МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»

М А Т Е Р І А Л И

105-ї підсумкової науково-практичної конференції
з міжнародною участю
професорсько-викладацького персоналу
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Матеріали підсумкової 105-ї науково-практичної конференції з міжнародною участю професорсько-викладацького персоналу Буковинського державного медичного університету, присвяченої 80-річчю БДМУ (м. Чернівці, 05, 07, 12 лютого 2024 р.) – Чернівці: Медуніверситет, 2024. – 477 с. іл.

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У збірнику представлені матеріали 105-ї підсумкової науково-практичної конференції з міжнародною участю професорсько-викладацького персоналу Буковинського державного медичного університету, присвяченої 80-річчю БДМУ (м. Чернівці, 05, 07, 12 лютого 2024 р.) із стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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Results. Our material revealed that the source of the stomach rudiment is a segment of the foregut, which during the 4th week changes its shape from cylindrical to spindle-shaped, and is located between the bronchopulmonary and hepatic buds. The inner lining of the stomach is represented by the endoderm of the primitive intestinal tube, the middle layer by condensed mesenchyme. The rudiment of the stomach is surrounded by a serous membrane, which originates from the mesoderm of the splanchnopleura and transfers in the form of a duplicate to the posterior wall of the embryo. On 3D-reconstructions of consecutive histological sections of embryos of the 5th week of intrauterine development, a dorsal mesogastrium is clearly visible, among the mesenchyme of which a primitive abdominal trunk passes to the posterior surface of the organ in the form of the most proximal unpaired branch of the aorta. In the same period of embryogenesis, heterochthonous growth of the walls of the stomach rudiment is observed, as a result of which the posterior wall of the organ (the future greater curvature of the stomach) increases and seems to grow into the mesenchyme of the dorsal mesentery. In the 6th week of intrauterine development, there are rapid changes in the holotopia of the stomach, which are explained by syntopic transformations and organogenesis of adjacent organs – the liver, pancreas, and spleen. In other words, around the stomach, in the ventral mesogastria, the liver is intensively developing, increasing in size and moving to the left. Also, in the dorsal mesogastrium, the spleen develops intensively and moves to the left. So, the stomach in the 6th week of intrauterine development makes a 90° clockwise rotation. The processes of organogenesis and syntopic changes of the stomach are accompanied by the formation of its connections and, in general, the definitive configuration of the abdominal cavity.

Conclusions. The sources of the rudiment of the stomach are the endoderm and mesoderm of the splanchnopleura of the lateral plate, which correspond to the segment of the primitive intestinal tube between the bronchopulmonary and hepatic buds. From the 4th to the 6th week of intrauterine development, topographic transformations of the shape of the stomach and its position in the abdominal cavity occur, which is manifested in the appearance of a greater curvature and rotation of the organ relative to the longitudinal axis of the embryo by 90° clockwise, as well as the formation of gastric ligaments. The critical period of stomach morphogenesis should be considered the 6th week of intrauterine development, which may be the time for the appearance of variants of the structure and the disappearance of congenital defects of the organ.

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MORPHOLOGICAL STRUCTURE AND TOPOGRAPHY OF THE WALLS OF BRONCHI IN HUMAN EMBRYOS

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Introduction. Elucidation of the regularities of the organogenesis of the respiratory system will allow a better understanding of the etiopathogenesis of birth defects. Therefore, it is important to study the patterns of development of the structural organization of the human respiratory system organs.

The aim of the study. Therefore, the purpose of this study was to examine the peculiarities of the intrauterine formation of the bronchial wall and topography of lung structures in human embryos.

Material and methods. The study was performed on human embryos of 56, 65 and 76 mm parietal-coccygeal length (PCL).

