

THENAR AND HYPOTHENAR TYPES OF NEURAL ATROPHY OF THE HAND.

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In the *British Medical Journal* of January 19th, 1929, Dr. Wilfred Harris reports two cases of occupational pressure neuritis of the deep palmar branch of the ulnar nerve, one occurring in a bootmaker and the other in a motor cyclist. In his comments he states:

"Until recently I have never seen a pressure neuritis of the deep palmar branch of the ulnar, nor do I know of any description of such a condition, but two cases which I saw within a week were so clearly limited to this nerve branch that possibly its apparent rarity may be due to want of recognition."

This statement, coming from a well-known English authority on disorders of peripheral nerves, would appear to indicate that the clinical picture which was described by me some twenty years ago has not gained recognition in Great Britain. In American literature it has long been recognized and has appeared in some textbooks and medical dictionaries as a special form of atrophy.

The neural form of atrophic paralysis of the small muscles of the hand, without accompanying sensory disturbances, may be caused by compression neuritis of either the deep palmar branch of the ulnar nerve or the thenar branch of the median nerve, both of which subserve a purely motor function.

Atrophic paralysis of the small muscles of the hand occupies a position of peculiar importance in the symptomatology of nervous disease because of the great variety of pathological conditions in which it may occur as an important and often early symptom. It may follow involvement of the spinal cord, the anterior nerve roots, the brachial plexus, and of the ulnar and median nerves. As a rule, the associated sensory disturbances or the absence of sensory symptoms play an important and often determining part in diagnosis and the topographical localization of the lesion, indicating its neural, plexus, radicular, or medullary origin, as the case may be.

The types of neural atrophy of the hand which I have described are characterized by a strictly neural distribution, with complete absence of those disturbances of sensibility which usually accompany lesions of the median and ulnar nerves. For this reason they resemble, more or less closely, certain of the myelopathies and myopathies beginning in the small muscles of the thenar, hypothenar, or interosseous regions of the hand.

This peculiar form of neural atrophy results from a neuritis or compression of purely motor branches of the ulnar and median nerves, and may be divided into a thenar and hypothenar type. In the *thenar* group the atrophy is limited to the muscles of the thenar eminence supplied by the median nerve, and is the result of compression of the thenar branch as it passes beneath the anterior annular ligament of the wrist. The *hypothenar* group is characterized by paralysis with atrophy of all the small muscles of the hand supplied by the ulnar nerve, and results from compression of the deep volar branch as it passes between the tendons of origin of the short abductor and the short flexor of the little finger. Both of the compressed nerves are purely motor in character, which explains the occurrence of neural atrophy without disturbances of sensibility in their respective distributions.

Of the hypothenar type six cases were described in my early studies, all of which were unilateral and identical in symptomatology. In all, there was a complete paralysis of the intrinsic muscles of the hand supplied by the ulnar nerve, without sensory disturbances. In two of the cases in which this symptom was investigated the function of the palmaris brevis muscle was preserved. This peculiarity is explained by the anatomical distribution; the filament supplying this small subcutaneous muscle is given off from the superficial palmar branch of the ulnar nerve, and so escapes injury in the compression of the deep palmar branch. Complete reactions of degeneration were observed

in all of the cases, strictly limited to the ulnar distribution in the hand.

Of the thenar type four cases have come under my observation, in two of which the atrophy was unilateral and in two bilateral. In all four cases, including those in which the atrophy was bilateral, the clinical features were identical—namely, paralysis with atrophy of the muscles of the thenar eminence innervated by the median nerve, with reactions of degeneration and complete preservation of sensibility in the distribution of the median nerve. Since these cases were published I have occasionally encountered the condition in both private and hospital practice, and I do not consider it a great rarity. In my experience it has often been confused with atrophy of spinal origin.

The neural atrophy in both the thenar and hypothenar group may come on gradually, following in the wake of the paralysis, and in this way a certain progressive tendency may be manifested in the earlier months, which may simulate very closely a beginning spinal atrophy of the Aran-Duchenne type. In some of my original cases an early progressive muscular atrophy had been diagnosed because of the localization of the atrophy in the small muscles of the hand and the absence of sensory disturbances. A discussion of the various occupational factors and the differential diagnosis relating to other forms of atrophy will be found in the references to my earlier publications.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

INJECTION OF WHOLE BLOOD FOR FURUNCULOSIS.

Cases of recurrent crops of boils are usually resistant to treatment. Among other methods the injection of colloid manganese helps in some cases, but I have never been satisfied that this is an efficient treatment. While serving in India, where furunculosis is common in the hot weather, I adopted a method which proved to be remarkably successful and in some cases dramatic in its cure. I do not claim the method is new, but I have never come across anyone using it.

Five c.cm. of blood are withdrawn from a vein at the elbow, and immediately injected into the muscles of the buttock. A 10 c.cm. syringe is used with a peripheral nozzle and two needles. If the syringe is kept in spirit it should be carefully washed out with distilled water. The site of election for the intramuscular injection is the upper and outer quadrant of the buttock, since this part is free from large vessels and nerves. If a line is drawn outwards from the top of the gluteal fold and bisected by a perpendicular line this will give the four quadrants, the upper and outer of which should be used for intramuscular injections in this region. The spot for injection is marked by a daub of tincture of iodine. One needle is fitted to the syringe, the other lying handy in distilled water; 5 c.cm. of blood are now withdrawn from one of the veins at the elbow, and the needle is detached from the syringe. The second needle is driven sharply into the marked spot on the buttock and, after waiting a moment to see that no blood flows, the nozzle of the syringe is applied to the needle and the blood is injected.

I have found that existing boils dry up within twenty-four hours as a rule, and the formation of further boils is prevented. In only one case was a second inoculation necessary after a lapse of four days.

Chagford.

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