

Dercum (F. X.)

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## A CASE OF SYRINGOMYELIA.<sup>1</sup>

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**I**N view of the interest attaching to syringomyelia, and especially in reference to its pathology, the following case may not be void of interest.

D. A., male, white, aged 62 years, had formerly been a clerk; married, native of Connecticut. Was admitted to the Infirmary for Nervous Diseases, April 16, 1892. Service of Dr. S. Weir Mitchell.

The family history revealed that the father had died of phthisis, but his mother and other relatives had enjoyed very good health.

The personal history was practically negative up to thirty-seven years of age, when he states he was attacked very suddenly by extreme pain in the back, and his trunk and limbs became rigidly extended, his head being drawn back (opisthotonos). This condition, he says, continued for five weeks, and also that during the greater part of this time he was unconscious. It was impossible to obtain from him any more definite account of this illness. However, his convalescence from it was very tedious and for a long time afterward there was pain in the back, weakness in the legs and numbness of the hands. Later, recovery was apparently complete and he remained in good health for some five years, when he again noticed a numbness in the fourth and fifth fingers of both hands. This numbness began in the fingers of the right hand, but soon appeared in the left hand also. It increased somewhat in severity, but did not spread to the other fingers or other portions of the hand. It persisted, according to his statement, for some sixteen or seventeen years without further change. At this time, that is three or four years ago, he commenced to notice a sensation of "drawing or tightness of the tendons" in the arms. This steadily increased, and later on actual contraction of the arms made its appearance. Some

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<sup>1</sup> Read at the meeting of the Philadelphia Neurological Society, December 26, 1893.

three years before this period he noticed a sensation as if the soles of the feet "were too much rounded." He says that he lost some of his certainty in walking. This steadily progressed until a marked staggering gait was attained. This continued until three years ago. The numbness also appeared in the feet and increased in degree, the condition being similar to that which already existed in the hands. His case had been slowly progressive, he thinks, and from bad to worse.

On his admission, the following notes of his condition were made by the resident, Dr. Pearse.

Present condition, April 16, 1892. Lies in bed with arms and legs much contracted. Examined for sensation, it is found that it is deficient in all the extremities. Voluntary motion is much impaired owing to the presence of the contractures. There is no ankle clonus, though the knee-jerks are exaggerated. Plantar reflex present. Pupils react well both to accommodation and light. Has lost control of both sphincters, bowels obstinately constipated. No apparent disease of spine, no pain elicited on pressure, or percussion. There is some pain in the hands. Character of this pain not made out very clearly.

Examined again, May 5, 26, 1892. Is able to move both legs and flex and extend them, but to a limited degree only. Has grown progressively weaker. K. J. appears to be normal on the right side, but is now absent on the left. Jaw-jerk not elicited. All of the muscle-jerks appear to be ++. There is a left-sided partial anaesthesia quite well defined in the middle line of the body. It is, however, most profound on the inner side of the left leg. It is now noted that he can distinguish heat from cold readily upon the right side of the body and upon the right leg, but on the right arm the power is evidently diminished. On the left side of the body and on the left arm and leg the thermal sense seems to be altogether lost.

June 15, 1892. Now, under the care of Dr. Dercum. The above notes as to the condition present corroborated. In addition, some wasting of both arms is noted, together with wasting in both legs, especially about the calves. Further, a bed-sore has made its appearance on each hip and in addition a very large one, five inches in diameter, over the sacrum. The knee-jerk is now absent on both sides. Tongue excessively coated. Patient is evidently in very bad condition; moans and groans almost con-

stantly, and especially at night. Upon being questioned he says that he suffers no pain, only a "general uneasiness." An examination of the urine reveals much pus and albumen, but no casts. A few days later the patient became delirious and sleepless, sedatives having little effect, and he finally died on June 28, 1892.

The autopsy was performed by Dr. C. W. Burr, Pathologist to the Hospital. It revealed among other changes of minor importance, a large cavity occupying the gray matter of the spinal cord. This cavity was most marked in the cervical region and to a less extent in the dorsal. It was absent in the lumbar region.

The microscopical appearances are as follows:

Microscopical examination of sections from the cervical region reveals extensive destruction of the grey matter and in addition sclerosis of both lateral tracts. The anterior cornua of the grey matter are to some extent preserved, though they seem to contain fewer cells than normally. Throughout the anterior cornua appear as though lopped off. The lateral processes if they exist at all are excessively distorted. Laterally and posteriorly the cavity encroaches much upon the general substance of the cord. Indeed, posteriorly the inroads have been so great that the posterior roots and root zones can with difficulty be defined. In some sections the posterior cornua seem largely to have disappeared. In the dorsal region, however, in which neighborhood the cavity is decided smaller, these parts are comparatively well preserved. In the dorsal region, also, the cavity is far more eccentric, being most marked toward the left side. In the lower dorsal and lumbar region the cavity is not detected. The walls of the cavity are exceedingly interesting, being made up of a richly nucleated, delicate connective tissue. That portion immediately lining the cavity is especially loose and delicate. Very soon, however, it becomes slightly more dense, but as we approach its periphery it again becomes more delicate and its fibres again separate more widely. In its peripheral portions are seen here and there numbers of nerve tubules. These, however, are absolutely wanting in the denser and more central portions. We are at once impressed with the difference which this connective tissue formation presents from that of ordinary sclerosis when we direct our attention to the sclerosed lateral tracts in the same sections. The latter tracts are replaced by connective tissue dense in character, presenting few or no

nuclei and differing strikingly in its physical appearance from the tissue just described. Further, the connective tissue formation lining the canal appears to pass from very fine gradations into the general substance of the cord. One is also impressed in examining these sections with the unusual vascularity of the cord in the immediate neighborhood of the cavity. The blood vessels are often numerous and large and sometimes quite tortuous. They do not, however, for the most part show any change in structure, though in a few instances they seem slightly thickened. Sections of the lumbar cord are of special interest as suggesting the possible sequence of the changes. As already stated, no cavity existed in the lumbar cord. Indeed, the central canal is entirely obliterated and in its place is found a rich deposit of nuclei, some within the lumen of the canal, but the bulk are aggregated about its periphery. Their arrangement, number and appearance closely suggest those found in the walls of the cavity of the dorsal and cervical regions. It is very probable, indeed, that we have here represented the beginning of a change which finds its completion in other portions of the cord.







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