A Clinical Lecture

ON

TWO CASES OF SPINAL CORD DISEASE CONSEQUENT ON SYPHILIS.

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At the present time I have in one of my wards two patients the subject of disorders of the nervous system, disorders which, although they differ entirely in their symptoms, their pathology, and their prognosis, have this in common—that they are late consequences of antecedent syphilis. They both present features which are somewhat unusual, and we may learn some important lessons from their consideration.

The first case is that of a man 40 years of age, who was sent to me by Dr. Main, of Macclesfield. He is the subject of locomotor ataxy in a characteristic form, but as we have already during the session made a careful study of this complaint I do not propose to go at length into the symptomatology of his case to-day. I am concerned more especially with the causation of the disease.

The causes which the textbooks assign to locomotor ataxy are various, and include excessive fatigue, over-exertion, injury, and exposure to wet and cold; but the antecedent which overshadows all others is a precedent attack of syphilis. The frequency of a syphilitic history has been variously given by different writers; Gowers places it at a high figure—70 or 80 per cent.—though he believes that in about 10 per cent. of the cases syphilis can be positively excluded. On the other hand, Drummond, of Newcastle, has expressed the opinion that locomotor ataxy is always a result of syphilis; and Möbius is quoted by Osler as saying, "The longer I reflect upon it the more firmly I believe that tabes never originates without syphilis." My own experience, so far as it goes, is strongly in favour of the syphilitic origin of tabes; I cannot recall a single instance of the disease since I began to pay special attention to this point about ten years ago, in which I failed to elicit a fairly clear history of syphilis.

The nature of the relation between syphilis and tabes is not clear. The lesion in the latter disease is not structurally the same as that which we recognize as the direct result of the syphilitic poison; neither is it influenced by the administration of remedies which are effectual in arresting and removing the characteristic lesions of syphilis.

Two theories have been advanced to explain the apparent connexion between tabes and syphilis. According to one, the action of the syphilitic poison gives rise to some toxic agent which exerts its action on certain parts of the nervous system; according to the other, the syphilitic poison has lowered the vitality of these parts in such a manner that they are liable to undergo degenerative changes under the influence of causes which would otherwise have no injurious action upon them.

The man whom I now show you has, as I have already stated, the symptoms of locomotor ataxy in a characteristic form. Two years ago the first symptoms of ataxia became manifest; he used to stagger when he shut his eyes in washing his face. Subsequently lightning pains came on, and there was partial retention of urine. At the present time he has the characteristic gait, and he cannot stand steady with his eyes shut, though there is no clear loss of power in the limbs; the knee-jerks are abolished, there is impaired sensibility in the legs, and the Argyll-Robertson pupil is present. His memory is, perhaps, somewhat impaired. In inquiring into the history with great care, I was much surprised to find that he denied, apparently with sincerity, the occurrence of any syphilitic infection, though he admitted readily that years ago he had frequently exposed himself to the possibility of acquiring it. Further, the most thorough search failed to reveal the existence of a scar in the usual situation. I began to wonder whether I had not at last met with an exception to what I had come to look upon as a rule; but on my next visit I found evidence to show that there was no exception; that

infection had undoubtedly taken place, but in an irregular manner. You will often find a great difficulty in eliciting an exact history from patients at a first interview. Ailments which have not interfered with the occupation are soon forgotten, the unusual surroundings of the hospital or the consulting room produce confusion of thought, events of the highest importance may seem too trifling to be narrated. But the first examination has probably started a train of thought which will lead to the recall of forgotten events, the patient takes a more intelligent interest in his condition, and he begins to suspect that what seems trivial may be of great moment. In the course of subsequent interviews I was able to piece out the following history of an attack of primary and secondary syphilis, which is of sufficient interest to be related at some length. He suffered very much from chapped hands eighteen years ago. While he was sharing his bed with a man whom he knew to be affected with some disease a sore formed on the back of his left hand. It was very painful; it was raised, and increased to about the size of a sixpence. He was treated by a doctor in Manchester, who prescribed pills and a mixture, which he took for some weeks. Soon afterwards an eruption appeared on his forehead and chest, his hair fell out, and his throat became sore. The position of the sore on the back of the hand is marked by a permanent scar.

