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EVALUATION OF EFFECTIVENESS OF SPLENECTOMY IN CHRONIC LEUKEMIAS

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Abstract:

This work presents observation data for 16 patients with hairy cell leukemia (HCL), the duration of the disease ranged from 1 to 15 years. The indications for surgery in case of ON and the results of splenectomy in 5 patients are presented. No complications from operations were observed. After splenectomy, the patients' condition improved platelets, blood retraction normalized, hemoglobin and erythrocytes rose in dynamics, hemorrhagic syndrome disappeared, hemodynamics stabilized. Despite the positive clinical and laboratory effect after splenectomy for a year, the further prognosis of the disease remains serious and patients need constant dispensary observation.

Keywords: hairy cell leukemia, complications, splenectomy, results.

INTRODUCTION. An unusual variant of chronic lymphocytic leukemia is hairy cell leukemia (HCL), which occurs with damage to the bone marrow, spleen and one, two- or three-stage cytopenia. HCL is a chronic lymphoproliferative disease isolated from chronic lymphocytic leukemia in 1958 [1,4] due to the peculiarity of morphology, clinical course and treatment tactics. The frequency of occurrence of HCL is 1 case per 150 thousand population, which is 2% of all leukemias. As a rule, the disease is characterized by an indolent course and a favorable prognosis. The most common cause of an unfavorable outcome of HCL is an infectious complication, which is registered in 30-70% of patients. Long-term granulocytopenia and monocytopenia contribute to the development of infectious disorders in patients with HCL. The morphological substrate of the disease are cells with characteristic outgrowths of the cytoplasm resembling hairs. The disease proceeds with the involvement of the bone marrow, spleen and is manifested by cytopenia, splenomegaly. A feature of the disease is the presence of characteristic lymphoid cells with a "villous" morphology and a special immunophenotype. The etiology of HCL is unknown. The clinical picture in some patients with HCL is latent and does not require special therapy for a long time, on the contrary, others quickly detect persistent pancytopenia, pronounced infiltration of the bone marrow by hairy cells, an increase in the size of the spleen and abdominal pain associated with splenomegaly in the clinic. Severe anemia requiring hemotransfusion correction occupies an important place in the clinical picture. With severe anemia - weakness, shortness of breath, palpitations, dizziness, which increase with physical exertion.

For almost 30 years, splenectomy has been the main therapeutic measure for hairy cell leukemia (8,9,10,12,13). The removal of the spleen pursued 2 goals: to reduce the volume of the tumor clone and eliminate hypersplenism syndrome, which plays a major role in the genesis of the main hematological symptom of the disease — cytopenia. Most patients: the number of erythrocytes and neutrophils increases in almost 90% of patients, the number of platelets — in 75% of patients, and about 40% of patients achieve normalization of all blood parameters (according to Afanasyev B.V., Berchan Sht., Bogdanov A.N., Grigory G.) Demidova A.V., Doronina V.A., Ivanov M.O., Mazurova V.I., Mikhailova N.B., Muntyan N., Agle D.P., Baldini M.G., Berceanu St., Feldman J.D., Harker L.A.).

MATERIAL AND METHODS OF RESEARCH. The cases of surgical treatment of patients in the period

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from 2014 to 2017 were analyzed. 16 patients treated in the clinic with the diagnosis of "Hairy cell leukemia" chronic form aged from 28 to 67 years in Research Institute of Hematology and Blood Transfusion of the Ministry of Health of the Republic of Uzbekistan were examined. Among these patients there were 10 men and 6 women. Among them, 4 (25%) patients were of young age - from 22 to 40 years. The duration of the disease ranged from 1 year to 15 years. All patients had complaints at admission of weakness, fatigue, headache, dizziness. Nasal bleeding in 4 (25%), gingival bleeding in 7 (44%) patients, prolonged and abundant mensis in 3 (19%), small red rashes on the body (petechiae) in 10 (62.5%) patients, bruises in places in all patients (ecchymosis on the skin), abdominal heaviness and pain in the left half of the abdomen in 5 (31.3%) patients were detected.

