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ASSESSMENT OF THE QUALITY OF LIFE OF PATIENTS AFTER RESTRICTIVE BARIATRIC SURGERY

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According to a number of scientific articles, after performing restrictive metabolic operations, in some patients, the severity or development of de novo symptoms of gastroesophageal reflux disease is determined, which affects the quality of life of patients. The relevant problem creates the urgency to investigate the quality of life of patients after restrictive operations and search for preventive measures to prevent this complication. In the relevant study, the presented data were obtained in the period from 2016 to 2019 during 1 year of postoperative follow-up of 49 bariatric patients, who were divided into 3 comparison groups, depending on the type of restrictive surgery (sleeve gastrectomy, greater curvature plication or fundogastroplication (greater curvature plication combine with Nissen fundoplication). One year after surgery, all 3 groups had positive weight reduction results, and compensation of accompanying pathology were noted. Also, an increase in the general quality of life indicator was noted, according to the results of the questionnaire, with a slight advantage of the indicators obtained in the III group of patients, which is associated with the absence of manifestations of gastroesophageal reflux disease and reflux esophagitis after 1 year. According to the obtained results, simultaneous surgery in the form of a combination of Nissen gastroplication and fundoplication in the treatment of patients with obesity and metabolic syndrome allows for achieving positive results of weight reduction and compensation of comorbid diseases, which is comparable and relative to classical surgical techniques and makes it possible to prevent the development of postoperative complications, which improves the quality of life of patients.

Key words: laparoscopy, simultaneous surgery, bariatrics, gastroesophageal reflux, reflux esophagitis, metabolic syndrome, quality of life.

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ОЦІНКА ЯКОСТІ ЖИТТЯ ПАЦІЄНТІВ ПІСЛЯ ПРОВЕДЕННЯ РЕСТРИКТИВНИХ БАРІАТРИЧНИХ ОПЕРАЦІЙ

За даними ряду наукових статтей після виконанння рестриктивних метаболічних операцій, у деяких пацієнтів визначається обтяження або розвиток de novo симптомів гастроезофагальної рефлюксної хвороби, що має вплив на якість життя пацієнтів. Відповідна проблема створює актуальність дослідити якість життя пацієнтів після проведення рестриктивних операцій та пошуку превентивних заходів, для попередження даного ускладнення. У відповідному досліджені представлені дані отримані у період з 2016 по 2019рр. протягом 1 року післяопераційного спостереження за 49 баріатричними пацієнтами, які були розділені на 3 групи порівняння, залежно від виду рестриктивної операції (рукавна резекція шлунку, гастроплікації або фундогастроплікація (поедання гастроплікації та фундоплікації за Nissen). Через рік після оперативного втручання у всіх 3х групах було відмічено позитивні результати зниження ваги тіла та компенсації супутньої патології. Також, було відмічено зростанння загального показнику якості життя, відповідно до результатів анкетування, з незначною перевагою показників отриманих у ІІІ групі пацієнтів, що пов'язано з відсутністю проявів гастроезофагальної рефлюксної хвороби та рефлюкс-езофагіту через 1 рік. Згідно з отриманими результатами, симультанна операція у вигляді поєднання гастроплікації та фундоплікації за Nissen при лікування пацієнтів з ожирінням та метаболічним синдромом дозволяє досягти позитивних результатів зниження ваги та компенсації коморбідних захворювань, які є співставними відносно класичних хірургічних технік, та дає можливість попередити розвиток післяопераційних ускладнень, що покращує якість життя пацієнтів.

Ключові слова: лапароскопія, симультанні операції, баріатрія, гастроезофагальний рефлюкс, рефлюкс-езофагіт, метаболічний синдром, якість життя.

The study is a fragment of the research project "Integration of the enhanced recovery after surgery program into emergency surgical care for patients with acute pathology and injuries of the abdominal cavity and retroperitoneal space" (49/2p) (No. 2301020) at the expense of the State Budget of Ukraine, approved by order No. 2651 of the Ministry of Health of Ukraine from 17.11.2021.

