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MORPHOLOGICAL CHANGES IN ECHINOCOCCOSIS THE LIVER IN THE AGE ASPECT

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Аннотация. Проведенным исследованием прижизненных морфологических структур печени при различных размерах и локализации гидатидозных кист печени в разных возрастных группах больных выявило следующее: наиболее выраженным изменениям подвержена ткань печени в зонах, находящихся в непосредственной близости к эхинококковой кисте. Это проявляется как нарушением балочного строения печени, так и дистрофическими изменениями самих гепатоцитов. На отдаленных участках паренхимы печени при эхинококковых кистах мелкого и среднего размера обнаруживаются незначительные дистрофические изменения гепатоцитов, в то время как при гигантских кистах эти изменения более выражены и носят диффузный характер, что требует от хирурга тщательной предоперационной подготовки.

Ключевые слова: эхинококк печени, морфологические исследования паразитарных кист, возрастные группы

Annotation. A study of intravital morphological structures of the liver with different sizes and localization of hydatid cysts of the liver in different age groups of patients revealed the following: the liver tissue in areas in close proximity to the echinococcal cyst is subject to the most pronounced changes. This is manifested both by a violation of the beam structure of the liver, and by dystrophic changes in the hepatocytes themselves. In remote areas of the liver parenchyma, with small and medium-sized echinococcal cysts, slight dystrophic changes in hepatocytes are found, while with giant cysts, these changes are more pronounced and diffuse, which requires the surgeon to carefully preoperative preparation.

Key words: liver echinococcus, morphological studies of parasitic cysts, age groups.

Annotatsiya. Har xil yoshdagi bemorlar guruxida jigarning turli joylarida joylashgan, har xil o‘lchamli exinokokkida parenximasidagi morfologik tuzilishi tekshirilganda quyidagilar aniqlandi: kistaga yaqin joylashgan jigar parenximasi ustunlarining tuzilishini o‘zgarganligi va shu sohada gepatotsitlarda distrofik o‘zgarishlar aniqlandi. Kichik va o‘rta o‘lchamdagi kistalarda undan uzoqda jigar parenximasida gepatotsitlarda biroz distrofik o‘zgarishlar kuzatilgan bo‘lsa, gigant o‘lchamdagi kistalarda shu sohada o‘zgarishlar bir muncha ifodalangan va diffuz holatda ekanligi aniqlandi. Bunday o‘zgarishlar bemorlarni operatsiyaga xirurglar tomonidan puxta tayyorgarlik o‘tkazilishini talab qiladi.

Kalit so‘zlar: jigar exinokokki, parazitar kistalarni morfologik tekshirishlar, turli yoshdagi bemorlar.

Introduction: Echinococcosis is a parasitic disease with a wide geographical prevalence in the world. The thickness of the echinococcal cyst may indicate the age of infection.

The aim: of the study was to study the lifetime morphological changes of the liver with different sizes and localization of gadatidous liver cysts in different age groups of patients. Morphological examination was confirmed by pieces of tissue of the fibrous capsule of the liver in the immediate vicinity of parasitic cysts, as well as biopsies from remote areas of the liver.

Materials and methods: surgical treatment was performed in 267 patients with single-chamber echinococcosis of the liver. There were 31 (12%) patients under the age of 20, 138 (52%) from 21 to 40, 77 (23%) from 41 to 60, and 21 (8%) patients over the age of 60. Histological examination was performed in 49 patients, pieces of liver from the fibrous capsule and adjacent liver tissue taken during surgery were fixed in a solution of 10% neutral formalin.

Histological sections were stained with hematoxylin - eosin according to Van Gieson.

The results of the study and discussion: Depending on the size of the cysts, 2 groups were conditionally distinguished: the first group - small cysts - 86 (22%) observations, the second group - large and giant cysts - 181 (68%) observations. It was noted that with increasing age of patients, the number of cases of liver echinococcosis with large and giant cysts increases. Complicated cysts in the form of suppuration were observed in 26 (13%) patients and were more common in adults, especially in middle-aged and elderly patients with large and giant cysts.

The formation of a parasitic cyst begins 4 days after fixation in tissues. The cyst size by the end of the first month is 1 mm, after three months it is 2 mm, then there is a sudden acceleration of growth, the average growth rate is 1-3 cm per year.

