTHETIC FOR ABDOMINAL SURGERY*

BY

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From the surgical point of view the requirements of a perfect anaesthetic are that the patient should be unconscious of pain, either physical or mental, and that there should be perfect relaxation of the muscles.

INHALATION ANAESTHESIA

In an inhalation anaesthetic the first of these points is perfectly obtained as regards physical pain, but mental pain or fear is often present, and one frequently hears patients state to-day that they fear the anaesthetic far more than the operation. In large part this fear is based on hearsay knowledge of the more uncomfortable methods used fifteen to twenty years ago. With ether or A.C.E. mixture given on an open mask the discomfort of the actual administration is negligible, but the fear of facing the ordeal is still great. To-day this may largely be overcome by the administration of drugs such as morphine, avertin, or nembutal in small doses while the patient is in bed, or, in some cases, by small doses of ether given in olive oil per rectum. I use the latter method as a routine in all my cases of exophthalmic goitre, and have found that it is very satisfactory. Drugs given in such a manner are, of course, used only as a means of making the patient unconscious for the period of transmission from the ward or room to the theatre, and until the real

anaesthetic is commenced. By this means the first part of our surgical requirements is easily obtained.

The second part—that of the provision of adequate relaxation—is much more uncertain, and is directly dependent upon the skill of the anaesthetist. We are all conversant with the defects that arise when a strange anaesthetist has to be utilized in emergency operations performed at some distance, and how after a very bad administration we are told how peculiarly difficult that individual patient was to anaesthetize. We surgeons know, however, that this difficulty has but little to do with the patient, but is almost entirely dependent upon the skill of the anaesthetist, and thus we are not to be blamed because whenever possible we require the services of those known to us.

Pulmonary Complications

Although, however, such good results are obtained as regards the requirements at the time of operation, one has to ask at what cost they are obtained, and here there is no doubt that the results are not so satisfactory. I suppose all abdominal surgeons would agree with me that the greatest post-operative danger to-day is the onset of pulmonary complications. I do not include pulmonary embolism, for this appears to be independent of the anaesthetic, but there is no doubt that some form of bronchitis is a very frequent post-operative complication. It is difficult to estimate its frequency, for it varies so greatly in degree, in one case consisting only of a slight cough with the expectoration of a small amount of mucus and pyrexia rarely rising above 99.5° F. for one or two days, to a severe purulent bronchopneumonia with pyrexia in the neighbourhood of 103° F. lasting for a week or more. If all cases are included some such lung

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