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**Andijan, Uzbekistan COURSE AND QUALITY OF LIFE OF PATIENTS
WITH HEMOLYTIC DISEASE, AFTER SPLENECTOMY**

Resume. Analysis of the causes of complications shows that they are caused by the peculiarities of diseases that lead to the development of hemorrhagic and hypercoagulation syndromes, acute adrenal insufficiency, the development of pneumonia, pleurisy and other diseases. In recent years, thanks to the development of modern resuscitation and anesthesia services, the number of non-surgical complications during these operations has been significantly reduced.

The most common surgical complications of splenectomy are acute pancreatitis, intra-abdominal bleeding, subdiaphragmatic abscess. With an open method of performing surgery, their frequency, unfortunately, does not decrease, and therefore the search for ways to prevent these complications will improve the results of treatment of hematological patients.

Keywords: bronchial asthma, esophageal varicose veins, viral hepatitis V, viral hepatitis C, gammaglutamylaminotransferase, gastrointestinal bleeding, gastrointestinal tract, enzyme immunoassay, vertical curve of the liver, cranio-caudal liver size.

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ТЕЧЕНИЕ И КАЧЕСТВО ЖИЗНИ БОЛЬНЫХ С ГЕМОЛИТИЧЕСКОЙ БОЛЕЗНЬЮ, ПОСЛЕ СПЛЕНЭКТОМИИ

Резюме. Анализ причин осложнений показывает, что они обусловлены особенностями заболеваний, которые приводят к развитию геморрагического и гиперкоагуляционного синдромов, к острой надпочечниковой недостаточности, к развитию пневмонии, плеврита и других заболеваний. В последние годы благодаря развитию современной реанимационно-анестезиологической службы число нехирургических осложнений при этих операциях удалось существенно снизить.

Наиболее частыми хирургическими осложнениями脾切除术 являются острый панкреатит, внутрибрюшное кровотечение, поддиафрагмальный абсцесс. При открытом способе выполнения операции их частота, к сожалению, не уменьшается, а поэтому поиск способов, направленных на профилактику этих осложнений, позволит улучшить результаты лечения гематологических больных.

Ключевые слова: бронхиальная астма, варикозное расширение вен пищевода, вирусный гепатит V, вирусный гепатит C, гаммаглутамиламинотрансфераза, желудочно-кишечное кровотечение, желудочно-кишечный тракт, иммуноферментный анализ, вертикальная кривая печени, кранио-каудальный размер печени.

There is a category of patients whose access to the spleen and performing surgery under visual control are difficult due to obesity caused by prolonged previous hormone therapy and the development of the Itsenko-Cushing syndrome, as well as in patients with large organ sizes. The accumulation of experience in the removal of the spleen by laparoscopic method confirmed the possibility of safe

intervention and a reduction in the frequency of postoperative complications. At the same time, laparoscopic splenectomy is the most difficult intervention for a surgeon. Its development requires experience from the doctor, thorough observance of technical techniques and indications for implementation. This is the only way to reduce complications after surgery in the patient. These circumstances led to the study of the indications and possibilities of the laparoscopic method of performing splenectomy and further improvement of techniques and tools for its implementation in patients with diseases of the blood system.

The purpose of the study. Improving the results of surgical treatment of patients with diseases of the blood system by choosing the optimal method of splenectomy.

Material and methods of research. The work is based on the analysis of the treatment of 162 patients with diseases of the blood system who underwent splenectomy due to the ineffectiveness of conservative treatment.

To solve the tasks set in the work, the patients were divided into 2 groups. The main group consisted of 86 (53.1%) patients who underwent laparoscopic splenectomy, the control group consisted of 76 (46.9%) patients whose splenectomy was performed in the traditional way.

According to the main clinical and morphological criteria, the patients of the main and control groups were comparable.

