A SECOND REPORT
ON THE
COMMUNICATION OF SYPHILIS IN THE
PRACTICE OF VACCINATION.

WITH TWO ADDITIONAL CASES.

BY
JONATHAN HUTCHINSON, F.R.C.S.,
SENIOR SURGEON TO, AND LECTURER ON SURGERY AT, THE LONDON
HOSPITAL; SURGEON TO THE MOORFIELDS OPHTHALMIC HOSPITAL
AND TO THE BLACKFRIARS HOSPITAL FOR SKIN DISEASES.

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IN the spring of 1871 it became my duty to ask the attention of the profession, in the most prominent manner that I could, through the medium of this Society, to two series of cases in which syphilis had been communicated to numerous individuals in the practice of vaccination. There was nothing new to medical science in the nature of the facts, for closely similar ones had occurred previously in various parts of the Continent, and had been faithfully recorded. The narratives of them had also excited much attention amongst ourselves, and had been criticised and investigated by many writers, amongst the ablest of whom I must mention the name of Dr. Ballard, who in his work on Vaccination had treated the subject exhaustively, had avowed his conviction of the reality of the occurrence, and had anticipated almost all the observations which have

occurred in connection with subsequent cases. Nor had we in English practice been wholly free from such accidents, for, not to mention some more or less suspicious occurrences which were not placed beyond doubt, a case which was perfectly clear in all its details had been brought by Mr. Thomas Smith before the Clinical Society six months prior to my own paper. Notwithstanding these circumstances, however, I believe that the facts which I brought before the Society produced in the British profession a sense of most disagreeable surprise, and awoke many for the first time to the perception of a danger which they had never before realised, and of which most had scarcely credited the existence. In the minds of some, I believe that I incurred blame, as being unwise and rash in making such facts public. I could not myself think so at the time, nor do I now, for it seemed most necessary that the knowledge of such a danger should be diffused as promptly and widely as possible. This opinion has been confirmed by the circumstance that during the last eighteen months two other examples of the communication of syphilis in vaccination have come under my notice. One of these presented itself amongst my patients at Moorfields, where the man applied on account of iritis and without the slightest idea as to what he was suffering from, and the other was brought to my house as a private patient, the lady being the subject of a urethral growth. I wish particularly to state that neither of the cases was sent to me because I had taken an interest in vaccination-syphilis, but that both showed themselves in the ordinary course of practice. It may be recollected that neither of my first series came under observation in this way, but that in both the nature of the disease had been recognised by others before I was consulted. I purpose in the present paper to relate briefly the particulars of the two cases to which I refer, and neither of which has as yet in any way been made public, and after doing this I shall ask to be allowed to make a few general remarks on the whole of the facts which I have had under observation. I may just add that during the last two years several cases have been sent

to me as supposed examples of vaccination-syphilis, but in none could the diagnosis be supported.

THIRD SERIES (ONE CASE).

The following case came under my care at Moorfields, where its subject applied on account of acute iritis, of the cause of which he had no suspicion.

The patient was a tobacconist, æt. 46, a married and respectable man. The iritis for which he applied at Moorfields was double. On investigation it was found that his body and limbs were covered with a papular and scaly rash of a very definitely syphilitic nature; he had also symmetrical sores in the tonsils. The examination further revealed the fact that he had large unhealed sores on his arm which had resulted from vaccination. He told us that he had been vaccinated three months before, being at the time in perfect health. Several of his children (young adults) were vaccinated at the same time and from the same child.

His account was that the vaccination places took and went on favorably, but that just as they were about healed, during the fourth week, they again inflamed, became ulcerated, and gave him much trouble. He attributed this relapse of inflammation to the irritation of tobacco dust, in which he worked. It was not until more than six weeks after the vaccination that the eruption showed itself, and not till the end of another month still that the iritis occurred. He had not as yet had any specific treatment, since the nature of his disease had not been recognised. On being questioned as to the possibility of his having contracted syphilis he firmly denied it. He readily submitted to an examination of his genitals, and we could not find the slightest trace of sore on them. His vaccination sores, at the time he came under my notice, were open ulcers as large as shillings, covered with scab and with dusky indurated borders. There was an indolent swelling in his armpit.

