

SURGICAL TREATMENT OF PATIENTS WITH LIVER CIRRHOSIS AT THE STAGE OF PARENCHYMATOUS DECOMPENSATION

Petiunin Oleksii,

Ph.D., Associate Professor

Kharkiv National Medical University,

Kharkiv Institute Of Medicine And Biomedical Sciences

apetyunin72@ukr.net

Parasyuk Dmytro,

Kharkiv National Medical University,

dsparasiuk.1m21@knmu.edu.ua

Arabadzhi Anna,

Kharkiv National Medical University

aearabadzhi.1m21@knmu.edu.ua

Liver cirrhosis (LC) in the stage of parenchymatous decompensation is characterized by the presence of such a complication as ascites, and leads to the progression of disorders of cardiovascular and respiratory systems, renal and hepatic failure. Ascites is an unfavourable prognostic sign: 50% of patients with this complication die within the first year and only 20% live for more than 3 years [1, 2]. Conservative therapy, including paracentesis, has only a temporary effect; as a result of decreasing intra-abdominal pressure and aggravating hypoproteinaemia (due to protein loss with transudate), when ascitic fluid is removed, the process of transudation into the abdominal cavity increases, which leads to the progression of hypovolemia [2-4]. Tactics of treatment of LC patients in the stage of parenchymatous decompensation even today are not unified - different surgical interventions are used, sometimes diametrically opposite in mechanism of action, therefore, the search for effective methods of surgical treatment of LC patients with ascites remains relevant for modern surgical hepatology. [4-6].

The aim of this research is to investigate the efficacy and clinical consequences of the operation of extraperitonization of the right liver lobe with intraoperative laser radiation (ERLL, LR) in LC patients in the stage of parenchymatous decompensation.

Methods and results. The work was performed on the basis of examination and treatment of 26 patients with LC. The indication for ERLL, LR was the presence of symptoms of portal hypertension and ascites. By gender, the patients were distributed as follows: 18 (69.2%) males and 8 (30.8%) females. The average age was 41.5 years.

The etiological factor of the disease was established on the basis of anamnestic data. In 13 (50.0%) observed patients the viral etiology of cirrhosis was established based on the presence of jaundiced form of acute viral hepatitis in the anamnesis, 10 (38.4%) patients abused alcohol for 2 to 15 years, in 3 (11.6%) etiological factor was not established: there were no indications in the anamnesis about acute viral hepatitis,

chronic alcoholism, malaria, contact with hepatitis in the past. Clinical, laboratory, biochemical, and instrumental methods of investigation were used in the examination of patients on admission to hospital and in the postoperative period.

General clinical examination of patients included clinical blood analysis with platelet counting and determination of blood clotting time according to Lee-White, clinical urine analysis, urine analysis according to Zimnitsky, determination of blood group, Rh factor, electrocardiography in standard and thoracic leads, external respiration function. In addition, daily diuresis, amount of fluid intake, abdominal circumference were measured. Liver function tests characterizing protein, pigment and carbohydrate metabolism were studied. Activity of secretory, indicator and excretory enzymes, blood coagulation factors, urea, blood creatinine was determined. To investigate the upper parts of the gastrointestinal tract for the detection of varicose veins of the gastroesophageal zone was performed fiberoesophagogastroduodenoscopy. The stage of esophageal varices was graded according to the classification, endorsed by a Baveno I (1992) consensus meeting [7]. The shape, size and echostructure of the liver and spleen were studied using ultrasound; length, shape, and size of the lumen of the portal and splenic veins. The presence or absence of fluid in the abdominal cavity was also ascertained using this method. Determination of linear blood flow velocity (LBFV), volumetric blood flow (VBF) and portal stasis index (PSI) in the portal and splenic veins was performed by using ultrasound Doppler flowmetry according to the methodic of Moriyasu et al. [8].

Statistical analysis of the material was carried out using parametric and nonparametric criteria (Student, Pearson's Chi-square), multivariate correlation and regression analysis on a personal computer using Microsoft Excel 2000 and SPSS 10.0 for Windows.

