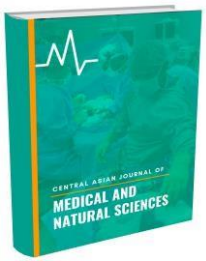

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Article

Dynamics of Quality of Life in Patients with Combined Post-Burn Cicatricial Strictures of the Esophagus and Stomach

Nizamkhodjaev Zayniddin Makhamatovich[1], Ligai Ruslan Efimovich[2], Khadjibaev Jamshid Abduazimovich[3], Abdullaev Davran Sabirovich[4]

1. Doctor of Medical Sciences, Republican Specialized Scientific and Practical Medical Center for Surgery Named after Academician V.Vakhidov, Republic of Uzbekistan, Tashkent
* Correspondence: badyu@mail.ru
2. Doctor of Medical Sciences, Republican Specialized Scientific and Practical Medical Center for Surgery Named after Academician V.Vakhidov, Republic of Uzbekistan, Tashkent
* Correspondence: docligay73@rambler.ru
3. PhD., Republican Specialized Scientific and Practical Medical Center for Surgery Named after Academician V.Vakhidov, Republic of Uzbekistan, Tashkent
* Correspondence: j.khadjibaev@mail.ru
4. Republican Specialized Scientific and Practical Medical Center for Surgery Named after Academician V.Vakhidov, Republic of Uzbekistan, Tashkent
* Correspondence: davronbekabdullaev56@gmail.com

Abstract: Performed diagnosis and treatment of combined post-burn scar constrictions of the esophagus and stomach depending on the stage of burn disease in 247 patients, men were 112 (45.3%) and women - 135 (54.7%) aged 18-73 years (mean age - 34.62±3.43 years). Patients of working age (19-59 years) prevailed - 235 (95.1%). Depending on the prevalence of esophageal and gastric lesions, based on the subjective assessment of the quality of life of the studied patients it is necessary to change the surgical tactics, so the prevalence of esophageal lesions definitely needs early treatment, for combined lesions without prevalence of gastric or esophageal lesions at the same nutritional status the terms of the burn disease do not matter, in case of combined post-burn scar constrictions of esophagus and stomach with prevalence of gastric lesions the surgical correction is effective also at any stage.

Keywords: combined post-burn scar constrictions of esophagus and stomach, dynamics of quality of life, effectiveness of surgical tactics

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1. Introduction

Currently, the treatment of combined burns of the esophagus and stomach continues to be an urgent problem of thoracoabdominal surgery. This is due to the presence of not one, but two levels of obstruction of the digestive tract – esophagus and stomach, which leads to a sharp violation of the alimentary status of patients [1]. The frequency of combined burns of the esophagus and stomach according to various authors ranges from 15 to 53% [2].

Patients with chemical burns of the upper gastrointestinal tract account for up to 32% of patients in acute poisoning treatment units, and burns of the esophagus and stomach have a frequency of occurrence of 15-16 cases per 10,000 among adolescents and 7-8 among adults, the gender ratio of pathology is 1:2 with a predominance of men [3].

The main objectives of the treatment of this category of patients is to restore the patency of the esophagus and stomach. Augmentation remains the main method of treating esophageal strictures. However, it cannot be used for stomach constrictions. The appearance of modern hydroballon dilators opens up new possibilities in the treatment of patients with combined lesions [4], [5]. However, their capabilities in ensuring the restoration of evacuation from the stomach at the stages of providing medical care to patients with combined burns still remain unexplored [6], [7].

Analyzing the data of modern literature, it can be concluded that there is still no single generally accepted treatment strategy for this category of patients. In patients with combined lesions of the stomach and esophagus, unusual clinical situations almost often occur, which are rarely repeated in different patients. This explains the broad approach and sometimes diametrically opposed points of view on the choice of surgical treatment for this category of patients.

A positive result of treatment can be achieved only if the correct choice of treatment tactics is made at each stage, which will reduce the duration of treatment and in most cases achieve restoration of the function of the upper digestive tract.

In this regard, we have determined the purpose of the study: to assess the dynamics of the quality of life of patients with post-burn scarring of the esophagus and stomach as a tool for evaluating the effectiveness of surgical treatment.

2. Materials and Methods

This research work is based on the experience of the Department of Surgery of the esophagus and stomach of the Republican Specialized Scientific and Practical Medical Center for Surgery Named after Academician V.Vakhidov, in which 247 patients with post-burns scarring of the esophagus and stomach were hospitalized and treated from 1990 to 2022.