At present, there is a rapid increase in the incidence of obesity and metabolic syndrome [1, 2] in countries all over the world, which acts as a trigger for the development of concomitant diseases (diabetes mellitus, pathologies of the cardiovascular system, dyslipidemia, paralysis of the musculoskeletal system), which in combination mutually burden each other and affect the level of quality of life of patients with metabolic syndrome, which is manifested in a decrease in work capacity, life expectancy, a violation of the psycho-emotional aspect of health and an increase in financial costs in order to compensate for pathological conditions. Among the possible treatment options for obesity and metabolic syndrome, bariatric surgery takes the leading place. This method of combating obesity and associated diseases is proving to be a safe and effective method for solving this problem [3]. According to IFSO Worldwide Survey 2016, the total number of metabolic procedures performed in 2016 was 685,874 [9]. And the most common bariatric operation was gastric sleeve resection, the number of which was 340,550, the specific share of which is 53.6 % of the total number of all metabolic operations [9]. Among the list of surgical treatment options,

there is also gastroplication as an alternative operation with a similar restrictive mechanism of influence on the pathogenesis of obesity and metabolic syndrome. However, this type of metabolic procedure remains poorly studied. According to various sources, there is an actual and ambiguous problem of aggravation or development of de novo symptoms of gastroesophageal reflux disease (GERD) after performing operations with the appropriate weight reduction mechanism, which has a direct impact on the quality of life of patients in the postoperative period [2, 4–7, 10, 12, 14]. The problem of the development of relevant complications creates the urgency of researching the long-term results of the implementation of restrictive bariatric operations, assessing the quality of life of patients after surgical treatment, and finding the implementation of preventive measures aimed at preventing the development of relevant complications.

Table 1

Dynamics of changes in body mass index (kg/m^2)

Patients group	1 month	3 months	6 months	12 months
LSG	38.42±0.44	36.09± 0.33	33.41±0.39	31.12±0.31
LGCP	38.92±0.34	36.73±0.29	34.57±0.23	32.51±0.24
LGCP+Nissen	38.81±0.29	36.20± 0.20	34.52±0.28	32,46±0,28

The purpose of the study was to conduct a comparative assessment of patients quality of life, effectiveness and long-term consequences after laparoscopic sleeve gastrectomy, laparoscopic greate curvature plication and laparoscopic fundogastroplication (Nissen fundoplication in combination with laparoscopic greate curvarute plication).

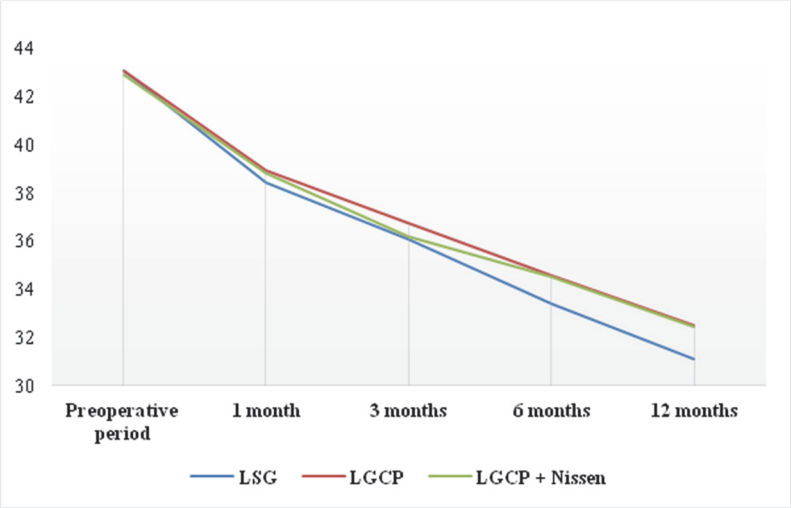
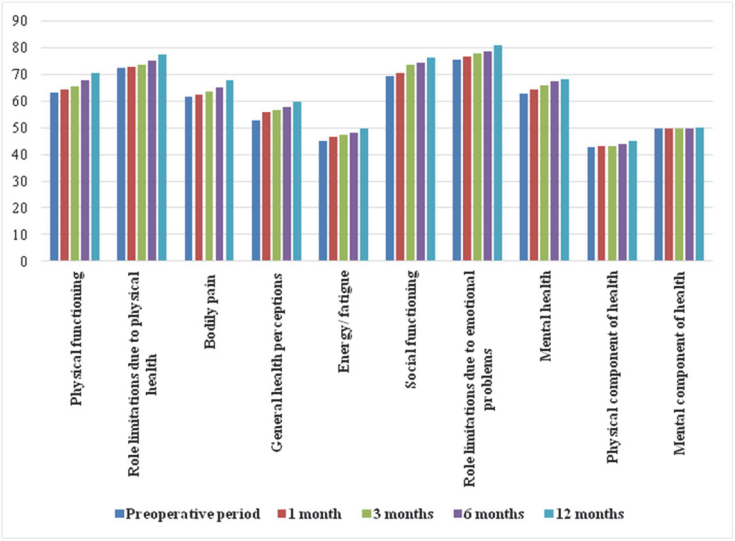


