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Syphilis

In its relation to

Pregnancy.

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Syphilis in its relation to Pregnancy

The object of this paper is to give the details of cases of Syphilitic pregnancy, to discuss Syphilitic disease of the Placenta; and to shew the bearings of the latter on the transference of syphilis from foetus to mother & from mother to foetus.

Cases.

I. The first case to be narrated is one which came under the writer's care in January 1875. Mrs B. wife of a railway guard, Edinr, was delivered Jany 2nd 1875 of a dead female child. She gave the following history: she had been married 8 months; at the end of the 2nd month after marriage she noticed a sore on external genitals; in the 3rd month an eruption appeared all over her body & her throat became sore; these symptoms disappeared under treatment; she was not salivated; in the 5th month after marriage condylomata appeared round the anus which still persist; in the 7th month she almost lost her voice; she believes she has been pregnant 8 months. Examined at the time she had a few papules on the neck & arms, condylomata round the anus & a husky voice.

The Child when born presented a very peculiar appearance. The abdomen was greatly distended & completely stripped of cuticle which was wrinkled & peeling off the rest of the body; where the cuticle was stripped off the skin was of a bright crimson colour, at other parts purple; on the left side of the neck was a petechia. Length of child 17½ inches; attachment of cord 9½ inches from vertex: no vernix caseosa.

On opening the abdomen a bubble of gas escaped & the peritoneal sac was found distended with a sero-sanguineous fluid to the extent of 8 fluid ounces. The pleura, pericardium, cranium, & loose tissues of the scalp,

(1) Gaz. Med. de Paris 20 Année p. 392.

(2) "Infantile Syphilis" (New Sydenham Soc translation) p. 90.

were all found distended with the same fluid. Under the microscope this fluid shewed ill-formed, coloured blood-corpuscles, solitary, floating about in the fluid & agglutinations of colourless corpuscles.

On examining the viscera nothing specific could be found in any of the organs except the Thymus gland. Externally this shewed no signs of anything wrong but when cut into & squeezed a yellowish, grumous, opaque fluid exuded which shewed under the microscope the characters of pus

The Long bones at their ~~junction~~ junction with their epiphyses & the ribs where they joined their cartilages shewed evidences both macroscopically & microscopically of the Syphilitic osteochondritis of Wagner.

The Placenta was large, firm, & sometimes pale. When cut into it left on the knife no greasy stain. Under the microscope the foetal villi shewed no trace of the tuft of vessels they contained, being enlarged by an enormous increase of cell growth round the vessels. The canal of the Cotton was obliterated, no blood from the foetus could enter & hence the pale appearance of the organ was seen to be due to anaemia. The decidual portion of the organ was affected with a similar increased cell growth.

Remarks.

(1) Paul Dubois was the first to point out the lesion of the Thymus gland publishing his researches in 1850.

(2) Diday gives the following account of the discovery:

"Having seen children whose parents had had syphilis sink in a few days after birth, unable to explain this termination by the severity of the eruptions on the skin or mucous membranes, he was induced to subject their viscera to a more strict examination than is generally made & thus frequently succeeded in detecting this affection.

"The affection always always presents itself in the

same form. Externally the gland offers nothing standing either in its colour or volume but on squeezing it after an incision has been made into it, small drops of a semi-fluid, yellowish-white matter having all the appearance of pus are easily pressed out."

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Case II

This case did not come under my own notice, it appeared in a paper read before the Brit: Med: Assoc: 1875 by Dr Angus Macdonald to whom I am indebted for the particulars.

Mrs M. was perfectly healthy when married. Twelve months after marriage she gave birth with aid of instruments to an apparently healthy & well nourished child. Within three weeks afterwards however a papular rash appeared on the child's skin which became subsequently copper coloured & squamous. Condylomata appears at the verge of the anus & the child ultimately died when only 7 weeks old, rather suddenly without any obvious cause other than its general syphilitic condition.

The mother suckled the child & the same week as it died began to suffer from cracked nipples. These shortly afterwards ulcerated & ecthymatous pustules broke out on the breasts & other parts of the body. Then the tongue & mucous membrane of the mouth became severely ulcerated. Iritis followed & almost complete loss of hair.

After six months the external manifestations of Syphilitic taint disappeared & she again became pregnant. At 7½ months she fell in labour a second time & after 36 hours of ineffectual effort to expel the contents of the womb, forceps were applied & a child extracted which at first seemed dead, but after half an hour's efforts at resuscitation the child

came round. A second foetus was found now in the womb & was delivered by turning. This foetus was dead & apparently had been for a day or two. The labour would seem to have come on owing to its waters having escaped prematurely. The first-child died after 24 hours.

