CASES AND REMARKS ILLUSTRATING THE HISTORY OF PREGNANCY COMPLICATED WITH SMALLPOX.

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The Society will, perhaps, remember that, in the remarks which I had the honour of addressing to the Fellows on retiring from the Presidentship, I expressed a wish that we should gather up our experience as to the course of pregnancies complicated with zymotic disease. I am sure no one can have observed and reflected upon even a small number of such cases without being struck with the number of questions of scientific and practical interest to which they give rise. To solve these questions, a large body of facts observed by different men, in different localities, and under other varieties of circumstances, is necessary. And it

cannot be doubted that the practice of the Fellows of our Society can supply such a body of facts. All that is wanted is that each should look over his case-books, and send in reports of cases in point; comparison and generalisation may then be usefully applied.

There is no disease, excepting, perhaps, syphilis, which has so many interesting bearings upon pregnancy as smallpox. In 1863-64-65 smallpox prevailed rather extensively in London; and in pursuance of my own suggestion I beg permission to relate the four cases which came under my observation.

August 3rd, 1863.—I was requested by Dr. Simpson, of Fore Street, to see a woman who had contracted smallpox when near the end of pregnancy. She had had several children, and had been vaccinated.

Rash came out on the 1st; she was delirious. On the 2nd, at night, she attempted to destroy herself. Pending our appointment, labour came on suddenly, after having taken an aperient dose. The child was born very quickly, alive, strong. No hæmorrhage. The mother had been better since delivery; pulse 100; respiration hurried. She did well. On suggesting to Dr. Simpson that he should vaccinate the child immediately, he said he had vaccinated two children born prematurely of mothers suffering under variola, but confluent variola broke out, although the vaccine vesicles came out well.

January 16th, 1864.—I saw the wife of a publican with Mr. Jenkins. She had usually enjoyed good health, and had borne three children. When Mrs. —— was pregnant, an inmate of her house had smallpox. She took it subsequently, and was delivered spontaneously of a living child, when supposed to be seven months gone. The eruption was just appearing; she had vomited, and had fever. The child did not seem of more than six months' development, and scarcely appeared viable. I saw the patient two hours after delivery. The placenta had come away without hæmorrhage. The pulse was quick, bounding; skin hot. A favorable prognosis was given. She had salines and anodynes.

I was informed by Mr. Jenkins that she was afterwards very ill, but recovered. The child showed no mark of variola.

On the 20th November, 1865, I met Mr. Jackson at Canonbury, in the case of Mrs. ——, who was in the last month of her first pregnancy. Modified variola had appeared some days. She expected labour at the end of November. It therefore seemed to have set in a little prematurely. The head descended into the pelvis, and then stopped, pains being ineffective; I found the body covered with discrete varioloid vesicles, not umbilicated. The head was near the perinæum in the second or right occipito-anterior position. We gave chloroform. The patient was at first excited by the chloroform, and we had to place her on her back. I then applied my long forceps, and delivered. The cord was twice round the child's neck, involving some danger of strangulation. The cord was cut whilst held between both hands, and then the ends were tied after releasing the neck. The child, a girl, cried and did well. The placenta was expelled. I have since been informed by Mr. Jackson that the mother did well; but that the child was attacked with variola either on the fifth or sixth day, and died.

The *first* question that arises is as to the *influence of intercurrent smallpox upon the pregnancy*. Does it interrupt the course of pregnancy? In the three cases related labour came on prematurely.

2. *In what way does smallpox excite premature labour?* It has been thought that labour was the ulterior result of the death of the embryo; and it is certain that in some cases the death of the embryo is really the first step or apparent factor. But in my three cases—as in a host of others—the child was born alive. The action, then, of the morbid poison is not always primarily upon the embryo. I venture to submit the following propositions:

a. Nature hardly tolerates the concurrent progress of an active disease and pregnancy. This law is of very wide application.

b. If the disease be of zymotic character, the morbid

poison, aggravated by the further blood-poisoning resulting from arrested or disordered secretory function—so important in pregnancy—acts upon the whole system, producing fever, increasing the irritability of the nervous system, impeding the nutrition of the muscular system, including the most important muscle of all, the uterus, and directly irritating this muscle. The influence of blood poor in oxygen and loaded with carbonic acid, in causing contraction of the involuntary muscles, has been well established by Marshall Hall, Brown-Séquard, and others. It is a matter of experience that pregnant women suffering from asphyxia, chronic or acute, are extremely apt to abort. The blood in fever wants oxygenation. In this respect it resembles the blood in asphyxia. But superadded to this condition are the materies morbi, and other consequent blood impurities, which it is probable act in a similar manner upon involuntary muscle. The result is that the uterus is directly stimulated to contract, and labour is induced.

