MORPHOLOGY AND SOME MORPHOMETRIC PARAMETERS OF THE LIVER

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Abstract:

In recent years, the number of cases of chronic diffuse liver diseases has increased worldwide. In this regard, the relevance of morphological studies of the portal vein (PV) vascular system for solving particular issues of diagnosis, treatment and prognosis of CDPD in conditions of the development of portal hypertension increases. We know that the liver is the largest gland in the human and animal body and is a vital organ. For many centuries, it has attracted and continues to attract the attention of researchers from various fields of medical and not only medical knowledge. However, until now, issues of development, structure, functions, as well as compensatory-adaptive properties of this organ remain unresolved, and interest to the liver as an object of research does not weaken both in general biological and medical aspects.

Keywords:

Liver, function, morphology, morphometric parameters.

The liver is a classic parenchymal organ. The parenchyma is represented by lobules - structural and functional units of the liver. There are 500,000 of them in the liver. They are hexagonal in shape with a flattened base, a somewhat convex apex. The vein, artery, bile duct and lymphatic vessel are immersed in the connective tissue that forms septa, the hepatic tract consists of 2 rows of hepatocytes, between which the thinnest bile capillary passes. The beams inside the PD have multiple anastomoses, i.e. the bile capillaries are interconnected, forming a dense network. Such a close connection contributes to the uninterrupted excretion of bile from the lobule. The beams are built by hepatic cells, or hepatocytes. Hepatocytes make up 60% of all liver cells. In addition to them, the so-called sinusoidal cells are of great importance. Most of them are endothelial cells. The protective phagocytic function is performed by Kupffer stellate cells, which have a processional shape and the ability to move to where there is the greatest need for them. Close relatives of fibroblasts are Ito cells, which contain many lipid inclusions. Between the endothelium of the sinusoids and the hepatocytes of the beams, there is the thinnest free space of Disse, filled with mucopolysaccharides, which exchange between the sinusoids and beams both in one and the other direction.
The development of the liver in all mammals follows the same pattern. The human liver develops at the end of the 3rd week of embryogenesis from the endoderm of the trunk intestine (according to L.I.Falin (1976), anlage of the liver occurs at the 4th week of embryogenesis). Initially, the anterior endoderm the future intestinal tube thickens and forms the so-called hepatic field (area hepatica), located caudal to the heart. After the formation of the intestinal tube from the intestinal endoderm, the area hepatica is part of the wall of the duodenum, which later forms a protrusion into the ventral mesentery, called the hepatic bay (hepatic diverticulum). Subsequently, the epithelium of the hepatic bay is subdivided into cranial and caudal sections. From the cranial section, hepatocytes and cholangiocytes of the epithelium of the hepatic ducts develop, from the caudal section - the epithelium of the gallbladder and cystic duct.

The mouth of the hepatic diverticulum gives rise to the epithelium of the common bile duct (Fig. 1.1).

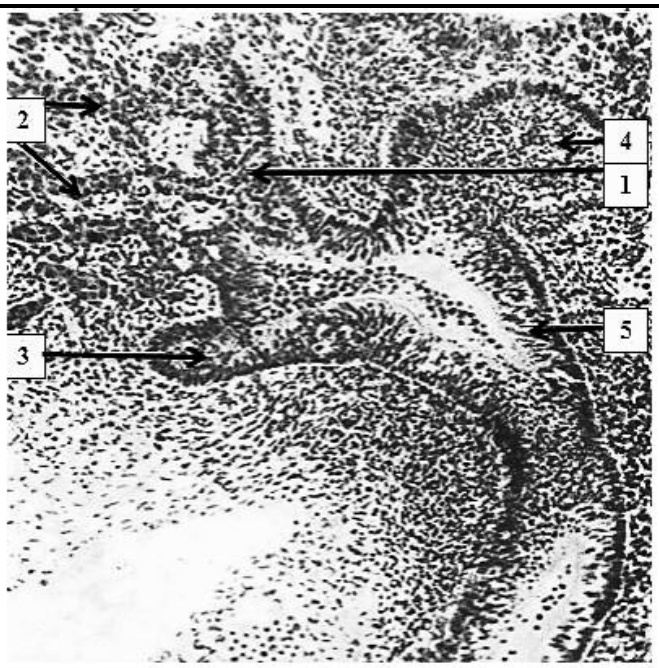

Figure: 1.1. Liver and pancreas anlage. The embryo is 4 mm long (4th development week). Hematoxylin and eosin. x140 (after L.I.Falin, 1976). 1 - hepatic part; 2 - strands of hepatic cells growing into the mesenchyme; 3 - the ventral part of the pancreas; 4 - anlage of the dorsal part of the pancreas

The aim of this study was to study the morphometric characteristics of the liver depending on the physique, sex, and type of portal vein structure.

Materials and methods research. The present study was carried out on 82 wet complexes of the abdominal organs taken from the corpses of people of both sexes aged 24 to 87 years, on which the morphometric characteristics of the liver were isolated and studied. All drugs were distributed according to gender and body type. 31 (37.8%) complexes from female corpses and 51 (62.2%) from male corpses were studied. When working with cadaveric material, the principles of bioethics were observed, which are regulated by the Council of Europe Convention on Human Rights and Biomedicine and the basic laws of the Republic of Uzbekistan. Morphometric measurements of the liver were carried out with a metal ruler GOST 427-85 or a caliper TTTTS I 0-150 GOST 166-80. The thickness of the right and left lobes of the liver was measured, for which the liver was cut into two halves in the frontal plane. The drug was fixed in a 10% formalin solution.

Study results. It was found that the thickness of the right lobe of the liver in men with a dolichomorphic physique was 126.67 ± 13.14 mm at $p < 0.01$, with a mesomorphic one - 130.9 ± 9.93 mm at $p < 0.001$ and with a brachymorphic one - 123.9 ± 5.86 mm at $p < 0.001$. In women, this indicator was 136 ± 9.58 mm at $p < 0.001$, 123.73 ± 7.68 at $p < 0.001$ mm, and 122.55 ± 5.32 mm at $p < 0.001$, respectively. The thickness of the left lobe of the liver in men with a dolichomorphic physique was 85.8 ± 17.9 mm at $p < 0.05$, with a mesomorphic one - 89.3 ± 13.37 mm at $p < 0.05$ and with a brachymorphic one - 82.5 ± 11.56 mm at $p < 0.05$. The thickness of the left lobe in women was 87.4 ± 19.39 mm at $p < 0.05$, 85.7 ± 12.67 mm at $p < 0.05$ and 78.3 ± 9.68 mm at $p < 0.05$ respectively. In the group of men in all selected groups, the size of the liver was larger than that of women.

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