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LAPAROSCOPIC SLEEVE GASTRECTOMY AS AN OPERATIVE METHOD OF MORBID OBESITY TREATMENT AND RESOLUTION OF ITS COMORBIDITIES

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Introduction. The worldwide prevalence of obesity has nearly tripled since 1975, which means that more than 1.9 billion of adults is overweight or obese nowadays. Every obese person is at increased risk of developing diseases including: insulin resistance and type 2 diabetes, hypertension, dyslipidemia, sleep apnea, osteoarthritis and others. Dietary changes, physical activity, drugs and behavioral therapy are often insufficient to achieve sustained weight loss. In these cases, the bariatric intervention can be carried out. Laparoscopic sleeve gastrectomy (LSG) is an example of the surgery procedure that has high effectiveness not only in body mass reduction but also in total or partial resolution of co-existing diseases.

Objective: the aim of the study was to analyze the influence of LSG on the course of comorbidities, body mass index (BMI) changes, lipid and carbohydrate parameters in morbidly obese patients who undergone the above procedure in 1-year follow-up.

Material and methods. The study included 142 patients with morbid obesity who were qualified for the bariatric procedure and underwent LSG. Patients were examined during follow-up visits scheduled at 1, 3, 6 and 12 months after the intervention. The analysis of BMI, percentage of excess weight loss (%EWL) and BMI loss (%EBMIL), carbohydrate and lipid parameters was carried out. The assessment of comorbidities was made based on the cessation of medicine intake, symptoms reduction and normalization of laboratory parameters.

Results and discussion. 78 females and 64 males were included in the study. BMI showed a gradual decrease in average values from $44.70 \pm 6.7 \text{ kg/m}^2$ ($p < 0.01$) after 1 month to $30.6 \pm 3.6 \text{ kg/m}^2$ ($p < 0.00001$) at the end of follow-up. The significant increase of %EWL from 23.34 ± 3.65 ($p < 0.001$) to 60.25 ± 8.35 ($p < 0.00001$) and %EBMIL from 25.62 ± 5.8 ($p < 0.0001$) to 62.02 ± 6.90 ($p < 0.00001$) was noted for 12 months observation. Fasting glucose level decreased from $107.2 \pm 11.5 \text{ mg/dl}$ ($p < 0.05$) after 1 month to $89.76 \pm 8.2 \text{ mg/dl}$ ($p < 0.05$) after 1 year, whereas the average fasting insulin level was reduced from 20.3 ± 14.4 ($p < 0.01$) initially to 12.5 ± 4.5 ($p < 0.05$) at the end of observation. The assessment of lipid metabolism revealed decrease in total cholesterol, LDL and triglycerides values by respectively 50 mg/dl , 32.2 mg/dl and 36.2 mg/dl , while HDL fraction mean value increased by 13.9 mg/dl (26.5%). The partial recovery or total remission was seen in majority of preoperatively diagnosed comorbidities. Especially worth emphasizing, with contribution to previously described metabolic effect, is therapeutic influence of LSG on type 2 diabetes that was observed in all 51 cases with preoperative diagnosis. Other comorbidities such as: depression, hypertension, sleep apnea, chronic obstructive pulmonary disease, peptic ulcer disease were also influenced but at lower percentage. During 1-year follow-up the slight progression of gastro-esophageal reflux disease (14 vs. 20 cases) and esophagitis was observed (27 vs. 34 cases), that may be the result of changes in anatomy of gastrointestinal tract.

Conclusions. LSG is an effective and safe method for morbid obesity treatment providing not only the significant weight loss but also reducing symptoms or even resolving comorbidities especially those that are the components of metabolic syndrome. Positive metabolic effect of LSG reduces cardiovascular risk that affects patients' quality of life and has a positive impact on socioeconomic condition.