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ASSESSMENT OF THE QUALITY OF LIFE AFTER SURGICAL TREATMENT OF PATIENTS WITH PRIMARY POSTOPERATIVE VENTRAL HERNIA IN CONDITIONS OF COMORBIDITY

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Abstract

Improving the quality of life of patients after surgical treatment of primary and postoperative ventral hernias is a very urgent problem, which is explained by the increasing number of patients with this pathology, high rates of recurrences and complications in hernioplasty (4.3–46 %).

Objective. Improving the results of surgical treatment of patients with primary and postoperative ventral hernia under comorbidity by performing a comparative evaluation of different types of hernioplasty performed using quality of life indicators in the early and late postoperative period.

Materials and methods. The quality of life indicators were analyzed based on the SF-36 questionnaire after surgical treatment of 1419 patients with primary and postoperative ventral hernia under conditions of comorbidity, operated with patient's own tissue hernioplasty, onlay, sublay, inlay, CST techniques. The total number of patients questioned on the SF-36 questionnaire on quality of life was 527. In relation to all patients operated on by different methods of hernioplasty in the main group and comparison group (1419 persons), the number of patients questioned in the postoperative period was 37.14 %, ie more than a

third of all patients operated for the whole period of the study (2001–2017). pp). This demonstrates the representativeness of this sample population.

Results. The results of the study were found to be the most optimal for the use in the surgical treatment of primary ventral hernia (PVH) and postoperative ventral hernia (POVH) sublay and inlay technique, taking into account the lowest incidence of recurrence in their performance and the fastest recovery of the basic parameters of life of patients and quality of life in the postoperative period.

The indicators of physical and psychological components of health at this time of the survey were significantly higher in patients of the main group. This is probably due to the recorded recurrence of PVH [8] after own tissue hernia. Determination of health components after 1 year showed a slight improvement in both indicators relative to the previous survey data in all study groups ($p < 0.05$).

The psychological component of health was significantly higher in patients in the main group than in patients in the comparison group. (51.73 ± 6.37) points compared with the results of the 6-month survey, and slightly improved (46.81 ± 2.59) points) in the comparison group ($p > 0.05$).

Conclusions. The results of the study seriously suggest that there is a strong correlation between the type of surgical hernioplasty techniques used in patients with PVH and POVH the incidence of disease recurrence and, as a consequence, the quality of life of patients – an important comprehensive determinant of health.

Key words: primary ventral hernia; postoperative ventral hernia; comorbidity; quality of life.

Introduction. The problem of improving the quality of life of patients after surgical treatment of postoperative ventral hernias is quite urgent, which is explained by the increasing number of patients with this pathology, high rates of recurrences and complications in performing reconstructive surgery (4.3–46 %) [1, 2, 3]. Annually, around 20 million hernia repair surgeries are performed in the world, and up to 9 000 in Ukraine, accounting for 10 to 15 % of all surgical procedures performed in total. Every 8–10th patient is at risk of relapse [4]. It should be noted a significant increase in the number of patients with postoperative ventral hernia with overweight and concomitant morbid obesity [5, 6]. There is an opinion that the surgeon should be engaged only in the treatment of postoperative hernia, and the correction of the anterior abdominal wall should be carried out by a plastic surgeon, gradually losing its position and changing its format in favor of simultaneous performance of

hernioplasty and dermatolipectomy [7]. Therefore, the implementation of surgical interventions that reliably strengthen the anterior abdominal wall and at the same time lead to a decrease in body weight, significantly improves the quality of life of this category of patients in the long postoperative period [8]. Despite the surgical technique, one of the possible factors in reducing the quality of life is the type of mesh used. Polypropylene mesh (PPM) is the most common material for hernia reconstruction. PP mesh exhibit high strength. The size of scar tissue induced by the mesh depends on the number and structure of the PP mesh and is responsible for the strength of the abdominal wall [9, 10]. In 20 % of cases, "heavy" PP meshes of even small size caused a decrease in the mobility of the abdominal wall. [11, 12]. As a consequence, "lightweight" PP meshes were implemented that are strong enough to withstand the maximal exercise of the abdominal wall [13]. This contributed to the restoration of maximal mobility of the abdominal wall and the reduction of chronic pain [14, 15, 16].

