„GEORGE EMIL PALADE" UNIVERSITY OF MEDICINE, PHARMACY, SCIENCE, AND TECHNOLOGY OF TÂRGU MUREȘ
DOCTORAL SCHOOL OF MEDICINE AND PHARMACY
SUMMARY OF PhD THESIS

TITLE: **The role of metabolic surgery in the treatment of obesity and its comorbidities**
PhD student: **Mocian Ioan-Flavius**
PhD coordinator: **Prof. univ. dr. Coroș Marius Florin**

INTRODUCTION

In the modern era, the prevalence of obesity has experienced a real increase at the global level, becoming a real public health problem, and Romania is no exception to this.

Several treatment modalities have been proposed to combat this disease, but obesity surgery, due to the complex anatomical, physiological and neurohormonal interactions, has proven to have the most effective and lasting results. In addition to sustained weight loss, this type of surgery also has spectacular results in improving or even curing obesity-related comorbidities such as type II diabetes. Therefore, surgery leads to a decrease in morbidity and mortality among obese people, while also decreasing the health costs generated by this disease.

In recent years in our country, the field of obesity surgery has seen an upward trend, and the most used procedure is laparoscopic sleeve gastrectomy.

OBJECTIVES

Starting from the hypothesis of the beneficial effect that sleeve gastrectomy has on body weight, the studies included in the thesis aimed at several objectives as follows: the first objective was represented by the evaluation of the weight loss process after the surgical intervention, by analyzing the different specific indicators used in the literature, the second objective was to evaluate the quality of life of patients who resort to this type of surgery, the third objective was to analyze the extent to which obesity-related comorbidities remit or improve after surgery, and the fourth objective that we pursued was the one related to the incidence of gastroesophageal reflux disease that can occur in the postoperative period and that can negatively affect the patient's quality of life.

GENERAL METHODOLOGY

To enroll patients, we used the database of the General Surgery Clinic of the Mureș County Clinical Hospital. We included in the studies in a retrospective manner, the patients operated on between May 2009 and December 2016, hereafter referred to as group I. In parallel, prospectively, we also included patients operated on between January 2019 and December 2019, hereinafter referred to as group II. In both groups, patients were eligible for participation in the studies if they had morbid obesity (BMI>40 kg/m^2) or severe obesity (BMI>35 kg/m^2) with at least one associated comorbidity, were over 18 years old and did not have a history of another bariatric intervention.

In the "Study of the process of weight loss after laparoscopic sleeve gastrectomy as a primary bariatric procedure" we analyzed weight loss through changes in %EWL (percentages of excess weight loss), body weight (kilograms), and BMI (body mass index) for the two groups.

In the study "Evaluation of the quality of life after laparoscopic sleeve gastrectomy" we analyzed the quality of life using a personalized questionnaire for group I, and for group II we used the BQL (Bariatric Quality of Life index) questionnaire.

In the "Study regarding the improvement or remission of obesity-related comorbidities after laparoscopic sleeve gastrectomy" we analyzed to what extent type II diabetes, hypertension, sleep apnea, arthralgia, and gastroesophageal reflux disease improve and/or remit in the postoperative period.

In the last study, we performed a narrative review of the literature on "The relationship between gastroesophageal reflux disease and laparoscopic sleeve gastrectomy".

GENERAL CONCLUSIONS

Analyzing the obtained results, we can state that sleeve gastrectomy is an effective surgical procedure in the weight loss process. But after a certain period, we have to pay attention to the potential for weight regain in some patients. In our research, this process appeared after an average period of two years, but it must be emphasized that the average weight regained was small concerning the weight from which it started initially.

In addition to weight loss, sleeve gastrectomy also has a beneficial effect in resolving obesity-related comorbidities, thereby leading to a decrease in patient morbidity and mortality. Greater attention should also be paid to the remission or improvement of type II diabetes after this type of surgery. Therefore, sleeve gastrectomy is recommended as the primary method of treatment in the case of diabetic patients, regardless the degree of obesity, with superior results compared to medical therapy applied alone. Therefore, metabolic surgery and implicit sleeve gastrectomy open new horizons for research and management of this condition.

We have also analyzed the patient's quality of life who have resorted to surgery and have obtained a significant improvement in its various aspects in most cases. One of the reasons why obese patients report a poorer quality of life is the low perception of body image, a perception that improved significantly in the postoperative period, leading to an increase in self-esteem.

A less positive aspect of sleeve gastrectomy is the incidence of gastroesophageal reflux disease that can occur in the postoperative period. Most studies published in the literature have reported a relatively high incidence of both *de novo* disease and worsening of pre-existing symptoms, but due to the lack of consensus regarding the diagnostic methods of reflux disease, we must be cautious when interpreting the results. Hence the need to standardize the diagnostic algorithm and subsequently conduct randomized trials carried out over longer postoperative periods, to get a more objective picture of this phenomenon and how we can correct it, considering the popularity of sleeve gastrectomy at a global level.

In conclusion, following the results obtained by us and reported to those in the literature, we recommend sleeve gastrectomy as a method of surgical treatment for patients suffering from obesity.

ORIGINALITY OF THE THESIS

The research contained in the thesis is the subject of originality through the very methodology used in their development, but also through the fact that we are talking about research in a branch of surgery that is relatively young in our country. The main directions of research in bariatric and metabolic surgery are represented by the complex analysis of the weight loss process, the evaluation of how the comorbidities associated with obesity improve or remit after such surgery, and last but not least the analysis of how the patient's quality of life improves in the postoperative period.

Through the studies included in the thesis, we followed exactly the stated research directions, and following the results obtained, we were able to carry out a broad characterization of the profile of the obese patient in Romania who addresses a metabolic surgery service.

Another element of originality consisted in the methodology used in the analysis study of the patient's quality of life, where we used a specific measuring instrument validated at the international level, being to our knowledge, the first study of this kind in Romania.