

SYPHILIS AND PREGNANCY.

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THE influence of syphilis upon pregnancy has attracted the attention of syphilologists and obstetricians from the days of Paracelsus to the present. The knowledge gained in the past ten years has added zest to its perennial interest and has wrought great changes in our views so that the aphorisms of the teachers of a former time have been relegated to the limbo of ideas no longer held as true.

Eighty years ago Colles formulated the law which bears his name: "A child born of a mother who is without any obvious symptoms, and which, without being exposed to any infection subsequent to its birth, shows the disease when a few weeks old, this infant will infect the most healthy nurse, whether she suckle it, or merely handle and dress it, and yet this child is never known to infect its own mother, even though she suckle it while it has venereal ulcers of the lip and tongue." In 1865 Profeta made the statement which has since been known as Profeta's Law: "A healthy child born of a syphilitic mother could be suckled by her or a syphilitic wet-nurse with impunity."

For many years these oracular expressions went unchallenged. Coupled with the fact that florid syphilis in the pregnant woman was a frequent cause of abortion and still-birth they represented

practically about all we knew concerning the disease in its relation to childbearing. Since the discovery of the *Spirocheta pallida* and the introduction of the Wassermann test we know the *raison d'être* of these laws and accordingly have grave doubts as to their verity. Since 1905 the literature on the subject has been voluminous, not to say confusing. But now, out of this mass of conflicting opinions, certain facts have been established which enable us to reach conclusions resting upon a scientific basis. It is my purpose in this communication to present these facts.

The Wassermann test has allowed us to arrive at a much clearer insight as to the incidence of syphilis than heretofore. We have learned that it is present, especially in a masked form, much more frequently than was supposed. We have also been made aware that absolute dependence cannot be placed on a serological reaction in diagnosing syphilis either in the pregnant woman or her child. I have not space to go into detail why this is so; indeed, authorities are still divided as to the reasons. Only, I might add in passing, that all women, whether pregnant or not, are more or less aberrant to the Wassermann reaction. We can affirm too, which was formerly denied, that paternal infection can and does occur, although rather infrequently.

The peculiarity which the pregnant woman affects toward the Wassermann is shown in other ways that are still more puzzling. In pregnant or parturient women the milk may react positively and yet syphilis may not be present; the reaction however is not marked—one or two plus. Scarlet fever occurring during pregnancy will give rise to a positive reaction, also in carcinoma and puerperal sepsis. Patients with eclampsia always give a strongly positive reaction. The condition known as latent maternal syphilis—where syphilitic spermatozooids exist in the woman's genital tract—not only creates an immunity to the disease but also against a positive Wassermann because these women not only have antigens in their breast milk but in their blood serum as well. These women may remain in good health indefinitely and yet convey syphilis to their offspring through the ovum, decidua or placenta.

Numerous observers have found that not much reliance can be placed in blood for a Wassermann taken from the umbilical cord. While it is undoubtedly wise to do so as a matter of routine, yet the most absolute test is to search for the *Spirocheta pallida* in the cord itself. The organism should be looked for in the walls of the vein and the connective tissue stroma. In a suspected case a section of the cord should be preserved in a formalin or Ringer's solution and later examined by a bacteriologist. Examination of the placenta is not so reliable, as it not infrequently happens that the spirochetæ cannot be found in the placental tissues, although the woman is patently syphilitic. Usually, however, they can be found and when present indicate not so much the presence of syphilis in the mother as its existence in an active form in the child. As strongly presumptive evidence of this is the fact that the organisms when found are always on the fetal side of the placenta. This is especially interesting because latent syphilis in the mother is undoubtedly derived from an infected fetus. The

organisms may lie dormant for an indefinite period and after the woman has borne several healthy children she may develop the disease. It can thus be assumed with almost complete certainty that infection of the mother occurs through the fetus by way of the umbilical vein or the ruptured vessels of the chorionic villi. The antigens thus formed allow the mother to nurse her syphilitic child. If these antigens cannot be found in her milk she cannot nurse her child without grave danger of becoming infected herself. Should the mother be syphilitic and the child proven to be healthy, then the child should be fed artificially.

