the surface should be seared with a hot iron or knife, and incised with a sterile weapon through the seared area before the culture is taken. Urine may be obtained by catheter, or a sterile syringe and needle can be used to aspirate it direct from the bladder.

Certain conditions, not uncommon, may be missed unless specially looked for. Air embolism may be the cause of death in injuries to the neck veins, and occasionally after criminal abortion with a Higginson syringe. Bubbles of air may be visible in the meninges, and the presence of air in the heart can be detected by opening the pericardium, filling it with water, and then piercing the right auricle. Obviously, if decomposition has occurred the test is invalid. Fat embolism is a common cause of death in multiple bone injuries, and fat in the lung may be demonstrated quickly by Robb-Smith's technique. Tiny pieces of lung are treated on a slide with potassium hydroxide until the red blood cells dissolve, when the fat is visible in the pulmonary capillaries. My personal preference is to take organs, especially the lung, brain, and kidneys, to the laboratory and cut frozen sections to be stained with scharlach R. It is primarily the cerebral condition which is fatal, and this is beautifully shown by the frozen method.

Pneumothorax, if suspected, may be detected by putting water between the skin flap and the ribs, and opening an intercostal space with a knife and watching for the emission of air.

Conditions not specifically mentioned which may be missed are electrocution, be it from faulty apparatus or lightning discharge. Here small burns can be found, particularly at the entry or exit point of the current, while the clothes may be singed or even stripped off the body. I remember an example in which a bone and metal collar-stud disappeared except for the small metal portion, which was driven into the trachea.

Acute encephalomyelitis may be detectable only by microscopical examination of the brain, but a clue is often given by a definite increase in cells in the spinal fluid.

Thyroid conditions, whether toxic or myxoedematous, may be associated with sudden death, and myxoedema may be easily missed in menopausal cases unless the thyroid is examined microscopically.

Uraemia, usually associated with hypertension and kidney lesions, may be proved by analysis, and here again the spinal fluid seems to give reliable results.

Glucose estimations in deaths from diabetes are unreliable, owing to post-mortem glycolysis.

In injuries to the neck fracture may occur, with crushing of the spinal cord, and yet not be immediately visible owing to self-reduction. It will be revealed only by opening the cervical cord and by careful dissection.

Conclusion

It is quite impossible, in a limited space, to cover the whole field of post-mortem work, and I would conclude by giving the advice that the safest working rule is never to cut anything without first being sure that evidence likely to be needed later is not being destroyed. In addition, it is no bad plan to include in the post-mortem kit some hand-book on the subject, of which I would mention particularly *Post-Mortem Appearances*, by Joan Ross, published by Oxford Medical Publications, and *Practical Pathology, including Morbid Anatomy and Post-Mortem Technique*, by James Miller and James Davidson, published by A. and C. Black. There are no doubt other publications equally valuable.

Refresher Course Books.—The first two volumes of collected articles from the Refresher Course for General Practitioners published in the *Journal* are now available. The first volume contains 55 articles and the second 60. Each article has been revised by its author. Copies of both volumes may be obtained, price 25s. (postage 1s.) each, direct from the Publishing Manager, B.M.A. House, Tavistock Square, London, W.C.1, or from book-sellers. The second book of "Any Questions?" is also available, price 7s. 6d. (postage 6d.).

EVOLUTION OF HOSPITAL AND LOCAL AUTHORITY ANTENATAL CARE UNDER THE N.H.S. ACT

BY

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Present-day antenatal care is becoming increasingly complex. To prevent overlapping of the services and to ensure that the expectant mother receives the best possible care it is essential that an integrated service, based on good team-work of all those concerned, should be established.

In this article attention is directed mainly to those expectant mothers who are to be delivered in hospital. The arrangements for antenatal care for such cases vary from area to area. The patient may attend an antenatal clinic held at the hospital. She may perhaps attend a local authority antenatal clinic situated at a distance from the hospital and be cared for by a medical officer of the local health authority, usually, however, being seen at least once during pregnancy by a consultant or some other member of the hospital staff. A third procedure is that a bed for the patient may be booked by a general practitioner merely by filling in a form; the antenatal care from then on will be in his hands.

Conditions of Antenatal Care

There should be firm links between the antenatal clinic and the hospital, so ensuring continuity of medical policy throughout the antenatal period, labour, and the puerperium to the post-natal visit. Moreover, the patient should know her medical attendants, who should try to know her as a person as well as deal with her medical problems.

