

## CRITERIA FOR CHOOSING SURGICAL TREATMENT OF PATIENTS WITH VENTRAL HERNIAS AND OBESITY



Kurbaniyazov Zafar Babajanovich<sup>1</sup>, Abdurakhmanov Diyor Shukurillaevich<sup>1</sup>,  
Shamsiev Ozodbek Fazliddinovich<sup>1</sup>, Davlatov Salim Sulaymanovich<sup>2</sup>

1 - Samarkand State Medical Institute, Republic of Uzbekistan, Samarkand;

2 - Bukhara State Medical Institute, Republic of Uzbekistan Bukhara

### ВЕНТРАЛ ЧУРРА ВА СЕМИЗЛИК БИЛАН КАСАЛЛАНГАН БЕМОРЛАРНИ ХИРУРГИК ДАВОНИ ТАНЛАШ МЕЗОНЛАРИ

Курбаниязов Зафар Бабажанович<sup>1</sup>, Абдурахманов Диёр Шуқуриллаевич<sup>1</sup>,  
Шамсиев Озодбек Фазлиддинович<sup>1</sup>, Давлатов Салим Сулайманович<sup>2</sup>

1 - Самарқанд давлат тиббиёт институти, Ўзбекистон Республикаси, Самарқанд ш.;

2 – Бухоро давлат тиббиёт институти, Ўзбекистон Республикаси, Бухоро ш.

### КРИТЕРИИ ВЫБОРА ХИРУРГИЧЕСКОГО ЛЕЧЕНИЯ БОЛЬНЫХ С ВЕНТРАЛЬНЫМИ ГРЫЖАМИ И ОЖИРЕНИЕМ

Курбаниязов Зафар Бабажанович<sup>1</sup>, Абдурахманов Диёр Шуқуриллаевич<sup>1</sup>,  
Шамсиев Озодбек Фазлиддинович<sup>1</sup>, Давлатов Салим Сулайманович<sup>2</sup>

1 - Самаркандский государственный медицинский институт, Республика Узбекистан, г. Самарканд;

2 – Бухарский государственный медицинский институт, Республика Узбекистан, г. Бухара

e-mail: [nobel-farm88@mail.ru](mailto:nobel-farm88@mail.ru)

**Резюме.** Манتيқий асос. Бир вақтнинг ўзида операциялар замонавий герниологиянинг истиқболли йўналиши ҳисобланади. Бу борада қорин олд девори чурраси билан оғриган беморларда қорин бўшлиғи аъзоларига ва қорин деворига бир вақтнинг ўзида аралашувни амалга ошириш учун объектив кўрсатмалар ишлаб чиқиш ўта муҳимдир ва тавсия этилган жарроҳлик усули ва уни бажариш услубига таъсир қилади. Мақсад. Жарроҳлик тактикасини такомиллаштириш орқали қорин чурраси ва семизлик билан оғриган беморларни бир вақтда жарроҳлик даволаш натижаларини такомиллаштириш. Материаллар. Иш вентрал чурраси бўлган 164 нафар ортиқча вазнга эга беморни жарроҳлик даволаш натижаларини таҳлил қилишга асосланган. Барча операциялар 2009 йилдан 2016 йилгача бўлган даврда Самарқанд давлат тиббиёт институти Биринчи клиникасининг жарроҳлик бўлимида ўтказилган. Беморлар икки гуруҳга бўлинган: назорат гуруҳи (72-43,9%) ва асосий гуруҳ (92-). 56,1%). Кўрсатмаларга кўра, назорат гуруҳидаги беморларга маҳаллий тўқималар ва протез материаллари билан классик герниоаллопластик операция ўтказилди. Асосий гуруҳда беморларга дерматоліпектомия операцияси билан биргалликда қорин олд девори тикланди. Натижалар. Муҳокама қилинган гуруҳлардаги беморларни даволаш натижаларининг самарадорлигини баҳолаш учун қуйидаги таққослаш параметрлари асосий мезон сифатида ишлатилган: - операциядан кейинги даврнинг қорин асоратлари; - операциядан кейинги дастлабки даврда қорин бўшлиғидан ташқари асоратлар; - операциядан кейинги дастлабки даврда яранинг асоратлари; - жарроҳлик даволашининг узоқ муддатли натижалари. Хулоса. Рамirezнинг сўзларига кўра, III – IV даражали семириш билан оғриган беморларда герниоластик жарроҳликнинг оптимал тури - бу қорин тўғри мушакларининг сафарбар қилиниши билан тўлдирилган, қорин бўшлиғи операциясининг комбинатсияси. Чурра дарвозаси пластмассасининг ишончлилиги полипропилен протези билан таъминланади ва ректус мушакларининг сафарбарлиги қорин бўшлиғи босимининг дастлабки қийматларида сақланишини таъминлайди. Дерматоліпектомия билан биргалликда протез чуррани тиклаш бу каби беморларнинг ҳаёт сифатини барча параметрларда яхшилайди. Жарроҳликнинг эстетик таркибий қисми тана вазини камайитириш мотиватсияси пайдо бўлишига ёрдам беради.

