THE CURATIVE INFLUENCE OF INFLUENZA IN A CASE OF SPECIFIC MENINGOMYELITIS WITH CYSTITIS *

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In the older books on medicine, written in what we moderns like to call, perhaps not quite accurately, the prescientific age — before students had become slaves to instruments of precision, when increase of knowledge came only by sharper observation, when chemistry was still alchemy and physiologic chemistry was yet unknown, and when comparative pathology was impossible because the human mind, held in the fetters of religious myth, could not conceive that disease is the same in man and animals — there are many references to the fact that sufferers from certain diseases are immune to certain others. Thus, e. g., victims of gout were well known to be immune to certain other disorders. More or less fantastic hypotheses were called in to explain the phenomenon and, after a time of active interest, there followed a long period in which little or no attention was paid to the matter. Still later came the discovery of the specific vaccines, attempts at explanations of their mode of action, and in recent years, with a widening point of view, an increasing literature on the subject of the curative influence of nonspecific proteins; in other words, the antidotal influence of one infection against another.

Today there is an active interest in this question of the curative, or at least ameliorating, influence of foreign proteins in acute infectious diseases, and renewed attention is being paid to the old subject of the influence of one infection on another. For example, it has long been noted that acute gonorrhea subsides during typhoid fever. Several investigators have noticed that in paresis intercurrent infections are frequently accompanied by a "remission" of the mental symptoms of the disease. The antagonism between carcinoma and tuberculosis has long been known. Von Wagner obtained favorable results from the tuberculin treatment of paresis. He believed that its use increased the favorable action of antisyphilitic treatment, and Donath suggested treatment by abscesses from turpentine injections. Several similar therapeutic measures have been tried, but none has stood the test of time.

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The following case is an example of the favorable influence exerted by an acute infection—*influenza*—on an illness of many months' duration, enabling a bedridden woman suffering from an old meningomyelitis, with severe cystitis, to recover sufficiently to do housework.

REPORT OF CASE

History.—The patient was a housewife aged 36, who came to the Orthopedic Hospital and Infirmary for Nervous Diseases, Aug. 19, 1917. She stated that her illness began in January of that year with constant and severe pain and stiffness at the back of her neck, numbness in both arms, and later pain in both legs. The symptoms slowly grew worse and she became bedridden the following March. Soon after she was confined to bed it became difficult to pass urine and her bowels thereafter moved only by the use of enemas and drastic purgatives. For four weeks she had to be catheterized. At that time also there was complete palsy in her arms and legs, but she had no trouble in speaking or in swallowing. By the end of April she had improved enough to leave bed and was able to stagger around the house, though she still had pain in the right leg and both arms and some palsy in her extremities. After a short time she gradually grew worse. By July she had lost all power in both legs; she was compelled to use enemas, and to have the bladder emptied by the catheter. In the same month she began to have trouble with vision and, for a time, transitory diplopia.

Her past history showed that she had had typhoid fever when 12 years old. Something that was called congestion of the brain followed the birth of her first child. She had five living children and had had no miscarriages.

Examination.—On admission there was absolute palsy of arms and legs with paralysis of the bladder and rectum. Speech was normal. The facies was expressionless and smoothed out, indeed it resembled that of paresis, but during the course of her illness she did not have any of the mental symptoms of that disease. There was tactile anesthesia from a level just above the breasts on the trunk, and on the arms it was present, growing more distinct as one approached the hands. The knee jerks were spastic and ankle clonus and the Babinski reflex were present on both sides. There was no deformity of the spine and no pain on pressure. The heart action was regular and, though the sounds were of poor quality, there were no murmurs. Her blood pressure was: systolic, 100; diastolic, 60. The lungs were normal. Electrical examination of the arms and legs revealed no reaction of degeneration. There were no trophic changes in the skin, but some weeks later a superficial burn caused by a hot water bag was very slow in healing. (Later she had bed-sores on the buttocks.) She menstruated several times while at the hospital. By Nov. 10, 1917, she could use the arms quite a little, though still unable to stand. There were involuntary jerking movements of both legs at times, and she had a distinct girdle sense. There was gray atrophy in both eyes and the blood vessels in the fundi were narrowed and thin. The right eye had 5/200 vision, the left could distinguish hand movement. The pupils were irregular in outline and their response to light was very poor. The blood Wassermann test, which was taken immediately on arrival at the hospital, was + + + +. On arrival, and throughout her stay, there was marked cystitis. At times the urine was ropy. On March 16, 1918, the bacteriologic examina-

tion of the urine revealed an almost pure culture of colon bacilli and a few staphylococci.

The blood examination revealed: red blood cells, 3,600,000; white blood cells, 15,600; hemoglobin, 0.68. The red blood cells varied much in size and intensity of color. There were 3 per cent. eosinophils. The red corpuscle count and the hemoglobin percentage remained fairly constant, but the number of white blood cells varied greatly from time to time.

Course and Treatment.—The patient had many febrile attacks of varying duration during her stay in the hospital. The temperature would suddenly shoot up to 103 F., then for some days it would be normal and then go up again or swing between 103 and 100 F., and finally after a varying time remain permanently normal for days or weeks. I could find no other cause for the fever than the cystitis and the bedsores. As to medical treatment, she was given potassium iodid up to 300 grains a day; she received large doses throughout the greater part of her stay in the hospital. Mercurial inunctions were used. She had a few injections of salvarsan but without any marked immediate effect. All antisyphilitic treatment was stopped four months before leaving the hospital.

The patient was discharged July 20, 1918. She was then bedridden, completely palsied in bladder and rectum and in the legs and had bedsores on the buttocks. She could use both arms weakly. The urine was thick as cream. I sent her home to die. In December, 1919, her family physician gave me the following account of the course of events: For several months after going home there was no change; then she was seized with an illness, which he diagnosed as influenza. Her fever (102 F.) lasted only a few days and then to his surprise her urine began to clear up and within a few days all signs of cystitis had passed away. At the same time she began to regain control of the bladder. Shortly after power began to return in her legs and after some weeks she was able to stand. Improvement continued for months.

When she came to my office, during the Christmas holidays of 1919, she walked in. Her gait was spastic but she needed no help, not even a cane. She had good control of bladder and rectum. The deep reflexes in the legs were increased. The bedsores were healed. Her arms were normal. There was no anesthesia. The urine was normal. She told me she cooked and did other work in her house and stayed up all day.

COMMENT

The explanation of the mode of action of both specific and non-specific protein therapy is still hypothetical. Either there is a stimulation of bodily resistance to disease, or a destruction of the micro-organisms themselves, and hence a cessation of the production of toxins, or there is a real antidotal effect, i. e., the chemical introduced destroys the poison produced by the micro-organisms of disease.

I suspect that in my patient the long continued cystitis acted as a continuous poison and increased general weakness so greatly as to make it impossible for the patient to use what little of her cerebro-spinal motor apparatus remained intact. I also believe the influenza cured the cystitis and thus left the patient with a somewhat injured

but workable nervous machine. The original lesion was a syphilitic meningomyelitis, but I am inclined to believe that the antisiphilitic treatment stopped further progress by the spirochetes. I do not, however, propose the artificial induction of influenza as a curative measure for inflammatory diseases of the spinal cord.