

POLIO-MYELITIS ACUTA ADULTORUM.¹

By WILLIAM C. KRAUSS, M.D., BUFFALO, N. Y.

MY object in bringing this subject before the association is, first, to report a case which has recently come under my observation, and secondly, to gather some information which may assist me in a better comprehension and treatment of the case.

Acute polio-myelitis occurring in the adult is a rare disease as compared with the infantile form, and the literature of the present day contains little reference to it. Its marked similarity with other affections of the nervous system, particularly with multiple neuritis, has long ago been commented on, and I am not over-confident that my own diagnosis is even correct or unassailable.

J. G. F., age, 43, married; height, 5 feet 10 inches; weight, 190 pounds; complexion, dark; hair, black; constitution, before stricken, strong, healthy, vigorous; countenance, open, frank, intelligent.

Antecedents: paternal side; nothing indicating nervous or mental disease could be elicited. Both grandparents passed through severe attacks of the measles between the thirty-fifth and fortieth years. The father likewise had a severe attack when thirty-four years of age, and as a sequel was left partially deaf. Maternal side: The grandfather, one uncle and an aunt were subject to despondent and melancholic spells. The aunt, on one occasion, took a large dose of morphia with suicidal intent. One sister and one daughter are alive and healthy.

Early history.—As a boy he was as rugged and healthy as any. When nine years old he had the whooping cough. Otherwise, nothing of any importance occurred until his thirty-eighth year when he, too, had a severe attack of the measles. He was bedridden over six weeks and not able to resume his duties for more than three months. From this time on his constitution seemed to be shattered, he

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lacked energy and ambition and his work seemed to be mere drudgery. On September 20, 1888, then forty years of age, he was taken with symptoms which his physician regarded as of malarial origin. The fever seemed to increase in intensity, when on the third day (September 23, 1888), he suffered excruciating pain in the nape of the neck, extending downwards along the spine and radiating into the extremities. Consciousness was undisturbed, no stiffness of the neck, no pain along the course of the nerves—in short, no symptom of meningeal or neuritic trouble could be ascertained. Thirty-six hours after the advent of the pain the fever subsided, and on awakening in the morning the patient found himself unable to execute the slightest movement of the body or limbs. The head and neck only were capable of voluntary motion. Sensory disturbances such as pain or anæsthesia were absent, but he complained of a deep-seated, sore, heavy feeling in his muscles and joints. His extremities were cold, cyanotic, his bowels constipated and his appetite impaired. The head and functions were perfectly intact, nothing abnormal that could be discerned by him or his friends. After three or four weeks he was able to move slightly the index finger of the left hand and the great toe of the right foot. The period of regeneration was extremely slow and tedious, and at the end of six months he regained a limited power over the left wrist and right ankle joints. He was unable to sit up erect, and was as powerless as a block of wood.

I first saw the patient in June, 1889, nine months after the initial stage. I found him, to all appearances, a strong healthy, middle-aged man, lying in a semi-recumbent position, and then and there made the following examination:

Psyche.—His mind is strong and active; sleep is good; although patient and resigned, he is moved to tears when spoken to about his affliction.

Motility.—The muscles of the face and neck are normal in their actions. The orbits and pupils are likewise normal in their movements, and the tongue offers no deviation on being protruded. With some exertion a slight upward movement of the left shoulder is possible, due to the action of the trapezius and levator anguli scapuli. The arm and forearm remain powerless, but there is a restricted motion of the left wrist joint and index finger. The right shoulder, arm, forearm and hand are incapable of executing the least

movement. The left thigh, leg and foot are equally powerless, but on the right side the patient is able to flex the foot on the leg. The muscles of the back at first were completely paralyzed, but at the present time he seems to have gained some power over them. The action of the sphincters, as well as the diaphragm, remain undisturbed.

It was impossible to make a complete electrical examination because of the inability to transfer the patient, and it was just as impossible to transport a suitable apparatus to the house. Small portable batteries, both Galvanic and Faradic, did not cause contraction of any of the muscles of the body or extremities.

Sensibility.—A careful examination revealed no painful spots along the nerves, no anæsthesia, and no loss of temperature sense.²

The organs of special sense were all unimpaired.

Trophic and vaso-motor disturbances.—There exists marked atrophy of the supra- and infra-spinati, deltoid, biceps, triceps and muscles of the forearm and hand of both sides. The muscles of the back and lower extremities do not partake of any wasting. Measurements made November 24th, 1889, show the size of the right and left arms respectively :

Right forearm circumference.	Distance from the internal condyle.	Left forearm circumference.
6 $\frac{3}{8}$ in.	9 $\frac{1}{2}$ in.	6 $\frac{3}{4}$ in.
7 $\frac{1}{4}$ "	6 "	7 $\frac{1}{2}$ "
8 $\frac{1}{2}$ "	3 $\frac{1}{4}$ "	9 "
9 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "	9 $\frac{3}{8}$ "
Arm, 9 $\frac{3}{8}$ "	3 $\frac{1}{4}$ "	Arm, 9 $\frac{5}{8}$ "
9 $\frac{7}{8}$ "	6 "	10 $\frac{1}{2}$ "
Hand and thumb,	From tip of index finger,	Hand and thumb,
8 $\frac{5}{8}$ in.	5 $\frac{1}{2}$ in.	8 $\frac{1}{2}$ in.

