

ABSTRACT

Background: Endoscopic sleeve gastroplasty (ESG) is still mainly proposed for patients with BMI 30-40, although there are no guidelines specifying applicability. There is little data comparing ESG to bariatric surgery in patients with class III obesity (BMI > 40).

Aim: To assess short-term safety and efficacy of ESG and compare it to sleeve gastrectomy (SG) and gastric bypass (RNYGB), in patients with class III obesity.

Methods: We retrospectively analyzed over 500,000 patients with BMI>40 undergoing ESG, SG, and RNYGB in the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program database from 2016-2020. ESG patients were stratified by BMI to compare outcomes between Class III versus Class I-II obesity. Class III obese patients undergoing ESG were also propensity matched to SG and RNYGB cohorts for an adjusted comparison. Primary outcomes included adverse events (AE), readmissions, re-operations, and re-interventions within 30-days after procedure. Secondary outcomes included procedure time, length of stay (LOS), and early weight loss.

Results: Of patients undergoing ESG, there was no difference in AE, readmissions, or reinterventions between Class III obesity and Class I-II obesity (p>0.05), while Class III obese patients achieved greater %TBWL at 30d (p<0.05). For class III obese patients, ESG had comparable AE to SG and less than RNYGB. ESG achieved similar %TBWL as SG and RNYGB within 30d.

Conclusions: This is the largest study yet evaluating ESG in class III obesity. ESG is safe in this population, with no difference in AE between obesity classes. The safety and efficacy of ESG mirrored SG and was safer than RNYGB.

CONTACT

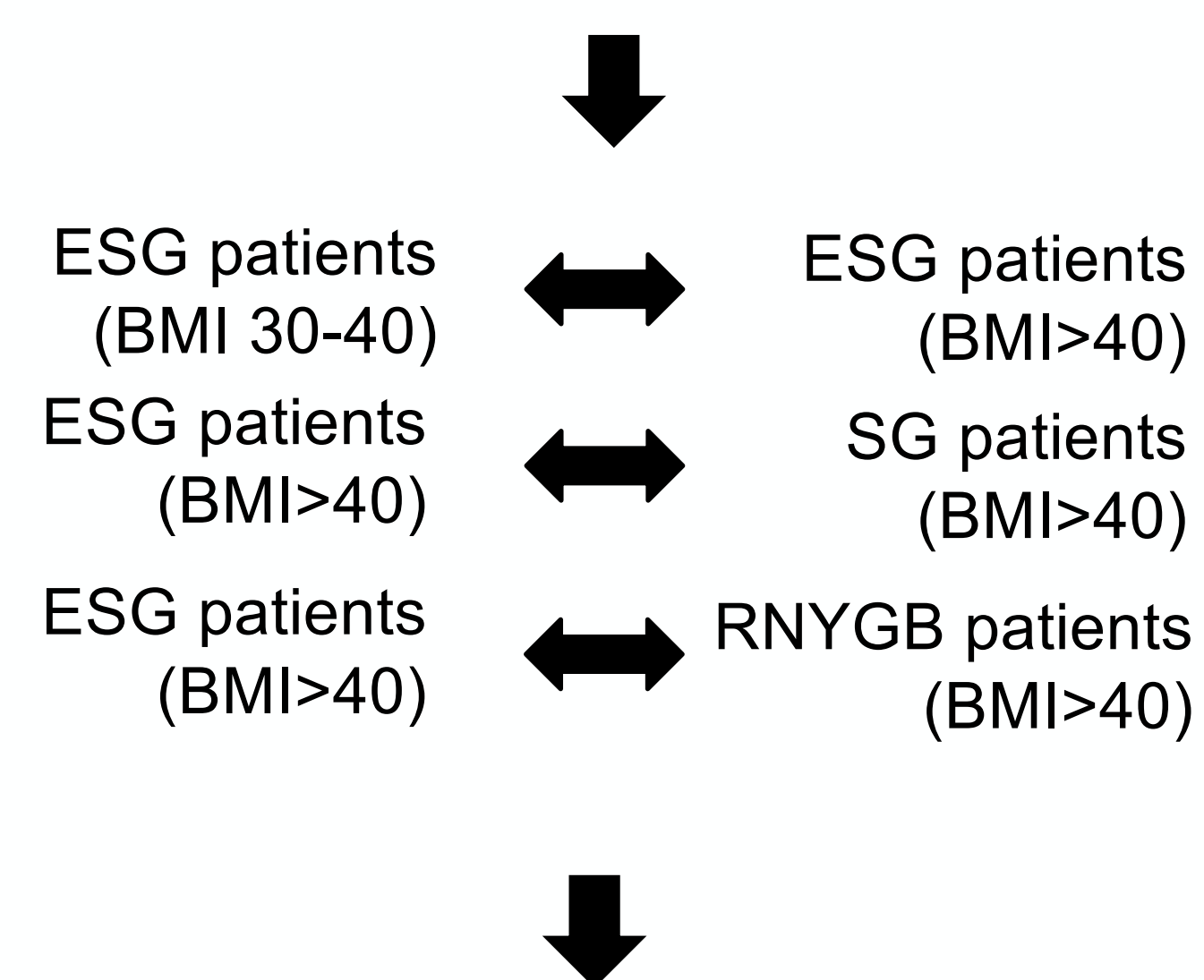
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INTRODUCTION

- ✓ Endoscopic sleeve gastroplasty (ESG) is mainly proposed for patients with BMI 30-40, although there are no guidelines specifying applicability.
- ✓ There is little data comparing ESG to bariatric surgery in patients with class III obesity (BMI > 40).
- ✓ This is the largest study to date analyzing short-term safety and efficacy of ESG and comparing it to sleeve gastrectomy (SG) and Roux-en-Y gastric bypass (RNYGB), in patients with class III obesity.

