Endoscopic sleeve gastroplasty for obesity: A multicenter study of 248 patients with 24 months follow-up

Emel Ahıshalı

Department of Gastroenterology, Koç University Hospital, İstanbul, Turkey

Cite this article as: *Ahıshalı E. Endoscopic sleeve gastroplasty for obesity: A multicenter study of 248 patients with 24 months follow-up. Turk J Gastroenterol 2018; 29: 373-4.*

Lopez-Nava G, Sharaiha RZ, Vargas EJ, et al. Endoscopic sleeve gastroplasty for obesity: A multicenter study of 248 patients with 24 months follow-up. Obes Surg 2017; 27: 2649-55.

Obesity, a global epidemic, is associated with multiple comorbidities. Endoscopic bariatric therapies provide an effective and minimally invasive treatment approach to obesity that would increase treatment options beyond surgery, medications, and lifestyle measures.

Endoscopic sleeve gastroplasty (ESG), a novel, incisionless, minimally invasive procedure, is developed as a non-surgical alternative for the management of obesity. It is a transoral gastroplasty procedure that utilizes a full-thickness endoscopic suturing system (OverStitch; Apollo Endosurgery) for the reduction of gastric volume by approximately 70%. In this procedure, sutures are placed in two rows along the greater curvature of the stomach, from the anterior wall to the greater curvature to the posterior wall, resulting in a gastric cavity that forms a tubular sleeve along the lesser curvature, with the closing of the greater curvature via plications from the gastroesophageal junction to the prepyloric antrum (1).

In this study, Lopez-Nava et al. (2) aimed to evaluate the long-term outcomes and reproducibility of ESG and the predictors of weight response in a large multicenter cohort. The authors conducted a three-center retrospective analysis of prospectively maintained databases of patients who underwent ESG between January 2013 and December 2015. Among the 248 enrolled patients (mean age, 44.5±10 years; 73% female), baseline BMI was 37.8±5.6 kg/m^2. Additionally, percent total body weight loss (%TBWL) was reported to be 15.2 [95% CI, 14.2–16.3] and 18.6 [15.7–21.5] at 6 and 24 months, respectively. At 24 months, the proportion of patients achieving ≥10% TBWL was 84.2% and 53% with per protocol and intention-to-treat analysis, respectively. As per multivariable linear regression analysis, only %TBWL at 6 months strongly predicted %TBWL at 24 months. The odds of achieving ≥10%TBWL at 24 months if a patient achieved <10%TBWL at 6 months was 0.18 [0.034–0.84]. Eventually, five (2%) severe adverse events, including two perigastric inflammatory fluid collections (adjacent to the fundus) that resolved with percutaneous drainage and antibiotics, one self-limited extra-gastric hemorrhage that required blood transfusion, one pulmonary embolism 72 h after the procedure, and one pneumoperitoneum and pneumothorax requiring chest tube placement, occurred.

The limitations of the study include the lack of a control group, limited long-term follow-up, the lack of endoscopic or radiographic evaluation of the plication durability, and the significant loss to follow-up rate at 24 months. Furthermore, the study was conducted in expert centers that developed high-level proficiency in this technique; thus, generalizing these results to all operators might be premature.

In addition to successful weight loss, ESG can reduce the measures of obesity-associated medical comorbidities. Sharaiha et al. (3) recently reported weight loss and metabolic outcomes post ESG. Their data demonstrated a significant reduction in the markers of diabetes, hypertension, and hypertriglyceridemia at 12 months post ESG.

In addition to reducing gastric volume, ESG causes gastric physiological changes similar to those in obesity surgery. Abu Dayyeh et al. (4) recently reported about the induction of physiological changes, including delayed gastric emptying, that promotes post-ESG weight loss. Other changes that were observed included a decrease

ORCID IDs of the authors: *E.A. 0000-0002-3543-0700.*

Corresponding Author: ***Emel Ahıshalı; eahishali@kuh.ku.edu.tr***
Received: ***April 10, 2018*** *Accepted:* ***April 19, 2018***

DOI: ***10.5152/tjg.2018.180501***

in the appetite-stimulating hormone ghrelin level and an increase in insulin sensitivity.

Endoscopic sleeve gastroplasty causes minor adverse events such as nausea, vomiting, and abdominal pain that can be treated with medication. Rarely, severe adverse effects such as peri-gastric leak, bleeding, pulmonary embolism, pneumoperitoneum, and pneumothorax have been reported. All of these complications have been completely resolved without any surgical intervention (1-6).

This study demonstrates that ESG can safely achieve >10% TBWL in >75% patients with mild to moderate obesity with durable weight loss. Failure to achieve adequate weight loss can be predicted early, and patients should be offered adjunctive therapies to augment it.

In conclusion, ESG, a new minimally invasive endoscopic bariatric technique, creates structural and physiologic changes to achieve and maintain desired weight loss. The procedure is effective, safe, reproducible, potentially reversible, and well-tolerated in the treatment of patients with obesity.

REFERENCES

1. *Kumbhari V, Hill C, Sullivan S. Bariatric endoscopy: state-of-the-art. Curr Opin Gastroenterol 2017; 33: 358-65.* [CrossRef]
2. *Lopez-Nava G, Sharaiha RZ, Vargas EJ, et al. Endoscopic Sleeve Gastroplasty for Obesity: a Multicenter Study of 248 Patients with 24 Months Follow-Up. Obes Surg 2017; 27: 2649-55.* [CrossRef]
3. *Sharaiha RZ, Kumta NA, Saumoy M, et al. Endoscopic sleeve gastroplasty significantly reduces body mass index and metabolic complications in obese patients Clin Gastroenterol Hepatol 2017; 15: 504-10.* [CrossRef]
4. *Abu Dayyeh BK, Acosta A, Camilleri M, et al. Endoscopic sleeve gastroplasty alters gastric physiology and induces loss of body weight in obese individuals. Clin Gastroenterol Hepatol 2017; 15: 37-43.e1.* [CrossRef]
5. *Sartoretto A, Sui Z, Hill C, Dunlap M, et al. Endoscopic Sleeve Gastroplasty (ESG) Is a Reproducible and Effective Endoscopic Bariatric Therapy Suitable for Widespread Clinical Adoption: a Large, International Multicenter Study. Obes Surg 2018; Feb 15. doi: 10.1007/s11695-018-3135-x. [Epub ahead of print].* [CrossRef]
6. *Jain D, Bhandari BS, Arora A, Singhal S. Endoscopic Sleeve Gastroplasty - A New Tool to Manage Obesity. Clin Endosc 2017; 50: 552-61.* [CrossRef]