СЕКЦІЯ 1
ОСНОВИ МОРФОЛОГІЇ ОРГАНІЗМУ ЛЮДИНИ І ТВАРИН, АКТУАЛЬНІ ПИТАННЯ ПАТОЛОГІЧНОЇ АНАТОМІЇ ТА СУДОВОЇ МЕДИЦИНИ

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FORMATION OF PHYSIOLOGICAL ATRESIA IN EMBRYOGENESIS OF BILE DUCTS

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At the 3rd week of embryogenesis from the endoderm of the ventral wall of the initial part of the midgut (the future duodenum) there is a protrusion (diverticulum), located between the leaves of the ventral mesentery. This diverticulum is soon divided into two depressions: cranial and caudal. The cranial deepening is a bookmark of the general hepatic channel and glandular fabric of a liver, and caudal – a bladder channel and a gall bladder.

In embryos of 4.0-5.0 mm of parietal-coccygeal length (PCL), at the 4^{th} week of intrauterine development, the germ of the liver is formed by the appearance of individual strands of epithelial cells that grow from the ventral wall of the primary intestine into the mesenchyme of the transverse septum. In embryos of 5.0 mm PCL of fetal development, the number of epithelial cords that form the liver tab increases significantly. Its craniocaudal size reaches 410 ± 10 microns, dorsoventral – 325 ± 10 microns, transverse – 285 ± 10 microns. At the 4^{th} week of fetal development from the ventral wall of the primary intestine a protrusion of the endodermal layer in the form of a hepatic diverticulum is formed, which in embryos of 4.5 mm PCL grows into the mesenchyme in the direction of the transverse septum. Leg of the hepatic diverticulum, which connects it to the ventral wall of the duodenum, narrows in the dorsal direction to 100 μm and includes the rudiment of the common bile duct, which is formed by oval epithelial cells that differ from other cells of the hepatic diverticulum due to bending of the rudiment of the duodenum to the right due to the rotation of the stomach.

The beginning of the common bile duct in embryos of 8.0 - 8.5 mm PCL is shifted to the cranial semicircle of the intestine, covering on all sides the rudiment of the liver. The walls of the common bile duct are formed by a single-row cylindrical epithelium, surrounded by mesenchymal cells of the ventral mesogastrium, the lumen of the common bile duct caudally narrows and disappears at the junction with the protrusion of the intestinal wall, which is lined with multi-row cylindrical epithelium.

At the beginning of the 6th week of fetal development in embryos 9.0 - 10.0 mm PCL the common bile duct is in the thickness of the ventral mesogastrium, caudal large papilla enters the right semicircle of the upper bend of the duodenum, from the end of the common bile duct to the right duct of the ventral rudiment of the pancreas. At this stage, the lumen in both the duodenum and the common bile duct is filled with epithelial cells, which is a manifestation of the so-called physiological atresia. At the end of the embryonic period (embryos 11.0 - 13.0 mm PCL) at the junction, the common bile duct and the pancreatic ducts are surrounded by their mesenchymal cells, which begin to acquire a circular direction and differ from the intestinal mucosa. This indicates the beginning of the formation of the sphincter of the common bile duct.

The rudiment of the liver, gallbladder and bile ducts occurs in the form of growth of kidney from the caudal part of the foregut during the 4th week of development. The beginning of the liver or hepatic diverticulum grows into the transverse septum, the mass of the splanchnotic mesoderm between the pericardial cavity and the bile stalk. The transverse septum forms part of the diaphragm in this area of the hepatic diverticulum ventral mesentery as well. The hepatic diverticulum rapidly enlarges and divides into 2 parts. Its large cranial part of the diverticulum is the rudiment of the liver. Proliferating endodermal cells form thick anastomotic strands of liver cells and epithelial lining of the intrahepatic parts of the gallbladder. The hepatic cords are separated from each other by irregular vascular spaces lined with condensed endothelium, which are the rudiments of hepatic sinusoids. These

specialized capillaries of the liver are formed from the capillaries of the transverse septum, they gradually surround the growing strands of hepatoblasts. Sinusoids contain intravascular blood cells: mainly erythrocyte type. Small caudal part of the hepatic diverticulum forms the rudiment of the gallbladder.

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TEMPORAL DYNAMICS OF COMPLEX DEGREE MODULE MAPS OF MICROSCOPIC IMAGES MUTUAL POLARIZATION OF BRAIN HISTOLOGICAL SECTIONS TO ESTABLISH THE TIME OF HEMORRHAGES FORMATION

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One of the most common mechanical injuries in forensic practice is traumatic brain injury and it is very important to make the differentiation diagnose of the time of hemorrhage formation in the human brain (HB), namely ischemic stroke (IS), hemorrhage of traumatic (HTG) and non-traumatic (NTG) genesis, as this eliminates the violent nature of death and narrows the circle of suspects.

The purpose is to develop forensic criteria for the differentiation of the time of hemorrhages formation of different genesis by mapping the distributions of the magnitude of the complex degree of mutual polarization (KDMP) of HB histological sections. Native histological specimens of HB with HTG included (1 group) - 30 samples, 30 samples with HNG (2 group), 35 samples with IS (3 group) and samples from 20 corpses, the cause of death of which was acute coronary insufficiency (4 control group). The following set of studies was performed: 1) temporal monitoring of necrotic and degenerative-dystrophic changes by measuring maps of the KDMP module of a series of microscopic images of histological sections of the brains of the dead of all groups with different hemorrhage formation time (HFT) - from 6 hours up to 168 hours; 2) statistical temporal analysis of objective data of polarization-correlation microscopy of coordinate consistency of types and forms of polarization by calculating a set of statistical moments of the 1st - 4th orders, which characterize the magnitude maps of the KDMP module of digital microscopic images with different HFT; 3) established time duration of linear sections of dependences of statistical moments of the 1st - 4th orders which characterize necrotic changes of maps of the KDMP module of set of points (pixels) of digital microscopic images of samples of histologic sections of the nervous tissue from corpses with various HFT.

Comparative analysis of polarization-correlation mapping data of microscopic images of brain histological sections of the dead from all groups found the time dependence of the magnitude of statistical moments of the 1st - 4th orders, which characterize polarization and azimuthal-invariant Mueller matrix maps, especially dependences of the value of asymmetry and excess distributions of the KDMP modules up to 48 hours from the moment of hemorrhage formations.

The accuracy of determining the time of hemorrhage formation by the method of KDMP - mapping of polarization-inhomogeneous microscopic images of histological sections of the brain is 45 min ± 15 min.

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IMMUNOHISTOCHEMICAL STUDY OF TROPHOBLASTS PROLIFERATIVE PROCESSES IN BASAL DECIDUITIS COMBINED WITH IRON-DEFICIENCY ANEMIA IN GRAVIDAS

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Morphological manifestations of inflammation of the placenta have been and remain the subject of many studies. Though, in Ukrainian and foreign scientific literature there are insufficient data concerning the processes of proliferation and apoptosis in the chorionic villi in chorioamnioitis and basal deciduitis. The influence of iron-deficiency anemia on the course of these processes in inflammation of the placenta is not sufficiently studied. Even if scientific sources mention that