

to have several watery stools occasionally, but very active purgation might bring about a state of collapse. Diuretics seem to me to be entirely useless and often might be harmful. The way to increase the secreting pressure through the kidneys is through the heart or circulation. Such patients often feel faint, and a little stimulant helps this and increases the heart's action. Relequet recommends elastic bandages to the lower extremities, to raise the pressure in the kidneys. Thornton recommends for suppression after operations an ice-bag to the head. In one case he had success from packing the arms in cold, wet towels when the urine was nearly suppressed after ovariectomy. Injections of very hot water should be tried for their relaxing effect on any spasmodic condition.

In regard to all the ways of exciting the different secretions for the purpose of removing the urea, the remarks of Debove et Dreyfous, who made very careful analyses of the blood and secretions in a case of anuria, are worth considering. "We think that in exciting the different secretions we cause the elimination of a considerable quantity of water and of a relatively very small quantity of urea, and the urea in the blood becomes thus more concentrated. If the loss of fluids thus artificially produced brings about the absorption of dropsical effusions rich in urea, as is often seen in nephritis, the increase of the urea in the blood might lead to transitory uræmia." Bartels reports such a result thus produced, and in some of my cases it is presumable that the treatment was harmful in this way. If, then, a patient can live comfortably for a week or ten days without passing urine, let us not be too urgent to do something which may do more harm than good.

Of course various manipulations and changes of position should be tried for the purpose of removing the obstacle. Simpson is reported to have stood a man on his head, with the result of dislodging a calculus in his water and thus allowed the urine to flow by.

The autopsy in my patient showed that no operation would have been possible, and this must be the case in nearly all instances of obstruction from cancer. In the case of Dr. Doe, where bands from an old peritonitis were constricting the ureters, an operation might be possible if the nature of the case could be known beforehand. Where there are calculi in the ureters it is advisable to wait and see if they will not be voided spontaneously. An operation would be very difficult, for there is generally little hydronephrosis, and so there is no fluctuating tumor to cut down upon and the ureter is difficult to reach. Where the calculi are impacted near the bladder, Morris recommends dilation of the female urethra, or urethrotomy in front of the prostate in the male, and then to pass the finger into the bladder until it feels the calculus. The tissue between calculus and finger is to be cut with a gun-shaped lancet and the calculus to be removed with a curette.

Can such patients be anesthetized? We have very few data to guide us, but chloroform has been given in a few cases of anuria without harm. It is in cases where the kidneys themselves are seriously diseased that anesthesia, particularly from ether, is so injurious.

A CASE OF TRAUMATIC DISEASE OF SPINAL CORD.¹

(LATERAL AND POSTERIOR SCLEROSIS.)

BY J. P. MAYNARD, M.D., DEDHAM, MASS.

THE patient was one of the surviving victims of the "Bussey Bridge" disaster. When the car in which she was seated fell through the bridge, she was thrown some distance into the middle of the aisle, striking on her back and head.

She was rendered unconscious for a short time; when she recovered, found herself surrounded with the debris of car-seats. She was lifted by two men through a car window and helped up the embankment on to the railroad track; walked with some pain and difficulty to the Forest Hill station and was brought home in the cars to Dedham.

The history of the bodily and mental condition of the patient prior to the injury is: a woman of unusually fine physique, with a vigorous constitution, and always in perfect health during her life of thirty-nine years; of a calm and unemotional temperament, combined with great will-power and energy of character.

Was called March 19, 1887, five days after the accident. She had received a blow on the right side of the head in front, and one on the left of the occiput. The most serious injury was on the spine in the lumbar region, causing a swelling some four to five inches in diameter, of an oval shape, red, and tender to touch. There was also a smaller one at the junction of the last cervical and first dorsal vertebra.

Notwithstanding the painful character of these injuries she felt obliged for five consecutive days to ride to her place of business (where she held the responsible position of cashier), and only when the pain and numbness became each day greater, being at last unable longer to walk or even stand, was she willing to submit to remaining in bed.

The pain in the lumbar and cervical regions, which in the latter extended from the spine around towards the right of the body on a line with the ensiform cartilage, daily increased, as well as the heat and tenderness of the swellings at the points of injury. She could not lie with any comfort except on the back, slightly inclined to the right side. Was unable to turn wholly on to the right side for nearly three months, and has not been able to do so on the *left* side to the present time.

Slight paresis of the left hand developed from the first week, together with great weakness of the legs; they are both moved about the bed slowly and with some difficulty. The inability to move certain muscles gradually increased.

During the first four or five months the tendon reflexes were increased. The knee-jerks were exaggerated. The plantar reflex, on tickling the soles of the feet, met with abnormal response. The myotatic irritability being somewhat greater on the left side than on the right. With the exception of a persistent headache there has been at no time any brain symptoms. The pupils respond readily to light. No nystagmus. No spasm of any muscles or rigidity of them. No tremors. Sense of hearing, taste, and smell are perfect. Great weakness of the legs and fatigue of muscles on exercise, with aching

¹ Read before the Norfolk District Medical Society, Dec. 18, 1888.

pain in the lumbar extending to the sacral region, and defect of co-ordination, are the dominant symptoms at this period.

