

in others the distention of the bladder during the routine lavage is felt, or the patient becomes conscious of the act of micturition or catheterization. Next in order, slight tone makes its appearance, and this can be shown by tapping the muscle, which contracts. Later on the reflexes appear and become markedly increased and, associated with this, is a prominent spasticity, and faradic and galvanic excitability become normal. Sensibility then returns in the following order: Touch, pain, temperature, and usually the lowest sacral segments are sentient before the others. Voluntary power is last to return, the flexors being earlier affected than the extensors. Sometime after the patient has been able to walk the increased reflexes, spastic condition and Babinski sign are apparent, the latter being invariably the last of all to disappear.

Owing to the kindness of Dr. G. E. Armstrong, the following case came under my observation.

J. C., aged 48 years, a sailor, was brought into the Montreal General Hospital, under Dr. Armstrong's care in the spring of 1902, suffering from fracture dislocation of the spinal column in the region of the ninth and tenth dorsal vertebræ, with symptoms of flaccid paralysis, complete loss of motion and sensation and of the superficial and deep reflexes of the lower extremities and bladder and rectal retention. Twenty-four hours after admittance, Dr. Armstrong cut down over the seat of the fracture and removed the laminae of the ninth and tenth dorsal vertebræ. Upon opening the dura mater a complete severance of the cord was found in this situation, with a gap of fully half an inch in extent between the two ends. On stimulating the anterior roots of the first and second lumbar segments with mild faradic current, with needle electrodes, the patient being only very slightly under the influence of the anaesthetic, contraction took place in the muscles of the leg. Stimulation was then applied to the posterior roots of the same segment and this was also followed by contraction of the muscles.

The above experiment was carried out for the following reasons: Considerable discussion had been going on as to the symptom complex present in cases of transverse division of the cord. Bastian, Brunn and others held the opinion that total transverse division of the cord was always followed by a flaccid paralysis, motor and sensory loss, with permanent abolition of the superficial and deep reflexes; others thought that while flaccid paralysis might occur at first, sooner or later a spastic condition set in. This second view was partly due to the influence of the opinions of many authorities who mistakenly compare the effects of transverse sections in dogs and in the higher apes with the sequence of events in man. Here also, physiologists frequently fail in impressing upon the mind of the student that the physiology of the nervous system