EXAMINATION. Clinical blood test. A detailed blood test with a leukocyte formula reveals agranulocytosis, monocytopenia, thrombocytopenia, a decrease in hemoglobin. Against this background, absolute lymphocytosis with the presence of hairy cells is noted – this kind of appearance is given to them by uneven, fragmentary contours of the cytoplasm. 81% of patients had anemia, of which 3 (19%) patients had severe anemia, but most of the patients were adapted to it, transfusions of red blood cells were needed only in 19% of cases. In our observation, leukopenia was detected in 75% of patients, and in 25% — the number of leukocytes was normal or elevated, with a range of values from 4 x 109/l to 36 x 109/l. We noted thrombocytopenia in 69% of patients, but it was deep (< 50 x 109/l) only in 5 (31.2%) cases. HCL is characterized by thrombocytopenia with impaired platelet function - aggregation and adhesion of the latter, the duration of capillary bleeding from a skin puncture was prolonged from 4 to 30 minutes according to the Duke's test, and the time of blood clotting according to Lee White remained unchanged. The coagulogram shows a decrease in blood clot retraction. Increased fibrinolytic activity of the blood (norm 15.2%), increased plasma tolerance to heparin. Positive tests: tourniquet, pinch, cupping, prick.Patients with HCL additionally underwent ultrasound of internal organs - splenomegaly was present in almost all patients - in 97% of cases, one patient was found to have spleen infarction. The size of the spleen varied from 20 to 35 cm, pronounced splenomegaly (more than 10 cm below the costal arch), combined with minor bone marrow damage in 5 patients. Electrocardiography - tachycardia. Bone marrow biopsy. Punctate for hairy cell leukemia can be obtained with difficulty due to severe bone marrow fibrosis (dry puncture). In the sample of the material, there is an inhibition of hematopoiesis sprouts, the phenomenon of "honeycomb" (rarefaction areas). Villous lymphocytes, infiltration of the bone marrow by leukemic cells are also detected. All patients received conservative treatment from 2 times to 4 times, including chemotherapy without special effect, one time, 5 patients retained pronounced shortness of breath, due to splenomegaly with compression of the diaphragm (the diaphragm is raised to the top) and pancytopenia. In one patient, pain in the left half of the abdomen and fever persisted for 2 weeks, moderate ecchymosis and petechiae in three limbs. Hemodynamic correction was performed in patients with hemoglobin <70 g/l. Hemotransfusion was performed, plasma was transfused with low protein and hypocoagulation. If conservative therapy was ineffective, splenectomy was recommended. Indications for splenectomy were:

- ineffectiveness or intolerance of drug therapy,
- frequent relapses as a diagnostic procedure,
- pronounced splenomegaly (more than 10 cm below the costal arch),
- spleen infarction, deep thrombocytopenia,
- refractoriness to drug therapy.

Splenectomy was used in 5 (31.2%) of 16 patients HCL. To perform splenectomy, patients are prepared for surgery 2-3 days before surgery.Ssplenectomy was performed in 5 patients with HCL by the method we proposed – during the revision of the spleen, its mobility and connection with the circumference were evaluated, its posterior surface was separated from the parenteral peritoneum by hemostasis in the direction of the pedicle and the posterior surface of the stomach. Then the spleen was easily dislocated into the wound, starting from the lower pole, it was freed from the ligaments and pre-bandaged; two clamps were applied over the ligature, then dissected between the clamps and the stump was stitched. Next, a 0.5 x 0.5 cm window was opened in the anterior leaf of the peritoneum from the upper pole of the spleen, and the gastrointestinal ligament was ligated in the above way. If the width of the leg is large, when selecting the poles, more fabric is taken. The anterior leaf of the

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peritoneum in the leg area is not opened, this preserves the integrity of the tissue and hemostasis.