The results of the study. Patients with diseases of the blood system were examined according to a single scheme. When collecting complaints of patients, attention was paid to the appearance of general weakness, pallor or jaundice of the skin, skin rashes, nasal and gingival bleeding, the nature and color of the stool.

Laboratory tests included: blood tests, in which the erythrocyte index of polychromatophilia was determined, the number of reticulocytes, the cellular composition of peripheral blood were counted, a coagulogram was necessarily performed.

Concomitant diseases were diagnosed in 34 (39.5%) of 86 patients of the main group and 37 (48.7%) of 76 patients of the control group of patients, including

diseases of the cardiovascular system - in 12 (13.9%) and 10 (13.1%) people, respectively. In 19 (22.1%) patients in the main group and in 12 (15.8%) patients in the control group, two or more concomitant pathologies were detected.

Before the operation, great importance was attached to determining the size of the spleen, assessing the severity of hemorrhagic syndrome, identifying the nature of biochemical disorders, that is, determining the factors affecting the surgical intervention, the course of the postoperative period and the development of possible complications.

Preoperative preparation of patients was carried out taking into account their age and concomitant diseases, while involving other specialists. Indications for splenectomy were established individually for each patient together with hematologists, taking into account the diagnosis of the disease, its complications, clinical and hematological parameters.

Open splenectomy in hematological patients was performed by laparotomy access. To improve approaches to the spleen, a wide upper-median laparotomy was supplemented by crossing the left rectus abdominis muscle at the upper corner of the surgical wound without crossing the costal arch. After a detailed revision of the left subcostal space by examination and palpation of the spleen, the nature of the pathology, the size of the organ, its mobility, the presence of adhesions with surrounding organs were clarified in it. Only then did they begin to mobilize the spleen and ligate the vessels in its gates. This stage began with the mobilization of the gastrointestinal and splenic-diaphragmatic ligaments, and only then clamps were applied to the vascular pedicle at the spleen gate and the spleen was removed. After drainage of the abdominal cavity with two tubes connected to the bed of the removed spleen, the wound of the abdominal cavity was sutured.

After the patient was put under anesthesia, 3 trocars were injected into the planned points of the anterior abdominal wall. Above the navel, at the level of the rib arch, the first port for insufflation and video systems was installed. A laparoscope with a viewing angle of 30° was used for the operation. After the creation of the carboxyperitoneum (CO₂ with a pressure of 12-15 mmHg), two or three additional

ports were installed, placing them along the anterolateral edge of the costal arch, and one under the xiphoid process of the sternum. Mobilization was started in the pocket of the peritoneum at the proximal part of the descending colon, continuing it upward to the left bend of the colon. Here, the diaphragmatic-colon ligament was dissected to the splenic-renal ligament. After the release of the lower pole of the spleen, the lower vessels in its gates were exposed. The vessels were separately isolated, clipped and crossed. If the width of the splenic artery and vein exceeded the size of the clip, then the vessels were stitched with a linear stitching device with a white cassette. The finally isolated spleen was removed through a 12 mm lateral port using an endoscopic bag. After that, an abdominal cavity revision was performed to exclude additional spleens. Drainage of the abdominal cavity after splenectomy was considered an obligatory stage, since it allowed dynamically observing the nature of the discharge from the abdominal cavity and thus preventing complications.

The first splenectomy operations by laparoscopic method also showed the difficulties encountered by the surgeon when performing them. They were caused by the complexity of manipulations on an enlarged organ and with its extraction from the abdominal cavity after mobilization.

The difficulties of manipulating an enlarged spleen in patients required the installation of two additional trocars to perform organ traction and provide access to the organ gates. To do this, in the position of the patient on his back, when the enlarged spleen shifted by gravity to the left, the first trocar was inserted at a point 1 cm below the navel. After insertion through the video system port, the abdominal cavity was examined, the size and position of the spleen were clarified, then the head end of the table was raised by 10-15 ° and the patient was moved to the position on the right side at an angle of 75-80 °.