Results. In embryos with PCL from 56.0 mm and 65.0 to 76.0 mm, there is an increase in the structure of the bronchial wall, the shape of the lung structures and further differentiation. The longitudinal size of the right lung reaches 5.56 mm, the transverse - 3.96 mm, the left - 6.38 and 3.41 mm, respectively in the embryo of 56.0 mm. At this age, there is a further complication of the branching of the bronchial tree, as a result of which the epithelial tubules occupy a slightly larger area of the organ lining than its mesenchymal part. Interlobular septa are expressed much better and are represented by delicate fibrous connective tissue. The length of the right main bronchus is 2.20

mm, the left one is 2.86 mm, the diameter is 948 and 726 mkm, respectively, and the wall thickness is 198 mkm. The diameter of lobar bronchi ranges from 326 to 400 mkm, segmental bronchi – from 176 to 220 mkm. Morphologically, it can be seen that the folds of the mucous membrane become well expressed in the subsegmental bronchi, reaching a height of 24-28 mm. In the system of the pulmonary artery, in contrast to the embryos of the previously described stages of development, in addition to lobular, segmental and subsegmental branches, interlobular arteries are also defined, the wall of which is still poorly differentiated and is represented only by endothelium and one or two layers of circularly arranged elongated cells with well-stained boron carmine nuclei 4-8 mkm in size. The outer shell of the vessel is not yet formed and passes into the surrounding connective tissue without a noticeable border.

In embryos with a PCL from 65.0 to 76.0 mm, as in earlier stages of development, the size of the lungs is still significantly smaller than the corresponding pleural cavities, although their growth is quite intensive and in an embryo 76.0 mm long, the longitudinal dimension of the right lung reaches 9.65 mm, left - 10.32 mm, transverse - respectively 5.95 and 5.15 mm. Further branching of the bronchial tree and some thickening of intersegmental and interlobular connective tissue partitions are observed. The length of the main bronchi increases relatively little – up to 2.42 mm (right) and 2.99 mm (left), their diameter is 974 and 780 mkm, respectively, the wall thickness is 220 mkm. The mucous membrane lining the bronchi forms longitudinal folds within the main, partial, segmental, subsegmental, and sometimes intralobular bronchi, but their height in the region of the latter is insignificant and, as a rule, does not exceed 8-12 mkm, in the main bronchi – 220m-242 mm. Bronchial glands are formed, which develop from the epithelium lining the bronchial tree, by pressing the latter between the folds of the mucous membrane into the underlying tissue.

Conclusions. Morphologically, along with the glands that are in the initial stages of formation, there are separate already formed glands not only in the wall of the main and lobar bronchi, but also segmental ones. The bronchial tree along its entire length is lined with prismatic epithelium, but in contrast to the intralobular branching of the bronchi, it turns from multi-row into two-row, and sometimes into single-row, the nuclei of epithelial cells are located approximately in the middle of the distance between the basal membrane and the lumen of the bronchi, they have a rounded shape – 4-6 mm in diameter.

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STRUCTURAL ORGANIZATION OF SUBCUTANEOUS ADIPOSE TISSUE OF THE LOWER LEG IN HUMAN FETUSES

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Introduction. Every year, the prevalence of metabolic disorders among the population of different ages is increasing. A few decades ago, obesity was a disease of adults, but today, society is faced with the problem of increasing the frequency of metabolic disorders in children. That is why the interest of researchers in the peculiarities of the formation of adipose tissue has increased. Recent studies prove the existence of three types of fat cells in humans: white, beige, and brown adipocytes.

The aim of the study is to investigate the features of the formation of adipose tissue of the lower leg in human fetuses of 5-6 months.

Material and methods. A microscopic examination of preparations of the upper, middle, and lower thirds of the lower leg of 12 human fetuses with a parietal-coccygeal length (PCL) of 136.0-230.0 mm was carried out using staining of histological sections with hematoxylin and eosin. For a better contrast of the protein elements of the structures – a histochemical study of the protein with bromophenol blue according to the method of Mikel Calvo. The percentage of multilocular cells was calculated on digital copies of optical images in the environment of the computer program ImageJ 1.53t (2022) with subsequent statistical processing of quantitative data using the open software "PAST" (Paleontological statistics, version 4.9 2022).