c. There appears to be this difference between the action of acute and chronic blood-poisoning upon the embryo and pregnancy: in acute disease, where respiration is impeded and where the blood is rapidly poisoned, the first effect is upon the uterus. In chronic poisoning, as in the case of secondary syphilis, the embryo may be first attacked. Its nutrition is sapped, it perishes, and then, the uterine development being arrested, and involution taking its place, in the course of a period ranging from seven to twenty-one days contraction sets in, and the dead fœtus is expelled.

d. There is another way in which it is probable that abortion is produced in zymotic diseases. The blood is in a state favorable to extravasation. Apoplexy of the placenta or effusions between the placenta and the uterus take place, and thus uterine contraction is excited.

e. Abortion, or premature labour, may be excited in yet another way. The sudden impression upon the nervous system, or shock, may cause the uterus to expel its contents. I have seen this happen under the influence of an attack of apoplexy, and it is at least a principal factor in the causation

of labour when uræmic convulsions break out during pregnancy.

3. *To what extent is the life of the mother endangered?* In the three cases related the mothers recovered, but I have seen another case, the notes of which I have been unable to find, which terminated fatally, and in which a post-mortem examination was made. It is in the highest degree probable that the fatality is much greater in the case of pure variola, that is, where variola attacks unvaccinated persons. Experience in these cases has become rare. For information as to the effects of pure variola we must go back to the medical history of the early part of the century; and for want greatly of such a society as ours at that time the records are very scanty. I will not examine these records now. It is enough to observe that pregnant women not infrequently pass through pure variola in safety. Still variola, pure or modified, must be looked upon as a dangerous complication. I am inclined, however, to think it is less dangerous than typhus or typhoid. It does not appear that there was any excessive loss of blood during labour in the cases here related.

The chief danger probably arises in the puerperal state.

4. *What is the influence upon the child?* The following facts appear to be established:

a. If the pregnancy is not interrupted, and the child is born alive at term, it will probably have gone through the disease. Evidence of this is found in the following cases:

1. Some years ago a child, aged 14 months, came under my care. The mother, when six months pregnant, took smallpox; she was delirious. She had been vaccinated, and bore the marks. The pregnancy did not seem to have been disturbed. The child exhibited scars, with which she was born—one on the back, another on the scalp, others on the legs. She had never been vaccinated, three medical men having considered the operation as useless.

2. In the 'Philosophical Transactions,' vol. xlvi, is this case. A woman big with child, having herself long ago had variola, nursed a maid servant with the disease. At the proper time she brought forth a healthy female child, in

whose skin Dr. Watson discovered evident marks of variola. Dr. W. pronounced that the child would be free from future infection. After four years her brother was inoculated at the same time as herself with pus from the same patient. The boy had the regular eruption. The girl's arm did not inflame or suppurate. On the tenth day she turned pale suddenly, was languid for two days, and then was well.

3. Dr. Jenner relates a case told him by Mr. Henry Gervis, a surgeon at Ashburton, the grandfather, I believe, of our honorary secretary. Mr. G. vaccinated a pregnant woman in her last month, variola prevailing in the village, and her three children having been inoculated with variolous matter the day before. She went through the vaccine disease, and was delivered of a female child presenting an eruption resembling variola in an early stage. This was five weeks after the mother's vaccination, and four weeks after her exposure to the variolous infection of her own children. Mr. G. inoculated successfully with pus taken from the infant's pustules.

4. John Hunter relates a similar case. On the other hand, William Hunter said in other cases of the kind the child in utero escaped contagion; and Sir George Baker mentions the case of two women who were inoculated when pregnant at Hertford. Both had the smallpox favorably, and brought forth children perfectly healthy. Both these children at the age of three were inoculated with effect.

5. This practical question arises, Can we, by inducing labour in a pregnant woman attacked with smallpox, increase the chances of safety of the child? The facts established above must govern the decision.

a. It is highly probable, in the first place, that, in the course of the disease, labour will occur spontaneously.

b. If not, the child may perish with the mother.

c. It may perish independently in utero.

d. It may take the disease and survive.

e. It may not take the disease in utero, but be born while susceptible to the infection, whilst the mother is still suffering from the disease. In such a case is immediate vaccination

desirable? If this be answered in the affirmative, as I believe it ought to be, then is it desirable in cases where labour has not occurred spontaneously to induce it, in order to secure the opportunity of vaccinating the infant before it has become infected? Would this course be attended with any advantage or disadvantage to the mother? No absolute rule can, I think, be laid down, but the condition of the mother, the mildness of the disease, will in some cases indicate the propriety of not interfering. But as a general rule I am disposed to conclude that labour should be provoked at an early stage by introducing a flexible bougie into the uterus.

