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**ТИББИЁТДА ЯНГИ КУН
НОВЫЙ ДЕНЬ В МЕДИЦИНЕ
NEW DAY IN MEDICINE**

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HISTOCHEMICAL STUDY OF THE LIVER IN CRANIOCEREBRAL INJURY

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✓ Resume

Long-term hypoxic processes in the body lead to disruption of metabolic changes in cells. In particular, this leads to irreversible morphological changes in liver tissue. When studying liver tissue samples from white rats after traumatic brain injury using the histochemical method according to Masson, it was found that the wall of the blood vessel of the central vein is covered with collagen fibers, and the connective tissue is tightly located around the vessels of the liver triad.

Keywords: histochemical study, liver, morphology, traumatic brain injury, white rats.

ГИСТОХИМИЧЕСКОЕ ИССЛЕДОВАНИЕ ПЕЧЕНИ ПРИ ЧЕРЕПНО-МОЗГОВОЙ ТРАВМЕ

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✓ Резюме

Длительные гипоксические процессы в организме приводят к нарушению метаболических изменений в клетках. В частности, это приводит к необратимым морфологическим изменениям ткани печени. При исследовании образцов ткани печени белых крыс после черепно-мозговой травмы гистохимическим методом по Массону установлено, что стенка кровеносного сосуда центральной вены покрыта коллагеновыми волокнами, а соединительная ткань плотно расположена вокруг сосудов печеночной триады.

Ключевые слова: гистохимическое исследование, печень, морфология, черепно-мозговая травма, белые крысы.

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✓ Rezyume

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Kalit so'zlar: gistokimyoviy tadqiqot, jigar, morfologiya, travmatik miya shikastlanishi, oq kalamushlar.

Relevance

The high mortality and disability rates of patients with traumatic brain injury determine the undoubted socio-medical significance of the problem of traumatic brain injury (TBI). The frequency and severity of traumatic brain injury, high mortality (from 26.8-81.5%) [2,3,4] determine the relevance of this problem. Signs of parenchymal liver damage are often observed in traumatic brain injury. In the first hours after injury, small focal necrosis of hepatocytes and changes in liver microcirculation are observed. The development of blood circulation and destructive necrobiotic processes in the liver is manifested by hypoproteinemia, temporary fermentemia, an increase in glucose and bilirubin in the blood serum (Tsarenko S.V., 2015).

At the same time, when assessing morphofunctional changes in the liver in case of brain damage, the degree of brain damage is often not taken into account and the features of changes in the microcirculatory bed of the liver are described. In case of severe brain damage, it is possible to develop a "disturbance" of adaptive arterialization of sinusoidal blood flow and intrahepatic portal hypertension. Severe microcirculation disorders are accompanied by activation of necrobiotic processes in the liver and serve as a general pathomorphological basis for the development of liver failure in traumatic brain injury, which is consistent with the literature data (I.V. Fursov et al., 2013).

Objective of the study: to study morphological changes in the liver of white rats with brain damage using the histochemical method according to Masson.

Materials and methods

The Masson staining method for micropreparations is used mainly for staining connective tissues, especially collagen fibers. This method allows differentiating cells and tissue components using several dyes. The Masson trichrome staining technique includes the following steps: the tissue sample is fixed with formalin or other fixatives. This ensures the preservation of the tissue and its structure. Paraffin embedding. After fixation, the tissue is embedded in paraffin and thin sections are prepared using a microtome. The sections are deparaffinized using solvents and then rehydrated through a series of alcohols to return them to an aqueous environment. Primary staining (Weigert's iron hematoxylin). This stain is used to identify nuclei. It stains the cell nuclei black or blue. Plasma dye (fuchsin or xylophilin). The cytoplasm, muscle fibers, erythrocytes and cytoplasmic structures are stained red or pink using fuchsin or xylophilin. Collagen fiber staining (aniline blue or green dye) Collagen fibers, i.e. connective tissues, are stained with aniline blue or green dye, which allows them to be better distinguished. Collagen fibers appear blue or green. The tissue sample is dried with alcohols. The sample is wrapped in special balms and examined under a microscope.