The next stage of the operation is the preliminary ligation of the spleen leg with a catgut over the pancreatic capsule, under the control of the posterior surface, so as not to damage the tail part of the pancreas. At the same time, all elements of the spleen leg are assembled into a single stem with a straightened axis, which greatly improves the subsequent application of clamps over the ligature. This, in turn, is the prevention of bleeding. Subsequently, 2-3 clamps are applied over the ligature, and the spleen is removed. The stump is bandaged and stitched. Performing SE in this way prevents damage to the tail of the pancreas, reliable hemostasis is created, the integrity of adjacent tissues is preserved.

RESEARCH RESULTS. Splenectomy results with HCL. 5 (31.2%) patients with HCL were operated by the conventional method, among them: 4 (80.0%) men, 21 (20.0%) women. At the same time, the total blood loss was up to 200 ml. During the operation, only 300 ml of SPP and 800 ml of erythrocyte mass were transfused to two patients. Such a complication as damage to the pancreas during surgery was not observed. After the operation, 1 (20%) patient had an increase in temperature to 380 for 5 days. 3 (60%) patients had complaints on the 2nd day after surgery for pain in the left hypochondrium and lumbar region. During SE, the amount of blood loss is determined by weighing surgical dressings - balls, before and after surgery, and blood loss after surgery from a drainage tube pouring into a marked dish. Blood loss during surgery ranged from 30 ml to 200 ml. Hemorrhagic discharge from the drainage tube was up to 100.0 ml or more on the 1st and 2nd day. In 50% of patients, the drainage tube was removed on the 2nd day after surgery, the rest 3-4 days. After the postoperative period, hemoglobin rose to 110 g / l in all patients, leukocytes from 4 to 10 000 thousand, platelets from 120 000 to 180 000 thousand.
Postoperative complication and lethality were not noted by us.

EXAMPLE. Patient B. is 42 years old, was in the surgical department for 26 days. Complaints at admission of weakness, fatigue, headache, dizziness, nasal and gingival bleeding, small red rashes on the body, bruises in places, heaviness in the abdomen and pain. From anamnesis, he has been ill for 3-4 months (bruises have appeared on the skin from time to time for the last 2 years)
She received treatment in the hematology department of RIH and BT. The condition at admission is severe. In the skin, petechiae are small-point and ecchymoses. PS - 100-104 beats per minute A / D 110/70 mm Hg. The tongue is wet. Abdomen- asymmetrically increased in volume due to splenomegaly, soft, painless. The liver is not palpable, the spleen is huge up to the pelvis, smooth, dense, motionless. Stools and urination are regular and free.

The first case: Anemia (Hb-62g/l), thrombocytopenia up to (1), leukopenia (0.8), lymphocytosis. Hypocoagulation. Ultrasound splenomegaly – length to the pelvis, width 27cm. Thickness -10.4cm. There is no ascite.
D/S: Hairy cell leukemia. Complications: nasal and gingival bleeding.

Taking into account the severity and abdominal pain due to splenomegaly (huge size), pancytopenia and hemorrhagic syndrome, after appropriate preparation on 9.09.2013, we performed splenectomy surgery, along the upper median incision, bypassing the navel on the left and continued below the navel. With technical difficulties, the spleen was removed by the proposed method in our clinic. Total blood loss of up to 30 ml (excluding deposited - splenic blood). The spleen is about 42x30 cm in size. Dark brownish in color, there is a 3x3 cm infarction area and the postoperative course is smooth for all about 3.0 kg, stitches were removed on day 8-9, healing per. primum. Tests at discharge: KKV - 36, prothrombin time - 96% plasma tolerance to heparin -9, plasma fibrinogen - 2.66 g,l retraction-0.5 Nv -100g/l, er-3.4, c. p. -0.8, platelets -190.0, leukocytes -4.8, s/i -47, e-1, lymph -50, m-2, ESR- 5mm.h. Examination in the third month: platelets 260.0, leukemia-6.25, lymph-52.0, POPS-8 mm.h. There is no hemorrhagic syndrome. Examination after a year: There are no special complaints, hemorrhagic syndrome has not resumed, there are no special changes in the blood test, the patient is active, working.

