

A CASE
OF
DISEASE IN THE POSTERIOR COLUMNS
OF
THE SPINAL CORD.

BY EDWARD STANLEY, Esq., F.R.S.,

VICE-PRESIDENT OF THE SOCIETY,
SURGEON TO ST. BARTHOLOMEW'S HOSPITAL.

READ JANUARY 28TH, 1840.

THE following case will probably be deemed worthy of publication, as a well marked example of disease strictly limited to the posterior columns of the spinal cord, yet producing phenomena at variance with the doctrine of the distinct influences of the anterior and posterior columns of the cord on the faculties of motion and sensation.

Joseph Cosden, aged 44, was admitted into St. Bartholomew's Hospital on account of the loss of the power of motion in his lower limbs, of which he gave the following history: that it had not been preceded by any external injury, and had commenced about three years previously; that at first, and for some time, the impairment of motion was slight, but had afterwards progressively increased to the present

period. In the investigation of the case on its admission, the patient was lifted into a chair; and when thus sitting, he did succeed, by a great effort, in raising his legs from the ground; but afterwards the inability of motion became complete through each lower limb in its entire extent. There was no discoverable impairment of sensation in any part of either limb: on scratching, pricking and pinching the skin, nowhere was any defect of feeling acknowledged by the patient. In the upper limbs there existed no defect either of motion or sensation. The general health was feeble. In the idea that the impairment of the lower limbs might in some degree depend on congestion in the vessels of the spinal cord, a few ounces of blood were taken, by cupping, from the loins; which reduced the pulse, and occasioned the feeling of extreme debility, but with no improvement in the limbs. Mercury was also administered to the extent of inducing moderate salivation, but with no benefit. The further symptoms were simply those of gradually increasing exhaustion of the vital powers, with inability to expel the urine or retain the fæces. Quinine, ammonia, wine, with the most nutritive diet, produced a slight and transient impression on the general health, but none on the condition of the lower limbs. At length he sank, about three months from the period of his admission into the hospital.

Throughout the progress of the case, the opinion had been freely expressed that it was one of disease in the spinal cord, and that we might expect this

disease to be limited to the anterior half or columns of the cord, or to the anterior roots of the spinal nerves. We found, on examining the body, the spinal cord to be the only seat of disease, but that this disease was strictly limited to its posterior half or columns. About an ounce of serous fluid was found in the theca of the cord ; in other respects the membranes were healthy. The substance of the cord through its posterior half or columns, and in its entire length, from the pons to its lower end, had undergone the following changes of colour and consistence : it was of a dark brown colour, extremely soft and tenacious. The substance of the cord, through its anterior half and entire length, exhibited its natural whiteness and firm consistence ; and on making a longitudinal section of the cord through its centre, and in the antero-posterior direction, the boundary line between the healthy and diseased nervous matter was seen to be most exact : it was a straight and uninterrupted line from the pons to the lower end of the cord. The roots of the spinal nerves were unaltered. The brain was healthy. The mucous membrane of the bladder exhibited the characters of recent inflammation. The kidneys and other viscera were sound.

The value of the foregoing case consists in the distinctness of its phenomena, and in the circumstance of these phenomena being acknowledged by many competent observers to have been such as they are here recorded. The patient was admitted into the medical wards under the care of my col-

league, Dr. Roupell, and afterwards transferred to the surgical wards under my charge; and the examination of the body was made in the pathological theatre in the presence of numerous students. The case is not wholly without a parallel,* but I know of none other in which the phenomena were so well marked. In its bearing on physiology, this case shows that with the full admission of the distinct attributes of the anterior and posterior roots of the spinal nerves as parts of the motive and sensitive apparatus, we cannot, in the present state of our knowledge, satisfactorily transfer the same view of the distinctness of function to the corresponding columns of nervous matter composing the spinal cord.

It would seem to be a safe conclusion that change of structure to the extent to which it occurred in the case now described, in a portion of the spinal cord, must be attended with a corresponding abolition of function alike in respect to the power of originating and of transmitting nervous influence; yet do we find well authenticated instances recorded of actual destruction by disease of a portion of the spinal cord

* Clinique Chirurgicale de l'hospital d'instruction de Strasbourg par P. Malle. 8vo. Paris, 1838.

“ *Observation.*—Ramollissement de la partie postérieure de la moelle épinière avec perte de la motilité des extrémités supérieures, et persistance de la sensibilité.” The spinal cord was found altered in structure between the fifth cervical and third dorsal vertebra. The alteration was most marked in the exterior of the cord, and gradually diminished towards its centre.

through its whole thickness, and with the persistence of voluntary motion and sensation in the parts below the seat of disease ;* and in the same view, we may refer to the fact that in the case now related, with the change of structure in the cervical portion of the spinal cord, there was no impairment either of motion or sensation in the upper limbs. Such are the difficulties which, in the present state of our knowledge, attend the explanation of these pathological phenomena.

* Olivier, *Traité de la moelle épinière et de ses Maladies*, tome ii, Observation lxxxv.