Our study includes an assessment of the quality of life and allows us to comprehensively evaluate the results of surgical treatment and to perform a comparative analysis of the effectiveness of the various surgical procedures used in the quality of life of patients.

Objective. Improving the results of surgical treatment of patients with primary and postoperative ventral hernia under comorbidity by performing a comparative evaluation of different types of hernioplasty using quality of life indicators in the early and late postoperative period.

Materials and methods. The quality of life indices were analyzed based on the SF-36 questionnaire after surgical treatment of 1419 patients with PVH and POVH, who underwent surgery using own tissue hernioplasty, onlay, sublay, inlay, and CST techniques. The limitation of physical performance and daily activity caused the greatest discomfort to the respondents and reduced the quality of life, which should be taken into account when developing treatment programs and differential approach to rehabilitation of such patients.

The distribution of operated patients by type of hernioplasty in the postoperative period, questioned by questionnaire SF-36 on quality of life, is shown in Table 1.

Table 1

Technique of hernioplasty	Total number of patients interviewed by the SF-36 (n=527)							
	Comparison group (n=211)		Dermatolipectomy		Main group (n=316)		Dermatolipectomy	
	abs.	%	abs.	%	abs.	%	abs.	%
Own tissue hernioplasty	112	53.08	9	32.14	47	14.87	5	9.62
onlay technique	88	41.71	14	50.00	79	25.00	15	28.85
sublay technique	6	2.84	4	14.29	135	42.72	27	51.92
inlay technique	5	2.37	1	3.57	32	10.13	3	5.77
CST technique	-	-	-	-	23	7.28	2	3.85
Total	211	100	28	100	316	100	52	100

The total number of patients questioned by the SF-36 questionnaire on quality of life was 527. In relation to all patients operated on by different methods of hernioplasty in the main group and the comparison group (1419 persons), the number of patients questioned in the postoperative period was 37.14 %, that is more than a third of all patients operated for the whole study period (2001–2017). This demonstrates the representativeness of this sample population. Analyzing these data, we can note the following features: among the surveyed patients in the comparison group, the part of own tissue hernioplasty was 53.08 %, which is almost 3.5 times higher than in the main group. This indicates the use of more modern methods of hernioplasty in the main group (2010–2017). The superiority of hernioplasty using the onlay method in the comparison group relative to the main group (41.71 % versus 25.00 %) indicates the use of the newest technologies in the period from 2010 to 2017. Particularly striking differences are observed when comparing the sublay and inlay methods used in the surveyed patients by questionnaires SF-36 on quality of life in the study groups. Thus, the sublay technique was used only in 2.84 % of the respondents in the comparison group in the period 2001–2009 in relation to the proportion of the operated by the same method in the main group, which was 42.72 %. Regarding the newest CST method of hernioplasty, it should be noted its use only in the main group of the study – 7.28 % of all cases.

Among the operated patients who underwent hernioplasty in combination with dermatolipectomy, such regularities were observed. The proportion of dermatolipectomy increased threefold in case of surgery by sublay technique in the main group (51.92 %) relative to the comparison group (14.29 %). When using the onlay technique, on the contrary, the proportion of dermatolipectomy decreased almost twice (50.00 %) against (28.85 %).

The number of relapses in patients in the postoperative period after different types of hernioplasty in the main group and the comparison group should be considered particularly relevant in the course of our study. Analyzing the data obtained after the survey of the postoperative respondents (Table 2), it should be noted such features in the occurrence of relapses in comparison with the total number of operated by different methods of hernioplasty. In total, among all 1 419 people operated on for PVH and POVH, recurrence occurred in 250 patients, accounting for 17.62 %. Comparing the incidence of recurrence in the two study groups yielded the following results: the number of recurrences was almost three times higher in the comparison group than in the main group (27.14 % versus 10.71 %). This indicates a significant reduction in the overall relapse rate in the main study group and an improvement in the basic quality of life criteria, which is justified by the use of more recent progressive approaches and techniques in the treatment of patients with PVH and POVH.