Results of the study and their discussion. To realize the set tasks, the functional state of the liver was studied before the operation, in the early postoperative period and 1 year after the operation. After the operation 25 (96.2 %) patients survived. In the early postoperative period 1 patient (3.8 %) died, the cause of death was hepatic coma. One year after the operation the results of treatment in 22 patients (86.4%) who underwent the operation were studied by means of examination and questionnaires. Two patients (9.1%) of them died from pathology unrelated to the main disease: one patient died from bilateral pneumonia, another - from myocardial infarction. So, the survival rate one year after the operation was 90.9%.

When studying the proteinogram of the operated patients was performed, the concentration of total protein in the blood serum remained practically unchanged both at the moment of discharge from the hospital and in the remote period, the concentration of blood albumin to significantly increased both at the moment of discharge from the hospital and in the remote period in comparison with the indicators at admission, and the content of γ -globulins significantly decreased in comparison with the preoperative values. These changes resulted in a significant increase in the albumin/globulin ratio compared to preoperative values.

Examination of the blood coagulation test has shown that the prothrombin index increased both at the time of discharge and one year after surgery. Fibrinogen concentration increased at hospital discharge of preoperative values and normalized in

the distant period. The level of cytolytic enzymes also decreased and in the remote period did not differ from the values of physiological norm.

Research has shown that the content of erythrocytes and platelets increased in comparison with the preoperative data, but the differences were statistically unreliable. The number of leukocytes in the remote period slightly exceeded the initial parameters, but remained within the normal values.

Thus, in patients with LC in the stage of parenchymatous decompensation after ERLL, LR there is an improvement of liver function, which is manifested by normalization of proteinogram, blood coagulation test, pigment metabolism, cytolysis markers both in the early postoperative period and in the remote period after the operation.

At ultrasound of the abdominal cavity with determination of portal blood flow in the late postoperative period there were still signs of portal hypertension, which was manifested by an increase in the size of the spleen, as well as in the diameter of portal and splenic veins. Despite the fact that the diameter of the portal system vessels in the distant postoperative period did not come to normal, there was a decrease compared to the preoperative values. Linear blood flow velocity in the portal vein in the remote period significantly increased compared to preoperative values and corresponded to normal values. Accordingly, with the increase in the linear blood flow velocity in the portal vein in the remote period after surgery, the volume of blood flow in it increased significantly. The increase of this index was only due to the increase of linear blood flow velocity, as the diameter of the portal vein did not increase after the operation. The portal stasis index was lower in the distant terms, which indicated an improvement of the functional state of the liver.

Decrease in the diameter of portal system vessels in patients in remote terms after ERLL, LR allowed to say that manifestations of portal hypertension syndrome under the influence of surgical treatment stabilized and had no tendency to progression. The increase of the linear blood flow velocity in the portal vein, as well as the volume blood flow in it, occurring in parallel with the decrease in the diameter of the portal system vessels, decrease in the portal stasis index, testified to the improvement of the functional state of the liver under the influence of this type of surgical treatment. Such changes in portal hemodynamics can be explained by the effect of the operation, which consists in the formation of a wide network of organ portocaval anastomoses between the liver and the diaphragm in the postoperative period, and as a consequence, a decrease in portal pressure.

Conclusions. 1. ERLL, LR is a low-traumatic surgical intervention, which is tolerated by 96.2% of patients with LC in the stage of parenchymatous decompensation, and the effect is observed in 90.9% of patients in the long term.

2. The effect of ERLL, LR consists in improvement of functional state of the affected organ and is manifested by normalization of protein-synthetic function of the liver and pigment metabolism, regression of cytolysis of hepatocytes, elimination of ascites both in early postoperative and remote postoperative periods.

3. The clinical effect of ERLL, LR is stabilization of manifestations of portal hypertension syndrome, which is manifested by the decreasing in the diameter of portal

system vessels, increasing in linear and volumetric blood flow velocity and decreasing in the portal stasis index.

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