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Research Article

DIFFERENTIATED APPROACH IN VENTRAL HERNIA SURGERY

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ABSTRACT

Relevance. The analysis of scientific, medical and patent documentation indicates that in the literature available to us there is no definition of indications for the use of one or another method of hernioplasty, taking into account various risk factors. The solution of these problems is an urgent and priority problem of modern herniology.

Objective of the study: To develop a program for the choice of surgical tactics for ventral hernias.

Research material. Based on the analysis of the results of surgical treatment of 228 patients with ventral abdominal hernias, the authors developed a program for scoring preoperative criteria that affect the choice of the optimal method of hernioplasty, taking into account the individual characteristics of the organism.

Research results. In the main group of patients, we detected a relapse of the disease in one patient, which was 0.9% of the total number of patients examined in the long-term postoperative period. Relapse was noted in a patient from the 2nd subgroup who underwent hernioalloplasty with defect suturing. The relapse was caused by the insufficient area of the alloprosthesis.

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Findings. The scoring of perioperative risk criteria in patients with incisional ventral hernias allows choosing the optimal method of plastic surgery, taking into account the individual characteristics of the organism and improving the results of treatment. With pronounced apron-like deformity of the abdomen in obese patients, it is preferable to perform open hernioalloplasty with DLE.

KEYWORDS

Hernioalloplasty, scoring, program.

INTRODUCTION

Despite the dynamic development of medical science, the problem of treating ventral hernia remains relevant. The increase in the incidence of ventral hernia persists mainly due to postoperative ventral hernias, their number after laparotomy is from 10 to 15% according to various data [5, 7].

An analysis of scientific, medical and patent documentation indicates that in the literature available to us there are no definitions of indications for the use of one or another method of hernioplasty, taking into account various risk factors. The solution of these problems is an urgent and priority problem of modern herniology.

Purpose of the study: To develop a program for choosing surgical tactics for ventral hernias.

Materials and methods. The work is based on the analysis of the results of hernioplasty in 228 patients with postoperative, recurrent and primary ventral hernias. All operations were performed in the surgical department of the 1st clinic of SamMI in the period from 2011 to 2020. The patients were divided into two groups: the control group (96 - 42.1%) and the main group (132 - 57.9%). Patients of the main group were divided into 3 subgroups.

Patients of the 1st subgroup with a total score of up to 5 (Table 1) underwent laparoscopic hernia alloplasty. This group consisted of patients with normal body weight, who, as a rule, had small defects and there were no pronounced changes in the tissues of the anterior abdominal wall, there were no concomitant diseases and without a pronounced adhesive process of the abdominal cavity. After examining the abdominal cavity, such patients underwent adhesiolysis and the hernial orifice was isolated. Next, a U-shaped dissection and separation of the parietal peritoneum was performed, after which a polypropylene implant was installed in the preperitoneal space. The mesh implant was sutured with an Endoclose needle (Covidien, USA) to the

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anterior abdominal wall from the inside with knots tied over the aponeurosis. Then, with a continuous suture over the mesh, the integrity of the peritoneum was restored.

The 2nd subgroup included patients with normal or overweight and functional disorders of the respiratory system, concomitant somatic pathology and severe adhesive disease of the abdominal cavity. They had from 6 to 10 points and, taking into account the risk of perioperative complications, they underwent open hernioplasty in 2 ways: the defect of the aponeurosis was sutured edge to edge with additional cover of the suture line with a polypropylene mesh; Patients with a risk of increased intra-abdominal pressure underwent tension-free hernioplasty without suturing the aponeurosis. This made it possible to avoid an increase in intra-abdominal pressure in the early postoperative period.

Table 1.