Table 2

Technique of hernioplasty	Relapse after hernioplasty								
	Relapse in the comparison group (n=162)			Relapse in the main group (n=88)			Total relapse (n=250)		
	total	abs.	%	total	abs.	%	total	abs.	%
1	2	3	4	5	6	7	8	9	10
Own tissue hernioplasty	314	125	39,81	124	33	26,61	438	158	36,07
onlay technique	254	18	7,09	209	31	14,83	473	49	10,58
sublay technique	12	7	58,33	354	15	4,24	366	22	6,01
inlay technique	17	12	70,59	90	9	10,00	107	21	19,63
CST technique	-	-	-	20	-	-	20	-	-
CST technique + mesh	-	-	-	25	-	-	25	-	-
Total	597	162		822	88		1419	250	100

Comparative analysis data in both study groups by types of hernioplasty indicate significant differences in the occurrence of relapses and major indicators of quality of life according to the SF-36 Health Status Survey.

The use of own tissue hernioplasty and onlay technique resulted in a significant number of recurrences both in the comparison group and in the main group (39.81 % versus

26.61% when using the own tissue hernioplasty and 7.09 % versus 14.83 % when using onlay technique). According to the questionnaire, the quality of life of patients in the postoperative period decreased significantly at different ages, especially in patients of older age groups. This applies to various aspects of patients' life activities: physical function (PF) and role physical (RP); general health (GH), mental health (MH), and vitality (VT), as well as reduced social functioning (SF) and role emotional (RE) parameters.

The striking differences in the occurrence of relapses in the postoperative period were observed in the repair of hernia by the sublay technique in different groups of the study. Thus, the number of relapses in the main group with respect to the comparison group decreased significantly (4.24 % and 58.33 %, respectively). Therefore, the quality of life components of the operated patients by this method were significantly higher compared to the previous types of operative methods – own tissue hernia and onlay methods. This indicates a significant improvement in the technique of sublay hernioplasty and surgery techniques from 2010 to 2017. In this regard, the quality of life components of the operated patients by this method were significantly higher than the previous types of surgical procedures – own tissue hernioplasty and onlay technique. Particularly important criteria for improving the quality of life were: reducing the intensity of postoperative pain, increasing the parameters of physical function and role physical, general health and vitality, as well as mental health parameters.

Positive dynamics regarding the occurrence of relapses and improvement of quality of life were also noted during the surgical treatment of PVH and POVH according to the inlay technique. In the comparison group, the number of postoperative recurrences was quite high, accounting for 70.59 % of the total number of operated patients using this method. In the main group, the percentage of relapses was 10.00 %, that is, decreased 7 times. This was facilitated by the latest advanced surgery technology, which significantly improved the quality of life in the early postoperative period (after 1 month, 6 months), and in the remote postoperative period (after 1 year and 3 years).

Analyzing the data in Table 3, we can conclude that there is a significant difference in the two study groups – the comparison group and the main group, the frequency of recurrence depending on the technique used to eliminate hernias. The most significant difference was observed between the comparison group and the main group when applying the sublay and inlay techniques.