The second case: Patient Sh. 44 years old, was in the surgical department of RIH and BT for 27 days. Complaints at admission of weakness, fatigue, cough rare, fever up to 38C, nosebleed. From anamnesis, he has been ill since December 2014. The condition at admission is severe. The skin and mucous

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membranes are pale P/S 100ud. in min. A \D 100 \60mm.Hg. The tongue is wet. The abdomen is of the usual shape, participates in the act of breathing, soft, painless. The liver is not palpable, the spleen is +5+6 cm. from the edge of the left hypochondrium, smooth, dense, painless. Stools and urination are free, regular. Examination: Hb-72 g \ l, er-2.5, platelets - one-15.0 thousand, leukocytes-45.0, c\-3, lymphocytes- 97 (villous), ESR-24mm \ h KKV-45, Prothrombin time-100%, plasma tolerance to heparin -11min 30 plasma fibrinogen-3.5g \ l, retraction-0.2. Biochemical analysis and urine analysis without features. Ultrasound of the liver without features, splenomegaly (180x90mm), the structure is heterogeneous, there are many hyperechogenic focal changes from 0.4 mm to 4 cm., with a homogeneous structure.
Diagnosis: Hairy cell leukemia. Complications: nosebleed.

Taking into account anemia, thrombocytopenia with hemorrhagic syndrome on 10.06.2016, splenectomy was performed, with an upper median incision, bypassing the navel on the left. The spleen was removed with technical difficulties due to adhesions between the spleen and the diaphragm, the method adopted in the clinic. The spleen is 22x12 cm in size, dark cherry color, dense, smooth, weighing about 2 kg Total blood loss -150.0 ml. In the postoperative period, the temperature was raised to 38c, which returned to normal within a week after antibiotic therapy. The stitches were removed on day 9-10. Tests at discharge: Hb- 100g \ l, Er- 3.5, c\n 0.8, platelets -175.0, leukocytes -6.2, n\I-2, c\I-18, lymphocytes - 77, monocytes-3. ESR -7 mm \ h, plasma tolerance to heparin- 10 min, retraction - 0.33. Examination in a month: HB -110 g \ l, Erythrocytes - 4.0, c\n -0.8, platelets- 200.0, leukocytes- 16.7, m\m-1.0, n\I -3.0, c\I -12.0, lymphocytes -78.0, monocytes-5.0, ESR-18mm \ h. There is no hemorrhagic syndrome. Examination after 3 months: Hb-124g \l, erythrocytes-4.2, c/p.-0.8, platelets- 210.0, leukocytes - 180, p. \I-1.0, c\I-34.0, erythrocytes-4, 0, lymph-59.0, monocytes -2.0, ESR- 6mm \h. There is no hemorrhagic syndrome.

DISCUSSION OF THE RESULTS. Thus, splenectomy has now given way to the first line of therapy, since most patients require continued treatment in the future, but it retains its significance for a number of patients - as a diagnostic procedure, with spleen infarction, deep thrombocytopenia, and drug therapy refractory. One of the advantages of spleen removal is the rapid correction of cytopenia within 1-2 days, which reduces the risk of complications and improves the conditions for drug therapy. Nevertheless, the risk of surgical intervention, although small, remains.

CONCLUSION: IN THAT WAY: 1. Splenectomy can be used as an auxiliary method of therapy with ON. The indication for the operation was: - a large spleen with compression of neighboring organs.
2. Abdominal pain with spleen infarction clinic.
3. Severe cytopenia with frequent hemorrhagic syndrome.
After splenectomy, the condition of patients improves, platelets, blood retraction normalizes, hemoglobin and red blood cells rise in dynamics, hemorrhagic syndrome disappears. Despite the positive clinical and laboratory effect after splenectomy, the prognosis of the disease remains serious and patients need constant dispensary supervision.

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