It seems to be practically certain that in some way the chapped skin became inoculated with syphilis, that a chancre formed on the back of his hand, and that a slight attack of secondaries ensued. The account of the case serves to emphasize the importance of syphilis as an antecedent of tabes, and it illustrates the care which may be necessary to elicit a history of it.

The second case is that of a man, A. C., 46 years of age, who gives a clear history of syphilis twenty-three years ago. He seems, however, to have had no further manifestations of the disease until twelve months ago, when he had some form of amblyopia of the left eye, which got well under mercurials. Subsequently he suffered from pain in the right lumbar region, his right leg began to get weary on exertion, and a fortnight before admission it dragged as he walked. Quite recently he has felt some weakness in the left leg. On admission he was able to walk with marked dragging of the right leg, the toes tending to catch in the floor, the movement being characteristically spastic. The toes of that foot were slightly clawed, the first phalanx being extended, the second slightly flexed. The muscles were flabby, but not materially wasted; the knee-jerk was exaggerated, and ankle clonus was well marked. Some numbness was complained of in the second, third, and fourth toes, but, so far as the usual tests for sensibility were employed, it did not seem to be materially diminished. The left leg appeared to be normal on physical examination. At the present time, however, a feeble ankle clonus can be elicited on the left side, which appears to have developed during the fortnight which has elapsed since admission. The cremasteric reflex is absent, but there is no impairment of the reflexes of the bladder and rectum.

When we endeavour to make an exact anatomical diagnosis of the condition upon which this man's nervous symptoms depend, we notice at once that the lesion is confined to the lumbar enlargement; further, that it is almost confined to the right side, the left being affected only recently and in a slight degree. When we come to analyse the symptoms more closely we notice the occurrence at the outset of pains suggesting irritation of the nerve roots or the meninges, while the existence at present of interference with sensibility, of loss of muscular tone, and paralysis of some of the small muscles of the foot may be readily explained by interference with the nerve roots. But we have also evidence of local degeneration of the pyramidal fibres—namely, ankle clonus and exaggeration of the knee-jerk; while the absence of all interference with the vesical reflex seems to indicate that the deeper part of the cord is not affected. It seems to me that most of the symptoms present may be very well accounted for on the supposition that there is a small gummata situated in the pia mater of the right side of the cord near the upper end of the lumbar enlargement. In its neighbourhood there will probably be a good deal of thickening of the meninges, which may even encircle the cord. The lesion will naturally press upon the more superficial parts of the

cord, including the crossed pyramidal fibres which lie directly beneath the pia mater, and will also interfere with the nerve roots. On this hypothesis we can readily understand why there is no impairment of the organic reflexes.

If this view be correct it is clear that although syphilis is the cause of the lesion in both cases, the lesions themselves are totally distinct, have a different prognosis, and call for different lines of treatment. In the one case we have a degeneration which tends to advance, and is not likely to be influenced by antisiphilitic remedies; nor, indeed, to any great extent by any therapeutic means at our disposal. In the other case we have to deal with a special form of inflammation, which we may confidently hope to arrest by appropriate measures, measures which will even lead to the disappearance of such morbid products as are already formed.

It only remains to remind you that arrest of the syphilitic process and the absorption of its products does not necessarily mean entire restoration to health, inasmuch as it is possible that their presence may have already injured the adjacent nerve structures to such an extent that their complete restitution is no longer possible.

ABSTRACT OF

The Hunterian Lectures

ON THE

ANATOMY, PHYSIOLOGY, AND PATHOLOGY OF THE IMPERFECTLY DESCENDED TESTIS.

Delivered before the Royal College of Surgeons of England.

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LECTURES II. AND III.

PHYSIOLOGY.

NEARLY all authorities are agreed that the testis which has not reached its normal position in the scrotum is generally functionless, at least in so far as the formation of spermatozoa is concerned. While this belief is true in the vast majority of instances, yet there are persons whose testes, although arrested or ectopic, are nevertheless capable of producing well-formed and active spermatozoa.

Double arrest or ectopia associated with want of development of the testes, as a rule implies sterility on the part of the man, although he may be perfectly virile. There is also some real doubt as to whether a testis arrested at birth, but brought down in early life into the scrotum, ever so develops as to become the seat of spermatogenesis. A few cases are on record in which this has been stated to have occurred, but the facts given do not strongly support the assertion. Moreover, testes which at birth are lying in the inguinal canal or even within the abdomen have been known to descend gradually, or perhaps somewhat hastily, either before or after the period of puberty. It may, therefore, be that some of the glands that have been brought down, placed in, and grown in the scrotum were those which, although well developed for their age, had merely had their passage delayed and would eventually have reached their proper position by natural means and become fully capable of function.