There were 112 men (45.3%) and 135 women (54.7%). The age ranged from 18 to 73 years, with an average of 34.62±3.43 years. Patients of working age (19-59 years old) prevailed – 235 (95.1%), which emphasizes the high social significance of this problem.

The prevalence of chemical acid burns in patients with combined post–burns and scarring of the esophagus and stomach was found in 209 (84.6%), compared with alkalis 16 (6.4%) and unknown liquids 22 (9%). In the vast majority of cases, acetic essence was the cause of burns in women – 116 (85.9%), while technical liquids (inorganic acids, alkalis) were the cause of burns in only 19 (14%) patients. In men, acetic essence was the cause of burns in only 44 (39.3%) patients, the intake of various technical liquids was noted in 68 (60.7%), which is more than 4 times higher relative to women.

In patients under the age of 19, the main reagent was acetic essence (95.5%), then with increasing age there is a decrease in the number of patients with acetic essence burns: from 19 to 44 years – in 64.5%, from 45 to 59 years – in 61.8% and from 60 to 74 years – only in 25% patients. On the contrary, with the age of patients, the number of burns with various technical liquids (inorganic acids, alkalis) increases, as well as burns with unknown reagents.

Patients underwent anamnestic, clinical, laboratory and social research methods (quality of life), X-ray contrast examination of the esophagus and EGDFS. We conducted a comprehensive assessment of the quality of life using the digital rating scale (DRS), the hospital anxiety and depression scale (HADS) [8], the Spielberger STAI Test and the SF-36 questionnaire.

The obtained results were subjected to scrupulous statistical processing in full in the Microsoft Office Excel – 2019 software package using methods of variational parametric and nonparametric statistics.

3. Results and Discussion

We considered it advisable to divide patients into three groups, depending on the degree of predominance of the clinic of esophageal obstruction or impaired evacuation from the stomach, as well as depending on the time since the burn.

43 patients were included in group I, which was 17.4%. Of the 43 patients, 21 (48.8%) patients treated in the early post-burn period (A subgroup), and 22 (51.2%) patients in the late (B subgroup). In the clinical picture and according to instrumental examination methods, the clinic of gastric evacuation disorders prevailed in patients. At the same time, in the presence of cicatricial deformation of the esophagus, violations of its patency were not established or were expressed minimally, which did not require instrumental and surgical interventions.

101 patients were included in group II, which was 40.9%. In the early post-burn period, 60 (59.4%) patients (A subgroup) were admitted, and in the late 41 (40.6%) patients (B subgroup). In these patients, a violation of the patency of the esophagus was prevalent in the clinical picture, and therefore, there was no need for reconstructive interventions on the stomach in this group.

Group III included 103 patients, which was 41.7%. All patients were treated in the late post-burn period in whom it was impossible to determine the prevalence of esophageal obstruction or gastric evacuation disorders, which were expressed equally and required simultaneous or step-by-step instrumental or surgical correction.

Subgroup III consisted of 51 (49.5%) patients whose condition did not allow for radical simultaneous surgery and they underwent esophageal augmentation and/or palliative interventions, since augmentation solved the issue only with esophageal stricture, but not in all cases, and the scarring process in the stomach required correction. However, the amount of intervention was minimal and limited to either bypass anastomosis or local plastic surgery.

Subgroup III included 52 (50.5%) patients whose condition was satisfactory and allowed for radical correction of both esophageal and gastric stenosis.

In group IB, the general condition of patients at admission significantly exceeds that of group IA (8.23±0.49 and 6.48±1.27 points, respectively) ($P \leq 0.05$), an identical trend is observed in the symptom of dysphagia (7.81±0.72 and 6.07±0.56 points, respectively) ($P \leq 0.05$), and the reverse trend characterizes the symptom of pain – 5.38±1.07 points in the IB group and 7.86±0.81 in the IA group ($P \leq 0.05$). We tend to explain this only by the stage of burn disease and the incomplete scarring process in group IA.

High reactive and situational anxiety according to the Spielberger STAI test was characterized during hospitalization of patients with post–burn scarring of esophageal and gastric constrictions with the prevalence of gastric evacuation disorders of both subgroups - it was interpreted as high (≥45 points). The tendency to decrease reactive and situational anxiety was demonstrated by patients of both subgroups already from the end of treatment and throughout the entire follow-up period ($P<0.05$). However, we did not record a significant difference between the subgroups throughout the entire catamnesis.

