The Effect of Laparoscopic Sleeve Gastrectomy on the Lower Esophageal Sphincter Preliminary Results on the Morbidly Obese Patients

Kleidi E, Theodorou D, Albanopoulos K, Menenakos E, Larentzakis A, Papailiou J, Memos N, Leandros E.

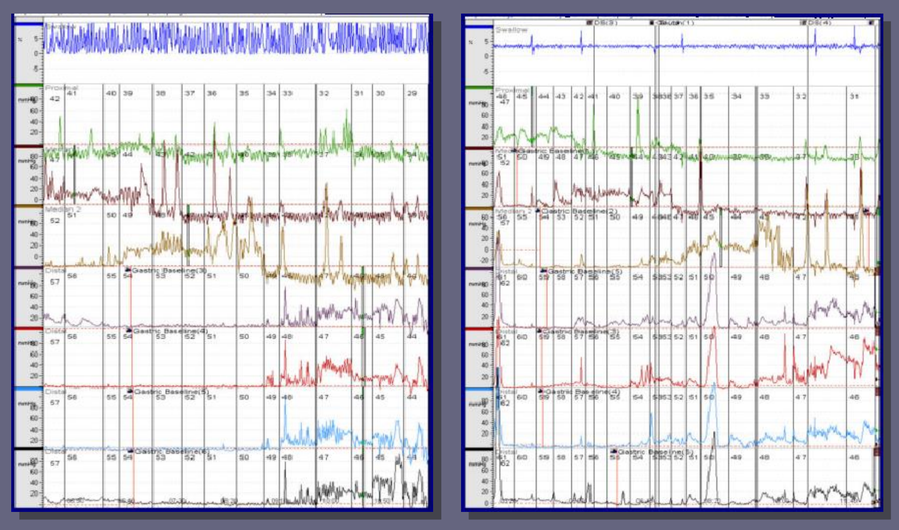
Introduction

Laparoscopic sleeve gastrectomy (LSG) is a widely established procedure for the treatment of morbid obesity. Since the transection of the stomach is often performed near His' angle, the lower esophageal sphincter (LES) can potentially be affected. This study aims to evaluate the effect of LSG on the LES and on esophageal motility.

Methods

Fourteen morbidly obese patients were prospectively submitted to esophageal manometry before and at least 45 days after LSG. Data reviewed included LES resting pressure and LES total and abdominal length. Patients, who had previously undergone a bariatric or an upper gastrointestinal tract procedure, were suffering from esophageal dismotility preoperatively or had any major complication postoperatively, were excluded from the study. Statistical analysis included Wilcoxon sign rank test and Spearman's rho.

Figure 1. Increased postoperative LES resting pressure



a. Preoperative manometry b. Postoperative manometry

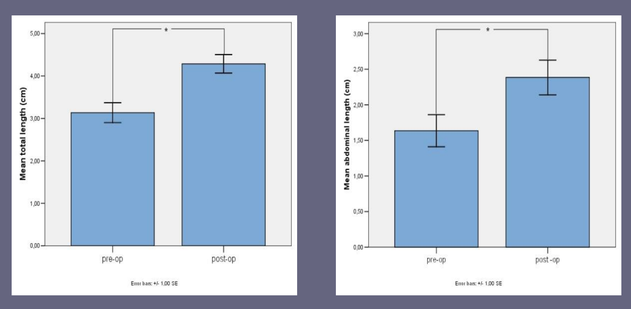
Results

Ten male and four female patients, with a mean age of 41.1 years (range 22-54), were included in the study. Postoperative manometry was performed in a mean of 81.4±13.5 days after the operation and the body mass index (BMI) reduced from an initial mean of 47.0±1.2kg/m^2 to 39.1±1.2kg/m^2 postoperatively. Total and abdominal LES length increased from a mean of 3.1±0.2cm to 4.3±0.2cm (p=0.01) and from 1.6±0.2cm to 2.4±0.2cm (p=0.04) respectively. LES resting pressure decreased from a mean of 21.3±3.5mmHg to 20.2±2.3mmHg but it was not statistically significant. However, there was a trend of this difference to increase according to postoperative days (Spearman's rho=0.5, p=0.06) due to a lower LES resting pressure observed when patients were examined in a later postoperative time.

Table. Preliminary results

Sample		10 male - 4 female
Mean age		41.1 years
Postoperative manometry time		81.4 ± 13.5 days
BMI	Preoperative	47.0 ± 1.2 kg/m^2
	Postoperative	39.1 ± 1.2 kg/m^2
Total LES length	Preoperative	3.1 ± 0.2 cm
	Postoperative	4.3 ± 0.2 cm (p=0.01)
Abdominal LES length	Preoperative	1.6 + 0.2 cm
	Postoperative	2.4 ± 0.2 cm (p=0.04)
LES resting pressure	Preoperative	21.3 ± 3.5 mmHg
	Postoperative	20.2 ± 2.3 mmHg

Figure 2. Postoperative increase in total and abdominal LES length



Conclusion

LSG increases the total and the abdominal length of the LES. This effect seems to lead in higher resting pressures especially in the early postoperative period when the majority of complications occurs.

1st Propaedeutic Surgical Department, University of Athens, Hippocration General Hospital, Athens, Greece

contact email: eleftheriaklidi@gmail.com