Thus, during the fifth month of human ontogenesis rudiments of thymus begin to divide into lobes where cortex is less developed, compared to cerebral part. At this developmental stage we can observe occupation of cortical zone within thymic lobules by individual lymphocytes.

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GROWTH RATES OF THE PANCREATIC HEAD IN THE PRENATAL PERIOD OF HUMAN ONTOGENESIS

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Intrauterine human development is crucial for future formation and differentiation of organs and systems not only in the prenatal period but also in postnatal ontogenesis, so a large number of works in the modern and foreign scientific publications are devoted to the study of human development. Therefore, it is relevant to study thoroughly the dynamics features of morphometric parameters of the pancreas in the prenatal period of human ontogenesis.

The study of the dynamics features of morphometric parameters of the pancreas in the prenatal period of human ontogenesis was conducted on the basis of embryos of 5-6 weeks in development and human forearms aged from 7 to 11 weeks (24.7-61.0 mm parietal and coccygeal length (TCL)) were studied using a set of morphometric research methods (anthropometry, morphometry macroscopy, microscopy of a series of consecutive histological sections, statistical analysis). Methods of variational statistics are used to determine the average value (M) and the possible error (m), as well as the degree of reliability (p).

The results of the study depicted the growth indicators of the pancreatic body in the prenatal period of human embryogenesis (M±m): embryo length is 24.7-28.0 mm, pancreatic dimensions (mm) are the following: length - 3.00 ± 0.05 ($p < 0.05$), head width - 0.24 ± 0.012, head thickness - 0.390 ± 0.012; embryo length is 31.0-40.3 mm, pancreatic dimensions are (mm): length - 4.20 ± 0.22 ($p < 0.05$), head width - 0.310 ± 0.014 ($p < 0.05$), head thickness - 0.430 ± 0.009 ($p < 0.05$); embryo length is 42.0-48.5 mm, pancreatic dimensions are (mm): length - 5.80 ± 0.12 ($p < 0.05$), head width - 0.410±0.012 ($p < 0.01$), head thickness - 0.550 ± 0.020 ($p < 0.05$); embryo length is 53.5 - 61.0 mm, pancreatic dimensions are (mm): length-7.40 ± 0.26 ($p < 0.01$ head width - 0.490 ± 0.015 ($p < 0.05$), head thickness - 0.690 ± 0.014 ($p < 0.05$); embryo length is 53.5-61.0 mm, pancreatic dimensions are (mm): length-10.30 ± 0.28 ($p < 0.01$), head width - 0.490 ± 0.015 ($p < 0.05$), head thickness - 0.690 ± 0.014 ($p < 0.05$).

The growth rate of the pancreas in the prenatal period of human embryogenesis per 1 mm TCL of the embryo in mm is the following: in embryos with a length of 24.7 - 28.0 mm, the pancreas has length of 0.110 mm, while the body width is 0.006 mm and the body thickness is 0.010 mm; in embryos with length of 31.0 - 40.3 mm , the pancreas has length of 0.120 mm, while the body width is 0.007 mm and the body thickness is 0.003 mm; in embryos with length of 42.0 - 48.5 mm, the pancreas has length of 0.130 mm, while the body width is 0.007 mm and thickness is 0.004 mm; in embryos with length of 53.5 - 61.0 mm, the pancreas has length of 0.130 mm, while the body width is 0.006 mm and thickness is 0.004 mm.

The obtained data indicate that when the length of the forearm increases from 24.7 mm to 61.0 mm, the laying and development of the pancreatic body is slow, which may contribute more to the divergent differentiation of the endodermal epithelium of the pancreas into pancreatic exocrinocytes and endocrinocytes of the islets of Langerhans.

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DEVELOPMENT PECULIARITIES OF BRONCHIAL AND RESPIRATORY STRUCTURES IN HUMANS

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Advances in perinatal medicine have improved methods of early diagnosis and treatment of respiratory diseases, which has increased number of surgical procedures in newborns and fetuses for

treatment of congenital respiratory pathologies. Therefore, investigations of embryonic development of the bronchopulmonary structures in humans remains a relevant topic for scientists.

The study was performed on human embryos of 32, 33, 35, 36, and 37 mm parietal-coccygeal length (PCL), which have shown that lungs already have a differentiated shape, but their topography does not yet correspond to the definitive shape. Lungs are located, as on the earlier stages of development, behind the heart and their size is much smaller than such in corresponding pleural cavities. These topographical features are particularly evident on the horizontal histological sections of the thorax. The posterior edge of lungs is thickened and rounded along the entire length. Anterior and lower edges are thinned and pointed. The hilum is located closer to the posterior edge, approximately on the border of the upper and middle third of its medial surface. The longitudinal size of the right lung in 33,0 mm PCL embryo is 3,52 mm, left lung – 3,30 mm; in an 37,0 mm PCL embryo they are 3,86 mm and 3,84 mm, respectively. Transverse dimensions – 2,20 mm and 2,56 mm (right lung); 1,98 mm and 2,20 mm (left lung). The bronchial tree is divided into the 5^{th}-6^{th} order branches. Last (terminal) branches end as round bronchial kidneys with a diameter of 110-132 microns. The length of the right main bronchus in the 37,0 mm PCL embryo increases to 1,16 mm, left –1,36 mm, and the diameter is 550 and 506 microns, respectively; wall thickness is 114,0 microns. Along the entire length of the main bronchi in their wall there is a well-defined anlage of an immature cartilage shaped as plates (84-88 microns thick) and located at a distance of 36-40 microns from each other. The mucous membrane of the main bronchi forms 7-8 longitudinal folds 40-44 microns high.

In human embryos starting from 33,0 mm PCL, the cartilage anlage in addition to the main bronchus, is also located within certain parts of the right bronchus. A distinctive feature of the bronchial tree at this developmental stages is also evident, that is it does not affect predominantly dichotomous distribution, sometimes the segmental bronchi give out the branches. Bronchial tree at all lengths, including its terminal branches, is lined by high multi-row epithelium, with a round or oval nuclei of 4-6 microns. Nuclei are found mainly at the apical poles and on 15 microns' thick sections form three rows. High epithelial illumination is equal to 24-28 microns. The number of goblet cells in the epithelium lining increases compared to the same embryos of the previous stages of development. Smooth muscular elements are found around bronchi, arranged circularly in several rows. In the region along lungs hilum, due to the differentiation of mesenchyme, fibrous connective tissue is detected. In the system of a pulmonary artery it is possible to visualize right and segmental branches, and additionally sub segments which extend in the course of one named bronchial tubes. Small blood vessels have composition of capillaries and, anastomosing with each other, create five different shapes and sizes.

As a result, most of the lungs are located behind the heart and only their anterior parts lie on the sides of the latter. The hilum of the lungs is located on the medial surface of organs at the border of upper and middle third. There is a further branching of bronchial tree and, in contrast to earlier stages of human development, bronchial branching occupies almost the same area of the lung anlage.

Komar T.V.

INNERVATION FEATURES OF THE TRICEPS SURAE IN THE 4-6 MONTHS HUMAN FETUSES

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Research devoted to the studying of the innervation features of the lower leg muscles, especially the triceps muscle, is becoming more and more significant because a long-term disruption of the connection between the peripheral nerve and the muscle leads to serious pathologies, such as muscle atrophy. Knowledge of the general patterns of the intramuscular distribution of nerves in the triceps muscle of the leg at different periods of human ontogenesis is necessary for doctors of different specialties for carrying out diagnostic manipulations, choosing treatment and rehabilitation tactics.