The fibrous capsule is the result of productive inflammation developing around a growing parasitic cyst. The fibrous capsule can be divided into three layers. The outer one is usually represented by a roughly fibrous connective tissue consisting of longitudinally arranged bundles of collagen fibers and few fibroblasts. In the middle layer, the collagen fibers are loosely arranged. Small blood vessels are detected between them. Along with fibroblasts, lymphoid cells, eosinophils and single polymorphonuclear leukocytes are located around the vessels.

Around small echinococcal cysts, unlike giant cysts, the fibrous capsule is usually smaller due to less developed coarse-fibrous connective tissue. In complicated echinococcosis with suppuration, the fibrotic capsule is usually thickened and abundantly infiltrated by polymorphonuclear leukocytes.

The inner layer of the capsule adjacent to the liver parenchyma has no clear boundaries and is represented by granulation tissue rich in blood vessels and here many lymphocytes, fibroblasts and eosinophils are detected.

The structure of the liver in the transition zone is undergoing significant changes. Hepatocytes are arranged randomly and quite densely. In this zone, atrophic processes in the parenchyma are expressed to the maximum extent.

Protein-fat dystrophy of hepatocytes is more pronounced in the areas of the parenchyma closest to echinococcus, necrobiosis and necrosis of individual hepatocytes are not observed.In portal tracts with dilated full-blooded vessels, significant inflammatory infiltration is observed, consisting of lymphocytes and eosinophils. Massive inflammatory infiltration spreads to the walls of the bile ducts, mainly portal ducts.

Foci of stasis and bile clots are noted in the lobules.

Proliferation of stellate reticuloendotheliocytes is observed in the periportal zones.

With suppuration of echinococcus, microabsesses are found in nearby areas of the liver. The study of the structure of the fibrous capsule around echinococcal cysts in various age groups shows that in young and middle age it is significantly infiltrated by inflammatory elements and fibroblasts. In the area adjacent to the parenchyma, dystrophic and atrophic processes are poorly developed. In elderly and especially senile patients with uncomplicated echinococcosis, the predominance of large and giant cysts, dystrophic and atrophic changes in hepatocytes were significantly pronounced. The number of vessels in the fibrous capsule is much smaller, it mainly consists of atrophied liver tissue and collagen fibers.

Conclusion: Thus, as morphological studies have shown, liver tissue is most susceptible to changes in areas in close proximity to the echinococcal cyst. This is manifested both by a violation of the hepatic girder structure and by dystrophic changes in the hepatocytes themselves. In remote areas of the liver parenchyma, minor dystrophic changes in hepatocytes are detected in small and medium-

sized echinococcal cysts, while in giant cysts these changes are more pronounced and diffuse, which requires careful preoperative preparation from the surgeon.

List of literature

1.Akhmedov R. M., Khamdamov B.3., Mirkhodzhaev I.A. "Surgery of complicated echinococcosis", monograph, Bukhara, 2016, 180 p.
2.Komilov S.O., Mirkhodzhaev I.A., Hikmatov J.S. "Optimization of surgical treatment methods for multiple and recurrent forms of liver echinococcus", Scientific journal: Tibbietda yangi kun, 2021, №4 (32), Avicenna MED
UZ, c 643-645;
3.Komilov S.O. "Modern aspects of prevention of thromboembolic complications in urgent surgery of abdominal organs in herniatric patients", journal: "Issues of Science and education", 2021, №27 (52), pp. 24-33;
4.Mirkhodzhaev I.A. "The effect of the liposomal form of albendazole on the development of experimental liver echinococcosis" Journal: "Problems of Biology and Medicine", 2021, №1 (125), pp. 138-141;
5.Mirkhodzhaev I.A. "The effect of multilayer liposomes on the course
of experimental liver echinococcosis" Journal: "Problems of Biology and Medicine", 2022, №1 (134), pp. 123-125;
6. Mirkhodzhaev I.A., Hikmatov J.S. "New in chemotherapy of echinococcosis of the liver" Electronic scientific journal: "Biology and Integrative Medicine", 2021, №1 (48), pp. 34-44;