REMARKS

ON

THOSE SECRETIONS WHICH ARE, AND ON THOSE WHICH ARE NOT, THE MEANS OF COMMUNICATING CONSTITUTIONAL SYPHILIS.*

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CASE I.—L. W., aged 23, was admitted under my care into St. George's Hospital on the 17th of June, 1868. There was then an oval sore upon the left labium, about an inch and a-half long, and half an inch broad, surrounded by well-defined induration. The surface of the sore was red, glazed, and presented no appearance of healing. The corresponding glands in the groin were enlarged, accurately defined, and not painful. A secondary eruption was commencing on the hands and on the chest. On June 19th, the secretion from the sore was inoculated in two places. On June 21st, the sore was dressed with savine ointment, so as to produce a copious secretion, which was inoculated in three places on the 22nd. On the 23rd, two fresh inoculations were made. All these inoculations proved negative.

CASE II.—G. D., aged 18, was admitted under my care on June 17th, 1868, with a soft oval sore on the upper part of the left thigh. The edges of this sore were well defined, and it secreted a large amount of pus. There was no enlargement whatever of the inguinal glands; and there was not the slightest appearance of any eruption on the skin during the time the patient remained under observation. On June 18th, a common sewing-needle was used for the purpose of inoculating; and three inoculations were made. On June 25th, three small circular ulcers, with sharply cut edges, and a free discharge of pus from their surfaces, had appeared in the situation of the three inoculations. Some pus from one of these was taken on a sewing-needle, and again inoculated on June 30th. This inoculation produced a sore, smaller in size, but of exactly the same character as those produced by the inoculation of the 18th. On July 15th, all the sores were healed.

The two cases now read are typical, and represent two very distinct morbid processes. In the first, there was specific induration at the seat of the primary affection, enlargement of the lymphatic glands, and constitutional disease; in the second, there was no specific induration around the original sore, no enlargement of the inguinal glands, and no constitutional disease. In the first case, the secretion from the sore was not inoculable upon the patient; in the second, it produced the specific pustules, which were re-inoculable. Neither of these patients had had any other syphilitic affection. It would, therefore, appear that the disease described had been the means of infecting the patient's constitution in the first case, and that it did not do so in the second.

The experiments with regard to inoculation above mentioned I have repeated a considerable number of times; and, where care has been taken, the results have always pointed to the same general laws; namely, 1. That an uncomplicated indurated sore is not inoculable upon the patient himself after it has infected his constitution; and 2. That the secretion of the suppurating sore is inoculable upon the bearer (whether affected with constitutional syphilis or not), so as to reproduce the same kind of disease, the secretion of which is again re-inoculable. In speaking of the inoculability of a secretion, I wish to be understood to mean that, so inoculated, it produces either a sore with specific induration, or the specific pustule, capable of being re-inoculated on any ordinary patient. A single pustule, or a number of pustules, may, under certain circumstances, be produced by the inoculation of ordinary pus; but the pustules so produced have not the sharply cut edges of the specific pustules; nor are they, as far as I know, capable of being re-inoculated in the same way. The accompanying drawing represents a pustule produced by the inoculation of some pus taken with a clean lancet from a case of excision of the knee-joint in a child. The inoculation was performed upon an adult patient who had constitutional syphilis; and the appearances are represented on the fourteenth day after the inoculation was performed. There is a well-developed pustule, as large as an ordinary inoculation from a suppurating sore. It wants, however, the sharply cut edges of the specific pustule, and the secretion from it was not again inoculable.