August, 1887. Five months after the injury the ataxia as well as the paralysis have become more palpable. She can now take but a few steps at a time and with uncertain gait. With great resolution, and in the hope of regaining her muscular strength, she persistently continued her efforts of daily walking, until, finding it invariably increased the pain in the lumbar and sacral region, she then consented to remain more quiet in a recumbent position.

October, 1887. After two months of partial rest, the pain having somewhat diminished, in resuming her attempts to walk, the paralysis and inco-ordination became more marked, especially of the left arm. With the eyes shut, she cannot now touch her nose with the forefinger of the left hand, but can do so perfectly with the right one. There was now a peculiar manner in her rising from the couch. A slow working of her limbs on to the floor into a partially sitting position, then being unable to raise herself on to her feet without first placing her hands on the knees and slowly by their aid pushing herself into a standing posture, at the same time with the legs wide apart, and the feet pointed strongly outward, in order to keep her balance.

Walking with a straddling gait, her progress is made by alternately rolling, or leaning the body from side to side in order to advance the feet, being unable to flex the muscles of the legs sufficiently to raise the feet more than an inch or two from the floor. She cannot turn around quickly without losing her balance, especially if the eyes are closed.

March, 1888. After the lapse of a year there is a slight lateral curvature of the spine toward the left, possibly owing to atrophy of the intervertebral cartilages at the point of injury. Pressure on the head produces pain in that locality. There is now some paresis of the right hand as well as of the left. The numbness in the legs has also increased. In a sitting posture she cannot put her left foot over the right, and a few weeks later she could not put the right one over the left.

May, 1888. The knee-jerks, which were somewhat exaggerated nine months ago, have gradually decreased. Reflex action from tickling the sole of the feet now meets with but faint response. Constipation has existed for over a year. Menstruation perfectly normal.

July, 1888. More impairment of sensation below the knees and parts of the thighs. The knee-jerks are now rapidly disappearing, especially in the left leg. Paralysis of extensors, flexors, and adductors of thighs and legs is more complete. Supporting herself by both hands on a table, cannot raise herself on tiptoe. Resting the hands on the back of a chair, cannot flex either leg sufficiently to lift the foot on to the round of the chair, the height of five inches.

The areas of anesthesia are extending, palpably on the front, outer and inner part of thigh and outer side of left leg.

August, 1888. Knee-jerk in left leg is now apparently totally abolished; at a later period it failed to be elicited even by Jendrassik's method, and is scarcely perceptible in the right leg. Muscular

sensation to weight is impaired in both limbs. Sense of posture of the feet is now entirely lost. Temperature of both legs below the knees one year ago was above normal, but has since gradually decreased and is now much below it. There is slight atrophy of the muscles of legs. Last year the circumference of each was twelve inches, now the right measures eleven and a half, and the left ten and a half inches.

September, 1888. She is unable to bend the spine without pain, except to a limited extent; for many months it has been impossible for her to stoop sufficiently to put on her shoes, and is obliged to have an assistant to dress herself.

October, 1888. There is now an entire loss of sensation in the left leg below the knee to the sole of the foot, even to a powerful current from a galvanic battery. There is no contractility of the muscles in that region to either the continuous or the interrupted current.

The disease is plainly indicated as existing, at its upper limit, near the junction of the last cervical and first dorsal vertebrae, as the paresis of the left hand is confined to the intrinsic muscles and sensation impaired only at the tips of the fingers. The lower limit evidently extends from the vicinity of the first and second lumbar to near the second sacral vertebrae, as all the muscles supplied by the nerves from the spinal cord and cauda equina between these areas are paralyzed and their sensation impaired.

In the above brief notes are condensed all the important and well-marked symptoms that have occurred in the progress of this case. They seem to indicate conclusively that there was developed, primarily, a focal myelitis at the seat of injuries; followed by a secondary degeneration of the spinal columns, known as lateral and posterior sclerosis, and so graphically described by Gowers as ataxic paraplegia.

REPORT ON MEDICAL CHEMISTRY.

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URINARY PIGMENTS.

M. GRIMBERT, in a communication presented to the Société de Pharmacie de Paris,¹ describes a new process for the recognition of urobilin in urine. This consists in heating the urine, mixed with an equal volume of hydrochloric acid, just to the boiling point. The mixture is allowed to become cold, and is then shaken with ether, which becomes colored reddish-brown and presents a beautiful green fluorescence. The ether solution, examined spectroscopically, shows the characteristic absorption-band of urobilin, situated between the lines *b* and *F*.

According to W. Michailoff,² the method of Senator, as modified by Salkowski, is the best for the detection and approximate determination of indican in the urine in the form of indigotin; but if the urine is too dark, it must be decolorized by the careful addition of basic lead acetate in order to remove urobilin. Another disadvantage of this method is the great care which must be taken in the addition of calcium hypochlorite solution or

¹ Journal de Pharmacie et de Chimie, July, 1888, page 80.

² Journal of the Chemical Society, London, August, 1888, page 880.