Table 3

Technique of hernioplasty	Relapse after hernioplasty				Student's t-test, t	P
	Relapse in the comparison group (n=162)		Relapse in the main group (n=88)			
	P ₁	m ₁	P ₂	m ₂		
1	2	3	4	5	6	7
Own tissue hernioplasty	39.81	3.88	26.61	3.47	2.63	<0.05
onlay technique	7.09	2.02	14.83	3.79	1.63	>0.05
sublay technique	58.33	3.87	4.24	2.15	12.21	<0.001
inlay technique	70.59	3.58	10.00	3.20	12.62	<0.001
CST technique	-	-				
CST technique + mesh	-	-	-			

The value of Student's t criterion was significantly higher than the maximum permissible value – 2.0 and was equal when using the sublay technique 12.21 and 12.62 when removing hernias by the inlay technique. The highest value was the probability of error-free prediction $p < 0.001$, which corresponds to 99.7 %, indicating that there is a significant difference between the frequency of relapse according to these methods in two experimental groups.

Thus, the results of the study were found to be the most optimal for the use in the surgical treatment of PVH and POVH sublay and inlay techniques, given the lowest incidence of relapses in their performance and the fastest recovery of the basic parameters of life of patients and quality of life in the postoperative period.

The indicators of physical and psychological components of health at this time of the survey were significantly higher in patients of the main group. This is probably due to the recorded recurrence of PVH (8) after own tissue hernioplasty. Determination of health components after 1 year showed a slight improvement in both indicators relative to the previous survey data in all study groups ($p < 0.05$).

The psychological component of health was significantly higher in patients in the main group than in patients in the comparison group. (51.73 ± 6.37) points compared with the results of the 6-month survey, and slightly improved ((46.81 ± 2.59) points) in the comparison group ($p > 0.05$).

Table 4

Quality of life components (standardized quality of life indicators)	Comparison group (n=112)			Main group (n=47)		
	1 month	6 months	1 year	1 month	6 months	1year
Physical health–PH	45.59 ± 1.81 *	45.82 ± 2.33 *	46.81 ± 2.59 *	45.67 ± 2.12 *	46.83 ± 2.23 **	51.73 ± 6.37 **
Bodily pain-BP	51.51 ± 1.81 *	51.47 ± 1.38	53.05 ± 1.14	51.36 ± 1.71	53.28 ± 1.23 *	54.35 ± 1.21 *
Mental health–MH	54.71 ± 5.48 *	57.54± 5.41 *	59.94± 6.27 ***	59,55± 6.19 **	61,20± 5.95 ***	67.04 ± 8.45 ***
Vitality – VT	41.36 ± 1,61 *	44.89 ± 2.23 *	43.64 ± 2.56 *	45.43 ± 2.18 *	42.83 ± 2.34 *	49.76 ± 6.35 *
Role-Physical Functioning – RP	50.48 ± 1.89 *	47.43 ± 1.33	51.02 ± 1.18	51.38 ± 1.72	53.23 ± 1.25 *	53.31 ± 1.21 *
Social Functioning – SF	51.54 ± 1.81 *	52,44 ± 1,38	53.01 ± 1.14	50.33 ± 1.71	51.21 ± 1.23 *	57.32 ± 1.21 *

Note. QOL for all groups of indicators is given in points as follows: a higher value indicates a higher QOL level; * - p <0.05 relative to postoperative data; ** - p <0.05 with previous data in a row; *** - p <0.05 compared to other hernia repair methods.

The physical component of health was not significantly different in these groups. This is due to a more rapid jump in indicators of the physical component of health in patients in the comparison group (from (46.8±2.59) points to (51.2±6.5) points). Exclusion criteria were: constricted hernia of the anterior abdominal wall, patients with concomitant diseases in the

stage of decompensation or exacerbation, which could affect the false positive results of immunological and biochemical studies (Table 4).

Analyzing the quality of life 3 years after surgery, we found significantly higher rates of physical and psychological components in patients of the main group than the comparison group. There was an improvement in the results of the previous year's questionnaire data in patients of the main group ($p > 0.05$).

Considerably insignificant, though considerable, growth in the physical component of health a month after surgery in both study groups was noted.

Subsequently, this indicator in the main group of patients increased steadily throughout the years, and in the comparison group up to 1 year after surgery it showed a slight increase and a more rapid jump in 2 and 3 years.