When analyzing the results of the SF-36 questionnaire of patients with post-burns, scarring of esophageal and gastric constrictions with the prevalence of gastric evacuation disorders of both subgroups in comparison with general population indicators. We have noted a sharp almost fourfold decrease in the quality of life on the physical functioning (PF) scale, which is undoubtedly due to their pathology, leading to a sharp restriction of daily physical activity, not limited by the state of health, which, of course, affects the role of physical functioning (RP). A decrease in the quality of life according to the somatic pain (BP) parameter characterizes the prevalence of subjective pain in patients of the IA subgroup, although without a significant difference with the IB subgroup in limiting daily activities.

Our subjects' subjective assessment of their own general health (GH) at admission was also reduced from the general population norm by almost 4 times in both subgroups, with a slightly worse trend characterizing the IB subgroup.

The quality of life on the viability (VT) scale was found to be almost twofold reduced relative to the general population norm, which is quite logical, given the developing alimentary disorders that necessarily affect the vitality, vivacity and energy of the studied patients of both subgroups.

Social functioning (SF) demonstrates to us the socialization of the subjects, a decrease in the indicators of this subscale in patients of the IA subgroup was found 4.5 times, in the IB subgroup – 5 times relative to the general population norm, which indicates a decrease in the frequency and quality of relationships with friends, relatives, colleagues and with people around them.

Low scores on role-based emotional functioning (RE) indicate a significant impact of a depressed emotional state on daily life, so in both subgroups the average score on this scale is reduced relative to the general population norm by about 4 times.

A subjective assessment of mental health (MN) shows us the patient's mood, happiness, calmness, and peace of mind. In our study, upon admission, patients with post–burn scarring of esophageal and gastric constrictions with a predominance of gastric evacuation disorders in the IA subgroup showed a 2.7-fold decrease in results relative to the general population norm, and in the IB subgroup - by 3.2 times.

But it should be noted that there was no significant difference on the scales of the SF-36 questionnaire at admission, although the greatest difference was found in the viability parameter (VT), lower in somatic pain (BP) and mental health (MN).

The dynamics of improvement in quality of life indicators according to the SF-36 questionnaire scales is similar in patients of both subgroups and at no stage of the examination had a statistically significant difference between the subgroups.

Based on the obtained results of studying the quality of life, we can conclude that the subjective similarity of both surgical procedures for patients, i.e., with adequately and competently performed surgical intervention, the duration of surgical intervention relative to the duration of gastric burn disease is practically irrelevant for patients.

Table 1. Dynamics of subjective assessment of their own condition and symptoms by patients with post-burn scarring of the esophagus and stomach with the prevalence of gastric evacuation disorders depending on the duration of intervention (n=43)

Scales		Terms of observation							
		I A (n=21)				I B (n=22)			
		Before treatment	After treatment	After 6 months	After 12 months	Before treatment	After treatment	After 6 months	After 12 months
DRS	Pain	7,86±0,81	5,32±0,78	4,38±1,23	3,65±1,36	5,38±1,07*	5,42±1,12	3,82±0,71	2,16±0,65#
	Dysphagia	6,07±0,56	2,23±0,49#	4,76±1,72#	3,12±1,69#	7,81±0,72*	2,18±0,62#	2,11±0,54#	1,89±0,51#
	General condition	6,48±1,27	4,37±0,85#	4,08±0,63#	3,23±0,72#	8,23±0,49*	4,23±0,71#	3,28±0,53#	2,36±0,47#
HADS	Anxiety	9,65±1,23	7,23±0,74	5,13±0,72#	5,07±0,68#	10,37±0,93	7,19±0,69	6,03±0,84#	5,32±0,78#
	Depression	10,78±1,17	7,71±0,89#	6,07±0,77#	5,12±0,63#	11,17±0,87	7,96±0,79#	6,28±0,89#	5,41±0,91#
STAI anxiety	Situational	58,37±4,57	44,63±3,62#	32,29±3,62#	29,18±2,13#	62,39±5,13	43,52±3,67#	34,18±3,41#	29,63±2,23#
	Reactive	52,38±4,69	40,12±4,17#	30,19±2,65#	27,32±2,85#	57,84±4,69	41,61±3,19#	32,52±2,68#	28,15±2,75#
SF-36	PF	16,38±4,79	35,83±6,48#	47,39±7,62#	47,85±7,38#	15,69±5,23	36,27±6,62#	48,95±7,63#	49,32±7,27#
	RP	15,36±4,52	34,89±5,39#	47,18±6,98#	47,92±7,62#	15,08±5,36	36,09±6,27#	48,88±6,54#	50,07±7,39#
	BP	14,28±2,37	28,69±7,27#	47,43±7,56#	47,74±6,52#	18,17±4,57	25,38±5,89#	48,52±7,08#	50,11±7,45#
	GH	16,27±1,39	32,75±6,51#	47,72±6,95#	47,86±7,08#	15,23±5,69	30,85±6,38#	48,28±6,98#	50,17±7,04#
	VT	23,69±4,57	41,18±7,28#	47,58±6,27#	48,07±7,12#	16,72±6,08	39,23±6,57#	42,37±6,84#	50,23±7,21#
	SF	12,26±2,49	20,45±6,31	41,37±6,08#	44,28±6,74#	10,27±4,54	21,89±5,34#	42,37±6,46#	48,12±7,05#
	RE	14,57±3,67	36,87±5,74#	38,79±5,82#	39,16±6,19#	13,52±5,37	35,81±6,09#	38,27±6,08#	41,28±7,32#
	MH	19,62±3,82	30,18±6,49#	35,62±5,87#	38,27±7,85#	16,37±5,21	32,13±6,28#	36,29±6,09#	40,53±7,64#