Results:

- The core is black or dark blue.
- The cytoplasm and muscle fibers are red or pink.
- Collagen fibers are blue or green.
- Erythrocytes are stained red.

This staining method is very useful for visualizing tissue morphology, helping to clearly distinguish connective tissue, muscle fibers and other components.

Result and discussions

Long-term hypoxic processes in the body lead to disruption of metabolic changes in cells. In particular, this leads to irreversible morphological changes in liver tissue. During the hypoxia process in the liver tissue (day 21), erythrocytes undergo partial hemolysis, and plasma begins to leak into the perivascular interstitial tissue. Due to the release of plasma factors from the veins, blood clots do not form. As a result of the above processes, morphometric parameters in the liver were determined under experimental conditions on the 21st day of traumatic brain injury. The liver has become pale, the consistency has softened, the size has increased, it is soft, the edges are rounded. The color is grayish-yellowish.

Microscopic examination shows that the erythrocytes have stuck together in the central vein of the liver lobes, are partially hemolyzed and filled with plasma fluid. We can observe the process of plasmorrhagia, when the plasma fluid leaks into the perivascular area due to increased permeability of the vascular wall. Due to the release of plasma factors from the veins, thrombi do not form. The

central vein and sinusoids of the liver lobes are enlarged. It occurs with continued deep dystrophic changes in hepatocytes, increased permeability of the cell membrane, disruption of diffusion and osmotic mechanisms, and the work of cellular pumps. Under such conditions, the cell loses the ability to maintain ion and water homeostasis. In a certain field of view, centrolobular necrotic changes are visible. We see the expansion of the interlobular veins and arteries of the vessels, the process of their stasis. Thickening of the wall of the interlobular bile duct indicates that the cavity has expanded, become empty, and the formation of bile has ceased.

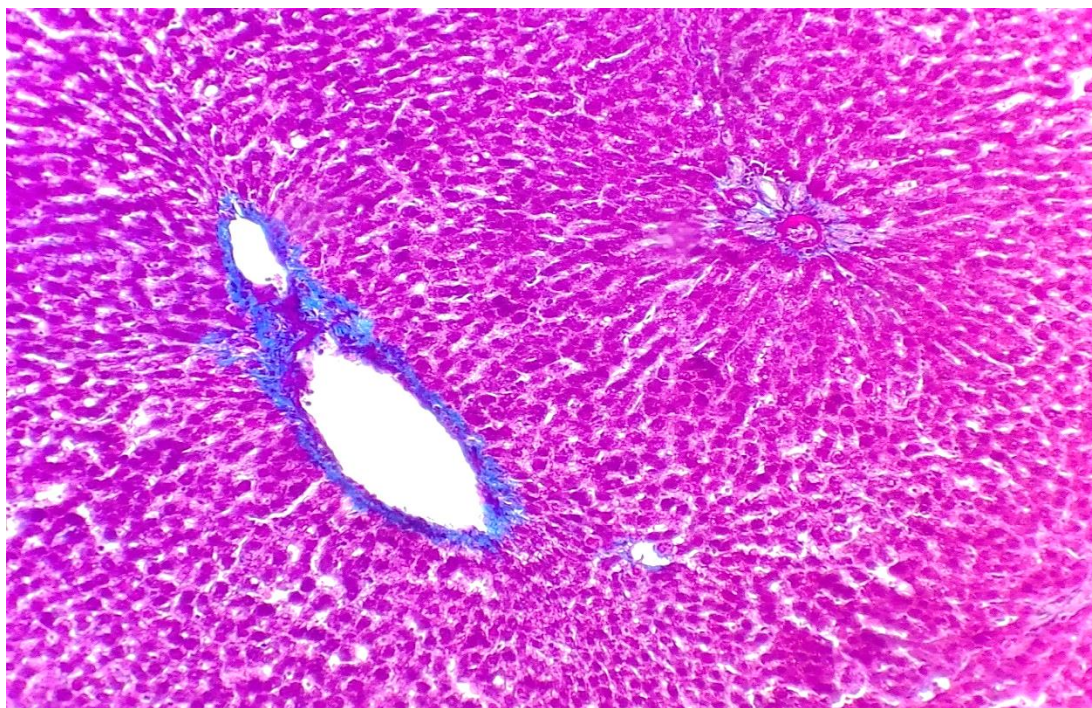


Figure 1. Microscopic preparation obtained from liver tissue of 3-month-old white rats on the 21st day after traumatic brain injury. Masson's aniline blue (400x magnification).