The psychological component of health, in contrast, in the comparison group increased evenly throughout all stages of the survey, in contrast to the indicators of the psychological component of the main group. There is a rapid increase in the psychological component of health immediately after surgery up to 1 year. In the future, the indicators, although significantly different from the previous ones, but increased slightly.

When analyzing the indicators of the physical component of health (Table 5), patients with PVH and POVH, operated by the onlay technique of hernioplasty and surveyed according to the SF-36 questionnaire on quality of life, noted higher results of all 6 components of health.

Among the patients of the main group, unlike the patients of the comparison group ($p < 0.05$), only the indicators "Role functioning due to physical condition" after 1 and 3 years and "General health" in 3 years after surgery among patients both groups were almost indistinguishable ($p > 0.05$). The Physical Functioning (PF) indicator of patients improved significantly one month after surgery in both study groups. Although this indicator increased from (39.1 ± 0.62) points to (41.04 ± 0.63) points in the main group, and only to (39.4 ± 1.22) points in the comparison group ($p < 0.05$), further we noted an increase in PF during all survey periods ($p < 0.05$) in the main study group. In the comparison group, only within 6 months after surgery, it was not significantly different from the previous one in this group.

Table 5

Quality of life components (standardized quality of life indicators)	Comparison group (n=88)			Main group (n=79)		
	1 month	6 months	1 year	1 month	6 months	1 year
1	2	3	4	5	6	7
Physical health (PH)	43.58 ± 1.81 *	42.82 ± 2.33 *	46.85 ± 2.59 *	45.67 ± 2.12 *	46.81 ± 2.23 * ** ***	51.76 ± 6.37 * ** ***
Bodily pain (BP)	52.51 ± 1.81 *	51.47 ± 1.38	53.05 ± 1.14	51.36 ± 1.71	53.28 ± 1.23 *	54.35 ± 1.21 *
Mental health (MH)	52.71 ± 5.48 *	57.51 ± 5.41 *	58.92 ± 6.28 * **	54.55 ± 6.18 * ***	61.20 ± 5.95 * ** ***	66.01 ± 8.48 * ** ***
Vitality (VT)	43.36 ± 1.61 *	44.84 ± 2.23 *	43.67 ± 2.56 *	45.45 ± 2.18 *	42.21 ± 2.34 *	44.74 ± 6.35 *
Role-Physical Functioning (RP)	50.48 ± 1.89 *	47.43 ± 1.33	51.02 ± 1.18	51.38 ± 1.72	53.23 ± 1.25 *	53.31 ± 1.21 *
Social Functioning (SF)	50,51 ± 1,81 *	52,44 ± 1,38	53.09 ± 1.14	50.37 ± 1.71	51.22 ± 1.23 *	57.78 ± 1.21 *

Note. QOL for all groups of indicators is given in points as follows: a higher value indicates a higher QOL level; * - p < 0.05 relative to postoperative data; ** - p < 0.05 with previous data in a row; *** - p < 0.05 compared to other hernia repair techniques.

Three years after surgery, the index was (46.8±1.93) and (45.1±0.5) points in the groups after autoplasty and aloplastic hernia defect, respectively. This indicates that, regardless of the method of hernioplasty in patients with PVH and POVH, the physical condition of patients did not differ significantly (p > 0.05). The relatively low values of this and other standardized indicators are explained by the fact that the majority of patients with PVH were over 55 years of age and had concomitant diseases.

The indicator of Role Functioning due to Physical Condition (RPst) before surgery was (48.5±1.82) points. In patients of the comparison group in the first 6 months after surgery, no significant difference in this indicator was observed. Only 1 year later, their RPst values ((50.7±2.67) points) differed from the values before surgery (p <0.05) and subsequently increased significantly. After 3 years, the RPst value in the comparison group patients reached (52.8±2.89). In patients of the main group, within 1 month after surgery, the index value was (50.6±2.55) points (p <0.05). In the following terms, the survey showed a significant improvement in physical condition in patients of the main group (p <0.05).

