

STRUCTURAL DISORDERS OF THE LIVER DEPENDING ON THE DURATION OF OBSTRUCTIVE JAUNDICE

Karyi Yaroslav,

Associate Professor

National Pirogov Memorial Medical University, Vinnytsya

Surgery Department of the Medical Faculty No. 2

Introduction: Obstructive jaundice (OJ), according to the WHO, is observed in 10-15% of the world's population [1]. In case of short-term OJ, hepatocytes develop a relative adaptation to cholestasis. In case of long-term obstruction of bile ducts, post-decompression liver dysfunction often develops despite a complete restoration of bile passage [2]. Therefore, the choice of bile duct decompression technique and timing depends on the duration of OJ [3]. The most reliable method of diagnosing structural changes in the liver is histological examination [4]. The study of structural disorders of the liver with different duration of OJ is still a pressing problem.

The aim: To study structural disorders of the liver depending on the duration of obstructive jaundice.

Materials and methods: We performed morphological and morphometric studies of 50 liver biopsy specimens with different duration of OJ. Material was fixed in 10% neutral formalin solution (pH - 7.4) for 48 hours, followed by treatment with alcohol of increasing concentration and poured into paraffin. Resulted paraffin blocks were cut into serial semi-thin 5 μm slides, which were stained with hematoxylin/eosin, Van Gieson`s picrofuchsin and with Sudan III. Morphometric parameters of structural changes of the liver were determined using a computer software (Quick Foto Micro 2.3).

50 patients with OJ were assigned to two groups. Group I (n = 25) consisted of young and middle-aged patients, while the Group II (n = 25) included elderly and senile patients. In each group, structural changes of the liver were studied with different duration of OJ: less than 7 days, 7-14 days, 14-21 days, 21-28 days and over 28 days.

Results and discussion:

In the Group I patients at the terms of OJ (less than 7 days, from 7 to 14 days), morphological changes in the liver consisted in:

- intraductal cholestasis;
- polymorphic cellular inflammatory infiltration of the stroma.

At the terms of OJ (from 14 to 21 days; from 21 to 28 days), changes in the liver in patients of the Group I were associated with:

- intraductal and intracellular cholestasis;
- stromal hepatitis;
- dystrophy of hepatocytes;
- small focal necrosis of the liver;
- initial fibrosis.

At the terms of OJ (over 28 days), morphological hepatic changes in the Group I patients consisted in:

- severe dystrophy of hepatocytes;
- large focal necrosis of the liver;
- severe fibrosis and onset of liver cirrhosis.

In the Group II patients with OJ lasting less than 7 days, morphological changes in the liver consisted in:

- intraductal and intracellular cholestasis;
- stromal hepatitis;
- dystrophy of hepatocytes.

In patients of the Group II with OJ lasting from 7 to 14 days and from 14 to 21 days, morphological hepatic changes were associated with:

- intracellular and intraductal cholestasis;
- severe dystrophy of hepatocytes;
- small and large focal necrosis of the liver;
- severe fibrosis and onset of liver cirrhosis.

In the Group II patients with OJ lasting from 21 to 28 days and over 28 days were the following morphological changes:

- large focal necrosis of the liver;
- severe fibrosis;
- severe liver cirrhosis.

Conclusions:

1. Morphological changes in the liver were reversible in the Group I patients at the terms of OJ (less than 7 days, from 7 to 14 days) and in patients of the Group II with OJ lasting less than 7 days.

2. At the terms of OJ (from 14 to 21 days; from 21 to 28 days) in the Group I patients and in the Group II patients with OJ (7-14 days; 14-21 days), morphological hepatic changes had a partially reversible course.

3. Irreversible morphological changes in the liver were observed in patients of the Group I with OJ over 28 days and in patients of the Group II with OJ (from 21 to 28 days and over 28 days).

References:

1. Topal B, Vromman K, Aerts R et al. Hospital cost categories of one-stage versus two-stage management of common bile duct stones. *Surg Endosc.* 2010; 24(2): 413-416.

2. Celotti A, Solaini L, Montori G et al. Preoperative biliary drainage in hilar cholangiocarcinoma: Systematic review and meta-analysis. *Eur J Surg Oncol.* 2017; 43(9): 1628-1635.

3. Nychytaylo MY, Dziubanovskyi OI. Comparison of dynamics of cytolytic and cholestatic indicators and the tempo of the biliary decompression after one-step laparoscopic and open operation interventions of patients with choledocholithiasis complicated with obstructive jaundice. *Hospital Surg.* 2017; 1: 8-16.

4. Campion JP, Fremond B, Guillouzo A. Hepatocytes isoles et suppléance hépatique. *Gastroenterol Clin Boil.* 2014; 18(1): 53-56.