In a paper published in the *British and Foreign Medico-Chirurgical*

Review for April 1859, the results of my original experiments (which have not always been acknowledged by those who have repeated them) are given; and I am anxious to quote one passage from that paper, because some writers have appeared to think that in it I represented the inoculations from the indurated sores (when any such occurred) and the inoculations from the suppurating sores as identical. "Having observed," I state, "that the indurated sore was inoculable under certain states of irritation, a blister was applied to some indurated sores; and subsequently they were dressed with the unguentum sabinae. By these means I obtained a free secretion of pus from these sores; and it was found that the secretion, before incapable of producing any effect upon the patients themselves, could now be inoculated. The results of these inoculations have been quite different in their course to those which follow ordinary inoculation from suppurating sores." (P. 500.) According to my experience, the laws which govern the development of the two kinds of disease above described are as distinct as those which regulate any other morbid processes in the body. On account, however, of the time that the infecting kind of syphilis requires before it appears in its characteristic forms, it is liable to be masked by, and confounded with, other actions; and much uncertainty and confusion has consequently prevailed, not only with regard to the ideas generally received, but in the writings of medical men who appear to have paid particular attention to this subject.

In a Report to the Right Hon. the Lords Commissioners of the Admiralty and the Right Hon. the Secretary of State, by a Committee lately appointed to inquire into the best mode of treating syphilis, the prevailing want of accuracy in the description of the different forms of the disease is evident. The Committee examined sixty-four witnesses, and have produced an elaborate Report, extending with the minutes of evidence, over upwards of six hundred closely printed pages. The Committee state that the simple local sore never extends its influence beyond the inguinal glands, and is incapable of infecting the constitution (p. vii). In the next paragraph, however, a soft sore is described which "is followed by constitutional disease". Now, no means are given by the Committee for distinguishing the simple local sore from the soft sore which infects the system; and it is not, therefore, surprising that they should arrive at the conclusion that, "whether a given local affection will result in syphilis, cannot be known with certainty until the constitution is actually involved" (p. vi). Surely something more definite than this is required from students who undertake to interpret the fixed laws of Nature—laws which regulate all diseased, as well as all healthy, actions. To state that a simple sore is local, only because it does not infect the constitution; and to imply that it does not infect the constitution because it is local,—is evidently to beg the whole question. The Committee state that, "however definite may be the laws that determine the history and progress of primary sores, a degree of obscurity always attaches to their future influence on the constitution, arising from the frequent apparent deviations from the laws which govern them." "Hard sores," they say, "do not necessarily contaminate the constitution; while, on the other hand, constitutional symptoms occasionally follow the presence of a sore which might have been regarded as a simple local sore." (P. ix.) If such a doctrine were admitted, our practice and our diagnosis would be most unsatisfactory and uncertain. If a patient, upon presenting himself, were told that he had a simple local sore only, but that, if his constitution became infected, it would then be syphilitic, he might fairly reply that his surgeon had not told him anything that, without any medical skill, he might not, to his cost, in time find out for himself.

The confusion which has prevailed with regard to the different kinds of venereal sores has been fostered by the experiments performed in what has been termed "syphilisation". It has been stated that soft chancres may be produced by the secretion taken indifferently from hard or soft sores.

Again: it being admitted that the secretion from some forms of secondary disease, when inoculated upon a virgin constitution, will produce an indurated sore—it is stated that the secretion from such a sore, having its origin in constitutional syphilis, will give rise, by inoculation, to a soft chancre, which may be the means of infecting the constitution of another person. Thus, it is taken for granted that these two kinds of disease may, by a kind of metagenesis, produce each other; and that either, after a certain number of generations, may again be reproduced in its original form. Now, on the contrary, I maintain that the two forms of disease of which I have given instances at the commencement of this paper, are essentially distinct, and cannot produce each other. They may appear together at the same time and place, and they may be variously modified by different circumstances; but, when accurately observed, they will, I believe, be found always to follow their own fixed and definite laws.