Point system of indications for the use of different methods of plastics

№	Risk factors	Quantitative characteristic	Points
1	The state of the abdominal wall according to ultrasound, CT.	Norm Mild weakness Severe weakness	0 1 2
2	Dimensions of the hernia gate	Up to 5 sm 6-10 sm 11-15 sm More than 15 sm	0 1 2 3
3	Weight (body mass index)	Norm Obesity I-II degree Obesity III-IV degree	0 1 2
4	Age	25-44 year 45-59 year 60-74 year 75-90 year	0 1 2 3
5	Duration of hernia	up to 1 year from 1 year to 3 years over 3 years	0 1 2
6	Exercise stress	Absent Moderate load heavy load	0 1 2

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7	The functional state of the respiratory system	No violations Intermittent difficulty breathing Chronic respiratory failure	0 1 2
8	Concomitant other somatic diseases	No available in mild form available in severe form	0 1 2
9	Concomitant diseases leading to increased intra-abdominal pressure	No available in mild form available in severe form	0 1 2
10	The severity of the adhesive process	No adhesive process Adhesions between the hernial sac Abdominal adhesions	0 1 2

In the 3rd subgroup of patients with scores from 11 to 20, who had grade III obesity, as well as large (W3) and giant (W4) hernias according to Chervel J.P. and Rath A.M. (1999) also used open hernioplasty in 2 ways, as was done in patients of the 2nd subgroup, but in this subgroup, in addition to hernioplasty, dermatolipidectomy (DLE) was performed.

To compare the results obtained, we took as a control group 96 patients who were operated on for ventral hernias in a planned manner without taking into account the scoring. The same plasty methods were used as in the main group.

RESULTS AND ITS DISCUSSION

Long-term results of surgical treatment of postoperative and recurrent hernias of the anterior abdominal wall were monitored by us in 196 patients in the range from 1 to 10 years. Of the 196 patients examined with long-term outcomes studied, 112 were from the main scoring groups and 84 were from the control group. Of the 84 examined patients in the control group, plastic surgery using local tissues was performed in 36 patients, plastic surgery using a polypropylene mesh - 41, and tension-free plastic alloplasty - in 7 patients. Of the 112 examined patients who underwent plastic surgery taking into account the score, laparoscopic hernia alloplasty was performed in 31, open hernioplasty with defect suturing - 6, tension-free alloplasty - 26, open hernia alloplasty with defect suturing and DLE - 12, tension-free alloplasty and DLE - 37.

In the main group of patients, we detected a relapse of the disease in one patient, which amounted to 0.9% of the total number of patients examined in the late

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postoperative period. A relapse was noted in a patient from the 2nd subgroup, who underwent hernioplasty with suturing of the defect. The reason for the recurrence was the insufficient area of the alloprosthesis.

In the group in which plastic surgery of the anterior abdominal wall was performed without taking into account the scoring, recurrence of the disease was detected in 7 (8.3%) patients out of 84 examined in the late postoperative period. Moreover, the recurrence was in 5 patients with III degree obesity and in 2 patients with large hernias (W3). At the same time, 3 patients with III degree obesity underwent hernioplasty using the laparoscopic method. When studying the causes of recurrence at the macro- and microscopic levels, we found that under the influence of the gravitational force of the skin-fat apron, the mesh prosthesis installed preperitoneally shifts downward, thereby exposing a weak spot in the abdominal wall, where the upper part of the prosthesis was fixed. 4 patients with grade III obesity and large hernias (W3) underwent edge-to-edge plasty with additional reinforcement of the suture line with a polypropylene mesh. The cause of recurrence in 2 patients was also the downward displacement of the previously applied prosthesis due to the effect of the gravitational force of the skin-fat apron. In patients who underwent DLE, no relapses were detected. In 2 more patients, the displacement of the prosthesis was facilitated by a more pronounced exudative reaction and, accordingly, a slower fibrous incorporation of the prosthesis.

CONCLUSIONS

Thus, the scoring of perioperative risk criteria in patients with incisional ventral hernias makes it possible to choose the optimal plasty method taking into account the individual characteristics of the body and improve treatment results. The cause of relapses in ventral hernia alloplasty in obese patients is the displacement of the prosthesis downwards under the influence of the severity of the skin-fat apron. In severe apron-like deformation of the abdomen in patients with obesity, it is preferable to perform open hernioplasty with DLE.

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