But while the chief fault of the imperfectly descended testis may be its inability to produce active spermatozoa, there are other important conditions closely associated with arrest or displacement of the organ. There would appear to be some relationship between the general growth and development of the body in the male and a proper descent of the testes, or, in other words, many instances of want of general growth of the body are accompanied in the male by an arrest of the testes.

With one testis arrested and ill-developed there is, except in a few instances, no lack of development of the individual, whether bodily, mentally, or sexually. It would seem from this fact that either the fully descended and developed testis is sufficient in itself to promote bodily growth, or that the arrested gland must also supply its quota towards the full development of the individual.

If the former view is the correct one, it might be argued

that the normal testis, in order to supply the full amount of what is needful for the growth of the body, ought to show signs of hypertrophy. Yet a size of the normally placed organ greater than it should be in a person of corresponding age and development is but rarely seen in the human subject. In animals, on the other hand, there seems to be more evidence of a compensatory hypertrophy. This is particularly the case in the horse. Experience has shown that a single well-developed testis is sufficient to provide all that is needed for the proper growth of the individual, and that no serious inconvenience to the subject, so far as complete bodily growth is concerned, is likely to occur should it become necessary to remove its fellow, and this in spite of the fact that the organ which is left does not exhibit any tendency to increase in size.

In furtherance of the argument that an ill-developed and imperfectly descended testis does not subscribe much, if any, of the stimulus for full bodily development of the man, is the fact that in instances of double arrest and non-development of the testes, there is as a rule some failure in the growth of the individual in all directions.

It is to be understood, however, that this want of growth may be due to some prior cause which is acting as a factor in also producing the imperfect descent. Such a condition is commonly seen in cases of cretinism, and in those rare instances of the condition which it is proposed to term "ateleiosis." When both testes are arrested, but are not imperfectly developed, there should be no want of bodily or other development.

In endeavouring to determine the causal relationship between imperfect development of the arrested testes and the failure of general bodily growth, or of efficiency in certain physiological functions, some light may possibly be thrown by a careful study of the microscopical appearances of sections of the arrested glands. The testis of the boy before puberty is often entirely devoid, or nearly so, of a type of cell lying in the spaces between the seminiferous tubules. These interstitial cells, however, may become noticeable about the period of increased sexual development, and are sometimes very abundant. Although in instances of double arrest of the testes both organs may be wholly incapable of producing spermatozoa, yet the owner of them may acquire full virile power, but will remain for ever without the ability to procreate. The arrested glands not infrequently have large numbers of these well-defined interstitial cells, and it is possible that they have an important function at the onset of puberty. They may have the duty of producing what is now generally called the "internal secretion" of the organ. This substance, whatever it may be, probably plays an important part in the development of the body. That there is some relationship between internal secretion of glands and the growth and division of cell elements gains some support from the fact that in a considerable proportion of instances where double oöphorectomy has been performed for recurrent or inoperable carcinoma of the mamma, and particularly in women before the climacteric, there has been a very noticeable change in the constitution of the malignant deposits. In some of these cases the neoplasm has become markedly altered within a few days of the removal of the ovaries; in others, well-authenticated, there has been a complete temporary if not permanent disappearance of the carcinomatous masses. Then, again, there is the well-known circumstance that an early removal of the ovaries leads to a diminution in the size of the uterus—uterine atrophy—and that the ablation of both the testes causes shrinking of both lobes of the prostate—prostatic atrophy. Further, it is an interesting fact that each of these mutilations is liable to be followed soon after they are performed by severe "nerve storms," in which the patient may for the time being become irresponsible for his or her actions.

On the other hand, supposing in the male that the vasa deferentia alone have been severed, such nervous phenomena but rarely follow, and in such a condition, although eventually the testis does atrophy on the side of the vasectomy, yet it remains present, and probably still capable of producing its internal secretion. Further, a removal of both the testes or of both the ovaries tends to a deposition of a considerable amount of adipose tissue in the body. There is much that is highly suggestive in the fact of these internal secretions, but there