

OBSERVATIONS ON THE TREATMENT OF SYPHILIS IN PREGNANCY IN THE DEPARTMENT OF HEALTH IN DETROIT

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IN 1915 J. Whitridge Williams reported syphilis as the causative factor in over 26 per cent of 705 fetal deaths occurring in 10,000 deliveries at the Johns Hopkins Hospital. It has been the experience of most obstetricians that the greatest causative factor of premature deliveries and macerated feti is syphilis. In an effort to reduce fetal mortality from this cause, an attempt has been made to lessen the incidence of inherited syphilis through prenatal care in Prenatal Station I of the Department of Health of Detroit. We aim therefore to diagnose syphilis as early as possible in pregnancy and to commence treatment at the earliest possible time, in order to cure the mother and child before birth.

After admission a brief family history of the patient is taken. At this time an effort is made to uncover any familial luetic conditions. A short personal history with special reference to luetic infection, lesions or antiluetic treatment is then secured. A concise history of labors is noted in chronological order. The year of each abortion, miscarriage and labor is written in order of occurrence; after the year of each delivery is written the period of pregnancy, duration of labor and character of delivery in order. Stillbirths are noted in order of occurrence as well as any pathology of pregnancy, labor, or puerperium of a given delivery. The patient is given a thorough physical examination at the first visit: Luetic changes as shown by dermal, vascular, neurological involvement are noted in all cases. Blood for a Wassermann test is always taken from every patient at the first visit. Those whose history is indicative of luetic infection, but whose Wassermann reaction returns negative or faintly positive, are given luetin and provocative Wassermann tests to aid in diagnosis. A Wassermann test is made on the spinal fluid in selected cases.

During the year 1921, 1467 new prenatal cases attended this clinic. There were 699 white women (47.6 per cent) and 768 colored (52.4 per cent). Of this number 193 (13.1 per cent) were diagnosed as syphilitic. Among the white patients 40 (5.7 per cent) were syphilitic. Among the colored patients 153 (19.3 per cent) were syphilitic. For various reasons 46 of the entire number were lost track of and 147 were cared for through pregnancy and the results of delivery noted.

Diagnosis was not made by a positive Wassermann reaction alone.

Of the 147 cases completed, 128 had a positive Wassermann reaction from their blood, an incidence of 87 per cent. The Wassermann test was usually considered positive in which there was a 2, 3, or 4+ reaction with alcoholic antigen.

Luetin was used as a diagnostic aid in 54 prenatal cases. These resulted in 42 positive pustular reactions and 12 negative, a percentage of 77.6 per cent positive. In the same series there were 45 positive Wassermann reactions with 9 negative, or a positive percentage of 83.3 per cent. As compared with the Wassermann reaction the luetin test agreed in 93.3 per cent of these cases.

Only one chancre was demonstrated in the entire number of cases. Twenty-nine (19.7 per cent) had luetic skin lesions. Forty-two (28.5 per cent) had absent or markedly retarded reflexes. Eighty-three (56.7 per cent) had ocular changes. Of these 18 (12.2 per cent) had definite Argyll-Robertson pupils. Seventy-four (50.3 per cent) had glandular involvement.

Abortions of feti under 16 weeks' development are considered of no diagnostic value, as transmission through the placenta probably requires a minimum of three months before development of syphilis in the fetus. Weber* in 35 cases of abortion during this period was able to rule out lues in every case. Histories of previous miscarriages at from 16 to 28 weeks pregnancy, premature deliveries to 40 weeks' duration and delivery of macerated feti are considered valuable aids in diagnosis. In the Munich Woman's Clinic† from 252 luetic children 201 (82 per cent) were delivered prematurely. In our series there were 106 multiparous women. Of these 57 had given birth to 129 premature deliveries, previous to attendance at the clinic, an average of 2.2 per individual.

An effort was made to confirm diagnosis in those feti which were stillborn or died while at the Herman Kiefer Hospital, by means of postmortem examinations. Also a Wassermann test was made from the cord blood of all babies born in the Hospital. Living children of luetic or suspected cases were examined carefully for signs of the disease; also they were examined at the end of six weeks for luetic signs which might have developed in that time.

All possible factors which bear on the individual case were weighed to diagnose lues. Where there was a negative blood Wassermann other positive findings, physical, anamestic, luetin test or spinal fluid tests were considered of sufficient importance to base a positive diagnosis on.