Out of the very large number of cases on which the experiment has

* Presented to the Surgical Section at the Annual Meeting of the British Medical Association in Oxford, August 1868.

now been made, there has not been one, as far as I know, in which the inoculation of the secretion of the "specific pustule" has given rise to any constitutional syphilitic symptoms. Inoculations of this kind have, however, not been wanting on those who have not had constitutional disease, as well as on those who have. Dr. Boeck, in his great work on *Syphilis* (p. 686), mentions that M. Danielssen had inoculated a great number of lepers. None of these were affected by constitutional syphilis, with one exception. In this case, a leper, who was being treated by syphilisation, after having had two hundred and eighty-seven inoculations from the matter of a soft sore, was inoculated with the secretion from a hard sore. This was on September 28th; and, in February following, distinct constitutional syphilitic symptoms followed. If an exception were ever the means of proving a rule, surely it does so in the present instance. But Professor Boeck asks, How is it that the results of the inoculation appeared at the expiration of three days in this case, and not at the time when infecting sores usually manifest themselves? Now, in the first place, the pustules which were produced appear to have been very small (*loc. cit.*); and, secondly, Dr. Owre, who witnessed Dr. Boeck's experiments on syphilisation, and who was himself much impressed at one time with the efficacy of this mode of treatment, has published, in the *Medical Times and Gazette* for April 18th, 1868, a very important statement. He says: "No such care (in the practice of syphilisation) was shown in the selection of matter as, from the printed statements, would appear to have been taken; both kinds having really been used indiscriminately."

Now, if this was the ordinary mode in which syphilisation was practised, we need not be surprised if, after making his inoculations with the matter from soft sores, M. Danielssen should not have wiped his lancet very carefully before he inoculated the secretion from the hard sore. We have thus a ready means of accounting for the production of the pustule, such as it was, in M. Danielssen's case; and, what is of very much more importance, we are furnished with the means of explaining how it was that Dr. Boeck came to conclusions with regard to the inoculability of the hard sore so very different from those arrived at by competent observers in France, Germany, and Italy, as well as in England. I would refer any gentleman who may wish further to pursue this subject, to Dr. Ricordi's work published in 1866.

In England, five cases have been published in which the secretion from an indurated sore was supposed, when inoculated, to give rise to ordinary soft chancres.

In some of these the matter used was taken from out-patients, and in others inoculations from the secretions of soft sores were being conducted upon the same patients at the same time. It is unnecessary here further to insist upon the facility with which an admixture of secretions may, in these cases, have taken place; and, under any circumstances, these five cases could not be placed in opposition to the immense number in which inoculation of the secretion from an indurated sore has failed. But it may be asked, Does not the fact of secondary symptoms occasionally appearing where a patient has had a soft sore only, prove that the secretion from such a sore may infect a patient's system? To this it may be answered, that something like an equal number of cases present themselves where there has been no sore, either hard or soft, and yet where a patient's system has become infected.

The following cases will illustrate this subject.

CASE III.—A gentleman came under my care with several well marked soft sores. After the lapse of a short time, one of the sub-maxillary glands became very much enlarged, with a distinct outline. Secondary syphilitic symptoms followed. Upon careful inspection, I now found a brown spot on the corona glandis. This continued, with occasional desquamations; but unattended by any pain, induration, or ulceration, long after all traces of suppurating sores and of the eruption on the body had disappeared. This was the spot, in my opinion, at which the poison had entered the patient's system, by what Hunter called physiological absorption. There was no affection of the inguinal glands in this case.

CASE IV.—A gentleman was sent to me by Mr. Forbes of Devonport Street, with a well marked syphilitic eruption. Every effort was made in this case to ascertain the means by which the poison had entered the patient's system. No trace of any kind could be found. There had been no sore, and the inguinal glands were not affected. In this case, again, physiological absorption had, I believe, occurred; and, if some soft sores had appeared during the time that this was taking place, it would in no way have interfered with the process.

The conclusion at which I have arrived, from all the facts and observations which I have been able to collect, is, that the pus from a simple suppurating sore (although that may have been produced upon a patient constitutionally syphilitic) will not communicate constitutional syphilis. If such pus be mixed with other secretions, such as those from mucous tubercles or with the blood of a syphilitic patient, then a

two-fold inoculation may take place; and the pus may apparently be the means of communicating syphilis, when, in reality, it has only diluted the real infecting poison.

