NERVE SUTURE; STRANGULATION AT POINT OF JUNCTION; OPERATION. RAPID RECOVERY OF SENSATION AND MOTION.

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H. B., 25, a cellarman and bottle-washer, was admitted into St. Mary's Hospital, March 12th, 1885, with the symptoms of paralysis of the left ulnar nerve.

History.—He stated that at the end of 1883 he sustained a deep cut along the inner border of the left hand, through a bottle breaking as he was washing it. He went to the Royal Free Hospital, an anæsthetic was given, and some fragments of glass removed. The wound was dressed, and healed up directly. There remained, however, shooting-pains in the first and second fingers, with anæsthesia of the fourth and the ulnar side of the third fingers. He tried to resume his work; but a fortnight afterwards the wound broke out again, and he returned to the hospital.

Under an anæsthetic, Mr. Rose then opened up the wound by an incision made over the position of the ulnar nerve, at the wrist and bottom of the palm. The nerve-trunk was found to be divided, and was united end to end. The wound healed with a moderate amount of suppuration, but without further trouble. From that time until his admission into St. Mary's, there was no return of sensation in the fingers, while the scars, both of the original wound and of the surgical cut, became very acutely hyperæsthetic. There was also steadily increasing wasting of the palm of the hand, which got more and more clumsy and weak, so that he could in no way follow his trade. He finally came to Mr. Pye's out-patient room at St. Mary's, and was admitted into the wards.

Condition on Admission.—A healthy man, but poorly nourished.

The left forearm is marked in several places by the scars of cuts said to have been inflicted by fragments of bottles broken by him whilst washing them; the muscles of the forearm appear to be all equally developed. Along the course of the ulnar nerve, at the junction of the wrist and palm, there is a longitudinal scar crossed obliquely in the palm by another

(the oblique scar was that of the original wound; the long one, of the operation-wound). The former is much indurated, and in the centre is scabbed over only, but is firmly healed in the rest of its extent. The scab is exactly at the junction of the wrist and the palm, and here especially, but to a less degree over all the scar, there is an apparently acute hyperæsthesia, with reflex spasm of the flexors of the wrist produced upon the slightest touch.

The patient states that he cannot feel at all with the little finger and with the ulnar side of the ring-finger; but examination shows that, although the sensation is extremely impaired and altered, it is not quite abolished, so that he is conscious of a deep pin-prick, or a firm squeeze, although neither gives him pain; tactile sensation appears to be quite absent.

The hand is generally ill-nourished, probably from disuse, but the spaces between the metacarpal bones are especially wasted, and particularly the interval between the thumb and the first finger, this last being plainly due chiefly to atrophy of the adductor pollicis. The movements of the digits are clumsy, but can be performed, with the exception of complete adduction of the thumb and complete extension of the fingers.

Sensation in the palm, with the exception of the parts mentioned above as being hyperæsthetic, seems to be natural.

March 21st.—The patient was anæsthetised, and an incision was made following the line of the former one, being therefore in the line of the ulnar trunk. The nerve was exposed in the healthy tissues of the upper part of the wound, and traced downwards, being carefully dissected out from the dense cicatricial tissue in which it lay imbedded. It was in this way followed right through the scar, and down to its division into its superficial and deep branches in the hand.

These branches presented a normal appearance, as did the upper part of the trunk where it was first exposed, but between these two points it was obviously strangulated by the fibrous bands of the scar tissue; these ran through it and around it, the tightness of some of the circular constrictions being evidenced by the nerve swelling out on either side of the bands.

At the place which was obviously where the nerve had been originally divided and subsequently reunited, there was a well-marked bulbous enlargement, of about the size of, and presenting an appearance very similar to, the Gasserian ganglion.

As much of the fibrous infiltration and strangulating investment of the nerve-trunk as it was possible to dissect off without injuring the nerve-fibres was then carefully removed with the

scalpel, and the small nerve bundles separated one from another; the wound was closed, a short and very fine drainage-tube inserted, and the hand and forearm splinted lightly.

With regard to the wound, all that need be said is that its original dressing was never disturbed; and that it healed straightway without a drop of pus.

The following is the record of the process of return of sensation:—

March 25th.—Until to-day patient has noticed no difference in the fingers from their condition previous to the operation, but he now (four days after) thinks the third finger feels more natural; no change in the little finger.

March 26th.—The third finger is distinctly less numb, in his opinion, and the little finger is beginning to improve.

March 29th.—Hand removed from splint; the wound is healed. The improvement of sensation has continued, and he says that he feels as if he had more use in the hand. There is no perceptible alteration in its wasted appearance. There is no hyperæsthesia in the region of the operation-wounds, where it was very marked before.

April 9th.—The sensibility of the parts supplied by the ulnar nerve now seems to be quite normal, and as good as upon the other side of the body; he is confident as to increased usefulness of the hand; the wasting is, if anything, less.

April 11th.—Discharged, to recommence his work. He was afterwards seen frequently in the O. P. room at the hospital. The sensibility of the ulnar region is up to the present date (June 28th) permanently restored, and the weakness and atrophy of the affected muscles has steadily diminished, so that he now reckons that his left hand is about as good as his right one.

Remarks.—The whole interest of this case lies in the very rapid recovery of function shown by this nerve-trunk, after a suspension of its activity for a period of sixteen months after it had been divided and spliced together. This functional activity was, however, held in abeyance only, not abolished, and this was evidenced by the existence of some sensation, although it was only a very little, before the second operation. The atrophy of the muscles of the palm which are supplied by the ulnar is sufficient proof of the genuine nature of the case, and it is worthy of notice that the nerve-trunk below as well as above the seat of strangulation did not show, to the naked eye, any sign of impaired nutrition.

The recovery was, however, in any case singularly rapid and very complete, and the case would seem to encourage us to cut down upon and examine the condition of nerve-trunks, when

an operation for the reunion of their divided ends has not been followed by restoration of function, more frequently than is at present the practice.

It is well also to note the great importance of avoiding, in these operations, suppuration and the delayed union which it entails. This point has been already insisted on by writers on the subject of nerve suture.¹

¹ Vide Mr. Herbert Page's paper. 'Brit. Med. Journ.' vol. ii., 1880, p. 347.