Topographic and morphometric aspects of the internal jugular vein.

Zorina Zinovia*[1], Babuci Angela[2], Botnaru Doina[3], Botnari Tatiana[4], Cotoneț Tatiana[5]
[1 2 3 4 5] *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova.

Background. Lately, due to the increasing number of intravascular manipulations, the internal jugular vein (IJV) is more frequently punctured and catheterized, and success of that procedure very much depends on IJV relationship with the common carotid artery (CCA), especially when are known its atypical positions. The topographical and morphometric peculiarities of the IJV were studied according to gender and laterality in patients undergoing Doppler sonographic examination.

Materials and methods. The blood vessels of the neck of 134 patients, without vascular pathology, were examined by Doppler sonography. The examination protocols and Doppler images were taken from the electronic database of the MSPI Republican Center of Medical Diagnostics, Chisinau, Republic of Moldova. The obtained data were statistically processed and the arithmetic mean and standard deviation were calculated.

Results. Five types of the IJV position towards CCA were identified: anterolateral position – 38.0% (14.2%/23.8% – male/female); lateral position – 35.0% (20.9%/14.1% – male/female); posterolateral position – 20.9% (17.2%/3.7% – male/female); posterior position – 5.2% (4.3%/0.9% – male/female) and medial position – 0.7%, established only in males. IJV described a straight trajectory in 77.6% (43.3%/34.3% – male/female), and in 22.4% (14.2%/8.2% – male/female) – it was tortuous. The average length of the IJV constituted 14.8±0.56 cm; in male – 15.0±0.62 cm, and in female – 14.2±0.44 cm; on the right side it was 14.9±0.6 cm, and on the left one – 14.4±0.52 cm. The diameter of the IJV, in its middle portion, was 15.1±0.49 mm; in male – 15.5±0.53 mm, and in female – 14.7±0.33 mm; on the right side in 66.4% the length was 15.7±0.56 mm, and for the remaining 33.6% it was 13.8±0.29 mm, similar with that of the left IJV. The thickness of IJV wall was 0.35 ±0.08 mm; in male – 0.45±0.09 mm, and in female – 0.3±0.09 mm.

Conclusions. The most frequent position of the IJV towards CCA in female was the anterolateral one, and in male was the lateral position. The morphometric parameters of the right IJV had higher values.

Keywords: internal jugular vein, vein catheterization, Doppler sonography