**Калит сўзлар:** вентрал чурралар, семириш, герниоластик жарроҳлик, полипропилен протези, дерматоліпектомия, қорин бўшлиғи жарроҳлиги.

**Abstract:** Rationale. Simultaneous surgeries are a promising area of modern herniology. In regards to this the de-

---

velopment of objective indications and contraindications for performing simultaneous interventions on the organs of the abdominal cavity and abdominal wall in patients with ventral hernia is extremely important and affects the approaches of the proposed surgery method and the technique of its execution. **Objective.** Improving the results of surgical treatment of patients with ventral hernias with concomitant obesity by improving surgical tactics. **Materials.** The work is based on the analysis of the results of surgical treatment of 164 obese patients with ventral hernias. All surgeries were performed in the surgical department of the First clinic of the Samarkand State Medical Institute in the period from 2009 to 2016. The patients were divided into two groups: the control group (72-43.9%) and the main group (92-56.1%). According to indications, patients of the control group underwent classical hernioplastic surgery with local tissues and prosthetic materials. In the main group patients underwent hernia repair using mesh implants with the addition of dermatolipectomy. **Results.** To assess the effectiveness of the results of treatment of patients in the discussed groups, the following comparison parameters were used as the main criteria: - abdominal complications of the early postoperative period; - extra - abdominal complications of the early postoperative period; - wound complications in the early postoperative period; - long-term results of surgical treatment. **Conclusion.** According to Ramirez, the optimal type of hernioplastic surgery in patients with III – IV grade obesity is a combination of abdominoplastic surgery, supplemented by the mobilization of the rectus abdominis muscles. The reliability of the hernia gate plastic is ensured by a polypropylene prosthesis, and the mobilization of the rectus muscles ensures the preservation of intra-abdominal pressure at the initial values. Prosthetic hernia repair in combination with dermatolipectomy improves the quality of life of such patients in all parameters. The aesthetic component of the surgery contributes to the appearance of motivation to reduce body weight.

**Key words:** ventral hernias, obesity, hernioplastic surgery, polypropylene prosthesis, dermatolipidectomy, abdominoplastic surgery.

---

**Rationale.** The incidence of abdominal hernia exceeds 50 out of people per 10,000 people. [3, 12]. According to statistical data, hernias are detected in surgical departments in up to 25% of patients [16]. The causes of abdominal hernia are functional insufficiency of the muscle defense mechanisms of the abdominal wall, its anatomical and functional weakness, obesity and abdominal surgeries [7]. The occurrence of ventral hernias can be the result of the following factors: wound suppuration, morphological changes in muscles and aponeurosis [5, 8]. It predisposes to the formation of postoperative ventral hernia of the patient's structure and type of incision, technique of suturing the abdominal cavity, as well as suture material [1, 9, 17].

In patients with postoperative ventral hernias, one of the most common comorbidities is obesity [2], and, conversely, 48% of obese patients develop hernias of various localizations. Hernia recurrences with local tissue hernioplastic surgery occur in 22-56.3% of cases [13, 17]. Such a high percentage of relapses is due to the preservation of the skin-subcutaneous apron during surgery period [14]. Abdominoplastic surgery in obese patients reduces the burden on aponeurosis, improves the course of the postoperative period and reduces the frequency of complications [14].

In 53.3% of cases in the presence of giant hernias, simultaneous interventions in patients with postoperative ventral hernia are performed in 2.1-39.9% of cases [10]. The most frequent simultaneous surgeries with herniotomy are as followings such as resection of the large omentum (16.9%), dissection of adhesions (18.2-24%) or removal of the subcutaneous fat apron (35-61.5%) or cholecystectomy (5.5-6.4%), gastric resection (2.2%) or amputation of the uterus with appendages (3.6-4.4%) as well as resection of the small and large intestine (2.5-5.2%) and inguinal hernia (2,8%) [6, 11, 15].

Thus, simultaneous surgeries are a promising direction of modern herniology. In this regard, the development of objective indications and contraindications for performing simultaneous interventions on the organs of the abdominal cavity and abdominal wall in patients with ventral hernia is extremely important and affects the approaches of the proposed surgery method and the technique of its execution.

**Objective.** By improving surgical tactics, developing the results of surgical treatment of ventral hernias patients within concomitant obesity.

