Miroshnichenko A. A., Perepelitsa T.S.

CRANIOMETRICAL FEATURES SKULLS PEOPLE ADOLESCENCE

Kharkiv national medical university, Kharkiv, Ukraine
Department of Anatomy

Introduction: The development of neurosurgery , in connection with the detail design of the skull bone in the brain and facial divisions , based on the teachings of individual anatomical variability , especially in adolescence .

Aim: To study the development of the facial features and brain , to determine the individual variability in postnatal ontogenesis people adolescence .

Materials and methods: The investigated objects were the two human skulls youthful age (males and females 16 and 21 years) . Applied the following methods: craniometry of the native preparations .

Results: During adolescence there is a further stabilization craniometric indicators head and skull . So , head length in males is 17,0-19,6 cm; maximum length of the skull cavity 15,2-16,8 cm; 13,2-15,9 cm width of the head ; head height 14,0-15,2 cm; cephalic index 71,1-87,5 cm. Accordingly, these parameters in females : head length - 16,0-17,3 cm; cranial cavity length 14,3-15,2 cm; head width 13.5-14.5 cm; head height 13,3-15,1 cm; cephalic index 78,0-91,2 cm .

Conclusions : It was determined that all of the cranial cavity have a certain range of age differences. Just that people skull adolescence has expressed individual anatomical features , confirms the measurements that must be taken into account during the various neurosurgical operations.

Movchan Y.O., Moroz K.R., Izmailova L.V.

MORPHOLOGICAL PECULIARITIES OF THE NERVES OF THE PERICARDIUM IN CASE OF CORONARY INSUFFICIENCY

Kharkiv national medical university, Kharkiv, Ukraine
Department of Human Anatomy

Introduction. Coronary blood supply disturbance results in most cases from atherosclerotic changes and leads to constrictive processes. However, lesion of the coronary arteries by atherosclerosis does not always determine changes in the cardiac muscle. Except peculiarities of the intraorganic vessels of the pericardium, the nervous apparatus of the pericardial sac, which undergoes some changes in case of the coronary blood supply disturbance, must be taken into account.

Materials and methods. Intraorganic neuroplexuses of the pericardium, which are formed by the pneumogastric, sympathetic and phrenic nerves, have connections in common with the vessels, i.e. through the pericardial reflection with the nervous apparatus of the myocardium. The main vascular lines, which are responsible for supplying of the pericardium, are pericardiacophrenic arteries located on the anterolateral surfaces of the pericardium, along the thoracic section of the phrenic nerves. Together they form neurovascular bundles situated in an anaxial way to the right and to the left. The right neurovascular bundle is close or at the root of the lung and the left one is located in front of the corresponding lung root. Due to this point the area of blood supply and innervation of the left neurovascular bundle is much bigger than that of the right one. On the specimens of the pericardium, which are totally stained, we can find a nerve plexus which is located in its

superficial layer. In this case a great number of nerves, which are situated either along the vessels, or independently, can be determined on the background of the dense vasculature. The latter ones are like trunks of different sizes which cross major and minute vessels in different directions. The nerve plexus of the pericardium situated in the superficial, friable, fibrotic layer sends a great amount of branches into the deep collagenous elastic layer where separate nerve trunks of different diameter are located. The intraorganic nerve plexus of the pericardium, which is in the friable fibrotic layer, and separate nerve tracts and fibers located in the collagenous elastic layer of the pericardium also display some reactivity conditions in case of difficulty of the coronary blood circulation owing to atherosclerotic changes. Reactive changes are found in the thick medullated fibers. The nerve fibers in the deep collagenous elastic layer form free nerve endings which branch according to cluster type. In the specimens, which were characterized by atherosclerotic changes, they also displayed increased argentophilic nature. In some specimens sharp induration of free branching endings was detected.

Results. These reactive changes, which are not so apparent on the side of the nerve apparatus of the pericardium, prove reversibility of this process that takes place as a result of oxygen deficiency of the tissues.

Conclusion. Therefore on the ground of the data we have obtained, it is possible to come to a conclusion that the nerve apparatus undergoes reactive condition. In this case induration of the nerve fibers and its endings, increased argentophilic nature of the medullated fibers, myelin sheath thickening are observed.

Narang Neha, Panasenko V.A.

HEMOPOIETIC GROWTH FACTORS

Kharkiv national medical university, Kharkiv, Ukraine

Introducrion. Generally hemopoiesis is controlled by a number of different growth factors produced by various cell types. Each factor acts on specific stem cells, progenitor cells, and precursor cells, generally inducing rapid mitosis, differentiation, or both. Some of these growth factors also promote the functioning of mature blood cells. Most hemopoietic growth factors are glycoproteins.

Results. Three ways are used to bring growth factors to their target cells: 1) transport via the blood (as endocrine hormones); 2) secretion by stromal cells of the bone marrow near the hemopoietic cells (as paracrine hormones); 3) direct cell-to-cell contact (as surface signaling molecules). Certain growth factors — principally, steel factor (also known as stem cell factor), granulocyte-macrophage colony-stimulating factor (GM-CSF) and two interleukins (IL-3 and IL-7) — stimulate proliferation of pluripotential and multipotential stem cells, thus maintaining their populations. Additional cytokines, such as granulocyte colony-stimulating factor (G-CSF), monocyte colony-stimulating factor (M-CSF), IL-2, IL-5, IL-6, IL-11, IL-12, macrophage inhibitory protein-α (MIP-α), and erythropoietin, are strongly believed to be responsible for the mobilization and differentiation of these cells into unipotential progenitor cells. Colony-stimulating factors (CSFs) are also responsible for the stimulation of cell division and for the differentiation of unipotential cells of the granulocytic and monocytic series. Erythropoietin activates cells of the erythrocytic series, whereas thrombopoietin stimulates platelet production. Steel factor (stem cell factor), which, as discussed previously, acts on pluripotential, multipotential, and unipotential stem cells, is produced by stromal cells of the bone marrow and is inserted into their cell