OPTIMIZATION OF SURGICAL MANAGEMENT OF POSTOPERATIVE VENTRAL HERNIAS

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Background. Despite the dynamic development of medical science, the problem of ventral hernia treatment remains highly relevant. Despite the rapid advancement of minimally invasive endovideosurgical technologies in abdominal surgery, a significant proportion of surgical procedures are still performed using the traditional laparotomic approach. In 4–18% of such cases, postoperative ventral hernias (PVH) develop. In the overall structure of ventral hernias, PVH accounts for approximately 20–26% of cases.

About 60% of patients with postoperative ventral hernias are between 21 and 60 years of age, representing a considerable proportion of the working-age population. The results of surgical treatment of PVH are characterized by a relatively high recurrence rate ranging from 4.3% to 46%, while in large postoperative ventral hernias recurrence may reach up to 60%.

Modern approaches to the management of various surgical diseases, including postoperative ventral hernias, require comprehensive preoperative assessment of patients using advanced imaging techniques to thoroughly evaluate the anatomical features prior to surgical intervention.

Aim of the study. To develop a program for quantitative assessment of risk factors for recurrence in patients with ventral hernias.

Materials and Methods. The study was based on the analysis of the results of hernioplasty in 228 patients with postoperative, recurrent, and primary ventral hernias. Patients were divided into two groups: a control group (96 patients – 42.1%) and a main group (132 patients – 57.9%). The main group was further subdivided into three subgroups.

Patients in the first subgroup with a total score of up to 5 points underwent autoplastic repair of the abdominal wall using local tissues. These patients typically had small hernia defects, no significant structural changes in the anterior abdominal wall, and no significant comorbidities. In such cases, repair was performed by duplicating the aponeurosis using standard techniques.

In the second subgroup (6–10 points), considering the risk of tissue tension and constitutional factors affecting postoperative recovery, combined repair was performed. The aponeurotic defect was sutured edge-to-edge with additional reinforcement of the suture line using a polypropylene mesh, eliminating the need for double-row sutures. This approach prevented increased intra-abdominal pressure in the early postoperative period and created favorable conditions for the formation of a durable postoperative scar.

Patients in the third subgroup (11–20 points) had a high risk of tissue tension and increased intra-abdominal pressure. In such cases, tension-free techniques such as sublay, inlay, and onlay are usually recommended. However, we believe that these methods alone do not sufficiently reduce recurrence risk and do not eliminate the hernia defect. Radical treatment can be achieved only by eliminating the defect rather than replacing it with a prosthetic graft. Therefore, a combination of tension and tension-free techniques may be considered the optimal method of abdominal wall repair.

A significant factor limiting radical surgery is excessive tissue tension during closure and a high risk of suture cutting in the postoperative period. In

such situations, we applied combined repair with mobilization of the rectus abdominis muscle sheath according to the Ramirez technique. The advantages of this method include single-layer suturing (which minimizes reduction of abdominal cavity volume) and mobilization of the rectus sheath, allowing more uniform distribution and reduction of tissue tension during suturing. The use of an allotransplant strengthens the suture line and creates optimal conditions for proper scar formation. Therefore, combined repair was preferred in the third subgroup.

For comparison, 164 patients who underwent elective surgery for postoperative and recurrent ventral hernias without using the scoring system were included as a control group. The same surgical techniques were used as in the main groups, taking into account the size of the hernia defect, duration of hernia disease, patient age, and comorbid conditions. However, CT and MRI findings, as well as histological and spirometric data, were not included in the assessment.

Results and Discussion. Long-term results of surgical treatment of postoperative and recurrent anterior abdominal wall hernias were evaluated in 196 patients over a follow-up period ranging from 1 to 10 years. Among these patients, 112 belonged to the main groups where the scoring system was used, and 84 belonged to the control group.

Among the 84 patients in the control group:

- local tissue repair was performed in 36 cases,
- polypropylene mesh repair in 41 cases,
- tension-free alloplasty in 7 cases.

Among the 112 patients treated using the scoring system:

- local tissue repair was performed in 19 cases,
- combined repair with polypropylene mesh in 28 cases,

- tension-free alloplasty in 34 cases,
- tension-free alloplasty with Ramirez component separation technique in 31 cases.

Recurrence of the disease was detected in 8 patients (4.1%) out of 209 examined patients. In the group where abdominal wall repair was performed without the scoring system, recurrence occurred in 7 patients (8.3%). Among them, 6 cases (7.1%) occurred after repair with local tissues and 1 case (1.2%) after combined repair with mesh reinforcement.

In the group where surgical treatment was performed according to the scoring system, recurrence occurred in only 1 patient (0.9%). This recurrence occurred in a patient who underwent repair using local tissues. No recurrences were observed in patients who underwent repair using an allograft.

Conclusions. The use of a scoring system for perioperative risk assessment in patients with postoperative ventral hernias allows surgeons to select the optimal surgical repair technique considering individual patient characteristics and significantly improves treatment outcomes.

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