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ANEMIYa POSLE BARIATRIЧESKIX OPERATSIY

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Summary. After the BPSh operation, all patients showed a significant decrease in the level of hemoglobin, ferritin and serum iron, starting from the 3rd month after the operation and progressively continuing throughout the entire observation period of the patients (7 years).
Key words: obesity, obesity treatment, bariatric surgery, laparoscopic longitudinal resection of the stomach, bariatric surgery, sleeve gastrectomy.

Relevance. Approximately 2.1 billion people on the planet suffer from excess body weight, and approximately 2-4% of obesity takes forms that are dangerous to health and life (morbid obesity). Remote results of conservative treatment of morbid obesity remain unsatisfactory. In this disease (BMI> 40 kg / m²), adipocyte hyperplasia develops, which makes the patient virtually resistant to physical activity, diets and pharmacotherapy [1,2,6,8,10,12,14,16,18]. Currently, the only effective method of treating morbid obesity is bariatric surgery [Sjöström L., 2013]. They are aimed at reducing weight with the help of various surgical interventions on the digestive tract and give a stable positive result in weight loss. Both a decrease in the volume of the stomach and the exclusion of the proximal small intestine from digestion, i.e. artificially created malabsorption, are the main causes of vitamin and microelement deficiency after bariatric surgery. Such deficiencies include the development of anemia. One of the most common pathogenetic variants of anemia after bariatric surgery is iron deficiency anemia (IDA) [3, 4,20,21,22,23,24,25,26].
It occurs in 6% of patients within a few months after surgery with a bypass component, years later IDA is diagnosed in 50% of patients [11, 13,15].
However, in 30-50% of cases, anemia after bariatric surgery cannot be explained by isolated iron deficiency alone [17,19,27,28]. Meanwhile, the main pathogenetic mechanisms of anemia depending on the type of surgery remain not fully defined, the risk factors for the development of anemia are not specified, there are no algorithms for the prevention and medical examination of patients after bariatric surgery. Until now, no work has been conducted in Uzbekistan to study anemic syndrome in patients who have undergone bariatric surgery. Research in this area

will allow us to verify the pathogenetic mechanisms of anemia and prognostic factors for their development, optimize correction methods, and ultimately improve the prognosis and quality of life of patients after bariatric surgery.

Purpose of the study. Optimize algorithms for examination and treatment of patients with anemia after various types of bariatric surgeries

Materials and methods. This work is based on an analysis of the results of examination and treatment of 159 patients with various types of external hernias of the anterior abdominal wall, who were examined and inpatiently treated in the 1st surgical department of the Bukhara Regional Multidisciplinary Medical Center and the Department of Thoracoabdominal Surgery of the Multidisciplinary Clinic of the Tashkent Medical Academy for the period from 2011 to 2023 The analyzed material included women of reproductive age who planned to have children in the future. The control group consisted of all women with hernias of the anterior abdominal wall who underwent traditional hernial orifice repair without the use of allomaterial. The main group is all women with hernias of the anterior abdominal wall who underwent alloplasty according to our recommendations.Research results and discussion.

The study was conducted at BukhMI - in the obesity surgery department in 2012-2023. 159 people were examined for anemia (men and women aged 18 to 61 years), of which 88 people underwent BPSh due to morbid obesity and 71 patients - PRZH. 80 patients (25 men and 55 women), average age 41.9 ± 9.8 years, underwent BPSh in the Hess-Marceau modification due to morbid obesity. BPSh in this modification included longitudinal resection of the stomach, as well as reconstruction of the small intestine with exclusion of the duodenum and jejunum from digestion and division of the entire small intestine into 3 segments: alimentary, common and biliopancreatic loops. The length of the alimentary loop after surgery was 248 ± 9.5 cm, the total loop - 72.9 ± 11.6 cm. The duration of the observation period for patients after BPSh ranged from 3 to 7 years from the date of surgery. The BMI of patients before surgery corresponded to morbid obesity - 48.7 ± 6.8 kg / m2. All patients after surgery were prescribed iron preparations (IP) orally at a rate of at least 100 mg of elemental iron per day in the form of ferrous salts. Of the 80 patients, 49 (61.25%) regularly received IP after surgery, while 31 people (38.75%) did not take IP or took them for no more than 2 months after surgery, stopping treatment on their own. Forty-five patients (6 men and 39 women), mean age 39.4 ± 9.3 years, underwent laparoscopic gastrectomy for morbid obesity. About ¾ of the stomach, including the fundus, was removed from the patients. The patients' BMI before surgery was 39.8 ± 6.6 kg/m2. None of the patients were prescribed gastrectomy after surgery. The follow-up period for patients who underwent laparoscopic

gastrectomy ranged from 2 to 4 years. Before surgery, no decompensation of concomitant diseases or clinically significant changes in laboratory parameters, including hemoglobin content, were detected. None of the concomitant diseases were contraindications to bariatric surgery. According to the study results, anemia (hemoglobin level below 120 g/l) was diagnosed in 40% of patients within 3 months to 5 years. In the vast majority of patients (71.9%), anemia developed within the first year after surgery - after 3 months (3 patients), after 6 months (7 patients), after 9 months (5 patients), after 12 months (8 patients). In another 4 patients, anemia was diagnosed after 2 years, in 2 patients after 3 years, and in 1 patient after 5 years after surgery. Patients had their hemoglobin, serum iron, folic acid, and vitamin B-12 levels tested before surgery and during follow-up periods. The initial hemoglobin levels in patients before BPSh averaged 145.0 ± 13.27 g/L, ranging from 120 g/L to 177 g/L. After BPSh, a significant decrease in the average hemoglobin level was detected, starting as early as the third month after surgery and progressively continuing throughout the 7 years of observation. Dynamic study of serum iron and ferritin content showed a reliable progressive decrease in the average value of these parameters over time. Dynamic study of serum vitamin B12 levels in patients who underwent BPSh (Fig. 4) showed no reliable decrease in its average value over time. Dynamic study of folic acid levels showed some decrease in its average value 1-4 years after surgery, but no persistent progressive decrease (as in the case of hemoglobin, serum iron, and ferritin) was observed. The subjects did not receive folic acid or vitamin B12 preparations during the observation period. The overwhelming majority of patients with IDA (66.7%, 16 out of 24 people) did not take PF (at the rate of 100 mg of elemental iron per day) after BPSh or took them for no more than 2 months after surgery, and stopped the treatment on their own. Among the observed patients without IDA, only 26.8% (15 out of 56) did not take PG. Patients who did not take PG had significantly lower hemoglobin levels starting from the 4th year after BPS, lower serum iron levels starting from the 3rd year, and lower ferritin levels already after 6 months. Thus, 5 years after BPS, the hemoglobin level in patients who did not take PG decreased by 26.6%, and in patients who took PG, by 14.2%. 5 years after BPS, in patients who did not take PG, the serum iron level decreased by 61.8%, ferritin - by 77.5%, while in patients who took PG, the serum iron level decreased by 28.5%, ferritin - by 40.9%. However, 33.3% of patients (8 out of 24) who regularly took PZ developed IDA.

Conclusions: All patients undergoing BPSH and PRG operations require daily oral iron supplementation at a dose of at least 100 mg (calculated as elemental iron).

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