Improving the quality of life of patients with PVH and POVH, operated by the technique of sublay hernioplasty using modern surgical technologies, gave significant indicators of a significant improvement in quality of life in the early and late postoperative period (Table 6).

Table 6

Quality of life components (standardized quality of life indicators)	Comparison group (n=6)			Main group (n=135)		
	1 month	6 months	1 year	1 months	6 months	1 year
Physical health (PH)	43.58 ± 1.81 *	42.82 ± 2.33 *	46.85 ± 2.59 *	45.67 ± 2.12 *	46.81 ± 2.23 * ** ***	51.76 ± 6.37 * ** ***
Bodily pain (BP)	52.51 ± 1.81 *	51.47 ± 1.38	53.05 ± 1.14	51.36 ± 1.71	53.28 ± 1.23 *	54.35 ± 1.21 *
Mental health (MH)	52.71 ± 5.48 *	57.51 ± 5.41 *	58.92 ± 6.28 *	54.55 ± 6.18 * *	61.20 ± 5.95 * ** **	66.01 ± 8.48 * ** **
Vitality (VT)	43.36 ± 1.61 *	44.84 ± 2.23 *	43.67 ± 2.56 *	45.45 ± 2.18 *	42.21 ± 2.34 *	44.74 ± 6.35 *
Role-Physical Functioning (RP)	50.48 ± 1.89 *	47.43 ± 1.33	51.02 ± 1.18	51.38 ± 1.72	53.23 ± 1.25 *	53.31 ± 1.21 *
Social Functioning (SF)	50.51 ± 1.81 *	52.44 ± 1.38	53.09 ± 1.14	50.37 ± 1.71	51.22 ± 1.23 *	57.78 ± 1.21 *

Note. QOL for all groups of indicators is given in points as follows: a higher value indicates a higher QOL level; * - p <0.05 relative to postoperative data; ** - p <0.05 with previous data in a row; *** - p <0.05 compared to other hernia repair techniques.

The quality of life study provides important additional information on the impact of the disease and treatment on the patient's condition. These data show that indicators of physical and psychological components of health in patients with PVH and POVH before surgery were (44.49±1.46) and (51.39±2.08) points, respectively.

Survey results of patients 1 month after surgery showed that both components of health improved in both the main group and the comparison group ($p < 0.05$). However, no significant difference was found between physical component indicator in patients in both groups. The psychological component of health in the main group ((59.6 ± 6.19) points) was higher ($p < 0.05$) than in patients in the comparison group ((54.7 ± 5.48) points). After 6 months, significant ($p < 0.05$) improvement in physical and psychological health indices was observed in the main group relative to data obtained 1 month after surgery. These indices were (46.8±2.12) and (61.2±5.95), respectively, and were higher than those of the comparison group ($p < 0.05$). The physical health component of patients in this group increased only to (45.8±2.33) points ($p > 0.05$). However, the psychological component has improved significantly compared to the previous data. In both groups, approximately the same points were before the surgery as when the own tissue technique. After surgery, the indicators between the sublay and onlay techniques were average. After the hernia repair by the sublay technique there was a significant increase in points in the main group. In the main group, indicators of physical, psychological components, role functioning, and pain intensity increased significantly after 1 month and reached a peak by 1 year.

When evaluating each group by performed different surgical techniques of hernioplasty, combined with dermatolipectomy and liposuction, indicators after surgery (role functioning, physical and mental component) are always higher by 3-4 points in both experimental groups.