Notes made during the antenatal period should be available in hospital when the patient is admitted either as an antenatal case or in labour.

The clinic should be so situated that there is no undue travelling on the part of the patient. Long waiting should be avoided, and the "sausage-machine" tactics of the larger clinics must be avoided. The atmosphere should be friendly and stress the normality of pregnancy.

Finally, such investigations by the obstetrician as may be required must be readily available and, wherever possible, they should be done at the clinic itself.

Application of these Conditions in Practice

(a) The antenatal clinic attached to the hospital could fulfil most of the conditions mentioned above more easily than by any other arrangement. Local factors, however, usually cause the hospital clinic to fall short of the ideal. For instance, it may be geographically difficult for the patient to reach the hospital. Another disadvantage is that, by the concentration of large numbers of patients, the clinic becomes unmanageable in size, with the result that there is prolonged waiting and loss of the personal touch.

(b) The local health authority antenatal clinic, being situated near the patient's home, is usually accessible and

the clinics are small and personal. The increased demand made on the consultant's time in having to visit these clinics is entirely outweighed by the convenience to the patient; but, as usually organized, the clinics have certain disadvantages. The local authority medical officer may never see the consultant or any member of the hospital staff, and may never see a delivery. The most serious objection of all, however, is that the notes taken during the antenatal period may not reach hospital before the patient is admitted and no record of the antenatal period is available to the obstetrician in charge of the delivery. In Bristol, efforts had been made to overcome this difficulty by sending to hospital a "photostatic" copy of the antenatal notes made at the 36th week of pregnancy. However, a patient might be admitted before her notes reached hospital; moreover, the vital entries of the last three to four weeks would not be available.

(c) If the patient attends her own general practitioner for antenatal care she is cared for by one who knows her medical history and social background; confidence and the personal touch are maintained and the patient will not have far to travel. Again, however, the question of antenatal notes and contact with the hospital is raised. The patient comes into hospital in labour as a stranger both from a medical and from a personal point of view. Also, the general practitioner working single-handed in his surgery may consider that it is a strain on his time to conduct the full range of investigations necessary.

A New Approach

A system has been evolved in Bristol to overcome the difficulties of each of the three procedures mentioned above. At least one session at the antenatal clinic is attended jointly by the consultant and the local authority doctor. This gives opportunity for an exchange of ideas between hospital and clinic and the maintenance of a common medical policy. Also, a clinical meeting is held weekly at the hospital to discuss cases delivered during the week: many of the clinic doctors attend this meeting.

The consultant sees each case early in pregnancy as well as at the customary 36th week. Moreover, the combined clinic enables him to see a case in conjunction with the clinic doctor at any time, neither of them losing contact with or interest in the patient.

The problem of making the antenatal notes available in hospital is a difficult one, and the solution we have arrived at may still be somewhat unwieldy but it is less complicated in practice than it sounds in description. A system of duplicating notes is used, each form being attached to its fellow at the top edge by a line of perforations, with a piece of "one-time" carbon paper between. The top sheet is torn off and sent to hospital; the carbon copy is kept at the clinic as a permanent record. At the patient's first visit the clinic doctor takes the history and performs a general examination and the laboratory tests, such as the Kahn reaction, blood group, and haemoglobin estimation. When completed, the original form is sent to hospital, while the carbon copy stays at the clinic. The routine antenatal record is kept similarly on a duplicate sheet, and at 30 weeks' gestation the original is sent to the hospital as before. From the 30th week onwards a second sheet is instituted, to record the routine pregnancy findings, and in addition a summary of these is placed upon a "personal card" carried by the patient herself. On her admission to hospital in labour the patient's "personal card" will give all the information from the 30th week onwards, while the clinic notes prior to this have already reached the hospital. As soon as the clinic sister is aware that the patient has been admitted, she sends the remaining notes to the hospital to form part of the full in-patient notes. Should the patient be admitted to hospital from the antenatal clinic on account of some abnormality, the antenatal notes may be sent in with her, the copy remaining at the clinic.