**Materials.** The work is based on the analysis of the results of surgical treatment of 164 obese patients with ventral hernias. All surgeries were performed in the surgical department of the Samarkand State Medical Institute in the First clinic during the period of from 2009 to 2016. The patients were divided into two groups: the control group (72-43.9%) and the main group (92-56.1%). According to indications, control group patients underwent classical hernioplastic surgery with local tissues and prosthetic materials. While the main group patients underwent hernia repair using mesh implants with the addition of dermatolipectomy. Out of the 164 patients, 114 (69.5%) were women and 50 (30.5%) were men, and more than half of the patients were aged between 46-59 years who were accounted for 53.0% of researched patients.

Concomitant pathology was more common in patients of the main group (table 1).

According to the classification of A. Matarasso (1989), patients were distributed coming to the degrees of ptosis of the anterior abdominal wall. Respectively, minimal and average ptosis (I-II degree) was observed in 36 and 42 patients with obesity level of I-II phases and III-IV phases. On the other hand, moderate and severe ptosis (III-IV degree) was observed in 51 and 35 patients with obesity of I-II and III-IV phases (Table 2).

**Table 1.** Distribution of patients by concomitant pathology

Indicators	Groups of patients			
	Control group		Main group	
	Qty.	%	Qty.	%
Hypertension	56	60,9	43	59,7
Coronary heart disease	24	26,1	17	23,6
Chronic obstructive pulmonary disease	7	7,6	8	11,1
Diabetes mellitus	5	5,4	3	4,2
Lower extremities Varicose veins disease	4	4,3	9	12,5

**Table 2.** Distribution of patients by abdominoptosis and obesity levels.

Abdominalis Obesity	Groups of patients			
	Control group		Main group	
	I-II	III-IV	I-II	III-IV
I-II	12	21	24	30
III-IV	19	20	23	15

**Table 3.** Distribution of patients by hernia size in comparing groups.

Features	Main group (n=92)		Control group (n=72)		Total amount
	Абс.	%	Абс.	%	
W <sub>1</sub>	18	19,6	12	16,7	30
W <sub>2</sub>	43	46,7	38	52,8	81
W <sub>3</sub>	19	20,6	14	19,4	33
W <sub>4</sub>	12	13	8	11,1	20
Overall:	92	100%	72	100%	164

The most important factors determining surgical tactics are the location of the hernia and the size of the flaw. According to the classification of Chervel J. P. and Rath A.M. (1999), 53 (32.3%) patients had large (W3) and giant (W4) hernias. The vast majority of patients (118 – 71.9%) had supra-umbilical (M1) and peri-umbilical (M2) hernias. The smallest number of patients had ventral hernias of lateral (L) and combined (M+L) location. As an illustration, schematic distribution of patients by flaw size is presented in Table 3.

All patients underwent general blood tests carried on the determination of blood group and Rh factor, blood tests for Wasserman's reaction as well as on hepatitis " B" and " C", HIV infection and urine. The following biochemical parameters also were determined such as total blood protein (according to indications - protein fractions), bilirubin, transaminases, urea, creatinine, blood electrolytes. Assessment of the coagulation and anticoagulation systems was carried out by the number of platelets, fibrinogen parameters, international normalized ratio, clotting time and duration of bleeding. According to these indications, a coagulogram was performed. Blood glucose level was detected in all patients, in diabetes mellitus, the presence of sugar and acetone in the urine was additionally determined, and in the cases blood glucose was monitored daily. From the instrumental methods of investigation, an electrocardiographic study was performed, an X-ray examination of the chest organs was carried out in all patients at the outpatient stage

of the examination. In cases of "chronic" intestinal obstruction in patients with ventral hernias W3 and W4, an X-ray examination of the gastrointestinal tract was performed according to the indications (an overview X-ray of the abdominal cavity and an X-ray contrast study). Corresponding with indications, a CT- computed tomography scan was performed. From endoscopic methods of research – fibrogastro-duodenoscopy, rectoromanoscopy, fibrocolonoscopy were conducted. In the preoperative period, ultrasound was performed on an outpatient basis in almost all patients to detect other surgical pathology of the abdominal cavity. Moreover, in the postoperative period, in order to assess the course of the wound process and identify complications ultrasound was used according to indications. When the hernia size was W3 and W4, intraoperative monitoring of IAP (intra-abdominal pressure) was performed indirectly by measuring the pressure in the bladder.

