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A CONTRIBUTION TO THE STUDY OF CHRONIC MYELITIS, BASED ON A RECORD OF TWENTY CASES.

BY

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The term chronic myelitis is in its usage a very flexible one and is unfortunately often applied to certain symptoms as a disease entity, having entirely different pathological lesions. The term should include cases of myelitis that arise slowly and gradually, although it is commonly applied to those cases that have begun as acute myelitis and have not eventuated in recovery. The various forms of sclerosis were at one time considered as varieties of chronic myelitis, but as our histological knowledge of the spinal cord became more perfect we have been able to isolate many of them, so that now their lesions are limited to special sets or systems of fibres or disseminated in some regular order. There are left yet, however, a large number of cases which cannot be classified with any regular systemic or focal lesions in the cord; but it is more than probable that as time goes on, and progress is made in our knowledge of the causation and pathology of these diseases, we will be able to separate many of them, as tabes dorsalis, disseminated sclerosis, amyotrophic lateral sclerosis, etc., have already been separated.

The following paper is a study of twenty cases of chronic myelitis as applied above. They occurred at the clinics under the control of Professor Charles L. Dana, and to him I wish to express my sincere thanks for his permission and assistance in making the following report:

Etiology.—The average age of the patients at the onset of the disease was forty-seven, the eldest being sixty-four and the youngest twenty-three. Fifty per cent of all the cases occurred in the fourth and fifth decades. Of the twenty cases sixteen were males and four females. Eight of the patients gave a history of an initial specific lesion occurring from two to twelve years previous to the onset of their present symptoms. Of the twenty, eight were moderate drinkers, three alcoholics by their own confession, and the remaining nine indulged but rarely. As regards nationality, nine were Irish and two of Irish extraction, three were natives of this country, two were Scandinavians, and four were of English birth. It may be a mere coincidence, keeping in mind the marked predilection of phthisis for the Irish race, especially when transplanted to this country, but in eleven cases occurring in the Celts three presented signs of personal phthisis and six gave striking family histories. For instance, one patient, R. H., aged twenty-four, said her parents, brothers, and two sisters had died of phthisis. Another had lost one parent and two brothers from the same disease. Of course one is led, when thinking of this, to explain this coincidence in one of two ways. First, it may be due to the fact that before tuberculosis can manifest itself there must be an overwhelming perversion of nutrition, which is unquestionably greatest in the organ or organs where the germ is going to take up its abode, but associated with this is a general depreciation of nutrition which favors the development of degeneration in the spinal cord when there is already an inherent or acquired predilection for such a disease. On the other hand, some of the cases may have been primarily tubercular in their nature. But, aside from both of these theories, the fact is ever apparent that the tendency to the development of degenerative diseases in the Irish when transformed into Americans is manifest as well in this as in other diseases.

Most text books, in their description of chronic myelitis, say that an inherited neuropathic predisposition can almost always be traced. In this series of cases, however, no such tendency could be detected, with possibly one exception in a patient whose father became insane and died of general paresis. Repeated exposures and chilling after perspiring, together with a history of previous attacks of what was called rheumatism, occurred in twenty per cent of the cases. Three of the patients gave a history of traumatism—either a direct fall on the back from a height or a severe blow. In two of the cases the symptoms came on very gradually after acute diseases, one after diphtheria and one after delirium tremens; and another patient was sure that the first symptoms of her trouble came on while she was carrying her child.

Naturally, these cases having presented themselves at hospitals and dispensaries for treatment, they were drawn from the lowest walks of life, where overcrowding, bad air, filth, improper nutrition, and other factors so prone to lower the vital resistibility of tissue cells are prominent. These, combined frequently with the history of some prolonged or extra-fatiguing labor which caused rheumatic pains in the back or legs, were the only points that many of these patients could have their trouble attributed to.