Note: PF – physical functioning, RP – role–based physical functioning, BP – somatic pain, GH – general health, VT – vitality, SF – social functioning, RE – role-based emotional functioning, MN - mental health.

* - the difference is statistically significant relative to the identical indicator of the parallel group at the level of $P < 0.05$. # - the difference is statistically significant relative to the indicator before the treatment of its group at the level of $P < 0.05$.

Taking into account the greater increase in the severity of the condition due to impaired evacuation of food from the stomach and the increase in anxiety and depression, reactive and situational anxiety of patients to a clinical level, we came to the conclusion that it is advisable to conduct earlier surgical interventions in such patients, which will avoid the mental and social consequences of post-burn scarring of the esophagus and stomach with the prevalence of clinic evacuation disorders from the stomach and at an earlier date will restore the mental health and socialization of patients, not to mention the physical component of health.

In subgroup II B, the general condition of patients at admission is slightly higher than that of subgroup II A (8.36±0.79 and 7.52±1.12 points, respectively), an identical trend characterizes the symptom of dysphagia (8.92±0.82 and 7.87±0.79 points, respectively) and the symptom of pain – 8.16± 1.12 points and 7.54±0.78 points, respectively). We tend to explain this by the stage of burn disease and the stage of the scarring process, which aggravated the symptoms, as well as the presence of cachexia in most patients of subgroup II B.

At the time of hospitalization, the scores of the HADS scale of patients of the II A subgroup anxiety and depression were subclinical on the edge of the clinic, and in the II B subgroup the average scores corresponded to clinical anxiety and depression, although we did not find a statistically significant difference between the groups. This is explained by severe dysphagia and the entire clinical picture of post-burn scarring of the esophagus and stomach with the prevalence of esophageal patency disorders.

There was no statistically significant difference between the groups according to the components of the HADS scale after treatment throughout the study, but a significant difference was achieved with the baseline values in both groups ($P<0.05$).

We found high levels of situational and reactive anxiety according to the Spielberger STAI test before the start of treatment in patients of both subgroups of group II of post-burn cicatricial narrowing of the esophagus and stomach with a predominance of the clinic of esophageal patency (≥45 points), and in subgroup II these symptoms were slightly increased relative to subgroup II, although they did not have a statistically significant difference ($P\geq0.05$).

In both subgroups of group II, these symptoms tended to decrease starting from the end of treatment and throughout the entire follow-up period, demonstrating statistically significant changes towards normalization relative to the baseline values of each of the subgroups ($P<0.05$), but without significant difference between the subgroups throughout the study.

When analyzing the results of the SF-36 questionnaire of patients with post–burns, scarring of esophageal and gastric constrictions with a predominance of the clinic of esophageal patency disorders of both subgroups in comparison with general population indicators, we revealed in subgroup II A A decrease in the quality of life on the physical functioning (PF) scale by 2.86 times and in subgroup II - by 3.38 times, most likely due to It was precisely the pathology we studied, which naturally caused a sharp restriction of daily physical activity and a decrease in role–playing physical functioning (RP) - by 3.32 times in subgroup II and 3.42 times in subgroup II.

