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THE ANTENATAL TREATMENT OF GONORRHOEA*

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ROUTINE examination of the expectant mother has only comparatively recently been adopted as a general practice in this country. All practical obstetricians have for generations realised that if the pregnant woman was examined, and in the case of a normal pregnancy such minor adjustments as may be necessary were made to her mode of life, diet or clothing, a safe birth and a healthy child were ensured. In cases presenting any serious abnormality plans could be made in advance, and the expected complications dealt with by operative or other means, instead of having to be met, as was usually the rule, in the flurry of the patient's growing distress and increasing weakness.

A great deal of the credit for the changed state of affairs in this country is due to two men, Ballantyne of Edinburgh, and Armand Routh of London. Both of these men were insistent on the necessity for antenatal examination of every primipara, and the advisability, to put it no more strongly, of examination of every multipara, at least once during pregnancy.

Now, as a matter of course, every upper-middle class woman, in London, at least, visits her doctor not once but many times during pregnancy, for examination and advice. In London, also, the free antenatal clinics, attached to the teaching hospitals, or provided by the municipal authorities or by private charity and subsidised by the State, are now popular with the wife of the small wage-earner, who takes it for granted that she should undergo careful examination, including the examination of urine, and possibly also her blood. All these changes

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in public opinion have taken place in ten or at most twelve years. I conducted some of the earliest voluntary ante-natal clinics in London, in 1916 and 1917, and the matter-of-fact reaction of the pregnant woman to-day to a thorough examination, compared with the suspicious and apprehensive attitude of her sister of twelve years ago, is scarcely credible.

That being so, it is natural that our standard of examination of the expectant mother becomes more exacting, with a view to preventing foetal mortality and maternal morbidity. The patient's pelvis is measured, her urine examined chemically, and sometimes also microscopically. She is questioned as to her diet, and the regularity of her bowel action. Her heart and lungs are as carefully examined as is the size and position of the foetus. Her teeth are overhauled, and the carious teeth condemned and marked down for immediate extraction. Her blood pressure is taken, and her blood examined as to its calcium content, urea, blood sugar, or some other constituent. Sometimes it is tested for syphilis. She is asked as to whether she has any discharge. In most modern ante-natal clinics, whether attached to a hospital or to outside agencies, almost any discharge in pregnancy is at once referred to the V.D. department for investigation and report as to whether treatment is required.

It is from the following classes that we get our pregnant patients suffering from gonorrhœa :—

- (1) Patients referred from ante-natal departments as suspicious.
- (2) Unmarried expectants referred from maternity and rescue homes, for routine examinations, to exclude V.D. or get it treated.
- (3) Those previously attending as patients suffering from gonorrhœa, who have become pregnant while attending the clinic, or who having been discharged and become pregnant, return to see that they are still all right—a common practice among our patients.
- (4) Pregnant patients who believe that they have V.D., and so come spontaneously for treatment.

All of the patients referred for opinion are by no means suffering from gonorrhœa. It is necessary to sort them

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out to decide who needs treatment, and who only requires more rest, or more baths, or both.

The types of case with discharge most commonly seen by us are associated with :—

- (1) Gonorrhœa, either acute or chronic. The latter type is usually referred by a doctor on an old history of ophthalmia in one or more children, or of post-puerperal pyrexia.
- (2) *B. coli* infections. These are common, and are often more dangerous in their end results than gonorrhœa.
- (3) Muco-purulent discharges, usually in multiparæ, secondary to severe varices of the vulva, and imperfect cleanliness.
- (4) Discharge associated with small cervical mucous polypi, or discharge in a pregnancy following a septic or sapræmic puerperium at a former confinement or miscarriage. The discharge is often so slight before the new pregnancy as to cause the patient no discomfort, but when pregnancy occurs, it increases rapidly with the growing congestion of the vulva and vagina.
- (5) Discharge accompanying gross oral sepsis, either of teeth or tonsils; the organism most frequently found is the streptococcus. With removal of the septic focus, the discharge quickly clears up.
- (6) A peculiar discharge, like thickly-curdled milk, or soft cream cheese, met with mostly in Jewesses. It causes severe excoriation of vulva and groins. This is not a venereal discharge, and seems to be due mainly to an excess of Doderlein bacillus. It would be interesting to hear from some one who has great experience of obstetric work among Jewish women just how common this type of discharge is, and whether or not it has anything to do with the more generous diet of the poorer Jewish house compared with the ordinary purely English dietary, which seems to me frequently deficient in vitamins A and D.