The latter part of this last paragraph naturally brings us to the discussion of Colles' and Profeta's laws. From what has been already stated the reader can readily infer that these laws are no longer accepted. The explanation of the apparently healthy mother nursing her syphilitic child, is to be found in the latent syphilis and the antigens in her milk. The same is true of the apparently healthy child suckling from the syphilitic mother. It is a latent syphilitic. We know now that it is the fetus which conveys the disease and that no woman can give birth to a syphilitic child without herself also being syphilitic; although the disease may be, and often is, dormant for a long period of time.

A clinical diagnosis of syphilis can be made from the placenta within certain limits. Evidences of the disease are found in the placenta in 70 per cent. of all cases. This, in spite of the fact that the child may show no signs of lues. It is apparent in some cases that the disease has exhausted itself on the placenta and in consequence the fetus is but slightly affected. It is also well known that infants who have syphilis do not always show symptoms at birth nor for a considerable time thereafter in a large percentage of cases. The child may exhibit symptoms of syphilis and yet the placenta may be perfectly normal in appearance. This is the exception, however, rather than the rule; the placenta shows certain signs which if not pathognomonic of the disease are strongly suggestive of it. Almost invariably there is a marked disproportion between the size of the placenta and the size of the child. In syphilis the placenta is decidedly larger. Between a normal child and a normal placenta the proportion by weight is about 1 to 6. In syphilis this is reduced 1 to 4 or even 1 to 3. Pinard has pointed out that the amount of amniotic fluid is also increased. I desire to say in passing that the disproportion between the placenta and child is, in my opinion, more apparent than real because the syphilitic child is often under weight.

The syphilitic placenta shows deep sulci between the lobes which causes the cotyledons to appear more prominent. Its color is paler and its surface is covered with yellowish white patches. Its substance is extremely friable and on section has a mottled appearance that has been likened to sausage meat. The vessels of the cord are visibly thickened, although this is sometimes present without syphilis. When the fetus is born dead the cord is often edematous and the vessels may be plainly seen, shining through the swollen cord. Wharton's jelly may be absent. The amniotic fluid may be increased to such an extent as to constitute hydramnios. This is to be accounted for by the placental

lesions incident to the disease. It may be due to a syphilitic cirrhosis of the liver. The changes occurring in the placenta are in most instances the cause of fetal death.

The condition known as habitual death of the fetus is frequently due to syphilis. The child dies in each succeeding pregnancy, usually between the thirtieth and thirty-fourth week, and is soon thereafter expelled. It cannot be denied that syphilis tends to the formation of monsters and of children malformed to a lesser degree. It is not true, however, that recent syphilis transmits itself as congenital syphilis and tertiary syphilis causes malformations. While syphilis is undoubtedly the most frequent cause of abortion—Charpentier found that in 781 luetic pregnancies there were 302 abortions, and Miller states that 70 per cent. of luetic women abort—the consensus of opinion among modern observers is that syphilis does not cause abortion as frequently as was formerly supposed; nor does it follow that every macerated fetus is syphilitic.

In the study of syphilis and pregnancy from the standpoint of the clinician the observations of Mangiagalli are worthy of note. He recognizes four conditions: viz., both parents syphilitic when conception occurs; the mother alone infected; the father alone infected; the mother becomes infected after conception, both parents having been healthy prior to conception. His conclusions are that an apparently healthy child born of a syphilitic mother is syphilitic although the syphilis is latent. When the mother becomes infected after the seventh month the disease in the child is apt to be less severe than if the infection occurred earlier in pregnancy. He could discover no direct relation between a positive Wassermann and the clinical manifestations of syphilis. When both parents are syphilitic the child inherits the disease in about 75 per cent. of births. When the mother alone is syphilitic the child inherits in about 60 per cent. If the father alone is syphilitic the child inherits in from 10 per cent. to 20 per cent.