A decrease in the quality of life in terms of somatic pain (BP) characterizes the strength of subjective pain in patients of both subgroups of group II, and in subgroup II this indicator (15.78±3.07 points) is 3.32 times lower than the age norm, and in subgroup II (23.14±6.87 points) – 2.27 times lower than the age norm, which we tend to explain by the almost completed scarring process of burn disease in II In the subgroup of patients.

The general state of health (GH) before treatment was reduced from the general population norm almost three times in both subgroups, and almost equally.

The quality of life on the viability (VT) scale was found to be 1.8 times lower relative to the general population norm in subgroup II A and 2.85 times in subgroup II in patients, which is quite logical, given the developing alimentary disorders that necessarily affect the vitality, vigor and energy of the studied patients of both subgroups.

Social functioning (SF) shows a clear decrease in indicators in the II A subgroup by 2.65 times, and in the II In the subgroup of patients – by 4.27 times relative to the general population norm, which indicates a decrease in the frequency and quality of relationships with friends, relatives, colleagues and with other people.

Low scores on role-based emotional functioning (RE) indicate a significant impact of a depressed emotional state on daily life, so in subgroup II it was reduced by 3.14 times, and in subgroup II In patients – by 4.3 times, which demonstrates the worst emotional state in the group with late-stage burns of post-burn scarring of the esophagus and stomach with the prevalence of esophageal patency disorders in the clinic.

A subjective assessment of mental health (MN) shows us the patient's mood, happiness, calmness, and peace of mind. In our study, upon admission, patients of the II A subgroup showed a fivefold decrease in results relative to the general population norm and in the II B subgroup – by 4.6 times.

This state of affairs clearly demonstrates the importance of esophageal patency disorders for the mental state of patients, since the rate of mental health recovery lagged behind the rest of the SF-36 questionnaire.

It should be noted that a statistically significant difference ($P \leq 0.05$) between the subgroups on the scales of the SF-36 questionnaire at admission was found only in terms of viability (VT) and social functioning (SF).

Table 2. Dynamics of subjective assessment of their own condition and symptoms by patients with post-burn scarring of the esophagus and stomach with the prevalence of esophageal patency disorders depending on the duration of intervention (n=101)

Scales		Terms of observation							
		II A (n=60)				II B (n=41)			
		Before treatment	After treatment	After 6 months	After 12 months	Before treatment	After treatment	After 6 months	After 12 months
DRS	Pain	7,54±0,78	5,17±0,84	5,08±1,92	4,47±1,43	8,16±1,12	5,62±1,27#	4,42±0,93#	3,18±0,85#
	Dysphagia	7,87±0,79	3,18±0,56#	4,84±1,90#	4,76±1,89#	8,92±0,82	3,05±0,72#	2,12±0,42#	2,07±0,46#
	General condition	7,52±1,12	4,33±0,84#	4,08±1,36#	3,87±1,52#	8,36±0,79	4,08±0,73#	3,19±0,49#	2,16±0,44#
HADS	Anxiety	10,48±1,34	9,17±0,78	8,34±0,98#	7,67±0,89#	11,89±1,23	9,86±1,19	8,17±0,89#	6,38±0,72#
	Depression	11,24±1,45	9,22±0,88	8,37±0,87#	7,42±0,83#	11,97±1,44	9,87±0,96	8,21±0,83#	7,45±0,90#
STAI anxiety	Situational	60,02±4,46	43,62±4,66#	37,44±4,13#	32,13±3,87#	68,19±5,24	43,17±4,07#	41,11±4,42#	30,61±3,17#
	Reactive	62,23±4,74	44,16±4,67#	38,11±4,61#	30,31±3,75#	67,44±4,52	46,64±4,39#	39,18±3,78#	29,85±3,55#
SF-36	PF	18,48±4,29	33,43±5,38#	44,19±5,22#	45,15±5,98#	16,09±4,24	38,22±5,92#	47,93±5,93#	49,33±6,07#
	RP	16,06±4,02	32,49±5,45#	43,12±5,92#	45,02±5,42#	15,58±5,28	36,89±5,23#	44,18±5,58#	47,57±5,69#
	BP	15,78±3,07	29,67±6,07#	48,73±6,76#	49,75±5,72#	23,14±6,87	30,62±5,44#	46,54±6,88#	51,12±6,65#
	GH	17,44±3,59	34,55±6,17#	46,32±6,05#	47,66±5,66#	18,21±5,79	36,82±5,68#	45,58±5,98#	50,27±6,04#
	VT	29,66±4,47	47,12±5,88#	49,58±5,24#	50,77±5,13#	18,42±5,05*	39,73±5,69#	46,87±5,87#	49,83±5,29#
	SF	19,86±3,23	39,55±4,33	43,38±5,28#	48,78±5,72#	12,32±3,42*	36,17±5,17#	46,18±6,12#	47,22±6,75#
	RE	16,55±3,87	35,47±5,44#	38,59±5,44#	41,19±5,89#	12,12±3,87	34,82±5,17#	37,47±5,88#	41,08±5,92#
	MH	10,22±1,54	19,52±2,19#	25,63±3,46#	28,24±4,05#	11,14±1,91	22,14±2,20#	26,17±3,05#	30,56±4,12#