I do not propose here to discuss these non-V.D. cases further, but to confine myself to a discussion of the pregnant gonorrhœa ones. There is not a class of patient anywhere requiring more tactful handling than these.

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If unmarried and deserted, as frequently occurs, her sense of helplessness and hopelessness increases. If married, the wounded pride of the "respectable married woman," who is faced with the fact that her infection is due in all probability to her husband's infidelity, makes her mental reaction to the world at large, and also at first to the clinic doctor, one of bitter resentment. Therefore the correct understanding of the expectant and infected mother's psychology is of the greatest importance, in order to secure her confidence and co-operation.

The unmarried mother suffering from gonorrhœa presents in London an easier problem. If she can remain at home under hygienic conditions, with a bed to herself and a sufficiency of baths, and lives near enough to the V.D. clinic to attend it as often as is necessary, well and good. If these conditions are not met with, as most frequently occurs, she is strongly advised to gain admission to a hospital or hostel, and a card is given to ensure her admittance, or she is taken by a worker to a place selected. At the Royal Free Hospital we are fortunate enough to have two such hostels attached to the V.D. department, where we can place such young women under excellent conditions during their treatment.

The married woman suffering from gonorrhœa is a more difficult problem. It is sometimes almost impossible to get her to attend as regularly and frequently as is necessary, owing either to ill-health, the factor of distance (some London women have miles to travel to the nearest clinic), or the claims of husband or children. The intelligent treatment of gonorrhœa in pregnancy naturally includes, on the part of the doctor, satisfactory provision of suitable facilities for confinement, *i.e.*, suitable from the obstetrical standpoint, having regard to the special circumstances of the case, and satisfactory also to the patient, in that she is happy and acquiescent in the arrangement made.

As regards the treatment of the pregnant woman suffering from gonorrhœa, *the first and most important step* is to have one or more Wassermann tests done, to ascertain that she has not got syphilis. Intensive treatment for gonorrhœa is then instituted. Even now in modern clinics this Wassermann test is sometimes omitted.

In all cases of acute gonorrhœa, we are agreed that if the patient could be immobilised by rest in bed for three or

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four weeks, the infection would automatically subside to a great extent even if no other treatment were given. But this counsel of perfection can rarely be complied with. We are compelled then merely to advise the patient that she is suffering from an acute condition which will be greatly helped by a sufficiency of rest, and to urge her to act on that advice to the best of her ability. The next most urgent thing is to impress on her the great need for regular complete evacuation of the bowels daily, or twice a day during pregnancy to prevent the superimposed cystitis or even pyelitis due to the *B. coli* infection which so frequently complicates a gonorrhœa during pregnancy. This superimposed *B. coli* infection, I think all will agree, very often gives the "showiest" discharge. The bright greenish-yellow discharge of pregnancy, which excoriates and causes warts, is always due to a strong admixture of the *B. coli* with the gonorrhœal infection.

In passing, if I am not stealing Professor McIlroy's thunder, I should like to advise the V.D. medical officer, who is not always an obstetrician, to beware of severe toxæmia due to the *B. coli* infection where there is a complaint of vomiting in the later months of pregnancy. Even though routine examination shows no albumen or only the most insignificant trace, still a catheter specimen should be specially examined in every case where there is vomiting after the middle of pregnancy. Only too frequently a marked infection by *B. coli* will be found to be present, and this, if neglected, may go on to acute pyelitis, with the usual rigors and high temperature, during which time a premature baby may be born either dead or suffering from the mother's toxæmia to such an extent that it dies in less than a week or is a very difficult and delicate baby. As an even more alarming result of a *B. coli* infection, eclampsia may set in without any prodromal symptom. Therefore it behoves the V.D. officer, who is presumably seeing the patient much more frequently than the obstetrician, to be on the outlook for such possibilities and either to deal with them quickly or to see that the patient is passed on to a obstetric *confrère* at once. It seems to me that the pregnant woman suffering from V.D. is prone to all the other infections to a remarkable degree. Crookshank, of Glasgow, in his recent work on the toxæmias of pregnancy, declares that a loaded bowel is not a factor in producing eclampsia, yet