METHODS AND MATERIALS

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



Comparison of safety and efficacy outcomes

RESULTS

Matched comparison of postprocedural outcomes after ESG between BMI groups			
	BMI 30-40 (n = 2626)	BMI > 40 (n=2626)	P-value
Mean BMI (SD)	35.38 (2.73)	47.79 (7.23)	<0.001
Mean % Total Body Weight Loss (SD)	3.2 (7.3)	5.0 (6.0)	<0.001
Major Adverse Event, n (%)	37 (1.4)	36 (1.4)	1
Reoperation within 30 days, n (%)	33 (1.3)	32 (1.2)	1
Readmission within 30 days, n (%)	92 (3.5)	101 (3.8)	0.557
Intervention within 30 days, n (%)	62 (2.4)	68 (2.6)	0.657
Mean Procedure Length, minutes (SD)	60.49 (44.48)	68.94 (49.15)	<0.001
Death within 30 days, n (%)	2 (0.1)	0 (0.0)	0.49
Received Treatment for Dehydration Outpatient, n (%)	54 (2.1)	75 (2.9)	0.075
Emergency Department Visit Not Resulting in Admission, n (%)	108 (4.1)	148 (5.6)	0.012

Comparison of Postprocedural Outcomes in Matched Procedure Cohorts					
	ESG (n= 2,626)	SG (n= 5,252)	P-value	RNYGB (n= 5,252)	P-value
Mean BMI (SD)	47.79 (7.23)	48.31 (7.44)	0.003	47.85 (6.84)	0.707
Mean % Total Body Weight Loss (SD)	5.0 (6.0)	5.4 (3.8)	<0.001	5.3 (4.4)	0.003
Major Adverse Event, n (%)	36 (1.4)	76 (1.4)	0.866	172 (3.3)	<0.001
Reoperation within 30 days, n (%)	32 (1.2)	53 (1.0)	0.464	138 (2.6)	<0.001
Readmission within 30 days, n (%)	101 (3.8)	179 (3.4)	0.355	334 (6.4)	<0.001
Intervention within 30 days, n (%)	68 (2.6)	53 (1.0)	<0.001	125 (2.4)	0.624
Mean Procedure Length, minutes (SD)	68.94 (49.15)	78.99 (40.17)	<0.001	134.97 (65.25)	<0.001
Death within 30 days, n (%)	0 (0.0)	7 (0.1)	0.157	9 (0.2)	0.082
Received Treatment for Dehydration Outpatient, n (%)	75 (2.9)	206 (3.9)	0.019	269 (5.1)	<0.001
Emergency Department Visit Not Resulting in Admission, n (%)	148 (5.6)	364 (6.9)	0.032	522 (9.9)	<0.001

DISCUSSION & CONCLUSION

- ✓ Among patients undergoing ESG, patients with BMI>40 had **no difference** in AE, readmissions, reinterventions, or re-operations, compared to those with BMI 30-40
- ✓ When compared to bariatric surgery, ESG had a **comparable rate of AE to SG** and significantly **fewer AE than RNYGB**, while achieving **similar short-term weight loss** in patients with BMI>40.
- ✓ Clinicians should consider **expanding access** to ESG for patients regardless of BMI class.
- ✓ Further studies evaluating long-term durability and cost-effectiveness of ESG in class III obesity are warranted.

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, Kumbhari 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.

Lopez-Nava G, Laster J, Negi A, Fook-Chong S, Bautista-Castaño J, Asokkumar R. Endoscopic sleeve gastroplasty (ESG) for morbid obesity: how effective is it? Surg Endosc. 2022 Jan;36(1):352-360. doi: 10.1007/s00464-021-08289-1. Epub 2021 Jan 25. PMID: 33492593

Li R, Veltzke-Schlieker W, Adler A, Specht M, Eskander W, Ismail M, Badakhshi H, Galvao MP, Zorron R. Endoscopic Sleeve Gastroplasty (ESG) for High-Risk Patients, High Body Mass Index (> 50 kg/m2) Patients, and Contraindication to Abdominal Surgery. Obes Surg. 2022 Aug;31(8):3400-3409. doi: 10.1007/s11695-021-05446-2. Epub 2021 Apr 27. PMID: 33905069.

Pontecorvi V, Bove V, Gallo C et al. OP45 SHORT TERM OUTCOMES OF ENDOSCOPIC SLEEVE GASTROPLASTY IN CLASS III OBESE PATIENTS: A CLINICAL, RETROSPECTIVE, SINGLE CENTER STUDY. Endoscopy 2021; 53: S21.