This man remained under my treatment at Moorfields

for two or three months, and was seen repeatedly by many members of the profession who were attending my clinique. There could not be the slightest doubt that he was suffering from secondary syphilis, and that too in a very severe form. We treated him with mercury, and both his iritis and rash disappeared.

Everything in the man's history that we could ascertain seemed to point to vaccination as the source of contamination. His vaccination spots were the seat of chancrous induration after having in the first instance healed. The date of their induration and the date of appearance of the rash fitted exactly with the hypothesis that he had in some way acquired syphilis about the date of his vaccination.

Having obtained from him the name of his vaccinator I called on that gentleman, and from him obtained information which strongly confirmed the man's statements. He said that he had never in his life seen such vaccination sores as this man's arm displayed. "He had been quite frightened at them," and had thought their condition so near phagedæna that on two occasions he had applied a strong solution of nitric acid. He had never, however, suspected the real nature of the disease.

About a dozen other persons had, I was informed, been vaccinated at the same time and from the same child as our patient. The vaccinator told me that he knew them all, and that, with the exception of a little trouble in the healing of the sores in one or two, none of them had shown anything peculiar. He was very anxious that we should not excite alarm in the neighbourhood by instituting any inquiry about these patients, and as he promised to get to know quietly how they were doing and to inform me if he found anything suspicious, I thought it best not to press the matter further. I ascertained from our patient himself that his own children, three in number, who had formed part of the series, had all done perfectly well. The vaccinator told me that the infant from whom he had vaccinated was a model of vigour and health, and he courteously procured for me an opportunity of seeing it.

The Vaccinifer.—I found it a very large and very fat baby, eight months old. It had no rash nor any trace of condyloma, and the only point about it suggestive of syphilis was the state of the bridge of the nose, which was decidedly broad and sunken. Its mother appeared in good health, but she told me that her first two children had died in infancy and that this, her third, was the only one she had living.

I have, in my own mind, no doubt from the appearance of the child's nose that it is the subject of inherited taint, and shall confidently expect that future years will prove the correctness of this suggestion; nor do I see any other way in which the symptoms displayed by the man can be accounted for, excepting on the supposition that he contracted syphilis from vaccination. If we suppose that from some other source he acquired a chancre at or near the date of his vaccination, it is remarkable that no trace of such sore should have been left; and it is yet more remarkable that the vaccination spots should have become indurated and have caused an axillary bubo. Nor does it seem in the least probable that the vaccination sores had become accidentally contaminated. No plausible source of such contamination can be suggested, while, as already stated, the dates fit exactly with the supposed introduction of the virus at the time of vaccination. Thus, we seem to have an instance in which only one patient out of twelve vaccinated from the same subject became contaminated; at any rate there is, as yet, no proof that any of the others have suffered, but under the peculiar circumstances of the case I can by no means accept this absence of evidence as conclusive. It is not improbable that something more may in the future be heard of some of these patients.

I will now relate the particulars of the fourth example of vaccination-syphilis which has come under my notice. They are in most points very similar to those of the preceding case; out of three vaccinated only a single individual became diseased.

FOURTH SERIES (ONE CASE).

Mrs. M—, aged about 46, came under my care last December. Her ailment was a vascular growth in the urethra, but in the course of the examination I found that she was covered with the stains of a syphilitic rash. On my asking about it she told me that she had been very ill after vaccination and had suffered from a severe eruption and from inflammation in one eye.

The following, on inquiry, proved to be the facts of her case:—She was vaccinated in May, 1871, and her two daughters, one aged 30 and another 15, were done at the same time. Four punctures were made in her arm and all of them soon healed, not having taken; but a month later one of them again became sore, and a hard-edged very troublesome ulcer resulted which lasted for three months. Within a few weeks of the formation of this ulcer, *i. e.* within seven or eight weeks of the date of the vaccination, she became covered with rash. It was especially copious on the chest and back of the neck and affected also the palms of her hands. From the date of the vaccination in May until the beginning of September she remained under the care of her own medical attendant by whom the vaccination had been performed. In September, as the rash remained out, she consulted another practitioner. Under her second adviser she remained for nine months taking almost continuously iodide of potassium and bichloride of mercury in small doses. In July, 1872, when the rash had been out eleven months and was still but half cured, iritis occurred in the left eye. It was so severe as to threaten the destruction of the organ, and after some delay she got admitted into the Ophthalmic Hospital. It should be stated that for two months before the outbreak of the iritis she had suspended all treatment and had been staying at the sea-side for the benefit of her health. She was in Moorfields from July 19th to August 1st and was treated by mercury and atropine. The diagnosis given, as I ascer-