A history of sexual excess was given in two cases, one occurring in a prostitute, and the other in a man who was tender on pressure over the tibiæ and sternum, both of whom, however, denied an initial lesion; but credence can hardly be given to their statements, as the primary symptoms so often escape observation in this class of people. Whether or not toxic substances, such as lead, arsenic, malarial poisoning, etc., so often prominent factors in the production of acute changes in nerve structure, have any relation to the causation of chronic myelitis, does not have any light thrown on it by this series of cases. Unquestionably this form of degeneration may be the result of mechanical pressure, but that it may be the result and follower of an acute process some of us, at least, are not so ready to affirm.

Symptoms.—The prominent initiatory point about all the cases was the slow and gradual development of the symptoms. In four cases only was pain a prominent symptom in the beginning of the disease, and in but one of these was it described as sharp and lancinating. This was a patient with a syphilitic history dating back three years, whose attention was called to her present trouble by darting pains in the lumbar region, extending up the spine as far as the inferior angle of the scapula, and then seeming to dart around the chest in the course of the intercostal nerves, and this after a few months gave way to a girdle sensation. The other three complained of a dull, aching pain in the small of the back and legs, but not of any severity.

Thirteen of the patients complained of prominent subjective symptoms, such as a sensation of tingling, formications, feeling of heat and cold, not continuous, and sometimes limited to one special area—for instance, one patient complained that she had these sensations in her ankles alternately and nowhere else. The histories show that nine of the cases presented the girdle sensation at or about the level of the lesion. Vaso-motor disturbances, although not a prominent symptom in any of the cases save one, were met with in several—as in one patient who had coldness in the entire left portion of the body from the lumbar region downward, and another whose feet were continually covered with a cold perspiration. Another patient says that he has occasionally a peculiar sensation, starting from the point of dull aching in the lumbar region and travelling up the spine to his head; then he may have specks before his eyes and tinnitus aurium; and then objects get black before him and he loses consciousness for a moment, but quickly recovers it and is apparently as well as ever, with the exception of a feeling of cramps in the flexor muscles of the forearm occasionally. Myotatic irritability was increased in all the cases, varying from a slightly exaggerated knee reflex in one to an extremely well-marked ankle clonus in others.

In twelve of the cases the bladder symptoms were very troublesome, generally the bladder reflex being exaggerated. One patient would on some days have incontinence, and again on others would be unable to void any urine whatever; but the dribbling of the urine was the most common complaint. The bowels in fifteen of the patients were constipated, and in seven they were obstinately constipated. The impairment of motorial power was the symptom that all the patients had in common, and this varied from a feeling of tiredness and weight in the extremities to complete paralysis. Most of the patients complained of numbness in the feet and a tired, dead sort of a feeling in the legs—a sensation as if they were made of lead—particularly after rising in the morning, which would disappear somewhat after they were up and about for a time, but to come on with renewed severity after making any particular muscular exertion. Muscular twitchings and spasms, particularly in the legs and occasionally in the forearms, when the patient was in the recumbent posture, was a symptom that caused a considerable distress to five of the patients.

The muscular atrophy present followed no regular order in its development, and generally the irritability to the galvanic current was not very much diminished; while the faradic irritability of the nerves was very greatly diminished in eleven of the cases, and somewhat diminished in nearly all as far as the records were kept. The gait in most of the patients was spastic in character, while some presented a more or less ataxic gait. In advanced cases of the disease, or where the lesion had been located high up in the cord, static ataxia was well marked. Seven of the patients complained of inability to walk in the dark, and four of these also had occasional diplopia. In one of the cases, who presented head pressure and band dizziness, the speech was slow and syllabic, and some difficulty was experienced in swallowing, it is probable that a disseminated sclerosis followed an attack of transverse myelitis. Of the distribution of the anæsthesia and loss of temperature sense little definite could be made out; but, as a rule, it was first manifest on the soles of the feet and then next most often on the anterior surface of the legs. In two of the cases delayed sensorial conduction was very manifest. In most of the male patients the sexual power was greatly diminished, and in many not alone the ability but the desire as well. In the females this was rarely inquired into, but it is to be noted that the menstrual function continued undisturbed. In one case only was trophic change, in the shape of a bedsore, present, and this was readily cured, and without doubt could have been prevented if ordinary precautionary measures had been taken, so the citation of this is of but little value as an integer in the history of the disease.