Note: PF – physical functioning, RP – role–based physical functioning, BP – somatic pain, GH – general health, VT – vitality, SF – social functioning, RE – role-based emotional functioning, MN - mental health.

* - the difference is statistically significant relative to the identical indicator of the parallel group at the level of $P < 0.05$. # - the difference is statistically significant relative to the indicator before the treatment of its group at the level of $P < 0.05$.

The dynamics of improvement in quality of life indicators according to the SF-36 questionnaire scales are similar in patients of both subgroups and at no stage of the examination had a statistically significant difference between the subgroups, but always significantly differed from the indicators before treatment in each subgroup.

Based on the obtained results of studying the quality of life, we can conclude that there is some subjective similarity for patients of both management tactics, however, in terms of viability and social functioning, levels of anxiety and depression of HADS, as well as situational and personal anxiety according to the Spielberger STAI test, we tend to conclude that early interventions are mainly necessary for post-burn scarring of esophageal constriction and stomach with the prevalence of esophageal patency disorders, as this will have a more beneficial effect on patients in the future with a significantly smaller volume of surgical interventions, and, therefore, more economically effective.

In both subgroups of group III, the general condition of patients at admission is correlated with each other and significantly exceeds the indicators of groups I and II ($P < 0.05$), the same pattern is observed with dysphagia and pain according to DRS, which is explained by the volume of lesion and the general clinical severity of patients, as well as alimentary cachexia in most patients.

This group of patients has obviously the most severe clinical symptoms due to post-burn scarring of the esophagus and stomach with an equivalent clinical picture of esophageal obstruction and impaired evacuation from the stomach, which leaves its mark on both surgical tactics and the clinical condition of the subjects.

At the time of hospitalization, the scores of the HADS scale of patients of both subgroups on the "anxiety" and "depression" scales corresponded to clinical anxiety and depression, although we did not find a statistically significant difference between the subgroups, but the difference with groups I and II was statistically significant for subgroups ($P<0.05$). This condition is caused by severe dysphagia and the entire clinical picture of post-burn scarring of the esophagus and stomach with an equivalent clinical picture of esophageal obstruction and impaired evacuation from the stomach.

According to the components of the HADS scale, there was no statistically significant difference between the groups after treatment throughout the study, but a significant difference was achieved with baseline values in both groups only at 6 and 12 months ($P<0.05$), i.e. even successful surgical intervention did not help patients overcome clinically significant depression and anxiety, in patients both subgroups of group III after treatment revealed subclinical anxiety and depression on the verge of clinical, which is explained by the severity of the somatic condition and the total volume of one- or multi-stage intervention.

We found a very high level of situational and reactive anxiety according to the Spielberger STAI test before treating patients of both subgroups of group III of post-burn scarring of the esophagus and stomach with an equivalent clinical picture of esophageal obstruction and impaired evacuation from the stomach (≥45 points, with a maximum of 80 points), and in subgroup III these symptoms are somewhat enhanced relative to III A Although the subgroups did not have a statistically significant difference ($P\geq0.05$), in particular situational anxiety associated with extensive damage to the esophagus and stomach and the need for complex and severe surgical intervention.

In both subgroups of group III, all of the above symptoms tended to decrease starting only 6 months after treatment throughout the remaining follow-up period, demonstrating statistically significant changes towards normalization relative to the baseline values of each of the subgroups ($P<0.05$), but without significant difference between the subgroups throughout the study.