tained from her prescription paper, was "Iritis, specific (?), after vaccination (?)" At the time of the iritis her rash relapsed and her palms became covered with scaly patches, her finger-nails also thickened.

At the time that this patient came under my observation she was much out of health and was still covered by the stains of an eruption about the nature of which there could not be the slightest doubt. There were adhesions of the iris in the left eye. I found that she had been much annoyed with the gentleman who had vaccinated her, attributing what had followed to his having done it when she was not in a proper state of health. She had not, however, the slightest idea of the nature of the disease from which she had suffered. Her surgeon had not suspected it either, and consequently, during the first four months, no specific treatment had been adopted. On asking her as to the particulars of the vaccination she told me that it was done from arm to arm in the surgeon's own house. The infant, according to her statement, was puny and its mother looked ill. She was not aware whether the child's arm bled or not. In her two daughters who, with her, were vaccinated from the same child, no definite ill results followed; in both, several spots took, went through their stages and healed soundly at the usual time. In neither of them did any of the spots re-ulcerate, but the younger one twice suffered from transitory rash, probably urticaria. I afterwards called on the surgeon who had vaccinated this patient: he confirmed her statements in all particulars excepting that he did not allow that the vaccinifer looked puny.*

The Vaccinifer.—I succeeded in tracing the vaccinifer. Its mother was the wife of a lighterman and had borne three children previously. Of these the eldest is a boy of ten who now shows no signs of syphilis and who is said to have had no symptoms in infancy. The second was stillborn. The third was a girl of four who had no special symptoms in

* It seems probable that the woman who is the subject of our narrative was the last or last but one vaccinated out of a considerable batch.

infancy excepting that for several months during teething she had very troublesome ulcers at the anus (condylomata). For these she was long under medical care and had numerous local applications. At the same period she was considered to have "a tendency to water on the head." The vaccinifer was four months old at the date of vaccination and appeared, according to his mother's statement, to be perfectly well. Subsequently, however, when dentition commenced he, like his elder sister, had very troublesome sores at the anus and a tendency to water on the head. For the anus he was three months under treatment at a dispensary and had blue stone applied. He is living, full grown, and shows no peculiarities excepting a large forehead.*

There cannot be the slightest doubt in this case that the patient has suffered from syphilis, the only question to be raised is how was it obtained? On this point I hold that a vaccination puncture having reopened a month after healing, having formed a large hard-edged ulcer which lasted three months and which was promptly followed by the rash, is an almost conclusive piece of evidence. The dates of each occurrence are precisely what we should have expected.

The patient is a married woman past middle life, and there is not the least reason for suspecting contagion from any other source. I may add that the vaccination ulcer has left a large dusky scar exactly such as I have seen in other cases of vaccination-syphilis.

Before leaving this case I may ask attention to the fact that the secondary symptoms were unusually severe and protracted, a circumstance not improbably due to the fact

* Since this paper was written I have obtained from the mother the name and address of a surgeon who treated her child. On inquiry he tells me that the child had *syphilitic condylomata*, and was, on and off, under his care for months. He states that it had also snuffles and a slight skin rash, and that it was cachectic and puny. He did not ask the parents any direct questions because he was perfectly certain as to the nature of the ailment.

that no specific measures were employed during the first four months, and that they were subsequently given very insufficiently.

I will now, with the permission of the Society, make a few general remarks on the subject of vaccination-syphilis, chiefly in connection with the four series of facts which I have recorded. It will be convenient to arrange what I have to say under separate headings.

