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**INTRAOORGANIC ARTERIES OF THE BRAIN STEM  
OF A MATURE HUMAN**

**ВНУТРІШНЬООРГАННІ АРТЕРІЇ СТВОЛА ГОЛОВНОГО  
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**Introduction:** Intraorganic arteries and anastomoses between them in its deep structures are of great importance in the blood supply of the brain stem. From the literature data available to us, it is known that the extraorganic part of the arteries of the brain stem of a mature human has been studied quite well. But the patterns of origin and distribution of intraorganic arteries and anastomoses between them are described much less. Especially few studies are devoted to the issue of individual morphofunctional features of the intraorganic arteries, the distribution of their branches and the formation of anastomoses between them in the substance of the brain stem.

**Materials and methods:** This study was conducted on 52 preparations of the brain stem of a mature human, male and female. The material for the study of the stem part with the vessels of the brain of a mature human was taken from the funds of the museum and the funds of educational and

scientific cadaveric material of the Department of Human Anatomy of KhNMU. Human brainstem arteries were filled with natural latex 3060 LBS, SYNTHOS DWORY tinted with red paint for batik Pigment-Mix, INCHEM. Arteries were filled with a latex mass with a 2 ml disposable syringe through a KD-FIX catheter, G18 1.3 x 45 mm, installed in the vertebral and internal carotid arteries and fixed with a ligature. All severed arterial vessels were also ligated to prevent leakage of the latex mass from them. All preparations of the brain stem with vessels of a mature human were fixed with 10% formalin solution. After that, the preparations were subjected to the process of enlightenment using the diaphonization method. Sections were made from the clarified preparations using a macrotome with a thickness of 1-3 mm. From each preparation, 60 to 110 sections were made from different parts of the brain stem of a mature human. Sections were studied using an MBS-10 stereoscopic microscope with a wide-field eyepiece with a ruler, magnification (7 x 10).

**Course of work:** In the course of our study, it was found that the branches of the second and third order from vertebrates, the main anterior and posterior spinal and posterior cerebellar arteries are distributed within the reticular substance of the medulla oblongata. Their small branches form numerous anastomoses between themselves, forming a dense arterial network between them. Especially in places of localization of cranial nerves nuclei. From 3 to 8 branches of the third order enter into each of these sections. It is also possible to note the formation of large, medium and slightly looped arterial networks. Their orientation and shape reflect the characteristics of a particular nucleus. Most look like an oval or polygon. Sections from preparations of the pons varolii revealed branches extending from the main and superior cerebellar arteries in the amount of 7 to 13. They supply blood to their own nuclei of the pons, the trapezoid body and the nuclei of the trigeminal nerve. It is noted that in the trapezoid body the arteries are directed along its fibers and form multiple anastomoses. On sections from preparations of the midbrain, it can be seen that it is supplied with blood from several sources of branches of the internal carotid artery, the main and posterior cerebral arteries. The arteries supplying the red nucleus depart in an amount of 5 to 12 from the middle, medial and lateral groups of the midbrain arteries. In its substance, they branch out at different angles, forming numerous anastomoses and arterial networks. Such networks are also characteristic of black substance, which are more arcuate in shape. Such features are especially clearly visible in the central part of the midbrain. Anastomoses surround the Sylvian aqueduct, and arcuately pass from its upper part to the lower. In the region of the quadrigemina,

branches of the 3rd and 4th orders acquire a spindle shape. A large number of branches supplying the midbrain go to the thalamus. They supply the thalamus in front and back with blood. Numerous anastomoses are formed in its substance with a finely looped structure. In addition to small anastomotic networks, larger ones were also identified – straight and arcuate arterial connections that connect branches coming from the lateral and medial surfaces of the thalamus.

Conclusions: thus, from the data obtained by us, it can be seen that in some parts of the brain stem of a mature human, a combination of rectilinear and reticular forms of arterial anastomoses is revealed. The intraorganic arterial bed of the brain stem reflects the structure of the medulla itself, is characterized by certain individual characteristics. Part of the arterial anastomoses both between individual arteries and between the arterial networks of some nuclei, in turn, branches, therefore, the intraorganic arterial bed of the human brain stem in most areas (especially in the midbrain and diencephalon) can be characterized as a continuous arterial network, undivided into distinct zones. Such a significant development of the arteries of the brain stem part can be explained by the maximum development of the human brain stem itself (which also receives blood supply from a larger number of sources, as indicated by both literary and own data), caused by the growth and development of the telencephalon and the influence on the brain stem cerebral cortex. In addition, the arterial vascularization of the human brain stem is also distinguished by a relatively large number of branches suitable for individual nuclei located in its substance.

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## **ORGANIZATION OF MEDICAL ASSISTANCE TO FORCED MIGRANTS: SHORTCOMINGS AND WAYS TO SOLVE THEM**

## **ОРГАНІЗАЦІЯ МЕДИЧНОЇ ДОПОМОГИ ВИМУШЕНИМ ПЕРЕСЕЛЕНЦЯМ: НЕДОЛІКИ ТА ШЛЯХИ ЇХ ВИРІШЕННЯ**

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Сучасна система надання медичної допомоги у різних країнах дещо відрізняється й залежить від фінансування та соціального рівня окремої країни, концепції культури та багато іншого. Сьогодні медицина дозволяє на високому рівні надавати медичну допомогу, тому числі й педіатричну, проте проведені опитування серед вимушених переселенців (що тимчасово проживають на території братиславського краю) дозволяють виявити досить велику кількість недоліків, щодо цієї допомоги. Крім того, згідно з законодавчою базою лише «особи з додатковим захистом» або, яким надано «статус біженця» мають право на повний спектр медичних послуг на відміну «особи, що проїжджають через Словацьку Республіку» та «особи з тимчасовим приютом у Словачії» мають тільки право на невідкладну медичну допомогу [1].