In like manner, if time permitted, I might shew that the products of other specific diseases, such as the lymph produced by vaccination (even in a syphilitic subject), when inoculated alone and free from admixture, will not communicate syphilis. We have here, I believe, indications of a general law; viz., that the secretion of no other specific disease in a syphilitic subject, if inoculated alone, will communicate syphilis. And this is quite analogous to what has been observed in other affections. It would appear that a specific poison inoculated on a constitution affected by another disease may produce its effects uninfluenced by that disease, however infectious or contagious that disease may be.

The following case is related in the *American Medical Times* for the 29th March, 1862.

A gentleman and his wife, with a daughter 3 years old, left their hotel in consequence of the appearance of small-pox. The child was vaccinated the day after with recent and active lymph. The formation of the vesicle progressed so naturally, that it was supposed that the child's constitution was protected against the small-pox. At the request of an intimate friend of the family, some lymph was taken from the vesicle on the daughter's arm, and inserted into the arm of another child. On the second day after this, the small-pox appeared on the child originally vaccinated. All the parties concerned, now became exceedingly anxious to know what the result would be on the second child. "To our great gratification," observes the vaccinator, "it proved to be only a benignant case of vaccine disease, which acted with ordinary mildness."

Another analogous, but much more important subject may be considered in connection with the previous observations; namely, whether the natural secretions in a syphilitic patient can communicate syphilis while the organs producing those secretions are not themselves specifically affected. My own opinion is, that they do not. But I mention this as a matter of opinion only, as far as the general principle is concerned. We are not, however, without evidence upon this point with regard to some of the natural secretions. A married woman was admitted into St. George's Hospital on October 5th, 1864. After her last confinement (having been previously quite healthy), she took a child to nurse in addition to her own. The strange child proved syphilitic. The woman had an ulcer on the breast, represented in the accompanying drawing. This was followed by a well marked syphilitic eruption.

This woman had taken the precaution to keep each child to one breast; and, although her own child was allowed to suck for six weeks after the eruption had appeared, yet it remained unaffected.

We have here the natural secretion going on in a syphilitic mother; the organ itself, which produced it, not being specifically affected. We have the constant contact of a diseased and healthy person, and the transmission of the secretion from one to the other, and yet no disease is imparted.

Few of the natural secretions of the human body have been accused of being the means of communicating syphilis. Besides the milk, the saliva and the semen are perhaps the only two which are supposed to be capable of transmitting the disease. There is no reason why these secretions in themselves should be more susceptible of the syphilitic poison than any of the other natural secretions of the body. If the organs which secrete them are not specifically affected, we cannot see why they should be more likely to contain the syphilitic poison than the urine or the bile. Now, all these secretions, before they pass out of the body, have to pass over tracts of mucous membrane. These portions of mucous membrane are peculiarly liable to secondary syphilitic affections; and, if the secretions in question become mixed in their passage with the products of specific inflammation, we may readily understand how they may be the means of carrying the disease, although, by themselves, they may have no power of communicating it. The fitful and uncertain way in which syphilis is imparted by hereditary transmission from the father, and the very small number of cases in which it has been supposed to be transmitted by the saliva, seem to point rather to some accidental causes of contamination, than to any inherent disease in the semen, or in the saliva, in syphilitic subjects. Such accidental causes at once present themselves to our minds when we contemplate the admixture of the diseased secretions of the mucous membranes with the proper secretions of the glands.

The conclusions to which I have arrived myself, and which I would submit for the consideration of others, are:

1. That the infectious form of syphilis is communicated by the secretions from both primary and secondary syphilitic affections.
2. That the secretion of other specific diseases (including the specific syphilitic pustule, and the sores which result from it) have no power of imparting constitutional syphilis.