1st, What are we to infer from the circumstance that when syphilis is conveyed in the practice of vaccination it does not affect all of those vaccinated from the tainted source? Clearly, I think, we must believe that the specific poison of syphilis is either not contained in the vaccine lymph at all, or is not equally diffused through it. In my first series of cases two patients out of twelve were successfully vaccinated and wholly escaped syphilis; in the second series out of about twenty-six more than half escaped; and in the third only one out of twelve is known to have suffered, whilst in the fourth only one suffered and six or eight probably escaped.

In the first and second series it was repeatedly observed that of those who contracted syphilis, some of the vaccination punctures developed chancres and others did not. There cannot be the slightest doubt that it is quite easy to vaccinate from a tainted vaccinifer without conveying syphilis, and on the other hand that it is possible to convey syphilis either with or without the production of a normal vaccine vesicle. Now, the supposition that it is necessary to convey some of the cell-elements of the blood in order to convey syphilis, seems to my mind by much the most probable explanation. Probably it is not necessary that these elements should be visibly red. That the vaccine virus itself in a pure state cannot produce syphilis seems highly probable, since in several recorded instances vaccination has been inadvertently performed on a considerable scale from a child that was subsequently found to be syphilitic,

and without ill consequences. It is probable that in a great number of instances, in addition to those placed on record, this has happened, and the evidence supplied by it in reference to the impotency of pure vaccine lymph in the production of syphilis is very strong. On the other hand experiment has fully proved, and more especially the well-recorded experiment of Professor Pelpizzari, that the blood of a patient in the secondary stage of syphilis can, when inoculated, produce a chancre which will be followed by the usual role of syphilitic phenomena. The facts in the case referred to afford as regards dates, &c., a very exact parallel with what was observed in all the cases which I have recorded.

Next we may ask is it absolutely necessary that *blood* should be used in vaccination in order to convey syphilis? It seems highly probable that it is not. At any rate there is not the least evidence in three out of the four series of cases which I have recorded that the lymph used was visibly contaminated with blood. The vaccinator in each instance asserts that it is his habit most scrupulously to avoid making the vesicle bleed. Probably it is quite sufficient to allow the vesicle to draw or weep. With this drainage no doubt corpuscular elements of the blood and tissues become free. According to this supposition as soon as the first contents of the vesicle are exhausted the risk begins. It is well-known that it is the custom of many experienced vaccinators to allow the ruptured vesicle "to weep," and to continue to employ its secretion long after the exhaustion of its original elements.

If the syphilitic virus and the vaccine virus be implanted at one and the same time, what will be the course of events? The cases recorded show conclusively that, if the patient be susceptible to vaccination, the vesicle may pass through all its stages in the most characteristic manner. Then after healing of the vaccination-sore, and at the end of about a month from the inoculation, the syphilitic virus begins to show its effects and the scar becomes irritable, inflames, and indurates. Although this course is the usual one it is not

invariable and deviations from it may be observed in connexion probably with the patient's age, state of health, and condition of tissues.

In these exceptional cases the vaccination-sore never heals, and the pus-scab which forms over it combines with the inflammatory swelling around to conceal the nature of the specific changes which subsequently occur. Should the vaccination not have taken, it is usual for the puncture to heal and for the patient to think no more about it until induration occurs at the end of the month.

What are the usual characters of the vaccination-chancere ?

As already hinted above, the amount of inflammatory effusion on the surface of the sore, and of inflammatory œdema at its base, may in certain cases be considerable. In several of the cases in my second series the specific characters of the chancere were in this way quite concealed. In these instances the patients were children. In the man who is the subject of my third observation the history was that the sore had been very acutely inflamed, so much so that the surgeon several times cauterised it, and probably it was on the verge of phagedæna. These conditions are, however, exceptional and in a usual way the vaccination-chancere shows but little tendency to excess of inflammation. In some cases it does not even ulcerate. It begins as a little red, firm, glossy tubercle which gradually increases in size and becomes harder. At the end of a fortnight, or earlier, it usually ulcerates and presents a sore remarkable for its small amount of secretion and for the hardness of its base and edges. The cases in which no mercury was given show that it may last for some months before it heals. After healing it leaves a dusky brown scar very different indeed from that of vaccination.