Preoperative preparation of patients at the prehospital stage included a set of measures aimed at reducing body weight in obesity, correction of concomitant pathology an including in a therapeutic hospital, and diagnosis of other surgical diseases of the abdominal cavity. At the hospital stage in the preoperative period, patients underwent preparation of the gastrointestinal tract and rehabilitation of the operating field. All patients underwent prevention of venous thromboembolic complications (VTC). Patients with hernia size W3 and W4 underwent preoperative preparation in order to adapt the cardiovascular and respiratory sys-

tems to an increase in intra-abdominal pressure. According to the method of S. D. Popov, for modified pneumobandage Trendelenburg's position with gradual lifting the foot from the end of the bed to an angle of 45° and a slageless diet is strongly recommended. All patients in the study groups were operated. Patients with combined surgical diseases were simultaneously corrected. Simultaneous surgeries were performed on 8 patients in the study groups. In terms of volume, simultaneous interventions were as follows: cholecystectomy-7 and supravaginal amputation of the uterus with appendages-1. Further, the selection and excision of the hernial sac was performed according to the generally accepted standard method. Splices were separated during the adhesive process in the hernial sac and abdominal cavity by blunt and acute methods with a thorough check of hemostasis and organ integrity. Herniation began with the mobilization of aponeurosis from subcutaneous fat being no more than 5 cm from the edge of the hernial gate. This distance is sufficient for subsequent fixation of the mesh endoprosthesis and does not lead to excessive detachment of subcutaneous fat.

Patients in the control group underwent hernioplastic surgery with local tissues and prosthetic materials, depending on the location and size of the hernia defect. In prosthetic plastics, the transplant was fixed using the "on lay" method (Pic. 1).



**Picture 1.** Fixation of the endoprosthesis over the aponeurosis. The final form of the endoprosthesis.

In order to increase the volume of the abdominal cavity and to prevent the development of abdominal compartment syndrome (ACS), it was required to perform the anterior abdominal wall plastic surgery by a non-tensioned method, i.e., mesh was applied to the aponeurosis without suturing it (Table 4).

In the main group, the choice of optimal hernioplastic surgery was more differentiated. For this purpose, a quantitative assessment of risk factors was developed for relapse of postoperative hernias.

The developed program was based on the clinical and ultrasound characteristics of the anatomical and functional state of the abdominal wall in the examined patients, as well as taking into account the size of the hernia gate, age and functional state of the respiratory system, digestive and urinary systems, physical activity and obesity which allows to optimize the choice of tactics for treating POVH (postoperative ventral hernias).

These factors that affect the results of treatment were evaluated on a point scale (certificate of state registration of the computer program №. DGU 03724, Agency of Intellectual Property of the Republic of Uzbekistan- 2016). According to the results of the program, patients of the main group were divided into 4 subgroups (Table 5).

Patients of the main group were divided into 4 subgroups (Table 6).

Patients of the 1st subgroup with a total number of points scored up to 5 (Table 6) autoplasmic surgery of the abdominal wall were performed with local tissues. This group consisted of young patients (25-44 years), who, as a rule, had small defects and no pronounced changes in the tissues of the anterior abdominal wall, there were no concomitant diseases.

In the 2nd subgroup with the number of points from 6 to 10, taking into account the risk of tissue tension, various constitutional features that affect the course of the postoperative period, we performed combined plastic surgery- the defect of aponeurosis was sutured edge to edge with additional cover of the suture line with polypropylene mesh, thereby eliminating the need for double-row sutures. This made it possible to create optimal conditions for the formation of a strong postoperative scar.

**Table 4.** Types of hernioplastic surgery in the control group.

Types of surgery	Control gr.	
	Qty.	%
Stretch plastic surgery methods		
Plastic surgery by Sapezhko	28	38,9
Plastic surgery by Mayo	19	26,4
Implantation of an endoprosthesis by "on lay" with suturing of the flaw	17	23,6
Non-binding methods		
Implantation of the endoprosthesis by "on lay" without suturing the defect	8	11,1
Overall	72	100

**Table 5.** Point system of indications for the use of different methods of plastic surgery.

№	Risk factors	Quantitative characteristics	Points
1	State of the abdominal wall according to Ultrasound Diagnosis, CT.	Normal	0
		Mild weakness	1
		Severe weakness	2
2	Dimensions of the hernia gate	Up to 5 cm	0
		6-10 cm	1
		11-15 cm	2
		More than 15 cm	3
3	Weight (body mass index)	Normal	0
		Obesity I-II levels	1
		Obesity III levels	2
4	Age	25-44 years	0
		45-59 years	1
		60-74 years	2
		75-90 years	3
5	Duration of herniation	Up to 1 year	0
		from 1 year to 3 years	1
		more than 3 years	2
6	Physical activity	Nonexistent	0
		Moderate load	1
7	Functional state of the respiratory system	no violations	0
		Periodic difficulty breathing	1
		Chronic respiratory failure	2
8	Functional state of the digestive system	no violations	0
		Periodic constipation	1
		Constant constipation	2
9	Functional state of the urinary system	No violations	0
		Periodic difficulty	1
		Constant difficulty urinating	2
10	Severity of the adhesive process	No adhesive process	0
		Adhesions between the hernial sac	1
		Adhesions of the abdominal cavity	2

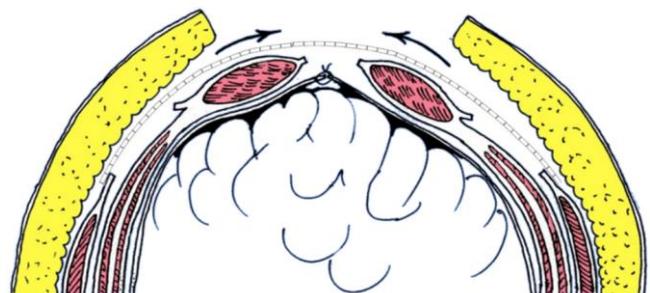
**Table 6.** Distribution of the main group patients into subgroups.

