

# Two Cases of Laminectomy

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These cases make an interesting comparison, because, though very similar in symptoms and subjected to the same treatment, they were paradoxical, both in morbid anatomy and results.

Case 1.—A.W., a woman of 28, had suffered for ten years from spastic paraplegia. There had been gradually increasing stiffness and disability in the use of both legs, but no pain, except for a “girdle sensation,” which later experience led us to attribute to suggestion on the part of some one of the many doctors whom she consulted. During the whole period there had been no sphincter trouble until within a few weeks of the time of our examination. This is all the more remarkable in view of the extreme compression of the cord as found at operation. Apart from the paralysis her general health was good, and she had good use of her hands, and was fairly skilful seamstress. The following condition was found on examination of the central nervous system:

Cranial nerves were unaffected.

Sensation.—There was considerable loss of appreciation of all forms of cutaneous stimulation, touch, prick, heat and cold, but it was not complete. The sense of touch was much less affected on both legs than the other forms, and pain, heat and cold were much more affected on the right leg than the left. She had some difficulty in localising the lines where normal sensation became impaired, but after prolonged examination a line of demarcation was found along the line of the second rib on the chest, and passing down the middle of the arm and hand, and along the ring finger of each hand, that is to say, from the seventh cervical segment downwards. This formed the upper sensory limit. In addition there was marked loss of joint sense up to the knees, and loss of vibration sense up to the ribs.

Movements.—The head and neck movements were unaffected. The trunk was

spastic and was only moved with great difficulty. She could stand with help, and could walk with sticks, but there was evident difficulty in maintaining the balance of the rigid body. There was no noticeable defect in the movement of the arms. The legs were typically spastic, and held rigidly extended and adducted, there was extraordinarily great resistance to passive movement, especially in the left leg.

Reflexes.—Superficial: Abdominal reflexes absent, plantars extensor.

Deep arm jerks present, knee jerks, and ankle jerks greatly increased, ankle clonus. Sphincters, apparently some reflex micturition, constipation.

It was evident that there was a transverse lesion of the cord, of which the upper limit was near the seventh cervical segment, but the spasticity was much greater in the left leg, and this, together with the unequal loss on the two sides of the sensations of pain, heat and cold, suggested something in the nature of Brown-Sequard's syndrome, most likely indicating unequal pressure on the two sides of the cord. X-ray examination of the spine and the Wassermann reaction were both negative. The main question for decision was whether the lesion was intra or extramedullary. The usual guide in this matter is the presence or absence of root pains, and the question of any dissociation of sensation. Extramedullary pressure nearly always produces root pains, which in this case were conspicuous by their absence, and intramedullary lesions often show greater loss of heat sensation than of touch, which was the case in the present instance. The probabilities, therefore, pointed rather to an intramedullary lesion.

This intramedullary diagnosis, therefore, was maintained by one of us (D.W.C.J.), but it was pointed out that the paralysis was of very long standing, and that life was hardly worth living in the condition and with the existing prospects, that the smallest chance of improvement was considered worth any risk, and that at the least decompression

might do good. Laminectomy was therefore decided upon, and performed by the other (J.R.W.).

The patient was anaesthetised with warm ether and the operation of laminectomy performed through a curved incision. The backs of the four upper dorsal vertebræ were exposed and removed. The dura mater was incised, and nothing in the shape of a tumour was found. The veins running up the back of the cord were, however, very varicose and congested. Hence the back of the seventh cervical vertebra was removed, the dura mater slit up and a large soft yellowish coloured tumour was exposed about the size of a walnut. It shelled out very definitely and easily, and was apparently growing from the pia or arachnoid mater. The cord was found lying in front of it flattened to the thickness of a ribbon. The amount of conducting function remaining in so flattened out a cord was most remarkable—no doubt the explanation lying in the extreme slowness with which the compression had taken place—spread over at any rate 10 years.

The patient was so collapsed after the operation that blood transfusion had to be resorted to. Owing to her collapsed condition, it was found impossible to nurse her on her face, and she had to be on her back. By the time she recovered from the collapse leakage of cerebrospinal fluid had taken place, and although the patient recovered well for ten days, this leakage continued, became infected, and the patient died on the twelfth day of meningitis.

The tumour was examined by Professor Drennan, who pronounced it a typical psammoma—an endothelial structure studded with minute calcareous masses.

It is a matter for extreme regret that this case was not diagnosed and operated on at an earlier date. The tumour was in an accessible spot and of a character admitting of complete removal, and was unlikely to recur, but at the time of operation, even if it had been better borne, the cord was so flattened that any considerable recovery of function was most likely impossible; still, the patient could still walk, and even slight recovery would have been of value. Even if the spasticity diminished not at all, and the patient had survived, a great improvement

in locomotion could have been obtained by tenotomies and other orthopædic surgical methods.

Shortly after this a case was admitted to Dunedin Hospital under one of us (D.C.J.), which presented many similar symptoms.

Case 2.—M.H., a girl aged 18, under the care of Dr. C. S. Murray, had a slight febrile attack, after which there was progressive loss of power in the legs, but no pain.

On admission to the Hospital, the cranial nerves, neck, trunk and upper extremities were unaffected, but both legs were extended in a state of spastic paresis.

Sensation.—This was unaffected in the left leg, but in the right there was slight loss to all forms of sensation, especially of pain, heat and cold, together with loss of joint sense and vibration sense. The anaesthesia of the skin extended from the level of the third lumbar segment downwards, that is to say, the buttock was completely involved, and the upper limit was marked by a line passing from the third lumbar vertebra across the iliac crest, and down the front of the thigh halfway to the knee, crossing the front of the thigh and passing upwards to the perineum along the adductor aspect of the limb.

Movements.—There was no paralysis, but some paresis of all movements, especially on the right.

Reflexes.—There was an extensor plantar response on both sides, increased knee and ankle jerks and ankle clonus. The sphincters were unaffected.

Having the previous case in mind, the similarity of absence of root pains, partial loss of all forms of sensation, especially of heat, cold and vibration sense, and spastic paralysis, was very striking, and in view of the possibilities revealed by the previous cause, it was decided to advise operation, giving at the same time a very guarded prognosis.

The patient was anaesthetised and the usual method of laminectomy performed. The backs of vertebræ L 1, 2, 3, 4 were removed and nothing abnormal found, although again the posterior spinal veins were markedly varicose and congested. The cord was followed up by removing the backs of two more laminæ—but nothing abnormal was found.

The patient suffered during the next week very much with root pains—for a fortnight she presented all the signs of a complete transverse lesion—complete flaccid paralysis with sphincteric incontinence. After this, however, she rapidly recovered, and when discharged from Hospital ten weeks after the operation, not only was she able to walk very well, but all her previous symptoms and signs had disappeared. It seems probable that a very small early intramedullary growth was decompressed, in which case recurrence of symptoms is to be

expected, but she remains perfectly normal six months after the operation.

In both these cases it was impossible to make a very positive diagnosis, beyond that of compression of the spinal cord, greater on one side than on the other, and the results were curiously paradoxical. In the former case a discrete tumour was successfully removed, with a fatal results; while in the latter, an operation which revealed nothing abnormal was speedily followed by a most satisfactory recovery.

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