What treatment ought the vaccination-chancere to receive ?

I can feel no doubt that should a vaccination-scar take on the induration characteristic of a chancere, and should the other facts of the case corroborate the suspicion, it is the surgeon's duty without delay to begin the administration of mercury. The cases which I have recorded show in the

strongest possible light the great difference in result between those in which mercury was given and those to which nothing was done. In my *first series* of cases the nature of the accident was recognised during the sixth week after vaccination and prior to the occurrence of any well-marked secondary symptoms. In all the patients, excepting one, mercury was at once commenced and in all these the progress of the chancre was at once arrested and rapid cure resulted. For a considerable period no secondary symptoms shewed themselves, and the success of the treatment was such as to induce not a few to doubt the correctness of the diagnosis. Subsequently, however, secondary symptoms showed themselves in several of the patients. They were so well characterised as to put all scepticism about the nature of the disease out of question, but still they were comparatively very slight. They yielded very quickly to the renewed administration of mercury and none of the patients in any material degree lost health either from the disease or the remedy, iritis did not occur in any single one and I believe they are all at the present date quite well. The only case which gave any real trouble was that of a young woman in whom suppuration in the cervical glands took place, and in her most probably it was strumous rather than syphilitic. The contrast in this respect was very great between the *first* and *second series*, and still greater in respect to the two cases which I record in the present paper (*third* and *fourth series*). In neither of the two latter was the nature of the disease suspected until the skin was covered with secondary rash. In both the chancre on the arm became very large and remained open for several months. In both the eruption came out most copiously and was attended by great loss of flesh and strength. In both iritis of a very severe character occurred. One of them was cured, both as regards local phenomena and general health, by a course of mercury; in the other the disease under inefficient treatment has lingered for twenty months and the patient is still suffering much from its effects. It is of course too

early to obtain data as to the relative liability of the patients to the tertiary forms of syphilis, but so far as the primary and secondary symptoms are concerned I cannot speak too strongly as to the vast apparent advantage of the mercurial plan. The lesson of the cases is very clearly opposed to the too prevalent modern doctrine that it is well to wait for secondary symptoms before beginning specific treatment, and would appear to indicate that the latter should be adopted as soon as ever the condition of the chancre permits of an accurate diagnosis. I may also in passing be permitted to ask attention to the interesting illustration which these cases afford of the manner in which mercury interrupts the evolution of syphilis and delays the occurrence of secondary symptoms. In all the cases which were not treated secondary symptoms showed themselves from the sixth to the ninth week after the inoculation, whilst those treated by mercury did not show symptoms until from five to seven months afterwards.

In conclusion a few words must be said as to the best means by which we may hope to prevent the occurrence of these lamentable accidents in future. Foremost under this head I would put the diffusion of the knowledge amongst the profession that such accidents are possible. Until quite lately almost the whole British profession was incredulous on this point, and in spite of the publicity which was given to the facts two years ago there still remain, I believe, many who are either uninformed or unconvinced. The vaccinator who proceeds in his duties with the fear of syphilis before him can I think incur but little risk in the matter. He will in the first place select his vaccinifer carefully, avoiding all children whose parents are not known to him. He will for the most part avoid all first-born*

* Of the vaccinifers in my four series of cases two were first-born children, the third was the first which had lived, the parents having lost two previous children in early infancy, while in the remaining case, although the child had a brother and sister living, and apparently in good health, there was the fact that the latter had in infancy long suffered from ulceration at the anus. I am bound, however, to admit that if this the second child had been presented as a

children and wait until by the development of one healthy child some guarantee of freedom from taint on the part of the parents has been given. There certainly cannot be any difficulty under ordinary circumstances in procuring vaccinifers who are absolutely free from risk. Next to the scrupulous selection of the child from whom to vaccinate come the obvious precautions of avoiding the use of blood and of recent exudation from the walls of the vesicle, but these and many other matters of detail have already been so well enforced that it is needless to allude to them further.

vaccinifer, there would, as far as can be ascertained by inquiry now, have been no facts likely to arouse the suspicion of the surgeon. The mother would have been able to produce the guarantee of an older child in good health.