In the light of the pathology of the present day it seems nearly paradoxical to say that the variety of symptoms quoted above, lasting, as they do, from two to twenty years, can be caused by a lesion which comes within our conception of inflammation or the results of inflammation. The term chronic myelitis is taken to include so much by many writers, placing under it, as some do, almost all degenerations involving simultaneously more than one conducting path in the cord, whether it be a focal lesion or otherwise. Probably most pathologists will admit that the disease in question does not partake of any of the phenomena known as inflammatory; that it is a degeneration pure and simple, and is caused, and follows the same course as degenerations in other parts of the body under like conditions. The pathological finds in these cases are not at all consistent with our theories of inflammation. At no stage in this disease do we find the vascular changes, nor the exudative changes, and very little which corresponds with the parenchymatous changes as ordinarily taught to be the necessary parts of an inflammation. It is a familiar and demonstrable fact that the nerve fibres atrophy before the interstitial process becomes apparent.

Treatment.—Taking these facts into consideration, the treatment simmers itself down to one thing, viz., to improve the nutrition of the patient, and particularly the nutrition of the nervous system; and this can best be done by changing the surroundings, the mode of life, the climate and scenery, and by the administration of those simple medicinal food stuffs which we know to be blood-formers and tissue-builders. All forms of bodily and mental exercise leading to exhaustion are to be absolutely interdicted; and frequently the rest plan of treatment for a short time in the beginning, combined with the use of electricity to prevent any retrograde change in the muscles from their forced quietude, will often be of service. Probably most of the patients will do best when put on cod-liver oil and a supporting plan of treatment, at the same time putting the hæmatopoietic organs in the best condition possible. Two of the patients in this series had their symptoms very much ameliorated and the progress of the disease seemingly checked by a sea voyage of long duration. Others would come to the Post-Graduate clinic and almost beg to be suspended, saying that it was the only thing that gave them relief.

Hydrotherapy offers, perhaps, as good results in the treatment of this disease as any other measures. We have no more potent factor in stimulating vascular tonicity, when properly applied, than water. In the early stages of the disease, when the degeneration is at its beginning, it seems a physiological deduction to say that cold water, applied by means of a graduated spray, needle bath, or perhaps a modification of the Scottish douche, may so act upon the circulation in the cord as to, in a measure, prevent or counteract the degeneration. Something may also be said in favor of counter-irritation to the back at about the seat of the lesion; it is doubtful, however, if the effects are more than transitory, but especially does it seem to do good when sensory symptoms, such as pain, are preventing the patient from getting the necessary amount of rest. It is in this way also that bathing with a solution of red pepper, or packs of brine to the back, are sometimes of use. The administration of such drugs as ergot, which was at one time so highly recommended on the grounds that the lesion was inflammatory in character and would so contract the blood vessels and diminish the hyperæmia, cannot be otherwise than harmful. Iron, mercury, quinine, phosphorus, etc., only do good, if at all, by enriching the blood and preventing the retrograde process in the cord. In cases where there is a marked proclivity to muscular degeneration and wasting, the administration of strychnine in full doses may be productive of some good. Of the use of electricity but little need be said ; its use is but symptomatic, and in the shape of the faradic wire brush it is remedial when the paræsthesiæ are troublesome; and the same may be said of static electricity, the patients often assuring us they feel better after being treated to a sitting. Central galvanization will be disappointing. Moral factors in the treatment of this disease, as they do in all chronic diseases, enter as important elements in the management of our cases. It is indispensable to keep the mind in a content and hopeful frame, as contributing to making both the patient and his physician happy.

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