

Anuragh Gudur, MD¹; Calvin Geng, MD¹; Peter Hallowell MD²; Bruce Schirmer MD²; Vanessa M. Shami MD³; Andrew Y. Wang MD³; Alexander Podboy, MD³
¹ Department of Medicine, University of Virginia, ² Department of Surgery, University of Virginia, ³ Division of Gastroenterology and Hepatology, University of Virginia

ABSTRACT

Purpose: Endoscopic sleeve gastroplasty (ESG) is a novel minimally invasive weight loss procedure designed to mimic gastric volume reduction of surgical sleeve gastrectomy. Currently, both bariatric surgeons and gastroenterologists perform ESG and early reports suggest that ESG is safe and effective for weight loss. However, as gastroenterologists and bariatric surgeons have variations in training backgrounds, it is important to evaluate for potential differences in clinical outcomes. To date, there are no studies comparing the impact of proceduralist specialization on outcomes of ESG. This study aims to assess whether proceduralist specialization impacts short-term safety and efficacy after ESG.

Methods: We retrospectively analyzed over 6,000 patients who underwent ESG from 2016-2020 in the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) database. ESG patients were stratified into two groups depending on the specialty of the physician performing the procedure, and propensity matched using baseline patient characteristics. We primarily compared adverse events (AE), readmissions, re-operations, and re-interventions within 30-days after procedure. Secondary outcomes included procedure time, length of stay (LOS), early weight loss, and emergency department (ED) visits after procedure.

Results: There was no difference in AE in ESG performed by gastroenterologists and bariatric surgeons. ESG performed by bariatric surgeons demonstrated a trend towards higher rate of reoperations within 30 days. ESG performed by gastroenterologists had more ED visits but did not lead to higher rate of reintervention. LOS was shorter in ESG performed by gastroenterologists, but procedure time was longer.

Conclusions: ESG is safely performed by both gastroenterologists and bariatric surgeons.

CONTACT

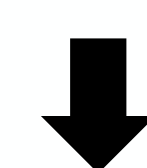
Anuragh Gudur
 University of Virginia
 Email: ycq3qt@virginia.edu
 Phone: 7063419299

INTRODUCTION

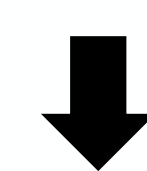
- ✓ Since the first report of ESG, clinical adoption of ESG as a primary weight loss modality has expanded rapidly worldwide
- ✓ Currently, both bariatric surgeons and gastroenterologists perform ESG
- ✓ To date, there are no studies comparing the impact of proceduralist specialization on outcomes of ESG.
- ✓ This study aims to assess whether proceduralist specialization impacts short-term safety and efficacy after ESG.

METHODS AND MATERIALS

Patients who underwent **ESG** at an accredited American Society of Metabolic and Bariatric Surgery (ASMBS) center from 2016-2020



1,234 propensity matched pairs of patients undergoing ESG by a **bariatric surgeon or gastroenterologist**