Mr. Benson Baker had had seven cases of pregnant women under his care during the past winter who had taken smallpox and miscarried; they were all delivered of living children, but with one exception all the children died. None of the children had variola when born, but a modified or abortive eruption came out within from three to eight days after birth. He could not but think that the effect of variola on the unimpregnated uterus might aid in elucidating some of the interesting and important suggestions of Dr. Barnes. He had observed cases in which amenorrhœa had existed for several years, and under the influence of variola an excessive menstrual flow had occurred; and others in which young girls from ten years of age and upwards, who had never menstruated, had done so on the eruption of smallpox. And lastly, he referred to other cases in which the catamenia had been established by the variola, but in which the amenorrhœic condition subsequently returned.

Mr. Streeter, as a visitor, would avail himself of the president's invitation to take part in the discussion, having long taken an interest in this subject. He had himself read a paper upon it before the Westminster Medical Society nearly thirty years ago, and in that paper, he believed, was contained the earliest recorded case in this country of smallpox after vaccination occurring with pregnancy. Referring for details of his case to the printed record ('The Lancet,' Nos. 751 and 757), he would only now state some of his conclusions, regretting that so little had been added to our knowledge of this complication since that time. One important point then shown was, that the child did not pass through the disease at the same time as the mother, but had it eight or ten days later at least. As the fœtus formed its own blood from absorbed material, so it incubated its own zymotic poison, and failed with the disease later than its parent. Hence,

when born during the primary or eruptive fever of the mother, it had no eruption; and it was not until after her secondary or maturating fever was nearly or quite over that the child could exhibit pock marks at birth, and if so it was usually dead. Another point of interest was, whether children born after their parents had survived attacks of smallpox after vaccination would be susceptible of the vaccine. In two children so born he failed to produce any vesicles from punctures made the day after their birth, but in the last one he succeeded some months after in producing a regular vesicle with characteristic induration and areola. The complication of natural smallpox was far more dangerous than that of variola after vaccination. Of this he had seen only one case; in this the eruption was confluent, and the woman died undelivered. Mr. Streeter also advocated revaccination after puberty, because, as smallpox may occur twice, so may smallpox occur after vaccination; and in conclusion, he referred to one especial danger of smallpox in the female—this occurrence, namely, of profuse menstruation during the eruptive fever, leading to prostration and a recession of the eruption.

Dr. Madge said that the third volume of the Society's 'Transactions' contained a short paper by him on a case of smallpox in twin-fœtuses, and in the remarks appended to that case he believed he had anticipated a good deal that had been said in this discussion. At present the subject was perhaps more of a theoretical than a practical one. In the paper referred to, however, he had made what he believed was a novel suggestion, and which he would now repeat—namely, the necessity or advisability of recommending all pregnant women during epidemics of smallpox to be vaccinated or revaccinated, so as to extend the protective influence of vaccination through the blood of the mother to the child in utero.

Dr. Barnes, in answer to Dr. Madge, thought that it might be desirable to revaccinate pregnant women who were specially exposed to infection during an epidemic, but that as a general rule it was not called for.

CASE OF VARIOLA IN THE FIFTH MONTH, WITH CONSEQUENT DELIVERY AT FULL TERM OF A DEAD CHILD.

(Reported by C. W. Milne.)

(Communicated by Dr. Barnes.)

Anne Batchelor, of James Street, Lambeth Walk, was taken ill on the 6th of July, 1866, with pains in back, limbs, head, and intense sickness. On the 9th I saw her as a private patient, when the eruption was becoming visible; after that she went on very favorably, having a very mild form of the disease, and in about a fortnight she got, I may say, quite well. From the condition she was in I predicted a miscarriage, but none took place, and I did not see or hear from her until the middle of September, when she had a slight show of a bright red colour, free from any offensive odour. From this time she went on having a slight show and no pains, in fact, feeling quite well from day to day, expecting her labour to come on. This did not take place until the 7th of October; she had been ill all night when I was called to see her in the morning. Her labour was natural but slow, and about it there was nothing unusual. The fœtus was dead, and the cuticle had begun to desquamate, but it was not putrid, simply general lividity of the surface. The placenta came away easily; it was of an unusual size, large, pale, and very friable, in fact, it had something of a lilac tint. The fœtus was well developed, small, and I thought must have been alive at the eighth month; it evidently had had small-pox, for it was covered with hard crusts of a whitey-brown colour. The woman made a good recovery and has since enjoyed very good health.