

## ANATOMICAL VARIANTS OF THE COMMON CAROTID ARTERY

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**Introduction:** The variability of the common carotid artery (CCA), its morphological and topographic features, can cause deficiency in blood supply of the brain and also are identified as predisposing factors in formation of atherosclerotic plaques. The purpose of our study was to determine the variants and individual morphological and topographic features of the CCA.

**Materials and Methods:** The variability of the CCA was studied retrospectively on a sample of 110 patients (60 males/50 females), with an average age of  $60.7 \pm 14.84$  years, with various complaints, who were examined through CT angiography at the MSPI Emergency Medicine Institute and Republican Center for Medical Diagnostics.

**Results:** The right common carotid artery (RCCA) originated from the brachiocephalic trunk in 98.2% of cases and in 1.8% it had a common origin with the left common carotid artery (LCCA). The LCCA derived from the aortic arch in 73% of cases, in 20% of cases, it had a common origin with the brachiocephalic trunk from the aortic arch and in 5.2%, it was a branch of the brachiocephalic trunk. High bifurcation of the RCCA was determined in 4.5% of cases while the high bifurcation of the LCCA was identified in 5.45%. Low bifurcation predominated on the right side, being observed in 12.72%, while the incidence on the left side was 11.81. As a variant of branching patterns, the trifurcation of the CCA into the internal carotid artery, external carotid artery (ECA) and superior thyroid artery (STA), was identified. The trifurcation of the RCCA was observed in 31% and the trifurcation of the LCCA in 26.3%. An unusual origin of the STA from the trunks of the common carotid arteries was revealed in 20.8%, from which in 3.6% of cases the STA was a branch of the RCCA and in 17.2% it was a branch of the LCCA. A few variants of the CCA primary branches position were identified. The right ECA was positioned anteromedially in 84.5%; posterolaterally in 2.7%; laterally in 11.8% and medially in 1% of cases. The left ECA was positioned anteromedially in 91%; posterolaterally in 1.8%; medially in 2.7%; laterally in 3.6% and anterolaterally in 1% of cases.

**Conclusions:** The anatomical variants of the CCA, particularly its bifurcation level, branching patterns and topographical relationship of its primary branches are of clinical significance in selecting the optimal methods in neck surgery.

**Keywords:** common carotid artery, external carotid artery, superior thyroid artery.