

calves and piglets. The apophysal ones are typical for long tubular bone organs of extremities in calves and it is absent in piglets. The formation of bone tissue is the result of endesmal and enchondral ossification in one day old calves and piglets. The endesmal osteogenesis occur in diaphysis of the long tubular bones. Compact bone tissue is of smesh structure, and connective tissue, blood vessels and nerves are disposed in its cells. The spongy bone tissue is formed by enchondral osteogenesis but red bone marrow, realizing function of universal hemo-and-immunopoiesis, is situated in its cells. Anatomically thymus possesses pair and impair cervical lobes and also impair thoracal ones in the neonatal calves and piglets, but its absolute mass is 105.0-175.0 g, relative one is 0.5-0.75% in calves. The cortical-and-medullar ratio constitutes 1:2 or 1:3 in thymical lobules. In neonatal animals the spleen is also anatomically formed. Parenchime of the spleen is formed by red pulp (75.5%-88.5%) and white one or diffusive and nodular lymphoid tissue (7.5%-12.3%). The individual splenic lymphoid nodules have germenative centers. That is the evidence of their particular functional activity. It should be noted, the analogeous lymphoid nodule (with germenative centers) is formed in limphatic knots, especially in visceral ones, but also in limphoid structure associating with mucosal cover of digestive organs in developed neonatal calves and piglets. Thus on anatomical and tissue levels the immune competent organs are characterized by some incompleteness in neonatal maturity animals. However they are able to react, to a certain degree, on the influence of genetic alien agents that is confirmed by the presence of the lymphoid nodule with germenative centres.

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Structural-and-functional peculiarities of hepatic veins and components of tissue in piglets of neonatal period

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The liver in mammals is a poly functional organ, developing in a prenatal period of ontogenesis as a structural component of the digestive apparatus and in a postnatal period of development adopting the function of «metabolic brain» of the organism (Розен и др 1991). The liver of a new-born human and immaturity mammals (white rats) remains the certain uncompleteness of structure, that can be observed in the absence of classic structure lobules, saved hearths of hemopoiesis and temporary vascular formations (umbilical vein and venous duct), associating with the organ. Research, devoted structural features and morphogenesis of vascular and tissue components of liver in neonatal period piglets, are occasional (Смирнова 1967; Kaman 1968). The purpose of our research is to set the structural-and-functional peculiarities of hepatic veins and components of tissue in piglets of neonatal period. Afferential and efferential veins, stromal and parenchimal components of the liver were determined in 1-20 days old piglets, using the morphological, X-ray anatomical and statistical methods. The results of research are following. Afferential (umbilical and portal) and efferential (caudal cava and hepatic) veins form afferential and efferential collectors accordingly. They regulate the intensity of intraorganical blood flow and volume of blood current to the heart from the abdominal region in one day old piglets. They do not only communicate by sinusoids of «rete mirabile» in parenchime of the organ but also by means of plural portal-and-caval anastomosis, which are the analogues of venous duct (Fig. 1). The parenchime of the liver has a spongy structure in one day old piglets. Hepatocytes form the ramified beams, sinusoids and shallow hemopoietic hearths are disposed among them. The lobules of classic structure are not found in the liver. The umbilical vein almost fully was obliterated in 10 day's old piglets, saving a narrow, winding road clearance for certain animals, and

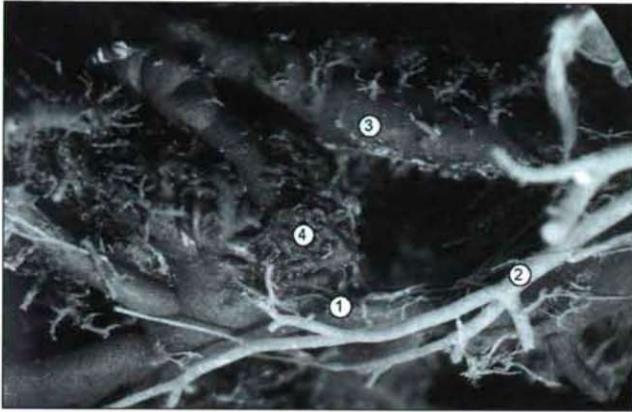


Figure 1. Corrosion preparation of the hepatic blood vessels of a one day old piglet. 1 – afferential collector; 2 – hepatic artery; 3 – caudal cava vein (efferential collector); 4 – plural portal-and-caval anastomosis.



Figure 2. Corrosion preparation of the hepatic blood vessels of a 20 day old piglet. 1 – afferential collector; 2 – caudal cava vein (efferential collector); 3 – postanastomotic branches; 4 – portal vein.

plural portal-and-caval anastomosis is transformed in shallow intraorganical veins on the border of the caudal and left lateral lobes of liver. The coiled and long capillaries are disposed among such veins. The lobules of primitive structure are formed in parenchime of the organ, not having expressed scopes with each other (50.3%), and also lobules are formed with clear scopes from septal connecting tissue (28.6%). The parenchime of spongy structure (21.1%) is saved mainly in the subcapsular area of the liver. The hearths of hemopoiesis are not found out in thr hepatic parenchime. The 20 days old piglets have complete obliteration of temporary anastomotic veins; the sinusoidal network, incident to the other areas of the hepatic parenchime, is formed between afferential and efferential veins in the location area of the plural portal-and-caval anastomosis in one day old piglets. The anastomosis become short treelike veins (Fig. 2). The lobules of the completed structure (59.6%) predominate above primitive ones (40.0%) in parenchime of the liver. The spongy parenchime only saves 0.4%. Thus the hepatic blood vessels and tissue components are characterized by the stuctural-and-functional uncompleteness in accordance with the degree of the organism maturity of animals. Obliteration of the temporary hepatic veins in piglets during their neonatal period on the background of forming the lobules in the parenchime of classic structure, and the disappearance of hemopoietic hearths. To our opinion, it is related with settling the definitive functions of the organ.

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Fractal organisation of tissue growth patterns in canine trichoblastomas

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Canine Trichoblastoma are hair follicle tumours of different subtype constituted by epithelial component (hair germ) and mesenchymal component (dermal papilla) which closely interact. The architecture and the epithelial growth patterns of the different histological subtypes, namely Ribbon type, Trabecular type, Granular Cell type and Spindle cell type, were cha-