In the analysis of the indicator “Bodily pain” (BP) and its effect on the ability of patients to engage in daily activities of significant changes were found not only in patients in the comparison group after 6 months, and in the main group – 3 years after surgery relative to previous results. The BP indicator in the main group patients was significantly higher than in the comparison group. It improved from (47.58±2.74) points before surgery to (56.09±1.14) points in the main group and up to (55.48±1.41) points in the comparison group when questioning patients 3 years after the surgery ($p < 0.05$). This indicates that, as with inlay hernioplasty, pain did not disturb the patients or limit their activity. The value of the indicator “General Health” (GH) in patients with PVH and POVH before surgery was (50.3±3.14) points. Among the patients in the main group, a significant increase in this indicator was

observed in 1, 6 months, 1 and 3 years after surgery ($p < 0.05$). After 2 years, GHst remained unchanged in this group (55.25 ± 4.01). In the comparison group, its values were lower than in the main group at the questionnaire after 1, 6 months and 1 year ($p < 0.05$), which indicates a lower assessment of their health status by patients after inlay hernioplasty.

The values of GHst were not significantly different in the comparison group in 1 and 6 months after surgery relative to the data before surgery. But 1 year after surgery, an increase in values of the indicator was observed and in the subsequent its values almost reached the values of the alloplastic group ($p > 0.05$). Perhaps this is due to the fact that in the period up to 1 year recurrences of hernia after autoplasty were detected and subsequently these patients were removed from the examination.

Table 7

Quality of life components (standardized quality of life indicators)	Comparison group (n=5)			Main group (n=32)		
	1 month	6 months	1 year	1 month	6 months	1 year
Physical health (PH)	41.58 ± 1.81 *	42.82 ± 2.31 *	46.85 ± 2.59 *	47.63 ± 2.17 *	46.85 ± 2.23 * ** ***	58.71 ± 6.32 * ** ***
Bodily pain (BP)	52.51 ± 1.81 *	51.47 ± 1.34	53.08 ± 1.14	51.36 ± 1.75	53.29 ± 1.23 *	54.35 ± 1.22 *
Mental health (MH)	52.71 ± 5.48 *	57.51 ± 5.42 *	58.92 ± 6.28 *	54.55 ± 6.13 * *	61.20 ± 5.95 * ** **	66.01 ± 8.44 * ** **
Vitality (VT)	43.36 ± 1.68 *	44.84 ± 2.27 *	43.67 ± 2.58 *	45.45 ± 2.11 *	42.21 ± 2.34 *	44.74 ± 6.35 *
Role-Physical Functioning (RP)	50.48 ± 1.87 *	47.43 ± 1.35 **	51.02 ± 1.19 ***	51.39 ± 1.72 **	53.23 ± 1.28 **	53.31 ± 1.25 *
Social Functioning (SF)	59.51 ± 1.87 *	52.44 ± 1.38 **	53.09 ± 1.14 **	50.37 ± 1.71 **	51.22 ± 1.29 ***	57.78 ± 1.21 ****
Note. QOL for all groups of indicators is given in points as follows: a higher value indicates a higher QOL level; * - $p < 0.05$ relative to postoperative data; ** - $p < 0.05$ with previous data in a row; *** - $p < 0.05$ compared to other hernia repair techniques.						

In the analysis of the components of the mental component (Table. 7) we revealed that the indicators of “Vitality”, “Social functioning”, “Role-Physical Functioning” were significantly higher in patients of the main group ($p < 0.05$) during all the survey periods. No significant difference was found when comparing the “Mental Health” indicators of both groups at the questionnaire 6 months and 1 year after the surgery.

Conclusions

1. The results of the study seriously suggest that there is a strong correlation between the type of surgical hernioplasty techniques used in patients with PVH and POVH, the incidence of disease recurrence and, as a consequence, the quality of life of patients – an important comprehensive determinant of health.

2. With a probability of an error-free prediction $p > 95.5\%$, the feasibility of using sublay and inlay hernioplasty techniques can be asserted, given the lowest incidence of recurrence and the fastest recovery of the basic parameters of patient life and quality of life in the postoperative period, especially in the main one.

3. The results of the study showed a significantly lower incidence of recurrences of postoperative interventions by the sublay and inlay technique, and the quality of life according to the basic parameters of the SF-36 questionnaire in the surveyed patients was restored at a much faster rate compared to the group of patients operated on by their own tissue hernioplasty.

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