It should also be noted that in groups I and II, most of the studied indicators had a statistically significant difference from the level before treatment at the end of treatment,

while in group III these indicators acquired statistical significance only 6 months after the end of treatment, which indicates a protracted recovery process after volumetric interventions in patients with post-burns scarring of narrowing of the esophagus and stomach with an equivalent clinical picture of esophageal obstruction and impaired evacuation from the stomach.

When analyzing the results of the SF-36 questionnaire of patients with post-burns, scarring of esophageal and gastric constrictions with an equivalent clinical picture of esophageal obstruction and impaired evacuation from the stomach of both subgroups in comparison with general population indicators, we revealed and stated the practical identity of the indicators of both subgroups on all scales of the questionnaire.

In patients of group III, a decrease in the quality of life on the physical functioning (PF) scale was found to be 2.83 times due to severe post-burn scarring of the esophagus and stomach with an equivalent clinical picture of esophageal obstruction and impaired evacuation from the stomach, which naturally caused a sharp restriction of daily physical activity and a threefold decrease in role-playing physical functioning (RP).

A decrease in the quality of life in terms of somatic pain (BP) characterizes the strength of subjective pain in patients of both subgroups of group III by 2.63 times lower than the age norm, due to the severity of the condition of patients with post-burns scarring of esophageal and gastric constrictions with an equivalent clinical picture of esophageal obstruction and impaired evacuation from the stomach.

The general state of health (GH) before treatment was reduced from the general population norm by 2.88 times in almost the same way in both subgroups of group III.

The quality of life on the viability (VT) scale was recorded 2.3 times lower than the general population norm, taking into account alimentary disorders and the severity of lesions of the esophagus and stomach, reducing the vitality, vigor and energy of patients with post-burns scarring of the esophagus and stomach with an equivalent clinical picture of esophageal obstruction and impaired evacuation from the stomach.

Table 3. Dynamics of subjective assessment of their own condition and symptoms by patients with post-burn scarring of the esophagus and stomach with an equivalent clinical picture of esophageal obstruction and impaired gastric evacuation (n=103)

Scales		Terms of observation							
		III A (n=51)				III B (n=52)			
		Before treatment	After treatment	After 6 months	After 12 months	Before treatment	After treatment	After 6 months	After 12 months
DRS	Pain	8,87±0,69	6,76±0,68#	5,17±1,02#	4,74±1,03#	8,96±0,82	6,72±1,03#	4,82±0,71#	4,48±0,98#
	Dysphagia	8,97±0,78	5,68±0,86#	4,89±1,15#	4,26±1,09#	8,94±0,95	6,05±0,82#	4,72±0,92#	4,09±0,96#
	General condition	8,86±1,02	6,83±0,88#	5,08±1,06#	4,87±1,02#	8,96±0,88	6,07±1,03#	4,45±0,89#	4,14±0,89#
HADS	Anxiety	12,75±1,85	10,24±0,89	8,44±0,76#	7,61±0,88#	12,88±1,93	10,82±1,05	8,36±0,82#	7,36±0,78#
	Depression	12,45±1,38	10,17±0,79	8,66±0,90#	7,64±0,89#	12,36±1,39	10,91±1,06	8,40±0,91#	7,50±0,88#
STAI anxiety	Situational	66,17±4,85	45,84±4,98#	38,37±4,77#	34,28±4,06#	70,56±5,23	45,10±4,63#	40,13±4,56#	32,75±4,05#
	Reactive	67,81±5,11	47,62±4,95#	40,24±4,92#	35,17±4,69#	69,85±4,76	50,15±4,75#	42,42±4,69#	33,48±4,14#
SF-36	PF	18,51±4,32	32,33±5,23#	43,17±5,12#	44,15±5,23#	18,27±4,56	32,48±5,46#	44,04±5,78#	44,86±5,77#
	RP	17,12±4,46	31,44±5,28#	43,15±5,67#	45,18±5,56#	17,18±4,77	30,99±5,78#	42,56±5,76#	45,56±5,76#
	BP	19,88±4,45	26,65±4,34	38,63±5,68#	42,56±5,45#	20,03±4,45	25,66±5,04	39,05±4,74#	41,15±4,95#
	GH	18,23±4,27	27,50±5,12	35,18±5,28#	37,45±5,23#	18,26±4,62	26,56±5,17	35,59±5,56#	38,23±5,62#
	VT	22,64±4,65	31,28±4,85	37,55±5,56#	42,34±5,07#	23,05±5,17	29,58±5,45	36,27±5,57#	43,22±5,28#
	SF	18,47±4,11	29,07±4,22	34,55±5,40#	41,58±5,56#	19,00±4,23	27,77±5,02	36,07±5,88#	40,74±5,77#
	RE	18,53±4,15	25,43±5,05	34,58±5,41#	41,45±5,49#	19,10±4,17	24,89±4,97	35,07±5,38#	41,58±5,88#
	MH	10,42±1,55	18,78±2,08#	35,88±3,56#	41,52±4,18#	11,25±1,66	20,17±2,16#	36,28±3,88#	40,96±4,27#