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in my cases constipation was very definitely a cause. There is almost certainly another factor which helps to cause the sudden storm, but I am convinced that intestinal toxæmia goes a long way towards producing the condition.

Now as to the treatment of gonorrhœa in pregnancy : Doubtless many of us disagree as to the exact details of treatment, but we are all as one in our belief that the strictest cleanliness is essential. The daily bath or the daily wash-down, held up as an ideal to even the poorest pregnant woman, is more than ever a practical necessity to the pregnant woman with gonorrhœa. It is a sad comment on the present state of our domestic hygiene that this bath should mean an infinity of work to the average poor-class mother. Better housing conditions for the poorer people and more baths would inculcate more self-respect and help to *prevent* the spread of infectious venereal disease.

Then as to the question of douching or otherwise : Where there is a profuse discharge, some low-pressure irrigation is absolutely necessary at the beginning of treatment. This must be given by a nurse, for no pregnant patient can either safely or satisfactorily douche herself. A small, say two-pint, douche of soda bic. *preceding* the antiseptic irrigation is of great use. If the urethra is infected, a urethral wash-out with special catheter, tubing and funnel must also be done, daily or four times a week.

Then as to the treatment by the doctor : It has been said that tampons should not be used in pregnancy, and some writers have even deprecated the use of probes to the cervix during pregnancy as liable to produce abortion. After working over a term of years with such cases I am sure that what would cause abortion is not any one treatment or another—it is *hurting* the patient that is harmful. By that I mean the production of physical hurt, by passing a speculum too large or too cold or insufficiently lubricated so that the patient strains and struggles. Again, *forcible* painting by probes or jamming the fornices full of tampons might undoubtedly act as such an irritant to the uterus that miscarriage might ensue. But gentle painting of the cervix with repeated antiseptic applications after first removing the tenacious mucus with an alkali or the insertion of a small tampon as a dressing to

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an inflamed cervix has never in my experience caused even one miscarriage. But a patient who has been roughly handled may ache or may even bleed a little for some days, and she or her husband may so resent or fear the effects of the treatment that they may refuse to continue it. For these reasons I never under any circumstances allow the medical students to treat a pregnant case of gonorrhœa, since, with the best intentions in the world, they are often, through lack of the skill acquired by experience, clumsy or rough.

Another very important point in treatment is the prevention of moisture occurring in the patient's vagina and vulva. These cases, we all agree, very easily develop warts in pregnancy. Therefore it is essential not to leave a tampon in position for twenty-four hours, by which time it is saturated; also, after a douche it is advisable to have the patient cough to rid herself of all surplus moisture and then to dust down the whole vagina and vulva with starch and zinc, or better still with Dermatol, zinc and starch, which is a very fine and comfortable powder.

All abnormal conditions of the peri-urethral crypts or of Bartholin ducts must be treated by a 1 c.c. syringe full of the favoured antiseptic attached to a blunt-pointed needle.

Infection of the anus and rectum must be looked out for and dealt with if present by rectal wash-outs and by painting the infected area with 5 per cent. AgNO_3 .

As to the removal of warts during pregnancy, I am now not in favour of doing this, as, owing to the congestive and moist character of the parts, they are very liable to recur. But ten or fourteen days after delivery warts clipped under gas and dressed for the first twenty-four hours with 5 per cent. phenol in glycerine and afterwards kept dry with powder heal in the most perfect and painless manner.