Gender	Group				Total amount
	1st	2nd	3rd	4th	
Male	7	24	2	5	38
Female	10	33	3	8	54
Overall	17	57	5	13	92

In subgroup 3, patients with scores from 11 to 15 had a high risk of tissue tension. In order to increase the volume of the abdominal cavity, to prevent the development of Subarachnoid hemorrhage (SAH), plastic surgery of the anterior abdominal wall was performed by a non-tightening method, i.e., applying a mesh to the aponeurosis without suturing it.

In the 4th subgroup of patients with grade III obesity and the number of points from 16 to 22, there was also a high risk of tissue tension and increased intra-abdominal pressure (IAP), while a significant factor deterring from performing only non-tensioned alloplastic surgery was excessive tissue tension during suturing and a high probability of eruption of sutures in the postoperative period. In such cases, ac-

ording to Ramirez, non-tension alloplastic surgery was used with mobilization of the vaginas of the rectus abdominis muscles (Pic. 2).

**Picture 2.** Reconstruction of the anterior abdominal wall with the mobilization of rectus muscles according to Ramirez [4].

**Table 7.** Types of hernioplastics in the main group.

Subgroups	Types of Surgery	Quantity	%
Stretch plastic methods			
1 <sup>st</sup> subgroup	Plastic surgery with duplicate seams	17	18,5
2 <sup>nd</sup> subgroup	Implantation of an endoprosthesis with "on lay" by suturing the defect	57	61,9
Non-binding methods			
3 <sup>rd</sup> subgroup	Implantation of the endoprosthesis by "on lay" without suturing the defect + ДЛЕ (Dermatolipidectomy)	5	5,4
4 <sup>th</sup> subgroup	Implantation of an endoprosthesis by "on lay" without suturing the defect with mobilization of the vaginas of the rectus abdominis muscles by Ramirez + ДЛЕ (Dermatolipidectomy)	13	14,1
Overall		92	100

**Picture 3.** Picture of "anchor" type (Castanares section). A. front view, B- side view.

The advantages of the proposed technique are that the plastic is carried out with a single-row suture (to a lesser extent reduces the volume of the abdominal cavity), the mobilization of the vagina of the rectus abdominis muscles allows you to evenly distribute and significantly reduce the pressure on the tissues when suturing. The use of an allograft helps to strengthen the suture line and creates optimal conditions for the formation of a full-fledged scar. Therefore, in the 4th subgroup, we preferred implantation of the endoprosthesis according to "on lay" without suturing the defect with mobilization of the vaginas of the rectus abdominis muscles according to Ramirez (Table 7).

Patients of the 3rd and 4th subgroups had concomitant pathology of obesity of the III-IV degree. On these patients in the main group after plastic surgery of the anterior abdominal wall was performed dermatolipectomy, through pre-applied on the anterior abdominal wall before surgery (Picture 3), which encloses the hernial protrusion, the old postoperative scar and skin-fat fold. The weight of the excess skin-fat flap was from 4 to 12 kg.

After completion of hernioplastic surgery, patients in the study groups were left with a perforated Redon drainage tube, the free ends of which were removed below the horizontal incision and fixed to

the skin, depending on the volume of the surgery on the aponeurosis.

Patients in the early postoperative period were in the intensive care unit according to indications. These are mainly patients with concomitant cardiovascular and respiratory pathology, as well as patients who have undergone surgery for large hernias with size W3 and W4. In the complex of intensive therapy after prosthetic repair are included: - adequate pain relief; - prevention of venous thromboembolic complications (VTC); - infusion therapy; - antibiotic prophylaxis, according to indications antibiotic therapy; - prolonged ventilation according to individual indications and drugs that stimulate intestinal peristalsis (proserin, cerucal, ubretid).

