

ANATOMICAL ARTERIAL VARIANTS OF THE UPPER LIMB

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Background. The terminal branches of the brachial artery, the radial and ulnar arteries have an applicative value. The radial artery is one of the main arteries of the forearm and hand. Usually, the brachial artery bifurcates in the cubital fossa, distal to the inter-epicondylar line of the humerus. Numerous variations are reported regarding the origin and branching patterns of the ulnar and radial arteries. Atypical origins are at the level of the arm, being called brachioradiales and brachiulnares with normal or superficial appearance. Their most common origin is the proximal half of the humerus. **Objective of the study.** Evaluation of the prevalence of anatomical variations of the forearm arteries and their clinical relevance.

Material and Methods: The anatomical variations of the ulnar artery and radial artery were studied on 35 adults upper limbs at the Department of anatomy and clinical anatomy of SUMPh „Nicolae Testemitanu”, Chisinau, Republic of Moldova. The variability of the arm and forearm arteries, their topography, course and diameters have been documented.

Results. Of the general number of members, 85.7% were male, 14.3% were female, right side was 48.6% and left side 51.4%. Males have an average bifurcation of the brachial artery distal to the elbow line of 29.83 mm, while females have an average bifurcation of 27.25 mm, 53.3% are on the right side and 46.7 % are on the left side. In one case, the bifurcation of the male left limb was proximal 33 mm to the elbow line. Overall average of trifurcation of the brachial artery distal to the elbow line was 35.67 mm. For males, it was 28.80 mm, and for females it was 70.00 mm. On the right side, both male patients had a brachioradiales artery that originated from the axillary artery. Brachiulnares artery was only found in one male case on the right side. The median artery was present in 14 cases, with 7 of them contributing to the formation of the superficial palmar arch, and 7 cases remaining on the forearm.

Conclusion. The present study revealed the significance of brachial artery variations for the composite tissue transfers and replantation in the microvascular surgery. An early diagnosis of the variants of the vascular structures and their pathology, such as aneurysm or thrombosis in the carpal tunnel, leads to a non-surgical approach.

Keywords: median artery, variations, radial artery, ulnar artery, brachioradialis, brachiulnares, superficial palmar arch.