Note: PF – physical functioning, RP – role–based physical functioning, BP – somatic pain, GH – general health, VT – vitality, SF – social functioning, RE – role-based emotional functioning, MN - mental health.

* - the difference is statistically significant relative to the identical indicator of the parallel group at the level of $P < 0.05$. # - the difference is statistically significant relative to the indicator before the treatment of its group at the level of $P < 0.05$.

Social functioning (SF) demonstrates a clear decrease in indicators in group III by 2.8 times relative to the general population norm, which clearly demonstrates the loss of relationships with loved ones and others.

Role-based emotional functioning (RE) also demonstrates a 2.8-fold decrease relative to the general population norm and a decrease in emotions in the daily life of patients with post-burn scarring of esophageal and gastric constrictions with an equivalent clinical picture of esophageal obstruction and impaired evacuation from the stomach.

The subjective assessment of mental health (MN) reflects the level of mood, happiness, calmness and peace of mind in patients with post-burn scarring of esophageal and gastric constrictions with an equivalent clinical picture of esophageal obstruction and impaired evacuation from the stomach, in patients III this indicator showed a decrease of 2.8 times relative to the general population norm.

According to the SF-36 questionnaire, at the end of treatment, there was a statistically significant difference ($P<0.05$) with the indicators before treatment in both subgroups, only physical functioning (RF), role-based physical functioning (RP) and mental health (MN), and all other indicators had a statistically significant difference ($P<0.05$) with the indicators before treatment in both subgroups, only starting from 6 months after the end of treatment. We tend to explain this by the severity of the condition of patients after undergoing a volume of interventions.

This state of affairs clearly demonstrates the importance of post-burn scarring of the esophagus and stomach with an equivalent clinical picture of esophageal obstruction and impaired evacuation from the stomach for the physical and emotional health of such patients.

The dynamics of improvement in quality of life indicators according to the SF-36 questionnaire scales is similar in patients of both subgroups and at no stage of the examination had a statistically significant difference between the subgroups, but starting six months after the end of treatment it always statistically significantly differed from the indicators before treatment in each subgroup ($P<0.05$).

Based on the obtained results of studying the quality of life, we can conclude that there is some subjective similarity for patients of both management tactics, however, in terms of viability and social functioning, levels of anxiety and depression of HADS, as well as situational and personal anxiety according to the Spielberger STAI test, we tend to conclude that it is necessary to rely on the choice of the stage of interventions for post-burn scarring esophagus and stomach with an equivalent clinical picture of esophageal obstruction and impaired evacuation from the stomach only affect the physical condition of the patient, since both methods have a beneficial effect on patients in the future, relying mostly on economic efficiency, with equal physical competencies of the patient.

4. Conclusion

According to the results of the study of the quality of life of the studied patients, mainly early interventions should be performed with post-burn scarring of esophageal and gastric constrictions with the prevalence of esophageal patency disorders, since this will have a more beneficial effect on patients in the future with a significantly smaller volume of surgical interventions, and, therefore, more economically effective. The increased severity of the somatic and mental state in patients with a predominance of impaired evacuation of food from the stomach, clinical anxiety and depression of these patients require earlier surgical interventions, which will avoid the mental and social consequences of post-burns scarring of the esophagus and stomach with a predominance of clinical disorders of evacuation from the stomach and restore mental health and socialization of patients at an earlier date not to mention the physical component of health. In patients with post-burns, scarring of the esophagus and stomach with an equivalent clinical picture of esophageal obstruction and impaired evacuation from the stomach, only the physical condition of the

patient should be taken into account and staged medical care should be provided, preferably in the later stages of burn disease.

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