Syphilis is always to be regarded as a grave complication of pregnancy. It increases puerperal morbidity more than any other cause. Many cases of nephritis occurring during pregnancy can be traced to syphilis. Sepsis is more apt to occur in syphilitic women than in those who are healthy. Cicatricial stenoses of the os due to syphilitic lesions may cause undue delay and complication of labor. The same is true of edema of the cervix due to active syphilis.

Syphilis in the pregnant woman should be treated the same as when it occurs otherwise. That is, salvarsan, mercury and potassium iodid should be exhibited sufficiently and properly to cure the disease. In the treatment of pregnant women, however, there are certain refinements which should be observed in order to attain the best results for the mother and her unborn child.

In giving salvarsan it must be remembered that the drug has been known to cause premature expulsion of the fetus; but in my opinion this danger is remote. If the woman's veins are sufficiently prominent the salvarsan should be administered intravenously, unless she is suffering with myocarditis or if her blood pressure is abnormally high. If her veins are not prominent enough and for the other

causes mentioned the salvarsan may be given by the rectum. A saline is given and after the bowels have moved the lower bowel is thoroughly cleaned with a normal saline enema; after which the salvarsan solution is allowed to flow into the rectum through a catheter attached to a glass funnel. This method while not much used is almost as efficacious as when the drug is injected intravenously. It has the advantage of not increasing the blood pressure, does not produce "water sickness" and is much easier to give to a nervous patient. Should the woman be threatened with eclampsia salvarsan and mercury should be withheld until the urine is free from albumin.

I do not advise intramuscular injections of insoluble mercurials, such as the salicylate or grey oil, in pregnant women—or in any woman for that matter. My reason for this is that when such a menstruum is injected into the buttocks the layer of fat prevents its absorption and painful abscesses are prone to occur. If the patient's veins will permit I prefer to inject the mercury intravenously. A solution of bichloride or mercury benzoate is prepared so that each ten minims represents 0.006 of the drug. The initial dose is ten minims in 15 c.c. of warm normal salt solution. The procedure is the same as when salvarsan is given, only that the blood is allowed to run into the syringe and mix with the solution before it is injected. By so doing the chemical combination which thus occurs renders the solution non-irritating and the danger of phlebitis is avoided. When properly done absolutely no ill effects are produced (which cannot be said when horse serum is used) and it is the most efficient and promptly acting method of introducing the medicament into the system. The patient should receive two injections a week for six weeks. Treatment should then cease for a month and then be renewed. If it is not possible to give mercury this way the next best way is by inunction. During the course of her pregnancy the woman should receive from sixty to ninety inunctions; each thirty inunctions from four to six weeks apart. In giving inunctions it is best to give one each day for six successive days and then rest the patient a day, on which a hot bath is taken. I am in the habit of giving potassium iodid during the course of mercury and for a week or two thereafter, as it assists in eliminating the mercury and as mercury acts best in a state of flux, i. e. while being eliminated, the maximum effect is thus obtained. Patients under mercurial treatment should rinse the mouth several times a day as a guard against stomatitis. As pregnant women sometimes have trouble with their teeth the services of the dentist should be requisitioned if necessary. Rest and a tranquil state of mind should be encouraged. The last the medical attendant can materially aid in by maintaining an optimistic outlook. The bowels should be cared for by the administration of a mild aperient as occasion requires. Sexual intercourse should be forbidden after the third month. In those cases where it is not possible to give inunctions, the mercury may be administered by means of suppositories after the manner of Lanney.

These patients require no other treatment, the mercury and salvarsan being sufficient to overcome any anemia that may be present. In some instances

July 7, 1917]

19

a bitter tonic may be given to improve the appetite. Treatment should be persistent; careless, casual treatment is, in my opinion, almost as bad as none at all.

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