3. That the natural secretions of glands in syphilitic subjects, when those glands are not themselves specifically diseased, have no power of imparting constitutional syphilis.

After the reading of the above paper, Mr. PAGET, the President of the Surgical Section, at which Mr. Lee's paper was read at Oxford, stated that the paper appeared to him to afford a fair explanation of those cases in which secondary syphilitic symptoms have followed, and have appeared to be the consequences of soft chancres; such cases had occurred to most surgeons, and yet so rarely in comparison with those in which secondary symptoms followed hard sores, that they seemed insufficient to disprove the law according to which hard chancre, or diseases derived from it, are the necessary precedents of secondary symptoms, the sole sources of constitutional infection. A law of this kind, if there be one, can have no exceptions. What seem to be such must, if the law exists, be erroneously or incompletely observed facts. And here the incompleteness of the observations in some of the assumed exceptions may have been, as Mr. Lee suggested, that a patient had had a soft chancre at or about the same time as he had been infected from a hard sore, the virus of which had traversed sound textures, and had produced in them too little change to be observed. It must have occurred to every one, seeing many cases of syphilis, to meet with patients, having secondary or tertiary symptoms, who have nevertheless been unconscious of having ever suffered primary disease. Such cases are commonly explained away or disbelieved. They might have been instances of infection through textures which were not observably contaminated by the transmission of the infecting material through them. Such a transmission is sometimes observed with the poison of dissections; and, although one might doubt much of what some believe respecting the derivation of pus-cells from exuded white blood-cells, yet it was quite certain that pus-cells, and others like them, might pass through membranes having no perceptible apertures, and might leave no visible traces of their passage. The doctrine of essential difference between infecting and non-infecting, hard and soft, chancres, was in the same position as many others in pathology. We seem to have discovered a general law; the facts in support of it are many; those against it are very few. We are justified in suspecting that these are incompletely or erroneously observed, and are not what they seem to be.

OBSERVATIONS SUGGESTED BY THE STUDY OF CASES OF CATARACT EXTRACTION.*

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OWING to the recent and numerous improvements in the art of extracting for cataract, the selection of an operation in any given case becomes a matter of no slight difficulty and importance. A thorough knowledge of the nature of the case, a perfect appreciation of the difficulties to be individually encountered, and some study and experience of each of the methods in vogue, are necessary to enable us to afford our patients that maximum chance of a successful result which they have a right to expect at the hands of all professing a knowledge of ophthalmic science. The age and previous history of the patient; the condition of his health; his peculiar idiosyncracies, and amount of nervous susceptibility; the condition of the cataract, as to hardness, softness, and presence of, or freedom from, degenerative changes, and the existence of glaucomatous or amaurotic complications—all merit a degree of study and consideration, the importance of which cannot be over-estimated, when we reflect that not only (as Mr. Critchett has observed) does the successful performance of this operation constitute one of the greatest triumphs of operative surgery of which our profession can boast, but also that to restore a fellow creature to sight must ever rank among the highest and most gratifying of human achievements.

As I am aware that the time accorded to papers read at these meetings will not permit a full discussion of the subject, I shall briefly recount the different methods of extraction now in use, detailing in each instance such observations and suggestions as the careful study of a large number of cases has, I may say, forced upon me.