The father of the children admits having had an ulcer on the penis twelve years before, he had however no secondary symptoms nor any gonorrhoea.

The dead child (which alone was examined) presented no external manifestations of syphilis on the skin but the bones shewed unmistakable osteochondritis syphilitica

The Placentæ were pale large & anaemic-looking but shewed no evidence to the naked eye of the characteristic changes associated with syphilis, but when submitted to microscopical examination abundant evidences of syphilitic change were found in both the villi & the maternal portion.

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Case III

Mrs C. Liverpool gave me the following history March 18 1897. She was married about 14 years ago. About three months after marriage she became severely ill, an eruption breaking out all over her, & her throat becoming sore, ~~her~~ & she had to go home to her parents. Her husband became similarly very ill at the same time & had to go to the hospital. She was pregnant when she went home & at full time was delivered of a healthy looking child which in a few days broke out in sores & died in 5 weeks. All her children have been healthy looking when born. The following is an account of her children:-

Her 1st child died aged 5 weeks
2nd — — — 6 "

4th 3rd child died aged 3 days

4th Miscarriage at 4 months

5th still living & apparently healthy. The bridge of the nose is sunken & there is profuse nasal discharge. When a few weeks old he suffered severely with eruptions as the other children did.

6th child	lived	18 months
7th	"	3 years
8th	"	5 weeks
9th		Still-born
10th		Still-born
11th	lived	14 months

I saw this child after it was dead. The hands & feet were fissured, the mouth was excoriated & had evidently been bleeding. It died unexpectedly in a "fit". The mother says she has never suffered so severely as in her first pregnancy but has always been subject to sore throat.

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Case IV

6th April 1877. Mrs R. brought me her child aged 3 mos. It was covered with a papulen copper coloured eruption. The nostrils were almost completely stopped. The angles contracted. The mouth was excoriated. It appeared healthy when born. The mother has noticed spots on it a few weeks before. She suckled the child & it has never been suckled by any one else. She has two children apparently quite healthy. Between the birth of the younger of these & this last she has had two miscarriages. She has never had any signs of syphilis. Her hair has never fallen off. The cervical glands are not enlarged. Tho she suckles this child with ulcers on its mouth she has no ulcers

(1) Virchow's Archiv B. 4 H. 3 S. 305

(2) Archiv für Gynäkologie Bd. H. 1 S. 1

on the breast. The nipples are perfectly sound.

Syphilitic disease of the Placenta.

has only been brought to light within late years. The reasons why it so long remained undiscovered are two-fold. The pale appearance of the placenta led practitioners to set it down off-hand as "fatty" & thus prevented them examining it further: & then again there was often great difficulty in ascertaining the certainty of syphilis in a given case. A child might be born dead without any external evidence of the disease & the parent might show no signs of it. This difficulty has been removed by (1) Wagner's discovery of osteochondritis Syphilitica. He has shown that this disease can always be made out in the long bones of Syphilitic fœtuses at their junction with epiphyses or in the ribs where they join their cartilages, even if the fœtuses have been macerated some time.

With this test as his guide (2) Frankel has worked out his discovery of the nature of Syphilitic disease of the Placenta. According to him, if we have constitutional syphilis in either parent, the disease in the placenta will vary as it originates. If the father only is the victim of the constitutional disease & beget a child affected with syphilis, then the part of the placenta primarily affected, will be those most connected with the villous or fœtal portion of the placenta. On the other hand if the mother only is primarily affected with the constitutional disease, then the maternal or decidual portion of the placenta will become first the seat of the diseased action. But if both parents are affected from the first, or even if the mother has been infected during the pregnancy secondarily, we shall have a mixed form of the disease,

(v S. 29

that is, we shall have disease of the fœtal villi, & combined with that, disease of the maternal or decidual portion.

In cases I & II when both parents were syphilitic either at the time of conception or the mother became so shortly afterwards, the combined form of the disease was found in each case.

Of the disease when confined to the fœtal villi (1) Fränkel says " The characteristic of the above diseased alteration of the placenta is therefore an increase of volume, weight, & mostly likewise of consistence of the organ. Microscopically the thick plump form of the fœtal villosities is the cause of this deformity, filling up the villous space by a growth outward from the vessels, of numerous middle-sized cells, complicated with a proliferation of the epithelial mantle which clothes the villi. In the higher grades of this growth of the cellular contents of the villi then follows obliteration of the vessels & lastly complete atrophy of the villi. The name 'disfiguring granulation-cell-increase of the placental villi' is therefore applicable to this disease."