At the stage of removing the organ from the abdominal cavity, we first used a mini-laparotomy, placed the organ in a plastic container and, destroying the spleen with our fingers, extracted it together with the container. Such manipulation took a long time and was not effective enough. Since the use of electromechanical devices for the destruction of the spleen is dangerous due to the high risk of damage to the

endocontainer and the possible ingress of splenic tissue fragments into the abdominal cavity, which can lead to its engraftment and the development of a relapse of the disease, we have proposed a method for the extraction of the spleen (certificate for innovation proposal No. 800 of 25.10.06). The essence of the new method is that a plastic endocontainer bag was inserted into the abdominal cavity, the spleen was placed in it, after that the neck of the container was removed into the trocar wound (Fig. 2a). Then, under visual control, the spleen tissue was crushed and removed using a large spoon-shaped clamp.

The essence of the second method was that we upgraded the working part of the standard electromechanical morcellator, which made it possible to use the tool in the endocontainer. To do this, the cutting part of the tool (knife) was placed inside the tube, and the edges of the tube were left without sharpening. Small fragments of the spleen were removed from the tube using an electric pump, visually monitoring the position of the endocontainer during the entire period of operation of the device, which made it possible to secure the manipulation.

Indications for open splenectomy were splenomegaly with the threat of rupture of the spleen; extensive areas of spleen infarction that occurred both spontaneously and as a result of intravascular occlusion of the splenic artery; a large array of tumor tissue in spleen lymphomas (in recent conditions splenectomy was considered as a palliative intervention).

Splenectomy with laparotomy access was performed in 76 patients of the control group. With this variant of operations, technical difficulties were noted in patients with splenomegaly and perisplenitis phenomena. They had a difficult approach to the gate of the spleen and had difficulties in the treatment of vessels due to their thinning due to prolonged overstretching of the ligamentous apparatus.

The average blood loss during traditional splenectomy was equal to 325.9 ± 52 ml. The volume of infusion of the solutions administered during the operation was 2670 ± 550 ml, after the operation 3700 ± 1000 ml. The average duration of splenectomies performed by laparotomy was 79 ± 23.5 minutes. When using LigaSure, the operation time was reduced by an average of 11 ± 3.2 minutes.

compared to operations in which the vessels were treated with a ligature method.

With open splenectomy, complications occurred in 30 (39.3%) patients within a period of 6 hours to 20 days. At the same time, 17 (22.4%) patients had two or more complications, and they were of a combined nature (hematoma of the spleen bed, subdiaphragmatic abscess, reactive pleurisy). After splenectomies with laparotomy access, 6 (7.9%) patients died in the early postoperative period.

When analyzing the complications of open splenectomy, depending on the pathology, it was found that 5 patients with myelodysplastic syndrome had three complications (1 died), eight patients with ITP – 8 (1 died), 17 with spleen lymphoma - 9, 18 with hemolytic anemia - 14, 12 with aplastic anemia – 15 (3 died). The regularities of the development of complications in patients depending on the disease of the blood system showed that in patients with aplastic anemia, the traumatism of open splenectomy was the cause of their development. In this regard, the indications for open splenectomy in this category of patients were sharply limited.

An attempt to reduce the frequency and severity of complications in patients with diseases of the blood system was the introduction into practice of the treatment of X-ray endovascular occlusion of the splenic artery. This method of treatment was used in 23 patients for indications similar to open splenectomy. Transfusion of erythrocyte mass and blood components in the first day after surgery was required in two patients due to severe anemia.

