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J.S. BEREZNITSKIY, R.V. DUKA

*Dnipropetrovsk Medical Academy, Department of Surgery № 1, Dnipropetrovsk*

## TECHNICAL FEATURES OF THE IMPLEMENTATION OF SLEEVE GASTRECTOMY AND BILIOPANCREATIC DIVERSION IN THE TREATMENT OF OBESE PATIENTS

It is executed baritrichni operative interferences in 42 patients which 29 women and 13 men were among. Were patients in age from 28 to 60 years, an index of mass of body was from 31,6 to 80 kg/mcode?. In 25 patients with the index of mass of body >40 kg/mcode? is the longitudinal resection of stomach and biliopankreatichne by-passing executed in modification of Hess-marceau, in 17 patients with the index of mass of body 31,6 to 47,7 kg/mcode? the longitudinal resection of stomach is executed. Implementation of the biliopankreatichnogo by-passing was provided by the decline of mass of body at level % EWL 64 %.

**Key words:** morbid obesity, surgical treatment, biliopancreatic diversion, sleeve gastrectomy

**Actuality of the work.** Steady growth of the number of people with excess weight is observed almost in all economically developed countries. According to the World Health Organization (WHO), about 30 % of people had excess weight by the end of the twentieth century. Today obesity is considered to be a noninfectious epidemic. 60 % of the Americans are overweight people and 27 % of them are obese; in the countries of Western Europe close on 25 % of the population have excess weight. Arterial hypertension, diabetes mellitus and dyslipidemia are closely associated with obesity; they decrease the quality of patient's life, increase costs of medical treatment and in most cases they are the reason of an untimely death.

Treatment of obesity is a difficult task for a doctor and especially for a patient. Obesity is regarded as a chronic recurrent disease, which needs a lifelong treatment and it is very important to the patient to understand this necessity. Present methods of conservative treatment contain nutrition and lifestyle changes, longtime therapy, but it is really hard to do for most patients. That is why in 90 % of cases conservative treatment is ineffective and after treatment cessation patients have a relapse of the disease.

As of today the most complete and lasting effect can be reached with the help of surgical methods of treatment of morbid obesity [1–5]. All bariatric surgeries are commonly divided into three main groups: restrictive, malabsorptive and combined [1, 2, 4, 5].

One of the modern methods of restrictive surgery is sleeve gastrectomy. In recent times this methodology attracts more and more attention of bariatric surgeons and gets wide spread. However, because of the relative novelty of the methodology there is no enough number of observations over the patients in the long term after the operation. This fact causes the high interest to the results of sleeve gastrectomy.

Combined surgery is recommended to the patients with morbid obesity and with accompanying dyslipidemia, insulin resistance and hypertension. One of the effective combined methodologies is biliopancreatic diversion (Hess-Marceau modification). This methodology allows to achieve a good result with a small number of complications in the early postop-

erative period and provides a high quality of life in the late period [2–9].

Thereby, assimilation and improvement of the methods of bariatric surgeries is an actual task.

**Purpose of the work.** Make estimate of technical features and the results of sleeve gastrectomy and biliopancreatic diversion (Hess-Marceau modification).

**Object and methods of research.** During the period since 2009 till 2014 year bariatric surgery was performed on 42 patients, there were 29 women and 13 men. Patient age ranged from 28 to 60, BMI range from 31,6 to 80 kg/m<sup>2</sup>.

Biliopancreatic diversion (Hess-Marceau modification) was performed on 25 patients (with BMI >40 kg/m<sup>2</sup>). Sleeve gastrectomy was performed on 17 patients (with BMI range from 31,6 to 47,7 kg/m<sup>2</sup>).

The main complaints of patients with morbid obesity were a progressive increase in body weight, with no effect from other methods of treatment (diet, drug therapy, intragastric balloon), severe shortness of breath with little exertion, pain in the back and in large joints of lower limbs, different degrees of manifestation of Pickwickian syndrome (night snoring, apnoea, daytime sleepiness).

Body mass, rates of the metabolism of carbohydrates and fats were controlled.

The degree of obesity was defined according to WHO classification (1997 year); BMI was defined as the individual's body mass (kg) divided by the square of his or her height (m<sup>2</sup>); ideal body weight was defined according to the international table Metropolitan Height and Weight Tables, Converted to Metric System (1983 year); the percentage of excess weight loss was defined according to the formula %EWL=(Weight Loss (kg)/Excess Weight (kg)) X 100 %.

**Results and their discussion.** The surgeon together with every patient planned and decided which method of surgical treatment to chose. During the conversation it was determined if expectations of patients were realistic; the advantages and disadvantages of each type of surgery, the expected decrease in body weight were discussed. Will and possibility of the patient to be under medical supervision in long-term

periods after surgery were obligatory conditions for the surgery. In our opinion, it is obligatory to obtain consent for surgery not only of the patient but also of the relatives, especially in the cases of younger patients.