In the early postoperative period, patients received adequate hydration. The volume of infusion therapy for hemodilution was determined taking into account the individual characteristics of the patient. Medical correction of concomitant diseases was also performed. The course of the wound process was evaluated according to clinical data, laboratory parameters and ultrasound data. Clinical assessment of the wound process was carried out on the basis of an examination of the operating wound. The presence or absence of edema, hyperemia, tissue infiltration in the area of the wound edges, as well as the severity of pain syndrome were determined. In the presence of

drains or blotting of bandages, the volume and nature of the exudate were evaluated. All patients' body temperatures were measured 2 times a day (in the mornings and evenings). The degree of inflammatory changes was assessed by the level of white blood cells and the formula in the general blood test. The thickness of the anterior abdominal wall, the echo structure and echogenicity of tissues in the surgical area, the presence of additional formations and inclusions were evaluated during ultrasound of the surgical wound after hernia sections. To remove fluid accumulations, either simultaneous evacuation through the wound or punctures under U3 guidance were used. Small accumulations of liquid were subjected to dynamic observation. In some cases, in the absence of the effect of punctures and evacuations through the wound and signs of infection, partial dilution of the wound (removal of 1-2 stitches from the skin) and open wound management with the installation of gauze turundaes and napkins with antiseptics were used.

**Results.** To assess the effectiveness of the results of treatment of patients in the discussed groups, the following comparison parameters were used as the main criteria to name but a few such as, ab-

dominal complications of the early postoperative period; extra - abdominal complications of the early postoperative period; and wound complications in the early postoperative period; as well as long-term results of surgical treatment.

In patients of both groups at the stages of treatment, the level of intra-abdominal pressure was measured in dynamics. Based on the obtained data, regular changes in intra-abdominal pressure indicators were revealed in the direction of their increase at the stages of surgery associated with the immersion of hernial contents and hernioplastic surgery. Performing non-tensioned hernioalloplastic surgery and a combined technique with Ramirez rectus muscle mobilization which was applied to 13 patients of the main group achieved an increase in the volume of the abdominal cavity and allowed to avoid an increase in intra-abdominal pressure. Most patients maintained normal gastrointestinal function after surgery, only 2 patients in the control group and 1 patient in the main group who underwent hernioplastic surgery for a giant ventral hernia had intestinal paresis stopped by medication. Urinary retention was observed in 3 patients of the control group and in 1 patient of the main group.

**Table 8.** Complications in the early postoperative period.

Complications	Control group		Main group			Total amount
	Tension methods of hernioplasty	Non-stretched methods of hernioplasty	Tension methods of hernioplasty	Non-stretched methods of hernioplasty		
				DLE	With mobilization of the vaginas of the rectus abdominis by Ramirez + DLE	
<b>Abdominal complications</b>						
Paresis of the intestine	2		1			3
Urinary retention	2	1	1			4
<b>Extra-abdominal complications</b>						
Bronchopulmonary complications	3		2			5
Cardiovascular failure	2	1	1			4
<b>Wound complications</b>						
Infiltrate	1			1		2
Hematoma		1				1
Seroma	1	1	1	3	2	8
Lymphorrhea		1		1	1	3
Suppuration of the wound	1	1				2
Necrosis of the edge of the skin flap	1					1
Overall	21 (29,2%)		14 (15,2%)			33 (20,1%)

**Table 9.** Distribution of patients by concomitant pathology in the long-term postoperative period.

Indicators	Groups of patients					
	Control gr.			Main gr.		
	Qty.	%		Qty.	%	
		pre-oper.	post-oper.		pre-oper.	post-oper.
Hypertension	38	59,7	77,5	23	60,9	30,3
Coronary heart disease	16	23,6	32,6	11	26,1	14,5
Chronic obstructive pulmonary disease	8	11,1	16,3	2	7,6	2,6
Diabetes mellitus	3	4,2	6,1	1	5,4	1,3
Varicose veins of the lower extremities	7	12,5	14,3	1	4,3	1,3

In the control group, bronchopulmonary complications were observed in 3 patients and 3 more patients had symptoms of heart failure, the latter were manifested by low blood pressure, increased pulse rate and shortness of breath. In the main group, extra-peritoneal complications were observed in 3 patients. Bronchopulmonary complications were observed in 2 patients while heart failure in 1 patient aged 59 years who was suffering from post-infarction atherosclerosis. Wound complications in the postoperative period in the control group were observed in 8 patients. In the main group, complications were observed in 9 patients (Table 8).

Thus, the greatest number of early postoperative complications was observed in patients in the control group. The lowest number of after surgery cardiopulmonary diseases was observed in the main group of patients. Local (wound) complications were noted in the same ratio.

Moreover, in the long-term period after surgery, 49 (68.0%) of 72 patients in the control group were observed and 76 (82.6%) out of 92 patients in the main group were observed in the period from 1 to 7 years. Recurrence of hernia was observed in 2 (4.1%) patients of the control group after repair of the hernia defect by autoscans. In the main group, recurrence of hernial protrusion in the anterior abdominal wall was not observed.

