

of my case were there any manifestations whatever of reflex action; he lived long enough to allow the effect of shock to pass away, and no symptoms that could be attributed to shock appeared at any time while under observation. I regard the absence of reflex action as due to changes having already taken place in the grey matter of the cord. Microscopical examination showed the lumbar region of the cord to be abnormally vascular, more so than some portions of the dorsal region. The genito-urinary centre is situated in this part of the cord, and from these facts I infer that the continued and unrestrained sexual excesses caused a hyperæmic state of that region, which extended upwards; myelitis set in, lessening the resistance of the cord, thus permitting the capillary extravasations, as well as the greater rupture. The inflammatory state, by interfering with the function of the ganglion-cells, would thus explain the absence of reflex excitability. It would also account for the apparent early absence of Faradic contractility, supposing it to be due to degeneration of muscle, one of the most constant changes occurring in consequence of irritative lesions of the spinal cord. As this seldom makes its appearance before the fifth day (between the fifth and fourteenth days, according to Charcot), its presence within forty-eight hours after paralysis would point to an abnormal condition of the nervous centres previous to the occurrence of hæmorrhage. The same inflammatory, and consequently irritative, condition of the spinal cord, would account for the presence of the lichenous eruption, which had made its appearance before entering Hospital; this being one of the many forms of skin affections which are so often seen in *irritative* lesions both of the spinal cord and nerves. Of course, similar cutaneous eruptions may occur and no lesion of the nervous system be found, but its occurrence in this case, coupled with the other symptoms then and subsequently present, point to its being of spinal origin. The bullæ which made their appearance in the course of the disease are among the commonest symptoms accompanying affections of the substance of the cord; this was pointed out fifty years ago by Bright, but it remained for Charcot to define the nature of the lesion. When these symptoms are associated with disease of the spinal cord, he claims that the diseased portion of the cord

has been the seat of *inflammatory* mischief. The lichen and other cutaneous affections which appear in the course of the disease, he says, depend upon irritative lesions occupying either the central and posterior portions of the grey matter, or the white posterior fasciculi. The microscope shows unmistakable evidences of such a condition having existed in my patient.

It further enables us to account for another very interesting fact—that while tactile sensation was present in a certain part of the arm, the patient could not recognize heat or cold when applied to same part. According to views advanced by Brown-Sequard, and supported by many observers, the path for temperature impressions in the cervical and dorsal regions is by the central grey matter, while tactile impressions travel chiefly by the anterior parts.

Patient was able to flex his forearms, thus showing that some, if not all, of the motor fibres in the musculo-cutaneous nerve were not implicated in the lesion in the cord, and as the portion of the forearm in which sensation was present corresponded to the cutaneous distribution of the same nerve, it follows, as a matter of course, adopting Brown-Sequard's views, that the anterior cornu of the grey matter which is connected with this nerve was perfect, or that some, at least, of its ganglion-cells had uninterrupted communication with the brain and the peripheral extremities of the nerve; and further, from the fact of temperature sensation being absent, that the central grey matter which is in relation with the same nerve was destroyed, or its communication with the brain interrupted.

On examining the brachial plexus, it will be seen that the musculo-cutaneous nerve arises from its outer cord, and that it is the uppermost of the divisions of that cord; for this reason, I think, it is quite probable that in the spinal cord it has the highest origin of the branches of the plexus. Indeed, the situation of the clot, and exemption from paralysis of the flexor muscles of the forearm, as well as the tactile impression of the portion of the forearm supplied by that nerve, I think fully justifies the conclusion. The section of the spinal cord opposite third cervical nerve is at least five millimetres above the entrance into the grey matter of the uppermost fibres of the fifth cervical nerve (the first nerve-forming brachial plexus). In the microscopic