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Test Your Knowledge

A MAN WITH CLAW HAND

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AM, a 26-year-old Bangladeshi furniture factory worker complained of progressive weakness and numbness of his left hand for 6 months (Figures 1 and 2). He was previously well. He had no pain except for a slight ache over the medial aspect of the left elbow. Neurological examination revealed sensory loss over the hand is as shown (Figures 1 and 2).

Figure 1

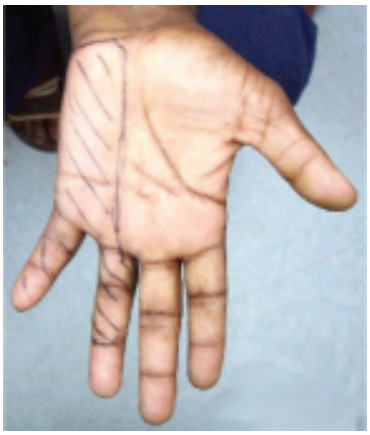
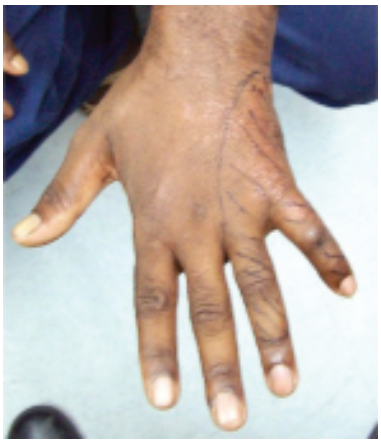


Figure 2



Questions

1. Describe the clinical findings.
2. What is the diagnosis?
3. What is the pathogenesis?
4. What are the treatment options?

Answers

1. The pattern of sensory loss corresponds to the innervation of the ulnar nerve. There is some degree of wasting at the first web space, an abducted little finger and clawing of the fourth and fifth fingers.
2. Ulnar nerve neuropathy
3. It is probably due to repetitive injury at the cubital tunnel (e.g. constant elbow flexion and extension in his work in the furniture factory). The patterns of sensory and motor loss indicate the possible site of ulnar nerve injury. Sensory loss over the ulnar aspect of the palm and dorsum of the hand suggests that the ulnar nerve injury is above the wrist. This is because the dorsal and palmar cutaneous branches of the ulnar nerve (sensory nerves) that supply these areas arise above the wrist. In this patient the "claw hand" is not obvious; again, this is indicative of high ulnar nerve injury, the so-called ulnar paradox. This is because a more proximal lesion at the elbow also causes weakness of the ulnar half of the flexor digitorum profundus, resulting in less flexion of the interphalangeal joints of the 4^{th} and 5^{th} fingers.
4. Conservative treatment is advised for mild cases. It includes rest, analgesics, elbow pads and using a night splint with the elbow in 45 degrees of flexion and the forearm in neutral position. The case described would require specialist referral for consideration of surgical decompression and nerve transposition.

Further readings

1. Stewart J. Ulnar neuropathies: where, why and what to do? Practical Neurology. 2006;6(4):218-29