All patients underwent a standard preoperative assessment. It was first estimated that 26 patients had hypertension and it caused longer preoperative preparation. All operated patients were in risk of thromboembolic complications, this fact was the reason to carry out specific and non-specific prevention of thromboembolic complications. Compression stockings were used for non-specific prevention, nadroparin (fraxiparine) was used for carrying out specific prevention. In all cases prevention of purulent-septic complications with the use of second-generation cephalosporins was carried out.

Biliopancreatic diversion (Hess-Marceau modification) was performed on 25 patients with class III obesity. Body mass of these patients was from 100 to 261 kg, BMI range from 40 to 80 kg/m<sup>2</sup>. In discussing the technical aspects of the operation it should be noted, the Harmonic scalpel (Johnson & Johnson) was used to mobilize the greater curvature of the stomach and duodenum, that greatly facilitated the implementation of this phase of the operation, and reduced its time. Resection was performed while gastric tube (12mm) was inserted, along the lesser curvature of stomach and the line of resection was carried out on the edge of the probe. The line of surgical staples was obligatory peritonized by a continuous encircling stitch. Intraoperative measurement of the stomach showed that the volume of reservoir was from 70 to 150 ml. For the intersection of the stomach and duodenum the suturing devices Ethicon Proximate (with the length of the seam – 75 mm) were used. The length of the total loop was left 80-100 cm. Before intersection of the small intestine the marks were made on the gut, it allowed to identify clearly the proximal and distal parts of the loop during the surgery.

Discussing the results of the treatment, it should be noted that almost immediately after surgery all pa-

tients of this group reported a significant decrease in appetite. Within 2 months after surgery loose stools was noted up to 4 times a day, then this number decreased to 1-2 times a day and depended on the quality of food. All patients regularly take a multivitamin, fat-soluble vitamins, iron and calcium. During the first year after surgery in this patient group, the percentage of excess weight loss ranged from 52 to 87 %, a median % EWL for the first year was 58 %. Within second year, a median % EWL was 72 %. Before surgery, eight patients had disorders of carbohydrate and fat metabolisms; it caused hyperinsulinemia, hypercholesterolemia, hypertriglyceridemia, increased levels of leptin and C-peptide. Also, there were an increase in blood pressure, Pickwickian syndrome and pain in large joints of lower limbs. In the postoperative period carbohydrate and fat metabolism rates, blood pressure numbers were normalized, Pickwickian syndrome was liquidated, and there is no pain in the lower limbs. Indicators of iron, calcium and protein were monitored, they remained within normal limits.

Sleeve gastrectomy was performed on 17 patients (with body mass from 95 to 159 kg and BMI range from 31,6 to 47,7 kg/m<sup>2</sup>), and in 15 cases laparoscopic way was used. Talking about the features of surgery it should be noted that the first intersection of the stomach was performed at a distance of 5 cm from the pylorus, and only for the second stitching a gastric tube was inserted (12 mm in diameter). The line of surgical staples was peritonized by a continuous stitch. All patients reported a significant reduction in appetite after surgery. It was reported a median percentage excess weight loss (%EWL) of 49 % in the first year after the operation, 64 %EWL after two years.

#### Conclusions.

1. Biliopancreatic diversion (Hess-Marceau modification) leads to a significant reduction in body weight and normalization of lipid and carbohydrate metabolism and in two years a median % EWL is 72 %.

2. Sleeve gastrectomy reduces % EWL 64 % within 2 years after surgery.

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Я.С. БЕРЕЗНИЦЬКИЙ, Р. В. ДУКА

*Дніпропетровська державна медична академія, кафедра хірургії №1, Дніпропетровськ*

**ТЕХНІЧНІ ОСОБЛИВОСТІ ВИКОНАННЯ ПОВЗДОВЖНЬОЇ РЕЗЕКЦІЇ ШЛУНКА ТА БІЛІОПАНКРЕАТИЧНОГО ШУНТУВАННЯ В ЛІКУВАННІ ХВОРИХ НА ОЖИРІННЯ**

Виконано бариатричні оперативні втручання у 42 хворих віком від 28 до 60 років, серед яких було 29 жінок та 13 чоловіків. Маса тіла хворих становила від 31,6 до 80 кг/м<sup>2</sup>. У 25 хворих з індексом маси тіла >40 кг/м<sup>2</sup> виконана повздовжня резекція шлунка та біліопанкреатичне шунтування у модифікації Hess-Margseau, у 17 пацієнтів з індексом маси тіла 31,6 до 47,7 кг/м<sup>2</sup> виконана повздовжня резекція шлунка. Виконання біліопанкреатичного шунтування забезпечило зниження маси тіла на рівні % EWL 72 %, а повздовжньої резекції шлунка на рівні % EWL 64 %.

**Ключові слова:** морбідне ожиріння, хірургічне лікування, біліопанкреатичне шунтування, повздовжня резекція шлунка

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