

STRESZCZENIE W JĘZYKU ANGIELSKIM – ABSTRACT

Title: Upper gastrointestinal tract study after laparoscopic sleeve gastrectomy – assessment and optimization of the method

At the brink of the previous century overweight and obesity came along as new threats to the entire population of the world. The number of people suffering from obesity and its comorbidities is increasing every year. In case of morbid obesity conservative therapies have low effectiveness rate. Surgical procedures is proven to be successful and effective in treatment this modern-day epidemic. Two of those operations stand out as the golden standard of bariatric surgery. These are laparoscopic sleeve gastrectomy (LSG) and laparoscopic Roux-en-Y gastric bypass (LRYGB). Nowadays, the most popular and most often performed is LSG. It is considered as safe and effective.

The aim of this study was to present radiological evaluation after laparoscopic sleeve gastrectomy (LSG), especially using upper gastrointestinal series (UGI). The main objective was to find the most suitable and repeatable way of calculating gastric remnant volume (GRV) using UGI in order to objectify the results among different bariatric centers. Equally important was correlation of GRV measurements to the weight loss after LSG.

The first article titled „Imaging after laparoscopic sleeve gastrectomy – literature review with practical recommendations” published in Polish Journal of Radiology is a review of available literature about radiological assessment after LSG. Its purpose was to define a role of imaging after LSG and to distinguish diagnostic algorithms in specific cases. The paper discusses methodology, evaluation of potential complications and the shape and volume of the gastric remnant assessed by imaging studies, UGI and computed tomography.

The original publication is titled „Radiographic measurement of gastric remnant volume after laparoscopic sleeve gastrectomy: assessment of reproducibility and correlation with weight loss” published in Obesity Surgery. This is a retrospective study of results of 174 patients after LSG. Gastric remnant volumes were measured twice using three different methods by two independent radiologists in three-month interval. The intraobserver reproducibility for Reader I was highest for complex of cylinder and truncated

cone formula and for Reader II for ellipsoid formula. The interobserver reproducibility was highest for ellipsoid formula. Weight loss-related data collected were: percentage of excess weight loss (%EWL), and percentage of total weight loss (%TWL). The negative correlation between GRV and WL at 12 months was most pronounced for ellipsoid formula (%TWL – $r(X,Y) = -0,335$, $p < 0,001$; %EWL – $r(X,Y) = -0,373$, $p < 0,001$). This was the strongest result among the three different mathematical formulas for GRV calculations.

Diagnostic imaging after LSG gives many advantages. Following complications exclusion, they allow morphological assessment of the gastric remnant, its shape and volume. To the best of our knowledge, none of the articles published before concentrated on analysis of method of calculation and assessment of GRV using UGI and its utility in clinical practice. Results that we obtained present a connection between GRV and postoperative weight loss. The lower GRV was left, the better effect of the surgery. The result was expressed the most for GRV calculated with ellipsoid formula. This method of calculation appeared with the highest reproducibility. This paper may contribute to optimization and standardization of GRV calculations and may improve comparison of the results between different bariatric centers. In addition it could bear practical guidance for surgeons to improve their skills.