In the future, the volume of transfusion of erythro- and thrombomass in patients also decreased. If before embolization of the splenic artery, the need for hemotransfusion in patients reached 3-4 times a week, then after embolization their number decreased to 1-2 times a week. The results of splenic artery embolization in patients showed that a positive effect on the first day was observed in 70% of patients with ITP and hemolytic anemia. We did not notice a decrease in the size of the spleen after embolization both in the early and late periods. There were no complications in patients immediately after embolization of the splenic artery. However, in the early postoperative period, spleen abscesses formed in 8 operated patients within 7

days to 1.5 months, and the observed positive dynamics of hematological parameters returned to their initial state after 2-6 months, which indicated a temporary effect that this method of treatment had. Subsequently, all patients who underwent splenic artery embolization were operated on. Performing open splenectomies for a period of 1 to 1.5 months was accompanied by increased bleeding from the tissues surrounding the spleen, mainly from the developed network of collateral circulation, pronounced adhesions due to perisplenitis. The adhesive process was most pronounced in the diaphragm area. In this regard, we began to consider the total embolization of the splenic artery one day before splenectomy only as a method of reducing splenic blood flow to prevent massive intraoperative bleeding.

Of the 86 patients who underwent laparoscopic splenectomy with spleen sizes from 15.6 to 18.4 cm (on average - 17 ± 1.4 cm), 48 patients used the modified morcelator proposed by us. To assess its effectiveness, the results were studied in 36 patients with similar spleen sizes, whose organ extraction was performed using a spoon-shaped clamp. Thanks to the device, it was possible to reduce the operation time from 122 ± 23.2 minutes to 87 ± 12.6 minutes ($p < 0.05$) compared to the traditional method of organ extraction and bring the time of laparoscopic interventions to open. The average blood loss during laparoscopic splenectomy was 127.2 ± 25 ml, and the volume of infusions was 2120 ± 350 ml. After laparoscopic splenectomy, complications occurred in 12 (14%) within 24 hours to 3 days. The main complications were intra-abdominal bleeding - 1 (1.2%), pleuro-pulmonary - 5 (5.8%), Subdiaphragmatic infected fluid accumulations - 4 (4.7%) and hematoma of the spleen bed - 2 (2.3%). 2 (2.33%) patients died, including 1 patient with myelodysplastic syndrome and 1 patient with idiopathic thrombocytopenic purpura.

When comparing the results of laparoscopic and traditional splenectomies, it was found that the average time of the endovideosurgical method of intervention is 159.5 ± 14.8 minutes, and with open splenectomy - 79 ± 23.5 minutes, that is, the duration of the intervention was twice as long. At the same time, a direct strong dependence of the operation time on the size of the removed spleen was revealed ($r = 0.42$, $p < 0.02$). Thus, splenomegaly statistically significantly affected the

immediate results after open and laparoscopic operations, in particular, its duration, the volume of blood loss and the frequency of postoperative complications. In this regard, splenomegaly was considered as the most significant factor in the course of preoperative planning and prognosis of technical difficulties and complications during and after operations.

Conclusions.

1. Open splenectomy with laparotomy access is accompanied by complications in 39.3% of patients and mortality in 7.9%. The most common complications are suppuration of postoperative wounds, subdiaphragmatic fluid accumulations and bronchopulmonary complications.

2. In diseases of the blood system, embolization of the splenic artery temporarily suppresses the phenomena of hypersplenism, may be accompanied by spleen abscess and perisplenitis and is indicated only for the prevention of intraoperative bleeding during splenectomy, as well as in patients with a high risk of its implementation due to the underlying and concomitant diseases.

3. An improved method of laparoscopic splenectomy consists in changing the patient's position on the operating table, using methods of extraction of the spleen from the abdominal cavity. The use of the developed devices helps to reduce the operation time from 122 ± 23.2 minutes to 87 ± 12.6 minutes, is not accompanied by organ damage and contamination of splenic tissue in the abdominal cavity.

4. Immediate long-term results of laparoscopic splenectomy indicate the effectiveness of the method compared with open splenectomy. The frequency of early postoperative complications (according to Clavien) decreased from 39.3% to 8.1%, late – from 12.3% to 1.6% (the increase in relative benefit was 52%).

5. The most favorable dynamics of quality of life after splenectomy in the long term is observed in patients after laparoscopic surgery, compared with patients who underwent traditional interventions.

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