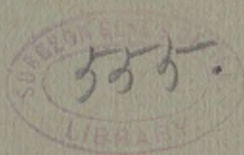


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Hæmatoma of the Spinal Cord.

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REPRINTED FROM THE
New York Medical Journal
for March 14, 1896.





LUMBAR PUNCTURE
OF AN INTRADURAL HÆMATOMA OF
THE SPINAL CORD.

BY OTTO G. T. KILIANI, M. D.

DR. GEORGE W. JACOBY, in his paper on Lumbar Puncture of the Subarachnoid Space, concluded in the number of January 4, 1896, of this journal, mentioned a case of puncture of intradural hæmatoma of the spinal cord which I reported in the September number of the *New Yorker medicinische Monatsschrift*.

As it appears that Dr. Jacoby's cases and mine are the only ones on record, you may possibly see fit to publish a somewhat detailed report.

T. S., forty-five years of age, fell on his back from a height of twenty feet, while working at Croton, N. Y., at four o'clock in the morning, July 1, 1895. Being slightly under the influence of liquor at the time of the accident, he was unable to give an accurate account of his fall. He was found after a few hours, and was brought to the St. Francis Hospital, in this city, where he was admitted about five o'clock in the afternoon. Catheterism.

On examination, the patient, who was apparently still under the influence of the shock, showed the typical clinical symp-



toms of an injury to the cord in the lumbar region and cauda respectively, complete motor paralysis of both lower extremities, sphincter ani, lower part of the rectum, and bladder; complete anæsthesia of both limbs, reaching upward on the body to an imaginary transverse plane drawn through the third lumbar vertebra and a point about two centimetres below the umbilicus. This area of insensibility therefore included the perinæum, scrotum, and penis, both dorsal and inferior surfaces.

A careful examination of the spine showed a spot of extreme tenderness on the third lumbar vertebra, but no deformity or crepitation, so far as could be ascertained. The region of the third lumbar vertebra was slightly ecchymotic. No patellar reflexes, no cremaster reflexes, no clonus of the foot. Abdominal reflexes present.

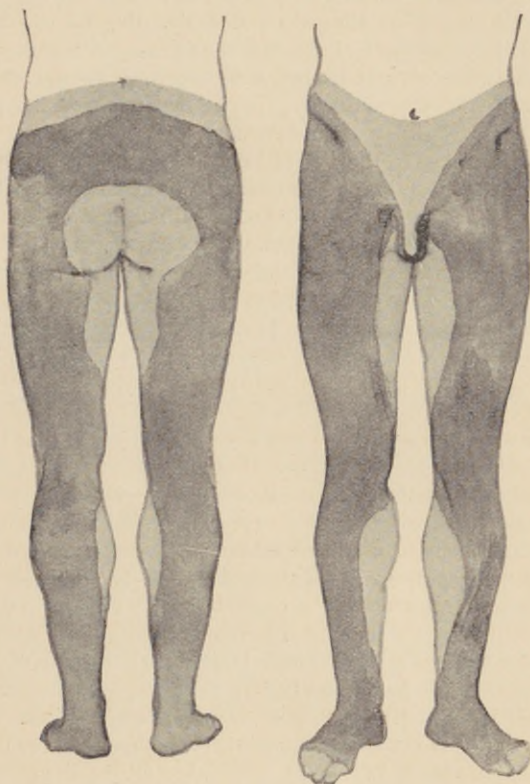
Diagnosis.—Compression of the conus terminalis and the cauda, probably by hæmorrhage (possibly by dislocation or fragment after fracture). The patient was comparatively easy in extension, with contra-extension at the head, on the water bed, and flatly refused an operation proposed on the following day (so-called laminectomy).

There was absolutely no change in the condition of the patient in the next few days up to the 6th of July, with the exception of profuse diarrhœa, which could hardly be controlled. Repeated examinations showed absolutely no change in the area of motor and sensory paralysis, the outlines of which had been marked with nitrate of silver.

On the 6th of July the patient consented to a puncture, which was done without narcosis in the typical way so often described. The patient was rolled on the left side, with only slightly convex spine, on account of the possible danger of compression of the cord. A strong needle was inserted in the vertebral canal between the third and fourth lumbar vertebrae, about one centimetre and a half from the median line, after several attempts, on account of the muscular development of the heavily built patient. Aspiration of eight cubic centimetres of thickish, tar-colored blood, which presented somewhat the appearance of a hæmarthros removed in the

second week. Aristol collodium on the point of puncture. This small operation was quite painful, but easy to bear.

Examination One Hour after the Puncture.—The anæsthetic area, which had been again determined a few hours before



the operation, was considerably diminished, so that the whole hypogastric region decidedly, although not quite normally, responded to mechanical stimulus (needle). In the dorsum penis sensibility has also returned, while the conditions on

the inferior surface, as well as on the scrotum, remained unchanged. A zone of returning sensibility was marked upon the inner aspect of the thigh and leg, as is shown in the figure. Sensibility had also returned in the toes. In the back of the patient a certain decrease of the pain in the region of the third lumbar vertebra was noticeable. Besides, the upper limit of insensibility had receded some five centimetres. The gluteal and anal region was also improved to the extent shown in the diagram. The posterior portion of the perinæum showed the same improvement.

The extensors of the left thigh were capable of slight voluntary contraction, which had not been observed before. An examination with electricity of the different muscles could not be effected for lack of a suitable apparatus.

The paralysis of bladder and rectum remained persistent, and the patient had to be catheterized every four hours, and passed stools involuntarily. The above conditions remained unchanged until the 10th of July, 8.45 p. m., when the patient, in spite of every precaution, suddenly died while the bed was being changed, with symptoms of asphyxia.

To my great regret, the autopsy was refused, so that I was only able to remove a portion of the spinal cord twenty hours after death. The cadaver showed rigor mortis in a very marked degree and an enormous lividity, which made the whole body look almost black. This may be assumed as a post-mortem symptom of the sudden death. Incision over the spinous processes of the lumbar region; dissection of the longitudinal muscles; the arachnoidal space laid open by chisel from the first to the fifth lumbar vertebra; no dislocation or fracture found, neither of the body, arch, nor any of the processes (neither articular, transverse, nor spinous). It is nevertheless not at all impossible that a fissure or replaced dislocation might have been overlooked or not discoverable. It is only certain that no fragments compressed the cord.

The dura, which was not severed or in any way opened, showed at a point corresponding with the intervertebral space between the third and fourth lumbar vertebræ, to the left of the median line, a sharply circumscribed suggillation

the size of a large pinhead, which showed where the needle entered. After incision of the dura, the cauda showed no macroscopic signs of bruising; a few remnants of a half-coagulated hæmatoma were still to be found. Although this post-mortem, for reasons mentioned above, is very incomplete, it abundantly proves that the puncturing needle really entered the intradural space, and furthermore that the blood evacuated in the aforesaid operation was actually drawn from the intradural space.

Omitting all the other details of my published report, I should like only to call attention to the therapeutic value of puncture in similar cases.

Wherever the hæmorrhage in the subarachnoidal space takes place, most of it will be collected in its blunt sac in the lumbar region. As it has been proved that compression of the cord merely by blood is possible (by Baginski and others), it is clearly our duty to try to remove the pressure by such a small operation as the puncture. Even if it is not followed by any improvement, it may be of decided value for purposes of diagnosis.

133 EAST FIFTY-SEVENTH STREET.

The New York Medical Journal.

A WEEKLY REVIEW OF MEDICINE.

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PUBLISHED BY

D. APPLETON & CO., 72 Fifth Avenue, New York.