Measurements made a few weeks ago show little if any change.

There exist no trophic changes in the skin or nails; the joints are somewhat stiffened, but not contracted.

² The thermæsthesiometer employed by the author is a model of cheapness, durability and precision, and consists of the expired air of the examiner. Blowing with some force upon the denuded surface produces a sensation of coldness, while if he breathe softly the patient will experience a sensation of warmth. Although subject to variations, yet the difference is great enough to be appreciated by one offering no sensory disturbances, and can be relied upon with as much accuracy as by the employment of hot and cold water tubes. The writer has made many trials with this procedure, and in none has the result been contrary to the condition present.

Vaso-motor disturbances are present in the atrophied members, also in the lower extremities, which become cold, cyanosed and œdematous.

The tendon reflexes are absent; likewise the superficial. The genital is naturally greatly weakened.

The bowels are regular, no trouble in urinating, pulse is somewhat feeble, temperature normal. The urine contains neither sugar nor albumen.

The treatment pursued is nerve tonics, massage, electricity and sponge baths.

But little improvement has taken place since I first saw him. The muscles of the back seem to be somewhat stronger, but with this exception he is in the same helpless condition as when I first saw him.

To me the case is of great importance and I hope I have not wearied the Association with its details. The fact that the first cases of the kind ever reported followed attacks of measles in middle life lent additional interest. The paternal side offers four members, three besides the patient, who in middle life were taken with the measles. On the maternal side we find psychopathic tendencies of a melancholic and suicidal nature. That the measles, *per se*, are capable of precipitating a serious spinal lesion I do not admit, but when neuropathic or psychopathic tendencies are inherited, all infectious diseases engender, to a greater or lesser degree, organic nervous affections. These need not necessarily follow at once, but weeks, months or even years may elapse before bursting into action.

That so little, if indeed any, improvement should have taken place after the subsidence of the general symptoms is worthy of note. Generally a partial recovery may be expected and a gradual improvement for the first nine or twelve months may be looked for. In this case, no appreciable change occurred in the motility of his extremities and but a slight improvement in the muscles of the back.

A complete paralysis of the lower extremities, due to a spinal lesion, would be accompanied with more or less wasting of the muscles and abolition of the reflexes. The superficial and deep reflexes are abolished in the case re-

ferred to, but no wasting, or atrophy, or other trophic disturbance is appreciable.

The points of difference between the symptoms offered by my patient and those of acute anterior polio-myelitis caused me to hesitate some little time before coming to a conclusion, and even now my diagnosis needs confirmation by a necropsy, which I hope may soon be forthcoming.

ON THE DIAGNOSIS OF MULTIPLE DEGENERATIVE NEURITIS.

Dr. H. Lorenz (*Zeitschr. f. klin. Medicin*, No. 5-6, 1891), before giving the details of a clinical case studied by him, passes in rapid review the cases described during the last ten years and emphasizes that writers are not agreed as to the neuro-muscular seat of the disease and have different opinions on its etiology, granting, at the same time, that the most various principles may be the cause of multiple neuritis. In his case the disease followed rapidly an exposure to cold, the patient dying in three months and a half. The microscope revealed great degeneration of the peripheral nerves, with integrity of the nervous centres, atrophy of the muscular fibrillæ, necrotic ulcerations of the intestines, thinness of the tunica intima of the aorta, radial, femoral and basilar arteries of the brain. In the small peripheral arteries, below five mm. in diameter, proliferation of the intima, infiltrations of the cells of the walls and complete obliteration of the small vessels were discovered. In this case the relation of the degeneration of the nerves and the vascular alterations is interesting. Hence, the writer regards the affection as having its primary seat in the blood-vessels and that the nervous disease does not depend upon changes in the nervous system, but that some toxic or infectious agent acts directly upon the blood-vessels, producing a diapedesis of leucocytes, if of slight degree; if of a greater, an inflammatory process of the vessel-walls. Hence, in multiple neuritis one has to do with a disease which may simultaneously attack the muscles, vessels and nerves. In his case, as well as in that of Kussmaul and Maier, and the two observations of Minkowski, there was no sign of syphilis. All five of these cases were those of alcoholists. Alcohol is itself not the cause, but only predisposes. The acuteness of the phenomena speak in favor of an infectious virus.

F. H. P.