And, first, as to the old flap method. This operation, which is still almost exclusively preferred by some leading ophthalmic surgeons, is certainly, when perfectly successful, for beauty and faultlessness of re-

sult, without a rival. Unfortunately, as usually performed, the amount of risk involved in the operation confines it to carefully selected cases of fully developed cataract, occurring in patients with but slight constitutional contraindication, of great self-control, and in a condition of health which we seldom find in the aged, and frequently cachectic, individuals who are usually the victims of cataract in our large manufacturing towns. Beer's knife, or one or other of the modifications of his wedge-shaped keratome, are the instruments usually employed. Zehender's modification, which I show you, is the one I used to prefer; it is longer, narrower, and rounder on the edge than Beer's original knife, and consequently perforates the cornea more readily, is more easily managed, and completes the section with less difficulty than is usually encountered when the larger knife is employed. Either the upper or lower section may be adopted, according to the nature of the case; recovery takes place a few days sooner with the upper section, the occurrence of prolapse of the iris, inflammatory complications, and suppuration, being about as likely to occur in the one as in the other; and partial suppurations, or the irritation occasioned by remnants of cortical matter, usually terminates more favourably when the lower section is adopted, as these morbid products naturally gravitate downwards, and find a point of exit in the latter case denied to them in the former. It is also easier to operate by the lower section, and we are less dependent on the tractability of the patient, and on assistance from others. Whether the upper or the lower section be used, the object of this method is to make a large flap of one-half of the cornea. The knife is entered at the transverse diameter of the cornea, about a quarter of a line from its edge, and carried parallel to the iris to a point of counterpuncture similarly placed; it is then pushed on, and the flap completed by turning its edge forward, and drawing it from heel to point until the section is finished; the capsule is then incised, and, by alternating pressure, the lens is turned on its axis, and tilted against the pupil, which slowly dilates, and permits its passage into the anterior chamber and exit through the incision. As before observed, in a favourable subject, and when performed without misadventure, the results of this operation are superior to those obtained by any of the modified methods which have recently been adopted in place of it. Unfortunately, such serious accidents are apt to occur both during the operation and subsequently to its performance, that we are limited in our selection of cases. Thus, the aqueous humour may escape prematurely; the iris may fold over the edge of the knife, and be seriously bruised or wounded. The eye may be pushed inwards by the blade, and there may be difficulty in making the counterpuncture; or, in completing the section, and when the flap is made, with a contracted pupil and the patient irritable and frightened, considerable difficulty may be encountered in rendering tense and incising the capsule. The iris is apt to be scratched, and the opening in the capsule too limited; while the involuntary winking and twitching of the patient's lids is sometimes sufficient to rupture the hyaloid membrane, even before the lens is extruded; or the cataract may be forced out with a gush of vitreous humour the moment the section is completed, the weak flap being forced forwards and at once reflected by spasm of the lids. Even when the operation has been successfully finished, the large size of the flap, in delicate thin-skinned patients, is apt to permit its retraction, and consequent mal-position and necrosis; while the same cause, in addition to its situation in non-vascular tissue (apart from inflammatory mischief or excessive traumatic injury), will often seriously interfere with its nutrition. The passage of the bulky lens through the more or less contracted pupil also occasions considerable bruising of the iris, which is a fertile source of subsequent mischief; while the comparative longer time required for the wound to close permits frequent gushes of accumulated aqueous humour, during which the iris is forced between the lips of the incision, is apt to be trapped, spoil the cosmetic result of the operation, and occasion much subsequent mischief. If, from the nature of the cataract, too, small portions of cortical matter be left behind, the risk attending manipulation of the globe and the extreme danger of rupture of the hyaloid membrane renders it almost impossible to remove them. In fact, when once the section is completed, if any accident occur, the operator is, in the majority of cases, powerless, and can only close the lids, hoping, often against conviction, that the wound may heal, and permit of remedy at some future period.

It is the desire to avoid this helpless feeling in a matter of so much importance, which has led to the various modifications of extraction which I shall presently describe. As they all, however, involve the sacrifice of a portion of the iris, I shall first endeavour to point out such safeguards against the accidents which occur in ordinary extraction as have suggested themselves to me; these, I believe, will, in many cases, enable us to secure that which we must always consider as the highest good fortune—namely, a central and moveable pupil.

The accidents which are apt to occur from the patient's want of steadiness, from spasm of the lids, and involuntary motions of the

* Read before the Midland Branch.