As soon as a positive diagnosis of syphilis is made treatment is started regardless of the period of pregnancy. Two injections of salicylate of mercury in goose oil, and one intravenous injection of

*Quoted by Döderlein, *Handbuch der Geburtshilfe*, vol. 2.

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neosalvarsan are given weekly for a period of six weeks. The first injection of neosalvarsan is gm. 0.3. Subsequent injections are gm. 0.45 for two injections, then gm. 0.6 per injection. If time permits a period of one month's rest is followed by a second course of the same treatment. In marked renal conditions the use of mercury is lessened or stopped. So far as possible the course of treatment is continued without any intermission. We find considerable difficulty in persuading some to continue treatments as they feel perfectly well without them, and not too well after mercury injections.

All babies from syphilitic mothers regardless of the result of cord Wassermann test are referred to an Infant Welfare Clinic for further observation and treatment. The record from the Prenatal Clinic is sent also for the babies' record there. All mothers are informed of the hidden danger of the disease and told that the other members of the family might be infected. They are then urged to have all other members of the family carefully examined for evidences of the disease. They are advised to continue treatment until the disease is eradicated. The importance of curing the entire family is clearly stated to them at the same time.

RESULTS

Of the 147 syphilitic mothers cared for by the clinic, 46 had adequate treatment consisting of three or more injections of neosalvarsan and eight or more injections of mercury.

These gave birth to 45 living children and one stillbirth, a fetal mortality rate of 2.1 per cent. The remaining 101 had insufficient or no treatment. These gave birth to 26 miscarriages or stillbirths with fetal development of from 16 to 40 weeks. This is a primary fetal mortality of 25.7 per cent for neglected cases.

In this series were eight miscarriages at from 16 to 28 weeks. All of these were not treated.

Of the 19 stillbirths occurring in the third period, 28 to 40 weeks, only one had full treatment and that was given in the third period of pregnancy.

Five mothers who had full treatment in the first period (up to 16 weeks' pregnancy) gave birth to living children with no sign of syphilis.

Nineteen mothers who had full treatment in the second period of pregnancy, 16-28 weeks, all gave birth to living babies.

It was possible to obtain cord Wassermanns only from those babies born at Kiefer Hospital. Among these, some of the tubes were broken and the blood of others was anticomplementary. There were only 79 specimens which could be properly examined;—63 of these (78.7 per cent) were positive.

Of the 79 cord Wassermanns examined 26 mothers had had full treatment. The result of the babies' Wassermann tests in these 26 cases was 8 (30 per cent) negative. From the 53 mothers who had no or insufficient treatment only 8 cord Wassermann tests were negative (15 per cent).

DISCUSSION

Approximately 85 per cent of the mothers diagnosed as syphilitic suffered from latent syphilis. None of these had any complaint of illness and visited the clinic only because they were pregnant. It was only because of routine examination that these were discovered.

It is of the utmost importance to make an early diagnosis so that early treatment can be instituted. As syphilis is only transmitted through the placenta to the fetus after a period of about three months, it is evident that the treatment instituted early in pregnancy is capable of preventing fetal transmission. After the spirochaete has been implanted in the fetus, the possibility of fetal cure is lessened, and more difficult to accomplish. It is questionable whether antisymphilitic treatment through the mother can be of any value to the fetus *in utero* when the vital organs of the fetus are severely involved. So, as far as the fetus is concerned the later the treatment is begun in the mother, the less possibility of either cure or control on the part of the fetus. It is our opinion that full treatment should be attempted even at the end of pregnancy in hope of securing a controlled case in a living child which can be further cared for after birth.

We have not found the injection of neosalvarsan productive of miscarriages or premature deliveries. With a small initial dosage, gm. 0.3, and an increase to gm. 0.45 or gm. 0.6 in weekly injections, we have seen no harmful results of this nature.

Those mothers who have not completed their treatment before delivery are urged to return for the completion of treatment after delivery. Also they are urged to return to the clinic for examinations and care as soon as future pregnancies are suspected.

It is necessary for every prenatal case to be carefully examined for syphilis. Routine examinations of placenta and fetus for signs of syphilis are of value not only to the child, but of greater value to subsequent children which are born after proper treatment has been instituted upon the mother.