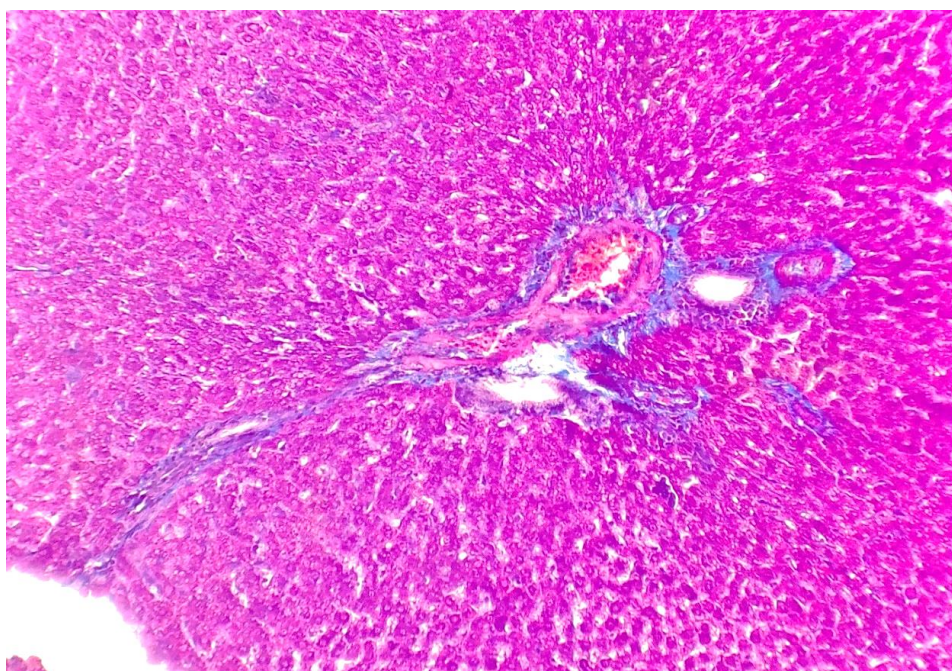


Figure 2. Microscopic preparation obtained from liver tissue of 3-month-old white rats on the 21st day after brain injury with Masson's aniline blue (400x magnification).

Conclusions

When studying liver tissue samples from 3-month-old white rats on the 21st day after traumatic brain injury using Masson's histochemical method, it was found that the wall of the blood vessel of the central vein was covered with collagen fibers and connective tissue fibers. The tissue was tightly located around the vessels of the liver triad.

LIST OF REFERENCES:

1. Олимова А. З. Морфологические и морфометрические особенности печени белых беспородных трехмесячных крыс после тяжелой черепно-мозговой травмы, вызванной экспериментальным путём // Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali. 2021;1(6):557-563.
2. Зокировна, Олимова Азиза и Тешаев Шухрат Джумаевич. «Морфологические аспекты печени белых беспородных крыс после тяжелой черепно-мозговой травмы, вызванной экспериментально в виде дорожно-транспортного происшествия». // Scholastic: Journal of Natural and Medical Education 2023;2(2):59-62.
3. Zokirovna O. A. Comparative characteristics of the morphological parameters of the liver at different periods of traumatic brain injury // Euro-Asia Conferences. 2021; 139-142.
4. Zokirovna O. A. Macroand microscopic structure of the liver of threemonthly white rats // Academic research in educational sciences. 2021;2(9):309-312.
5. Zokirovna O. A., Jumaevich T. S. Morphological Aspects of the Liver of White Outbred Rats After Severe Traumatic Brain Injury Caused Experimentally in the Form of a Road Accident // Scholastic: Journal of Natural and Medical Education. 2023;2(2):59-62.

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