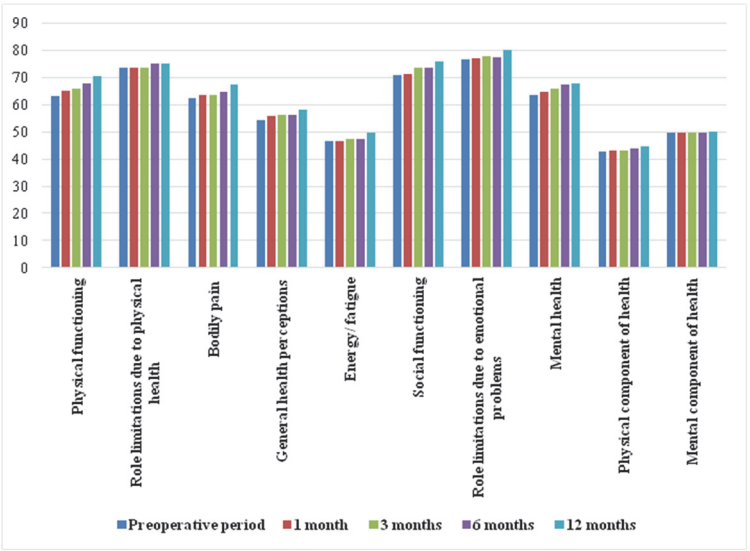
Fig. 1. Dynamics of body mass index (BMI) reduction

Materials and methods. During the comparative assessment of the quality of life of patients after the implementation of the relevant restrictive operations, the results obtained during the curation of 49 patients with obesity and metabolic syndrome in the period from 2016 to 2019 were taken as a basis, which were divided into 3 comparative groups, depending on the type of planned surgical operation. intervention. Group I – patients who underwent laparoscopic sleeve gastrectomy (LSG), group II – patients who underwent laparoscopic greate curvature plication (LGCP), and group III – patients who underwent simultaneous laparoscopic greate curvature plication combined with Nissen fundoplication (LGCP+Nissen). Each patient received a note with a list of recommendations for preparing for the metabolic procedure. All patients, without exception, strictly followed all the recommendations given in the note – compliance was achieved. Patients were also provided with information about available treatment options and possible short-term and long-term results, possible alternative methods of non-surgical treatment of obesity and a comparison of their effectiveness with metabolic surgery. All patients gave consent for surgical treatment. At all stages of patient management before and after surgical treatment, patients were measured and monitored for anthropometric, laboratory parameters (full blood count, urinalysis, biochemical blood analysis, HbA1c, HOMA index, triglyceride level, low and very low density lipoproteins) and instrumental studies (abdominal ultrasound examination, gastroscopy, X-ray examination with contrast of the upper part of the gastrointestinal tract) were carried out, aimed at determining the presence of concomitant pathology and complications after the relevant metabolic procedure. The patient`s quality of life was assessed based on the SF-36 [11] and GERD-Q questionnaires [15]. Patients with symptoms of gastroesophageal reflux disease (GERD) and esophageal hiatal hernia (HH) were excluded from this study – according to the results of examinations in the preoperative period, the previously listed exclusion criteria were absent in all patients presented in this study. Surgical treatment of obesity and metabolic syndrome was carried out on the basis of the Department of Surgery and Vascular Surgery of the National Institute of Health of Ukraine named after P.L. Shupyk for the period from 2016 to 2019. Of them, 14 patients (men/women – 4/10; average age – 41.14±7.24, body weight – 126±7.53 kg; abdominal circumference – 133.86±4.05 cm; body mass index (BMI) – 43.05±2.51 kg/m2; I-III ASA) was performed LSG, LGCP – 20 patients (men/women – 6/14; average age – 40.9±5.78; body