During the dynamic observation of patients in the control group, body weight indicators did not change significantly. In patients of the main group, the indicators of abdominal obesity suffered global changes. This had a positive impact on future life prospects, since it is the abdominal type of adipose tissue distribution, which is most associated with a high risk of cardiovascular diseases and type 2 diabetes, that is undergoing significant changes. In both groups, 99 people (60.4%) had varying degrees of arterial hypertension at baseline. Dynamic follow-up in the long-term postoperative period in patients of the control group showed the preservation of high blood pressure, with a tendency to transition to more severe degrees of arterial hypertension. In patients of the main group, a decrease in high blood pressure was noted with a tendency to transition in order to milder degrees of arterial hypertension (Table 9).

One of the priority directions in modern medicine is the inclusion in the study of various methods for assessing the quality of life of patients after conservative or surgical treatment. Since 2012, the quality of life of patients undergoing hernioplasty surgery has been determined in our clinic according to the developed program, which includes objective and subjective signs, instrumental data on which it is possible to assess the physical, mental and social daily activities of patients undergoing hernioplasty surgery (Tables 10 and 11).

**Table 10.** Objective criteria for determining the quality of life of patients undergoing hernioplasty surgery

№	Criterion	Characteristics of the criterion	Points
1.	State of the postoperative zone according to instrumental data (Ultrasound examination, CT, Magnetic resonance imaging)	The microabscesses	3
		Infiltrate	7
		No pathologies were detected	10
2.	Characteristics of bowel movement	Constant constipation	3
		Periodic constipation	7
		There are no violations	10
3.	Objective examination of the anterior abdominal wall	Non-healing of the wound, fistula or relapse	3
		Rough postoperative scar	7
		Gentle postoperative scar	10
4.	Palpation of the postoperative area	Severe pain	3
		Minor pain	7
		No pathology was detected	10
5.	Functional state of the respiratory system	Chronic respiratory failure	3
		Periodic breathing difficulties	7
		No pathology was detected	10

**Table 11.** Subjective criteria for determining life quality of patients undergoing hernioplastic surgery

№	Criterion	Characteristics of the criterion	Points
1.	How do you assess your overall health condition?	Unsatisfactorily	0
		Satisfactorily	3
		Good	7
		Excellent	10
2.	Are you satisfied with the cosmetic result of the surgery?	Unsatisfactorily	0
		Satisfactorily	3
		Good	7
		Excellent	10
3.	How do you assess the overall result of the surgery?	Unsatisfactorily	0
		Satisfactorily	3
		Good	7
		Excellent	10
4.	How do You rate your physical activity?	Unsatisfactorily	0
		Satisfactorily	3
		Good	7
		Excellent	10
5.	Feeling of discomfort in the postoperative area	Constant severe pain	0
		Minor pains	3
		Feelings of discomfort	7
		No complaints	10



**Picture 4.** View of the patient after surgery. A. Final type of hernioalloplastic surgery with abdominoplastic surgery, B – Patient after hernioalloplastic surgery in the long term.

In fact, on this research program a certificate of official registration of the computer program was obtained (№ DGU 05632, Intellectual Property Agency of the Republic of Uzbekistan, in 2018 "Program for determining the quality of life of patients after hernioplastic surgery for postoperative ventral hernias").

The quality of life of each patient was assessed by the presence of the points collected from the questionnaire for objective and subjective signs in the postoperative period. Patients who scored from 81 to 100 points were rated as "excellent", from 61 to 80 points - "good", from 41 to 60 points - "satisfactorily" and patients who scored below 40 points were rated as "unsatisfactory or unsatisfactorily" groups of patients.

According to the developed program, for determining the quality of patients' life who underwent hernioplastic surgery, 115 (70.1%) out of 164 patients

observed in the long-term postoperative period were evaluated. From these 51 patients from the control group and 64 patients were from the main group.

To put into words illustration of figures, it can be observed that in the control group excellent results were obtained in 16 (31.4%) patients, good results in 18 (35.4%), satisfactory results in 15 (29.4%) patients and unsatisfactory results in 2 (3.9%) cases. In turn, in the main group, excellent results were obtained in 28 out of 64 (43.8%) patients, good results in 23 (35.9%), satisfactory results in 12 (18.8%) patients and unsatisfactory ones in only 1 case (1.6%) (Picture 5.6). Improvement in quality of life indicators was obtained for all domains of the scale, taking into account the psycho- emotional background, as well as physical activity of patients after various types of hernioplastic surgery (Picture 4). 5). Regardless of

the general status of patients, all cases of relapse of the disease were recorded as unsatisfactory results.

Thus, the frequency of postoperative complications is significantly higher when performing hernioplastic surgery than using dermatolipidectomy. This fact is of fundamental importance, since with comparable characteristics of patients in groups, the use of lipoabdomino plastic surgery has significant advantages both in objective and subjective indicators for the patient.