After delivery a summary of the hospital treatment is sent to the clinic; it is also entered on the "personal card." The findings at the post-natal visit are recorded, again with a carbon copy, and sent to hospital. Thus the hospital and the clinic have a complete record of the case from the first antenatal visit to the post-natal attendance. The "personal card" has proved a most valuable link between the antenatal clinic and hospital. Lennon (1952) says: "I found by experience that patients very seldom forgot their cards, and, if they did, relatives brought them to the hospital very quickly. This 'personal card' is printed on both sides. It is a single card which is folded in two and enclosed in an envelope. On the outside of this envelope are instructions to the patient to carry the card with her in her handbag at all times, and there is also the address of a hospital or clinic to which the card should be returned if found. It is not intended that this card should replace the full clinic notes, but that it should be a supplement to these, . . . particularly in emergency."

Place of the General Practitioner in Antenatal Care

However well the foregoing procedure may work, and giving full credit to the local authority doctors for their contribution to the care of the pregnant woman, the ideal would be for the general practitioner to work in co-operation with the hospital staff in the management of his own pregnant patients.

We have now arranged that whenever a patient has been booked for hospital confinement through an antenatal clinic she is given a note to take to her own general practitioner informing him of this fact. This avoids the criticism, so often made, that the first intimation the general practitioner may have that his patient has become pregnant is when meeting her pushing a perambulator along the main thoroughfare.

At the William Budd General Practitioner Health Centre, which was opened in Bristol in 1952, certain general practitioners hold their routine surgeries: it is also used by a local authority antenatal clinic attended by a consultant from Southmead Hospital as well as by a local authority medical officer. It was apparent that here was the ideal situation for the general practitioner to take part in the antenatal care of his own patients, for the note system outlined in the previous paragraph was in operation in the same building. The general practitioners concerned have co-operated enthusiastically by starting a special antenatal clinic session on one afternoon where all the interested G.P.s attend as well as the district midwives. To the general practitioner this means having at his disposal all the secretarial and nursing facilities of the centre. To the patient it means that her medical care, both general and antenatal, lies in one place and in the hands of only two doctors—her own general practitioner and the consultant. To the hospital it means continuity of medical policy, achieved by direct and personal contact between the hospital representative and the patient's own doctor.

A natural development of these arrangements is the consideration whether the same principle can be extended to other local authority antenatal clinics not planned as general-practitioner health centres. There seems to be no reason why it should not, provided the general practitioners who are interested in obstetrics in the area can agree upon suitable sessions at which they could all attend. This has, in fact, been started in Bristol at a clinic on the new housing estate of Lawrence Weston, and it is hoped that this practice will be extended.

Domiciliary Confinement

The same arrangements, both medical and administrative, are taking place in connexion with domiciliary confinements. If a case booked for delivery at home is diverted into hospital for medical reasons, all the necessary information is readily available.

The combined clinic at which both general practitioners and midwives attend should go a long way towards abolishing one of the most unnecessary controversies which have arisen in the practice of obstetrics. As all cases will be seen by the midwife as well as the practitioner, with the consultant on call as required, there ceases to be any question of whether a case is a midwife's delivery or a doctor's confinement, for the functions of midwife and general practitioner are complementary, as they should be, and in fact always have been.

The Clinic Doctor

What is the future for the local authority medical officer? Even assuming that much of the work in the antenatal clinics be taken over by the general practitioner in the way described, there still remain the patients of those doctors who are unwilling to undertake antenatal care. It is likely that such cases will be numerous, and change in the present system of antenatal care is likely to be gradual.

It would be churlish not to pay tribute to the work of the clinic doctors, who came into existence to provide adequate antenatal care at a time when this was not otherwise available, and it is no reflection on them to suggest that the work should be done by the patient's own general practitioner where this is feasible. Moreover, the local health authority should continue to provide very important educational facilities—by holding mothercraft classes, and antenatal exercise and relaxation sessions in the centre.

The developments outlined above have not come to pass through the efforts of any one person. Professor G. G. Lennon has striven hard to achieve a closer link between those engaged in antenatal care. Professor R. H. Parry, Medical Officer of Health, and the Bristol Health Committee, in conjunction with the Southmead Hospital Authorities, have willingly co-operated in the linking of the clinics with the hospital. In particular, the new note system has involved a good deal of work shared by the records officers of the local health authority and the hospital. The co-operation on the part of the general practitioners at the William Budd Health Centre and at the Lawrence Weston Clinic has made the work there a great pleasure. Finally, our thanks must go to all the local authority clinic doctors, midwives, and health visitors who have assisted in the development of the service.