weight – 130.55±7.25 kg; abdominal circumference – 133.28±4.54 cm; BMI – 43.05±2.51 kg/m2; I-III ASA) and LGCP+Nissen – 15 patients (men/women – 4/10; average age – 42±5.72; body weight – 128.5±7.05 kg; abdominal circumference – 134±5.66 cm; BMI – 42.9±2.5 kg/m2; I-III ASA). The observation period was 1 year. Repeated consultations were held after 1 month, 3 months, 6 months and 12 months of the postoperative period, which were aimed at monitoring the condition of the patients and the course of the postoperative period.



A



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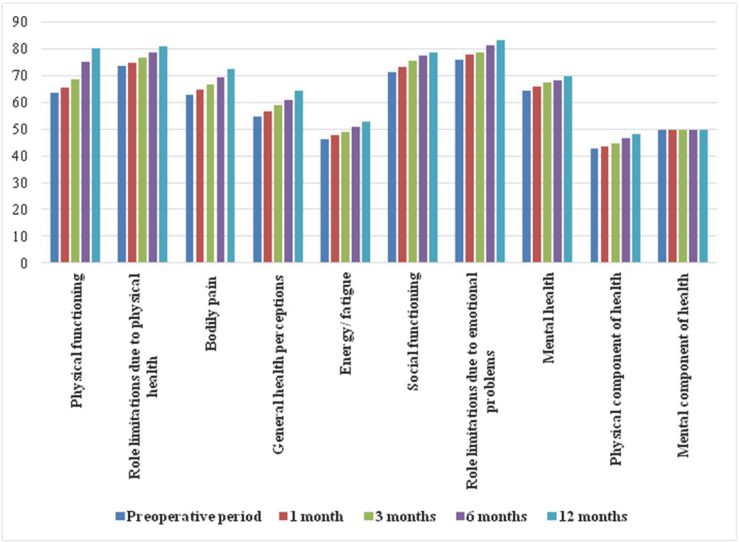

C

Fig. 2. Dynamics of changes in patient questionnaire results according to the SF-36 questionnaire after laparoscopic sleeve gastrectomy (a), laparoscopic create curvature plication (b) and laparoscopic greate curvature plication combine with Nissen fundoplication (c)

Results of the study and their discussion. The corresponding study was based on data obtained in the process of curation of patients with a confirmed diagnosis of obesity and metabolic syndrome, who were treated at the Department of Surgery and Vascular Surgery in the course of conducting this research, the following results were obtained, which are highlighted below.

The average duration of surgical intervention for group I patients was 92.5±8.49 min, for group II patients – 121.5±5.52 min, and for group III patients – 135.3±6.11 min. In the early postoperative period, on the first day of postoperative observation, 2 patients of group I and 6 patients of group II had transient nausea and vomiting. The corresponding symptoms were eliminated in the next 36 hours of the postoperative period, with the help of conservative therapy. There were no relevant complications among patients of the III group of patients who underwent LGCP + Nissen. The index of the average length of stay of patients in inpatient treatment had the following values: LGCP – 3.6±0.7 days, LSG – 3.7±0.73 days and LGCP + Nissen – 3.43±0.51 d. One year after the surgical intervention, the BMI were: LGCP – 31.12±0.36 kg/m2, LSG – 32.51±0.24 kg/m2, LGCP+Nissen – 32.46±0.21 kg/m2 (Table 1 and Fig. 1).

The dynamics of changes in the results of the survey of patients from the LGCP group (Fig. 2a), LSG (Fig. 2b), LGCP + Nissen (Fig. 2c) according to the SF-36 questionnaire in the preoperative period, after 1 month, 3 months, 6 months, and 12 months of the postoperative period are shown in the graphic images below.

According to the obtained results of the patient questionnaire of all 3 groups, a significant increase in the quality of life of patients was noted during the year of postoperative observation in comparison with the results obtained before the introduction of surgical treatment, however, the greatest value was obtained in the LGCP+Nissen group.

