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БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

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106-ї підсумкової науково-практичної конференції
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Матеріали підсумкової 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) – Чернівці: Медуніверситет, 2025. – 450 с. іл.

У збірнику представлені матеріали 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) зі стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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Topographically, the smallest network of blood vessels is located most superficially, then vessels of medium diameter and the largest branches of lattice arteries are located most deeply.

Emelianenko N.R.

MORPHOGENESIS OF THE NASAL SEPTUM IN THE PREFETAL PERIOD OF HUMAN ONTOGENESIS

Mykola Turkevych Department of Human Anatomy
Bukovinian State Medical University

Introduction. Despite the fact that the period of intrauterine development is relatively short, the transformations of the body during this time are much more significant than during the entire subsequent life. Therefore, it is important to study the structure of organs and systems in connection with the main processes of morphogenesis, based on the data of embryogenesis. The problem of antenatal protection of the nasal area is especially important at the present time, when the harmful influence of the external environment, including environmental and other natural (chemical, physical) factors, has increased significantly. Their influence is reflected on the development of the embryo as a whole and on the embryogenesis of the peripheral part of the olfactory analyzer in particular.

The aim of the study. To study the topographical and anatomical features of the structures of the nasal septum in the prenatal period of human ontogenesis.

Material and methods. The study was conducted on 10 samples of dead prefetuses without any external signs of anatomical deviations or abnormalities. In the process of conducting the research up-to-date adequate anatomical and morphostatistical methods were combined with the estimated probability of the obtained results including macro- and micropreparations under the control of microscope, injection of vessels with further preparation, contrast angiography and morphometry.

Results. The beginning of the nasal septum is represented by mesenchyme, covered from the outside by a tall cylindrical epithelium, the nuclei of which have a spherical or oval shape and are located in 4-6 rows. The thickness of the epithelium ranges from 36±2.0 μm (in its upper part). In the central part of the lining of the nasal septum, mesenchyme cells are located more densely, forming a conglomerate that has the shape of a wedge on frontal sections, the top of which is turned downwards. Its transverse size at the base (from above) is 220±10.0 μm, in the middle part – 110±6.0 μm, in the tip area – 80±5.0 μm, vertical – up to 880±25.0 μm. The aforementioned conglomerate of mesenchymal cells extends in the anterior-posterior direction along the entire nasal septum. In its middle third, the distal end of the conglomerate forms a mace-like expansion. As it approaches the rear part of the nasal septum, in parallel with the decrease in the height of the nasal septum as a whole, the height of the conglomerate also decreases. Between the layer of epithelium and the aforementioned formation is a layer of loosely arranged mesenchymal cells, the thickness of which does not exceed 240±5.0 μm. At a distance of 220±4.0 μm from the lower edge of the nasal septum, the beginning of Jacobson's organ is located. The thickness of the nasal septum does not exceed 836±20.0 μm. Its largest vertical size reaches 990 μm. The posterior end of the septum, gradually decreasing, passes into the upper wall of the primary oral cavity. It should be noted that the front and middle thirds of the nasal septum are fused with the primary palate, and its rear part hangs freely in the primary oral cavity. At this time, the further development of blood vessels takes place – the separation of blood elements from the surrounding mesenchyme with the help of the endothelium becomes clearer, and the formation of a subepithelial blood network begins in pre-fetuses with a length of 15.5-16.0 mm, which in pre-fetuses at the end of the 7th week of development (length 19.5-20.0 mm) is represented by capillary-type vascular trunks with a diameter of 8±0.5 μm. At this stage of intrauterine development, larger vessels growing from the outside are clearly visible. The anterior ethmoid artery goes downward in the mesenchymal layer of the upper wall of the primary nasal cavity. Its diameter is 20±1.0 μm.

Conclusions. During the prenatal period of development, as a result of the formation of the secondary palate, the final separation of the nasal cavity from the oral cavity occurs. Nasal conchae

and nasal septum are being formed. In the early prenatal period, the connection of the central processes of the olfactory nerves with the olfactory bulbs, the establishment of a connection between extra- and intra-organ vessels, which serves as a significant impetus for intensive growth and differentiation of the walls of the nose, takes place.

Garvasiuk O.V.

THE STUDY OF TROPHOBLAST SURFACE ALTERATION

Department of Pathological Anatomy
Bukovinian State Medical University

Introduction. Based on global research findings, it has been observed that certain disorders in the maturation of the placenta, particularly the chorionic tree, are associated with damage to the surface of the trophoblast. Our study hypothesizes that such trophoblast alteration develops through a mechanism of free radical damage.

The aim of the study. To determine the Pearson correlation coefficient between the R/B ratio in the trophoblast of chorionic villi and placental lactogen, as well as placental alkaline phosphatase; and between free amino groups in proteins within the trophoblast of chorionic villi and placental lactogen, as well as placental alkaline phosphatase.

Material and methods. The study employed computerised microspectrophotometry of histological samples stained with bromphenol blue using the Mikel Calvo method. This technique allows for the detection of various types of structural alteration associated with increased free radical activity in placental tissue. The quantitative indicator used was the spectrometric measure – R/B ratio.

Results. The Pearson correlation coefficient between the R/B ratio in the trophoblast of chorionic villi and the optical density of immunohistochemical staining for placental lactogen was -0.844, while the coefficient between the R/B ratio in the trophoblast of chorionic villi and the optical density of immunohistochemical staining for placental alkaline phosphatase was -0.781. These correlation coefficients indicate a strong negative relationship between the production of placental lactogen and placental alkaline phosphatase and the intensity of free radical oxidation processes in proteins.

Regarding the processes of limited proteolysis, the Pearson correlation coefficient between the optical density of histochemical staining for free amino groups in proteins within the trophoblast of chorionic villi and the optical density of immunohistochemical staining for placental lactogen was -0.806. The coefficient between the optical density of histochemical staining for free amino groups in proteins within the trophoblast of chorionic villi and the optical density of immunohistochemical staining for placental alkaline phosphatase was -0.744. Conversely, the correlation between the R/B ratio in the trophoblast of chorionic villi and the optical density of histochemical staining for free amino groups in proteins within the trophoblast was +0.912, indicating a high positive correlation.

Conclusions. The results of the study concerning oxidative modification of proteins, limited proteolysis, and the production of specific pregnancy-related proteins (placental lactogen, placental alkaline phosphatase) suggest that these processes are interconnected. Thus, the alteration of the trophoblast observed in disorders of chorionic tree maturation is likely driven by a mechanism of free radical damage.

Karatieieva S.Yu.

MORPHOLOGICAL CHARACTERISTICS OF THE THIGH PARAMETERS OF BUKOVYNA STUDENTS

Department of Anatomy, Clinical Anatomy and Operative Surgery
Bukovinian State Medical University

Introduction. It is known that the factor that determines success in sports is the morphological features of the structure of the human body.