REFERENCE

Lennon, G. G. (1952). *Publ. Hlth.* 65, 199.

Reports of Societies

LOCAL MEDICAL SOCIETIES

Liverpool Society of Anaesthetists and the Section of Anaesthetics of the Manchester Medical Society

At a joint meeting held in Manchester on April 8 Dr. A. R. HUNTER read a paper on the new short-acting hypotensive drug, "arfonad."

He said that hexamethonium was unsatisfactory for inducing hypotension, because the tachyphylaxis to it, which developed so rapidly, made it impossible to give the drug in fractional doses until the required degree of ganglion block for the individual patient had been produced. Arfonad, given in a drip in a 0.06 or 0.1% solution, was therefore tested as an alternative in 20 neurosurgical cases undergoing operations for aneurysm, angiomas, and vascular meningiomas. Arfonad proved to be quickly acting, but a safety pause of five minutes was needed after the blood pressure had begun to fall. Tachyphylaxis was encountered, but this difficulty could be overcome by giving large amounts of the drug. When the hypotension was no longer needed the blood pressure could readily be restored to normal on stopping the drip, by inversion, or the injection of methylamphetamine hydrochloride, or both.

The only complication directly traceable to the arfonad was the appearance of a red streaking of the skin overlying

the vein into which the drug was being run. Two patients died in the post-operative period, but the deaths would have been by no means unexpected had no hypotension been induced. The following danger signs were noted during arfonad hypotension: gasping respiration seemed to indicate acute medullary anoxia, and congestion of the operation area, with local venous bleeding, that the oxygenation of the myocardium was being interfered with. Excessive reduction of the haemoglobin in the cerebral veins was assumed to signify slowing of the blood flow to such an extent that cerebral anoxia had begun to develop. Arfonad was more potent than hexamethonium, and it had less cardio-accelerator action. It reduced the risks of hypotension in cases where this technique was essential, but did not make hypotension safe for everyone.

Manchester Medical Society

At the annual general meeting of the Manchester Medical Society on May 5, Sir HENEAGE OGILVIE gave an address on "The Future of Surgery." He said that writers in the past had thought that surgery had no future and that its role remained to polish and perfect what had already been done. As regards operative surgery this might be to some extent true, for technical skill had not improved in the last 50 years. Yet in those 50 years new operations had been invented, new parts of the body had been explored, operative mortality had fallen, and operative results had improved. This advance had been due not to surgical skill or enterprise but to advances in para-surgical methods, particularly in anaesthetics. Manual skill could not improve much further, but this was not the whole of surgery or even its most important part. The worst surgeons were nearly all good operators. The great surgeon must have, in addition to skill, knowledge, wisdom, clarity of thought and diction, originality, leadership, integrity, courage, and above all humility, without which no advance was possible. Increase of skill could come by the division of labour in an operation, particularly by handing over parts of it that involve difficult stitching to a nurse.

Two things surgeons would like to have, Sir Heneage said, were a contrast medium excreted by the pancreas, and a systemic haemostatic, able to seal cut vessels but not liable to produce clotting in intact ones. The avoidance of blood loss by retarding the circulation might be valuable in certain difficult operations, but it carried too great a risk of producing thrombosis in the cardiac and cerebral vessels to justify its extended use at the present time.

The prospects for the future of surgery as a profession were not encouraging, he continued. All important advances in surgery had come from Britain, because the door was always open to let in those who were on the way up, to let out those who were on the way down, and to offer a broad hint to those who were merely starting. Now, in place of surgery as a vocation, a dangerous adventure calling to the stout of heart, we had surgery as a guaranteed career, calling to those in search of security. The pre-Beveridge surgeon was offered an opportunity only, and he had to make it into a position and a livelihood by his own efforts. The contemporary surgical aspirant walked into a board-room a registrar and walked out a consultant—made for life. The present position did not recognize the fact that surgery is a profession in which skill and wisdom are acquired slowly, progressively, and by apprenticeship, and that a far more gradual release of supervision and assumption of responsibility are required.

North of England Society of Anaesthetists

At the final meeting of the 1953-4 session, on May 21, the president, Dr. E. J. MILLAR, presented the Registrar's Prize to Dr. F. SORRELL for an essay entitled "Some Aspects of Bronchospasm." Dr. M. H. ARMSTRONG DAVISON was elected president for the coming session and Dr. E. I. TATE was re-elected hon. secretary.