

Streszczenie w języku angielskim

Introduction

Laparoscopic sleeve gastrectomy is currently the most frequently performed bariatric and metabolic procedure in the world. The surgery leads to a reduction in the amount of food intake, and thus causes a significant reduction in body mass. In addition, as a result of postoperative weight reduction, the control of comorbidities such as dyslipidemia, hypertension or type 2 diabetes is improved or completely eliminated. Another disease coexisting with obesity is non-alcoholic fatty liver disease, which is becoming more and more common and may affect up to 90 % of morbidly obese patients.

Aim of the study

The aim of this study was to assess the effect of laparoscopic sleeve gastrectomy on the course of non-alcoholic fatty liver disease in one-year follow-up.

Material and methods

The study included 55 patients (32 men and 23 women), who undergone laparoscopic sleeve gastrectomy due to morbid obesity and were diagnosed with non – alcoholic fatty liver disease on abdominal ultrasound. The analysis included the assessment of selected biochemical parameters (including the activity of liver enzymes, lipid and carbohydrate profile), assessment of postoperative weight loss and bariatric effect based on percentage of total weight loss (%TWL), excess weight loss (%EWL) and excess BMI loss (%EBMIL), and assessment of hepatic steatosis by ultrasound. All measurements were collected preoperatively, as well as half a year and a year after the surgery. A liver biopsy was also performed intraoperatively to assess steatosis, inflammation and fibrosis in histopathological examination.

Results summary

The analysis of the bariatric effect showed a statistically significant decrease in BMI from 45.6 kg/m² (42.5 - 50.2) to 31.0 kg/m² (27.5 - 34.5) one year after surgery, $p < 0.0001$ and an increase in the median %TWL from 29.2% (25.2 - 32.4) 6 months after surgery to 32.5% (28.2 - 36.9) one year after surgery, $p = 0.0003$. There was also an increase in %EWL (53.5% (46.3 - 62.4) vs. 61.8% (52.4 - 72.3), $p = 0.0013$) and %EBMIL (61.8% (53.6 - 74.4) vs. 71.0% (61.3 - 86.9) , $p = 0.0036$), respectively 6 and 12 months after surgery, which indicates a beneficial bariatric effect. Preoperative abdominal ultrasonography revealed features of first degree liver steatosis in 6 patients (11%), grade II in 33 patients (60%), and grade III in 16 patients (29%).

One year after the surgery, only 38% of patients presented the features of liver steatosis in abdominal ultrasound - grade I - 19 patients (35%), grade II - 2 participants of the study (4%). The analysis of the NAFLD Fibrosis Score showed a reduction in the risk of developing advanced liver fibrosis in the one-year follow-up, which was correlated with postoperative weight loss.