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У збірнику представлені матеріали 101 – ї підсумкової наукової конференції професорсько-викладацького персоналу вищого державного навчального закладу України «Буковинський державний медичний університет» (м.Чернівці, 10, 12, 17 лютого 2020 р.) із стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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provisions of the Declaration of Helsinki on ethical issues of studies conducted with humans (1964-2008), Ukrainian Ministry of Health Orders № 690 (23.09.2009), № 944 (14.12.2009), № 616 (03.08.2012). All specimens were obtained from ectopic pregnancies or spontaneous abortions, and no part of the material gave indications of possible malformation. Approval for the study was granted by the Ethics Committee of the HSEE of Ukraine "Bukovinian State Medical University".

To prepare material for computer reconstruction, it has undergone a few steps: dehydration, enlightenment and pouring into a paraffin block; microtomy and digital photographing with labeling congruous one in a specialized computer program (3D-Doctor Virtual Anatomist, Kharkiv); calibration and creation a three-dimensional model (rendering). As a result, the obtained virtual model of microscopic structures further can be measured (morphometry method), which was not possible previously with the help of classical morphological methods. The advantage of this method is that the series of photos are received while conducting microtomy, so there is no need to compare histological slides in an appropriate order. Digital photos are saved in a specific order with serial number.

While conducting the reconstruction of human fetuses and prefetuses' neck, it is important to start labeling from massive structures like neckvertebrae. In human embryos (middle of 2nd month of the PND) infrahyoid group of muscles is represented by a fused mass that only starts its way of differentiation on smaller, defined structures. By the end of 2nd month of the PND (21,0–30,0mm of PCL) platysma, sternocleidomastoid and omohyoid can be easily labeled and measured. Starting from the beginning of 3rd month of PND (31,0 mm PCL human prefetuses) sternohyoid, thyrohyoid, sternothyroid can be labeled and measured throughout their length, between the points of their typical topographical placesof attachment. Subinfrahyoid structures should be recognized in triangles that are bordered by the rudiment of hyoid bone, sternum, scapula, and vertebras. Crucial blood vessels as the common carotid artery, internal jugular vein, and internal carotid artery can be visualized behind the sternocleidomastoid region. Problematic regions for computer remodeling are intrafascial spaces: fascial coverings can be distinguished, but it is hard to outline spaces between neighborhood sheets of neck fasciae.

To conclude, three-dimensional reconstruction is a method that gives profound information on morphological peculiarities during human intrauterine development, whichwas not possible while using classical microscopic investigation methods. Digital models of human embryos and prefetuses give a unique possibility to conduct precise measurements of microscopic structures and describe their topographical interconnections in different periods of intrauterine development.

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INTERSTITIAL CELLS OF CAJAL

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The interstitial cells of Cajal (ICC) are specialized network-forming cells distributed within and around the smooth muscle wall of the gastrointestinal wall (digestive tract), capable of generating and propagating the electric slow waves potential that leads to contraction of smooth muscle tissue. In addition to their pacemaker role, ICC is implicated in enteric neurotransmission and acting as stretch receptors in the gastrointestinal tract (smooth muscle tissue). It has been shown that there are several ICC subtypes depending on their anatomical locations, morphologic and functional criteria as follows: ICC lying between the circular and longitudinal muscle layer, ICC located in muscle bundles, ICC situated along the submucosal margin of the circular muscle layer, between myocytes, ICC lying within the connective tissue septa which surround bundles of the muscle and ICC located in the small intestine wall at the level of the deep muscular plexus. Throughout the digestive tube, the ICC lying around the myenteric plexus ganglia play the pacemaker role. Other ICC subtypes are functionally intercalated between the enteric nervous system and smooth muscle cells or they function as mechanoreceptors.

Although it has been thought in the past that ICC represents a kind of neuron, it has been later reliably established that they are mesenchymal by origin. ICC expresses the gene product of c-kit, a proto-oncogene that encodes the receptor tyrosine kinase. Most ICC subtypes, ICC-myenteric plexus and ICC smooth muscle subtype included can be identified by labeling with the c-Kit antibody. This fact has made possible the study of their appearance in the wall of the digestive tube. Also, ventrally emigrating neural tube cells as well can have a role in the development of particular ICC subtypes in the esophagus, stomach and the first part of the duodenum, portions of the digestive tube that arise from the foregut.

ICC has been identified as pacemaker cells, but, it is recognized that only a few subsets of ICC function in this capacity. Other subsets of ICC have an as yet unidentified function or possibly are involved in inhibitory neurotransmission.

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SPECIFIC CHARACTERISTICS OF THE BLOOD SUPPLY OF THE EXTRAHEPATIC BILE DUCTS DURING THE PRENATAL PERIOD OF HUMAN ONTOGENESIS

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The blood supply of the extrahepatic bile ducts in man is notable for variability which is important to take into account during surgical interferences on the organs of the hepatobiliary system. The publications of recent years adduce only scrappy information, about the formation of the blood channel of the derivatives of the intestinal tube during the intrauterine development (IUD) in a human.

The aim of the research:to study the specific features of the organization of the blood stream of the CBD during the prenatal period of human ontogenesis. The research has been carried out on 32 series of histological sections of human prefetuses from 14.0 to 79.0 mm of parietococcygeal length (PCL) by means of the methods of microscopy, morphometry, graphic and 3D-reconstruction. The IUD period is systematized on the basis of the classification of G.A. Schmidt (1968).

It has been established that at the end of the VII week of the IUD in prefetuses of 18.0-19.0 mm of PCL the CBD is located in the thickness of the mesenchyma of the ventral mesogastrium behind the superior portion of the duodenum and is joined with the duct of the ventral anlage of the pancreas on the concave surface of the descending portion of the intestine. The layer of the mesenchymal cells adjacent to the CBD walls delimited from the neighboring cells of the surrounding mesenchyma in a caudal direction assumes a clear-cut circular orientation.Isolated lumens of the blood vessels of the capillary type are detected in the said mesenchymal layer, primarily on the left and caudally from the CBD, corroborating the formation of its intraorgan blood channel during this period. One can differentiate 3 portions in the VIII week of IUD in prefetuses of 23.0-29.0 mm PCL in the CBD: the retroduodenal section located behind the superior part of the duodenum, the pancreatic segment between the pancreatic head and the medial wall of the descending portion of the duodenum and the intramural one – in the thickness of the medial wall of the latter. The duodenal branch of the gastroduodenal artery is located on the left and in front at a distance of 150 μm from the retroduodenal portion of the CBD. On the right, at a distance of 90 μm the pancreatic section of the CBD is accompanied by the superior posterior pancreaticoduodenal artery in a descending direction. The branch of the inferior pancreaticoduodenal artery approaches caudally at a distance of 120 μm to the terminal portions of the CBD and the pancreas.Tiny duodenal branches from the gastroduodenal artery approach the left wall of the retroduodenal portion of the CBD, primarily, at the front and behind in a longitudinal direction in the IX week of the IUD in prefetuses of 32.0-40.0 μm PCL. The pancreatic portion of the CBD obtains branches from the superior pancreaticoduodenal artery on the right in an oblique transverse direction. Tiny blood vessels, passing mainly from the inferior pancreaticoduodenal artery, are located cranially