Sometimes one is fortunate enough to see the warts disappear spontaneously in pregnancy as a result of local treatment or of vaccines. I have seen warts disappear after an unduly large dose of vaccine. I remember once telling a student to give 200 mill. of gonococcus vaccine, instead of which the student, owing to mental confusion, gave 500 mill., and a week later the patient, who had received this suddenly much greater dose, was clear of warts. So out of evil, good may come.

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In pregnancy I give usually graduated doses of vaccine on six or eight occasions, or in very acute cases I may give two or three doses of non-specific protein, usually boiled milk, keeping the patient in bed until the reaction is over—usually for twenty-four hours only. Then, after the three doses, the patient has a tonic and, after a lapse of two or three weeks, a few doses of vaccine may be given weekly or every ten days if still required. The vaccine we use at the Royal Free Hospital is ordinary stock-mixed vaccine made from a virulent gonorrhœa, usually from a child, with the addition of the usual pyogenic organisms in our hospital, *e.g.*, staphylococci, streptococci and diphtheroids.

In pronounced persistent cases of gonococcal urethritis occurring in primiparous pregnancies I have sometimes applied diathermy with excellent effects to the urethra. This treatment, which may seem unwise to many, was begun by me in fear and trembling, because these persistent horribly infected urethræ always seem to get bruised and torn at delivery. It seemed wiser to try, by every means, to get the urethra clear before delivery, otherwise one was simply faced with severe bruising and extension of infection after child-birth, which was incredibly tedious to cure. And as the majority of these severely infected young primiparæ were unmarried and dependent on their own earnings for their own and their child's support, it was a continual struggle after the child was six or eight weeks old to keep the mother from going to work and giving up intensive treatment. By thus treating selected cases by diathermy to the urethra at a temperature of 112°–113° F. for ten to fifteen minutes one got much better results, and the time needed after delivery for complete cure was greatly reduced. It seems necessary to stress the reason for adopting this treatment, for in most cases the cervical infection was cured, and, consequently, discharge and all other symptoms had ceased (because, as we all know, there are rarely bladder or micturition symptoms in these cases), and therefore the patient felt well though still showing G films from the urethra. She was prone to claim the right to go to work, thus adding another female still suffering from gonorrhœa to the population. Therefore, when there is a really acute gonococcal urethritis in pregnancy that is not yielding satisfactorily to the ordinary treatment, it seems to me

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that diathermy should be applied. Even if the case is not rendered G negative before delivery, at any rate the condition is so relieved that one can confidently expect to clear it completely within a few weeks after delivery. These cases of resistance to ordinary treatment may not constitute a great proportion of the whole, but they are sufficiently numerous to need special consideration. None of these pregnant cases treated by diathermy had premature delivery or suffered any ill-effects at all.

When speaking to a society of experts it is unnecessary to give details of drugs used, and it would seem impertinent to those with a greater experience of these cases than myself. My only reason for agreeing to give this paper in conjunction with Professor McIlroy's paper on Delivery, etc., of these cases is that one sees yearly a considerable number of such cases and knows only too well the meticulous care and patience needed to bring them to a satisfactory conclusion. The number of new pregnant cases of gonorrhœa seen in the V.D. department of the Royal Free Hospital in 1927 was 188, and almost as many others were seen and found to be non-gonococcal.

To attain a satisfactory conclusion I consider that the following conditions must be fulfilled :—

- (1) There should be no ophthalmia of the new-born child.
- (2) The mother's pelvis after the puerperium should be in as good a condition as that of an uninfected mother who has had the same type of delivery.
- (3) Complete cure of the mother's infection must be obtained by continuous treatment so that she may be discharged free from infection, after repeated satisfactory tests and after observation for some time without treatment, *within* six months after child-birth.

The absence of a foreign bibliography makes this short paper less scholarly but, I hope, not less practical, as each country has naturally its own sociological and domestic problems.

In conclusion, I want to record with thanks the cordial manner in which Professor McIlroy's Obstetrical and Gynæcological Unit co-operates with the female V.D. department in the Royal Free Hospital. The two departments are quite separate and distinct, and yet one

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can truthfully say that the work done there on infected pregnant and recently delivered women is team work in the best sense of the word, each department working happily and hopefully with the other for the greatest ultimate good of the patient.