**Conclusions.** The optimal type of hernioplastic surgery in patients with III – IV obesity phase with abdominoplastic surgery combination was supplemented by the mobilization of the rectus abdominis muscles according to Ramirez. The reliability of the hernia gate plastic is ensured by a polypropylene prosthesis, and the mobilization of the rectus muscles ensures the preservation of intra-abdominal pressure at the initial values.

As a result of the use of abdominoplastic surgery, it was possible to reduce the number of complications in the immediate and long-term postoperative period. Wound complications decreased from 11.1% to 9.7%. From the CVS (cardio-vascular system) authorities from 54 (72.6%) to 34 (44%). There were no relapses of the disease and no deaths. Prosthetic hernia repair in combination with dermatolipectomy improves the life quality of such patients in all parameters. The aesthetic component of the surgery contributes to the appearance of motivation to reduce body weight.

**Conflict of interest.** The author declares that there are no conflicts of interest or special funding for ongoing research.

#### Literature:

1. Azamat S., Salim D. Factors influencing the choice of hernia repair method in patients with incisional hernias //European science review. – 2017. – №. 1-2.
2. Salim D., Sarvinoz A. Hernioabdominoplastics of postoperative ventral hernia in patients with obesity //International scientific review. – 2016. – №. 11 (21).
3. Salim D., Sarvinoz A. Criteria's of choice method in surgical treatment of patients ventral hernia with concomitant obesity //European research. – 2016. – №. 7 (18).
4. Amirovich M. B., Zafarovich S. J. Modern problems and perspective of treatment of patients with ventral hernia with simultaneous pathologies // Научные исследования. – 2018. – №. 4 (23).
5. Давлатов С. С., Абдусаттарова С. К. Criteria's of choice method in surgical treatment of patients ventral hernia with concomitant obesity Davlatov S., Abdusattarova S. 2 (Republic of Uzbekistan) Критерии выбора метода хирургического лечения больных с вентральной грыжей с сопутствующим

ожирением // European research: innovation in science, education and technology. – С. 84.

б. Мардонов Б. А. и др. Клинико-инструментальная характеристика послеоперационных вентральных грыж в выборе оптимального способа пластики //Достижения науки и образования. – 2020. – №. 1 (55).

#### КРИТЕРИИ ВЫБОРА ХИРУРГИЧЕСКОГО ЛЕЧЕНИЯ БОЛЬНЫХ С ВЕНТРАЛЬНЫМИ ГРЫЖАМИ И ОЖИРЕНИЕМ

Курбаниязов З.Б., Абдурахманов Д.Ш., Шамсиев О.Ф., Давлатов С.С.

**Резюме.** Обоснование. Одномоментные операции являются перспективным направлением современной герниологии. В связи с этим разработка объективных показаний и противопоказаний для выполнения одновременных вмешательств на органах брюшной полости и брюшной стенки у пациентов с вентральными грыжами чрезвычайно важна и влияет на подходы предлагаемого способа операции и технику ее выполнения. Цель. Улучшение результатов хирургического лечения больных с вентральными грыжами с сопутствующим ожирением путем совершенствования хирургической тактики. Материалы. Работа основана на анализе результатов хирургического лечения 164 больных ожирением с вентральными грыжами. Все операции были проведены в хирургическом отделении Первой клиники Самаркандского государственного медицинского института в период с 2009 по 2016 год. Пациенты были разделены на две группы: контрольная группа (72-43,9%) и основная группа (92-56, 1%). По показаниям пациентам контрольной группы была выполнена классическая герниопластика местными тканями и протезными материалами. В основной группе пациентам была выполнена грыжесечение с использованием сетчатых имплантатов с добавлением дерматолипэктомии. Результаты. Для оценки эффективности результатов лечения пациентов в обследуемых группах в качестве основных критериев использовались следующие параметры сравнения: - абдоминальные осложнения раннего послеоперационного периода; - экстраабдоминальные осложнения раннего послеоперационного периода; - раневые осложнения в раннем послеоперационном периоде; - отдаленные результаты хирургического лечения. Вывод. По словам Рамиреса, оптимальным типом герниопластической операции у пациентов с ожирением III – IV степени является сочетание абдоминопластических операций, дополненных мобилизацией прямых мышц живота. Надежность пластики грыжевых ворот обеспечивается полипропиленовым протезом, а мобилизация прямых мышц обеспечивает сохранение внутрибрюшного давления на начальных значениях. Протезирование грыж в сочетании с дерматолипэктомией улучшает качество жизни таких пациентов по всем параметрам. Эстетическая составляющая операции способствует появлению мотивации к снижению массы тела.

**Ключевые слова:** вентральные грыжи, ожирение, герниопластическая хирургия.