Institute of Experimental Morphology, Pathology and Anthropology with Museum
Bulgarian Anatomical Society

Acta morphologica et anthropologica, 24 (3-4)
Sofia ● 2017

# Clinical Significance of Anatomical Variations in the Carpal Tunnel: Review

*Georgi Kotov*[1], *Alexandar Iliev*[1]*, *Georgi P. Georgiev*[2], *Vesselin Karabinov*[3], *Boycho Landzhov*[1]

[1] *Department of Anatomy, Histology and Embryology, Medical University of Sofia, Bulgaria*
[2] *Department of Orthopaedics and Traumatology, Univeristy Hospital Queen Giovanna-ISUL, Medical University of Sofia, Bulgaria*
[3] *Clinic of Neurology, National Cardiology Hospital, Sofia, Bulgaria*

*Corresponding author: e-mail: dralexiliev@abv.bg

Anatomical variations of the structures related to the carpal tunnel are numerous and involve muscles, tendons, vessels and nerves. The structures passing through the carpal tunnel include the tendons of the flexor digitorum superficialis, flexor digitorum profundus and flexor pollicis longus, as well as the median nerve. Anatomical variations in this region may predispose the median nerve to compression and lead to carpal tunnel syndrome, which is the most often reported compression neuropathy. The most common muscle variations involve the palmaris longus muscle, the flexor digitorum superficialis, the abductor digiti minimi (ADM) and the lumbrical muscles. Vessels anomalies refer to the presence of a persistent median artery and a superficial ulnar artery. The median and ulnar nerves can also be present with variant course, division and anastomoses. The present manuscript reviews literature data on these variations and underlines their clinical implications.

*Key words:* anatomical variations, carpal tunnel, wrist, median nerve, clinical significance