Comparison of safety and efficacy

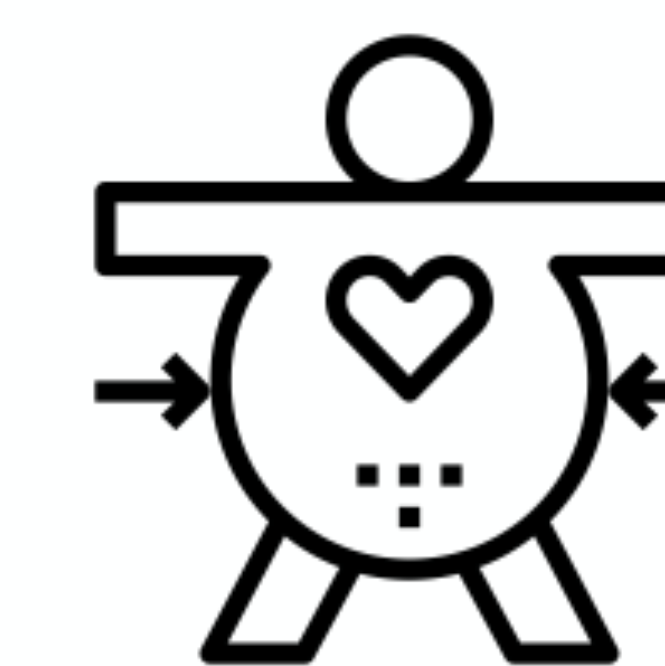
RESULTS

	Gastroenterologist (n=1234)	Metabolic and Bariatric Surgeon (n=1234)	p
Male, n (%)	203 (16.5)	204 (16.5)	1
BMI (mean (SD))	38.61 (7.78)	38.46 (7.78)	0.648
Mean Age, years (SD)	49.32 (10.97)	49.24 (11.36)	0.857
Race, n (%)			0.917
White	852 (69.0)	872 (70.7)	
Black or African American	188 (15.2)	175 (14.2)	
Smoker, n (%)	63 (5.1)	54 (4.4)	0.449
ASA Physical Status Class, n (%)			0.884
ASA II - Mild systemic disease	611 (49.5)	597 (48.4)	
ASA III - Severe systemic disease	580 (47.0)	588 (47.6)	
ASA IV - Severe systemic disease threat to life	21 (1.7)	25 (2.0)	
Diabetes, n (%)	189 (15.3)	187 (15.2)	0.992
Hypertension, n (%)	429 (34.8)	420 (34.0)	0.735
Renal Insufficiency, n (%)	6 (0.5)	4 (0.3)	0.751
Dialysis, n (%)	2 (0.2)	1 (0.1)	1
Therapeutic Anticoagulation, n (%)	39 (3.2)	34 (2.8)	0.635
GERD, n (%)	347 (28.1)	360 (29.2)	0.593
Hyperlipidemia, n (%)	206 (16.7)	206 (16.7)	1
Obstructive Sleep Apnea, n (%)	238 (19.3)	200 (16.2)	0.051
COPD, n (%)	19 (1.5)	12 (1.0)	0.278
Chronic Steroid Use, n (%)	26 (2.1)	21 (1.7)	0.556
History of PE, n (%)	25 (2.0)	20 (1.6)	0.547
History of DVT, n (%)	46 (3.7)	36 (2.9)	0.312

	Gastroenterologist (n=1234)	Metabolic and Bariatric Surgeon (n=1234)	p
Mean Change from Pre-Op to Post-Op BMI (SD)	-1.69 (3.61)	-1.51 (2.21)	0.228
Mean % Total Body Weight Loss (SD)	4.0% (10.1%)	3.6% (6.0%)	0.310
Mean Number of Days from Procedure to Discharge (SD)	0.44 (2.00)	0.74 (1.54)	<0.001
Major Adverse Event, n (%)	15 (1.2)	17 (1.4)	0.859
Reoperation within 30 days, n (%)	10 (0.8)	24 (1.9)	0.025
Readmission within 30 days, n (%)	60 (4.9)	51 (4.1)	0.437
Intervention within 30 days, n (%)	42 (3.4)	44 (3.6)	0.913
Mean Procedure Length, minutes (SD)	66.59 (41.69)	55.26 (43.13)	<0.001
Death within 30 days, n (%)	1 (0.1)	0 (0.0)	0.96
Received Treatment for Dehydration Outpatient, n (%)	36 (2.9)	29 (2.4)	0.451
Emergency Department Visit Not Resulting in Admission, n (%)	80 (6.5)	45 (3.6)	0.002

DISCUSSION & CONCLUSION

- ✓ This is the first study to date comparing outcomes of ESG based on provider subspecialty
- ✓ ESG is safely performed by both gastroenterologists and bariatric surgeons.
- ✓ ESG by gastroenterologists led to more ED visits but not readmission or reintervention
- ✓ ESG by bariatric surgeons led to a trend towards more reoperations within 30 days.



REFERENCES

- Hedjoudje A, Abu Dayyeh BK, Cheskin LJ, Adam A, Neto MG, Badurdeen D, Morales JG, Sartoretto A, Nava GL, Vargas E, Sui Z, Fayad L, Farha J, Khashab MA, Kalloo AN, Alqahtani AR, Thompson CC, Kumbhani V. Efficacy and Safety of Endoscopic Sleeve Gastroplasty: A Systematic Review and Meta-Analysis. Clin Gastroenterol Hepatol. 2020 May;18(5):1043-1053.e4. Epub 2019 Aug 20.
- Sharaiha RZ, Hajifathalian K, Kumar R, Saunders K, Mehta A, Ang B, Skaf D, Shah S, Herr A, Igel L, Dawod O, Dawod E, Sampath K, Carr-Locke D, Brown R, Cohen D, Dannenberg AJ, Mahadev S, Shukla A, Aronne LJ. Five-Year Outcomes of Endoscopic Sleeve Gastroplasty for the Treatment of Obesity. Clin Gastroenterol Hepatol. 2021 May;19(5):1051-1057.e2.
- Mehta A, Sharaiha RZ. Bariatric and metabolic endoscopy: impact on obesity and related comorbidities. Therapeutic Advances in Gastrointestinal Endoscopy. January 2021.