This obliteration of the fœtal circulation in the diseased part of the placenta, must throw a strain on the healthy portion & so lead to extravasations & thus render the disease still more fatal to the fœtus.

The villi of the whole of the placenta are not uniformly affected as a general rule. A portion of the villi in a cotyledon may be affected or a whole cotyledon whilst the parts around are healthy. The disease begins in the basilar part of a villus & extends to the terminal parts involving as is proceeds the branches of the larger villi.

If the mother were constitutionally syphilitic

(1) P. 17 (Op. cit.)

(2) P. 22

(3) P. 22

before conception, or became so immediately after this & the father were free from the disease then we find the affection different. It is confined, at first at least, to the maternal decidua & appears as a sort of diffuse inflammatory irritation analogous to, if not identical with, the disease described by Virchow as 'endometritis gummosa placentaris'.

If both parents are constitutionally syphilitic, or if the mother became so shortly after conception, or in consequence of being poisoned by the syphilitic foetus she is carrying, then we have both the diseases present in the placenta

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Having related the cases & given a resumé of Syphilitic disease of the placenta, we now come to consider the subject of

Transmission of Syphilis through the placenta from foetus to mother & from mother to foetus.

As to the manner in which the foetus may become infected Diday's observations & researches lead him to the following conclusions.

I [1] "Syphilis in the foetus frequently acknowledges no other cause than Syphilis in the father."

II [2] "When a man affected with Syphilis has had connection with a pregnant woman, especially if she have not been pregnant long, we must not, even if she remain healthy calculate with certainty that the child will be exempt & it will be prudent to watch it carefully during the first months of its life."

On the influence of the mother he says:

III [3] "A woman suffering from constitutional Syphilis may affect the foetus in two different ways:

(1) P. 54

(2) P. 146

either by throwing off a vitiated ovum, or by furnishing it during pregnancy with elements of nutrition infected with the specific diathesis."

(1) and this latter is only possible between the 4th month & the end of the 7th month of pregnancy.

Cases II & IV seem directly to favour Diday's first conclusion for in case IV the mother does not appear to have had the slightest manifestation of the disease & in case II it was not till after the birth of the child that the mother shewed signs of the disease.

In Cases I & III it is most probable that the mothers shrew off healthy ova which were infected by the fathers at the time of impregnation the mothers being primarily affected at the same time.

The questions that will most concern us at present are these:-

i Can a foetus that has received syphilis from its father alone transmit the disease to its mother?

ii Can a woman infected during her pregnancy transmit the disease to her foetus?

iii Can a pregnant woman having connection with a syphilitic man transmit the disease to her foetus without herself becoming infected?

To the first of these queries, 'can a syphilitic foetus transmit the disease to its mother?' (2) Diday answers in the affirmative giving cases in support of his opinion & Hutchinson has lately come forward to shew that it not only can but must; that a woman who bears a syphilitic child must have had the disease in some form or other.

In the 'Medical Times & Gazette' Dec 9. 1876. p. 643, is published a paper read by Mr Hutchinson before the Hunterian society on "Colles Law".

In 1837 Dr Abraham Colles wrote in his 'Prac-

-tical Observations on the Venereal Disease' "The following fact appears to me very deserving of notice: I have never seen or heard of a single instance in which a syphilitic infant (although its mouth be ulcerated) suckled by its mother, has produced ulceration of her breasts: whereas very few instances have occurred where a syphilitic infant has not infected a strange hired wet-nurse who had been previously in good health"

Hutchinson's experience corresponds with this. He has never seen a woman who has borne a syphilitic child contract chancre of the nipple from the child & his natural conclusion is that she must have had syphilis in some form.

(In the face of it Case II might seem an exception but there is no evidence of true chancre of the breast. & the placenta of her first pregnancy was not examined so we are in ignorance as whether the maternal portion was affected.

Concerning the mode of transmission of the disease Hutchinson says[1] "Admitting then the truth of Colles' observations, and next that it cannot be explained by asserting that all mothers of syphilitic infants have had chancre syphilis, we are drawn to the conclusion that they must have had syphilis in some other way. The method suggested is that of direct blood-contagion by the influence which the fetal blood exerts on that of its mother. xxxx Not only does it prove that the foetus, not sometimes but invariably, infects its mother, but it seems to prove that it conveys to her syphilis in its entirety xx If the contagium passes at all it must be allowed its full potentialities of development. That the mother of a syphilitic child has had the disease as a whole & not in part or in small degree, is proved

by her total immunity afterwards: & we must observe that this immunity is exactly the same in the numerous cases in which the woman has never shown the slightest symptom, as it is in those in which she may have suffered severely.

