

Histotopographic study of the ulnar nerve at the elbow

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Entrapment of the ulnar nerve at the elbow (cubital tunnel syndrome) is the second most common compression neuropathy seen clinically after carpal tunnel syndrome. The aim of the present study was to evaluate the anatomical structures at the level of the cubital tunnel through an histotopographic study. 18 upper limbs were analysed in un-embalmed cadavers performing in 9 cases a dissection of the region with particular reference potentially sites of nerve compression and in the other 9 cases full thickness samples were performed. The slices were stained with azan Mallory and Weigert-Van-Gieson. In the anatomical dissection the mean length of the ulnar nerve as it coursed in the cubital tunnel was 3.6 cm. In all the cases a fibrous band was observed to cross over the ulnar nerve, originating from the tendon of the triceps to the aponeurosis of the to the flexor carpi ulnaris. The average length of the fibrous band was 5.1 cm From the microscopic point of view, the ulnar nerve is a multifascicular bundle, surrounded by a variable amount of areolar fibro-adipose tissue and is located between the thickened periostium and the roof of the tunnel, constituted by a 2-3 layers of connective tissue, separated by areolar tissue, that is in continuity with the tendon of the triceps muscle and the aponeurosis of the flexor carpi ulnaris. From the clinical point of view the surgical decompression of the ulnar nerve has to provide wide opening from the triceps muscle fascia and flexor carpi ulnaris.

Keywords: Cubital tunnel, dissection, ulnar nerve, compression.