According to the results of a repeated survey of patients according to the GERD-Q questionnaire in the specified terms of the postoperative control, an increase in the overall average index was noted in the groups of LSG and LGCP. The corresponding results are displayed in Table 2.

Table 2

The results of the survey of patients according to the GERD-Q questionnaire in the preoperative period and after 1 month, 3 months, 6 months, 12 months of the postoperative period

Patients group	Preoperative period	1 month	3 months	6 months	12 months
LSG	2.57±0.51	3.86±0.66	4.29±0.73	4.57±1.40	6.07±2.37
LGCP	3.40±0.91	4.47±0.52	4.13±0.74	4.80±1.66	6.47±2.59
LGCP+Nissen	2.50±0.69	2.65±0.59	2.60±0.60	2.70±0.47	2.45±0.51

This situation of increasing final values in the LSG and LGCP groups is associated with the development of de novo clinical manifestations of GERD in 2 (10 and 9 points) and 4 (11, 10, 9 and 10 points) patients, respectively. As a result of the development of symptoms, in the above-mentioned patients, there was a need for regular use of drug therapy, namely drugs from the group of proton pump inhibitors, in order to eliminate the corresponding manifestations. The corresponding manifestations in the final result had a direct correlation with the lower general indicators of the quality of life of the patients, obtained in the process of the questionnaire according to the SF-36. These symptoms were absent in the group of patients who underwent LGCP+Nissen. Also, during the control gastroscopy after 1 year, de novo signs of reflux esophagitis (according to the Los Angeles classification) were detected in 3 patients from the LSG group (3 – grade A and 1 – grade B) and 5 patients in the LGCP group (3 – grade A and 2 – grade B). Also, in the course of a control fluoroscopy with barium contrast a year after surgery, episodes of gastro-esophageal reflux of contrast fluid were confirmed and recorded in 3 patients from the LSG group and in 5 from the LGCP group. In the process of repeating the above-mentioned research methods among patients of the LGCP+Nissen group, there were no corresponding manifestations.

Taking into account the increase in the share of patients with obesity and metabolic syndrome, there is an actualization and a directly proportional increase in the total number of bariatric surgeries, which demonstrate themselves as the most effective method of treatment for the corresponding category of patients [8]. Sleeve resection of the stomach, which is a restrictive type of surgery, has the largest number among the possible variants of metabolic procedures, and demonstrates its effectiveness in weight correction and compensation of accompanying diseases caused by obesity, which has a positive effect on improving the quality of life of patients [9]. Also, one of the bright representatives, however, a less researched bariatric operation, with a similar restrictive effect is gastroplication, which in terms of its effectiveness has comparable weight loss results to laparoscopic sleeve gastrectomy. According to the results of various sources, there are data indicating the possible development of de novo manifestations of GERD and reflux esophagitis in the short and long term, which requires the use of conservative therapy in the form of diet therapy and the use of proton pump inhibitors, which reduces the quality of life of patients after restrictive surgery. and in the absence of effectiveness of drug correction, the complication makes reintervention necessary to correct this pathological condition [11, 12, 13]. This problem creates the urgency of implementing simultaneous operations into the practice of bariatric surgery, which is demonstrated in this article using the example of a combination of laparoscopic gastroplication and fundoplication according to Nissen, and the search for new preventive measures during the implementation of the metabolic procedure, which not only have an effect on reducing the weight of obese patients and metabolic syndrome, but also prevention of complications in the long term after surgical treatment.

Conclusion

The possible development of GERD a year after restrictive bariatric surgery has a significant impact on the quality of life of patients after surgical treatment. This problem makes it urgent to use a combination of antireflux and bariatric procedures in patients with no manifestations of GERD and reflux esophagitis in the preoperative period in order to prevent the development of the above-described complications in the short term after the metabolic procedure. In this study, the effectiveness of the

implementation of simultaneous operations was demonstrated on the example of a combination of laparoscopic greate curvature plication and fundoplication according to Nissen, which was manifested not only in relation to the reduction of BMI and the achievement of compensation for concomitant diseases, but also the absence of complications in the group of patients who underwent this method, and achieved a higher the value of the quality of life indicator. However, this method of surgical treatment requires further research, longer-term data collection, and retrospective evaluation. In accordance with this, we recommend giving preference to carrying out simultaneous operations in patients with obesity and metabolic syndrome.

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