"Have we not here a new chapter in the natural history of Syphilis opened to us? It being proved that a third mode of communication of the virus is possible, to chancre syphilis & inherited syphilis we must add syphilis by blood contact between foetus & mother."

Now I venture to suggest in regard to this 'third mode of communication that it should be studied in the light of the newly discovered disease of the placenta & then it will be found that it is not by 'blood contact' or 'direct blood contagion' but that it is done by direct tissue contact & something very analogous to chancre syphilis.

It is an ascertained fact that syphilis in the foetus manifests itself, if at all, in the Osteochondritis syphilitica of Wegner. With this exception there may be no trace of it to be found in the child's body but the foetal villi of the placenta are sure to be affected by the specific disease. Fränkel says 'if the ~~foetus~~ mother were syphilitic in consequence of being poisoned by the syphilitic foetus she is carrying, we may have both diseases in the placenta'. But the question is, how is the woman poisoned? It is to the placenta that we must look for the solution of this problem. Here, if the foetus alone is affected, we have the disease specifically manifested in the foetal villi, & here we see diseased

(1) P. 29.

foetal tissue in contact with maternal tissue. The mucous membrane of the uterus is richly supplied with lymphatics; ordinary chancre syphilis shews itself in the lymphatics as soon as it shews itself anywhere; hence it seems highly probable that the disease in the villi poisons the tissues of the decidua, & after a period of incubation, thus shews itself in the decidua, in a manner analogous to that of ordinary chancre ~~syphilis~~ which runs its course. Secondary symptoms may or may not follow, or the decidua may be the only part where the disease is ever manifested in the mother.

Of course this question cannot be settled without further research but I think with our present knowledge of syphilis of the placenta we are not warranted in concluding that the contagion is by 'direct blood contact' when we have healthy tissue of one being in contact with diseased tissue of the other. In future the history of a case will not be considered complete unless the placenta has undergone a careful microscopical examination.

Can a woman who acquires syphilis during her pregnancy transmit the disease to the child she is carrying?

It is universally admitted that she can but it is also allowed that there is a time after which the foetus will be safe. (1) Diday's digest of eleven cases leads him to conclude that if she acquire the disease later than the 7th month she cannot transmit it. Will the disease of the placenta shew any light on this? I think it will. How is it then, that a woman can transmit syphilis to the child she is carrying if she acquire it before

(1) P. 19.

the end of the 7th month but not if she acquires it. Later? Clearly the virus is in the woman's blood between the time of her infection & the birth of the child. The villi of the foetus are floating in the blood & the conditions in this respect are the same in the sixth month as in the 8th. If therefore the disease is conveyed by blood-contact why is contagion impossible after the 7th month? The answer would seem to be that it is not by blood-contact at all that the disease is conveyed but by tissue-contact & that in the placenta. If a woman is infected at the end of the 7th month it will be near the end of the 8th before the chancre appears & there is therefore not time for the disease to affect the surface of the decidua before the child is born & so it escapes the disease.

Can a woman who has connection with a man suffering from syphilis convey the disease to her foetus without becoming affected herself?

"Diday says we should not hastily decide in the negative & quotes the analogous case of small-pox which has undoubtedly been so conveyed & also the following cases

I. A man affected with primary syphilis had connection with his wife when in the 6th & 7th month of pregnancy. She was not affected. At full time an infant was born which soon after presented well marked syphilitic pustules & died in 9 days. The father soon after had symptoms of constitutional syphilis & was cured by mercurial unctions

II A woman who asserted that she had never had syphilis though she had given birth to a child

which died of it, Eighteen months after this married a healthy man. By him she had a child which proves to be syphilitic. She gave no evidence on any part of having venereal affection.

Diday contends that this is an example of the disease being transmitted from the father of the first child to the child of the healthy father mother the woman's having the disease.

With regard to small-pox, though it is very analogous to syphilis the different modes of contagion in the two diseases forbid us to draw conclusions from the one to the other such as are suggested.

In the two cases cited, from the fact that neither of the women shewed any sign of syphilis, it is <u>assumed</u> that they did not have the disease but the probabilities are just as great the other way & even the second case seems strongly to favour Hutchinson's application of 'Colles' law'. Had the placentæ in these two cases been carefully examined we should have been able to form more definite opinions on them. As it is there does not appear to be evidence enough for us to deem it possible for a man having connection with a pregnant woman to transmit the disease to her foetus without affecting the mother.

Syphilis is a disease which is more definitely understood than many departments of Medical science & a great light has lately been thrown on its natural history by the discovery of the specific

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Disease of the Placenta.

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Thesis.

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