

DEBATE SESSION

**Endoscopic Sleeve Gastroplasty**  
**VS**  
**Laparoscopic Gastric Plication**

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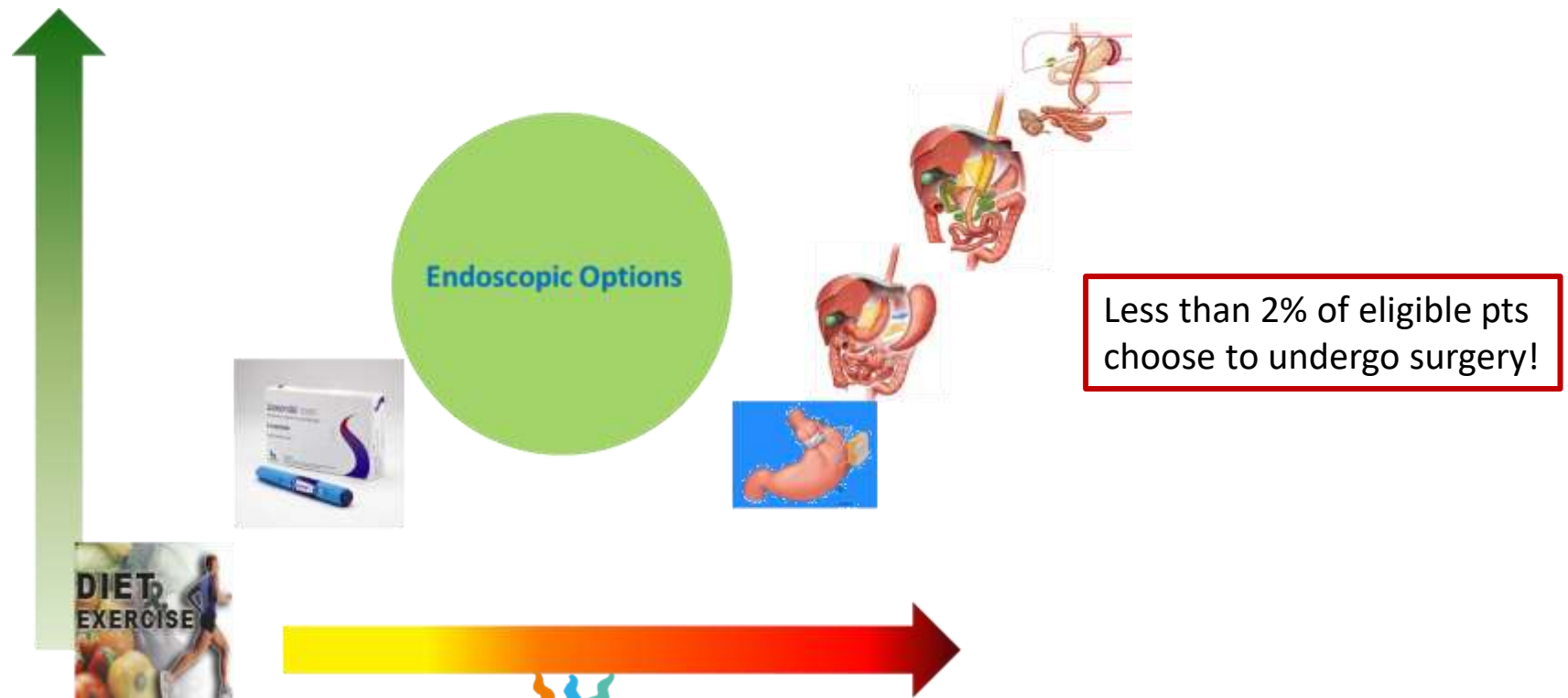
## TOPICS TO BE ADDRESSED:

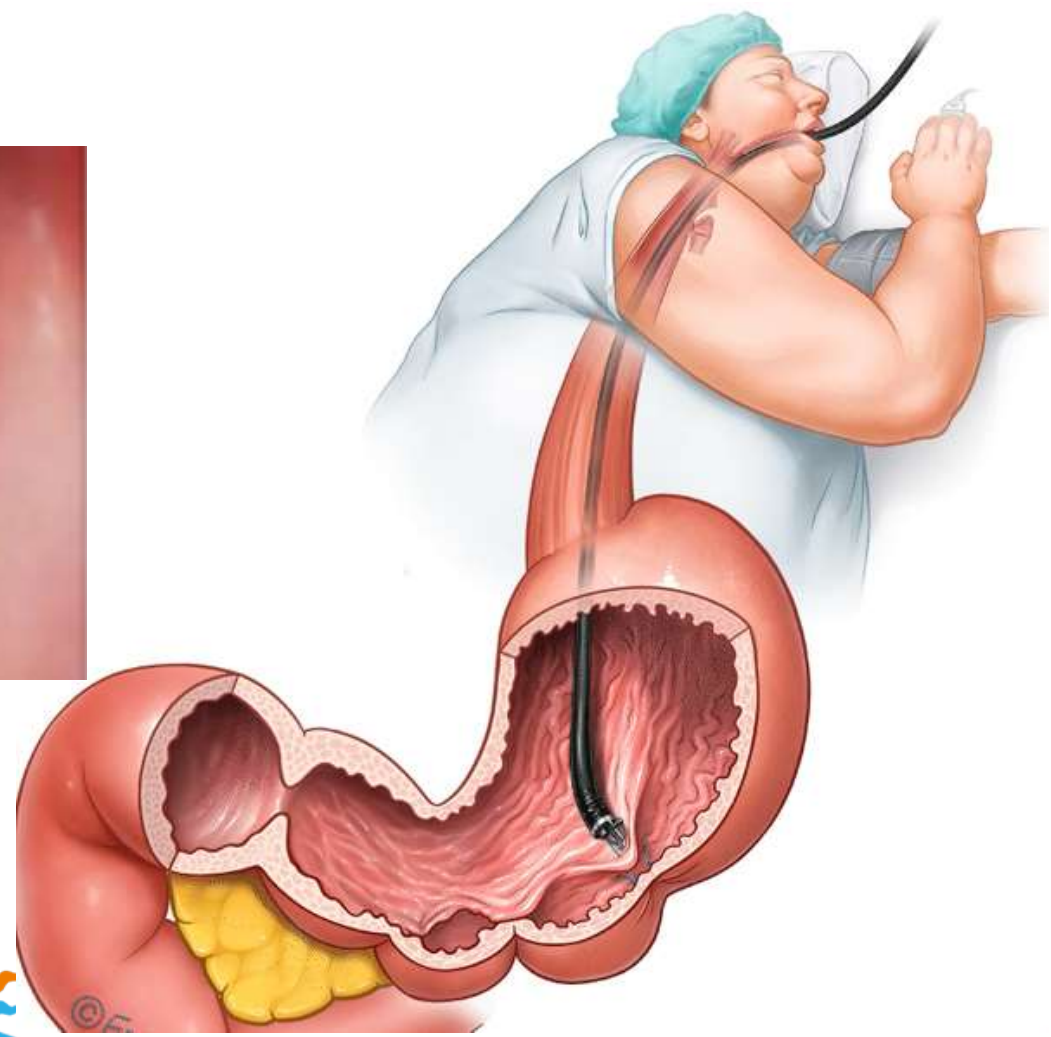
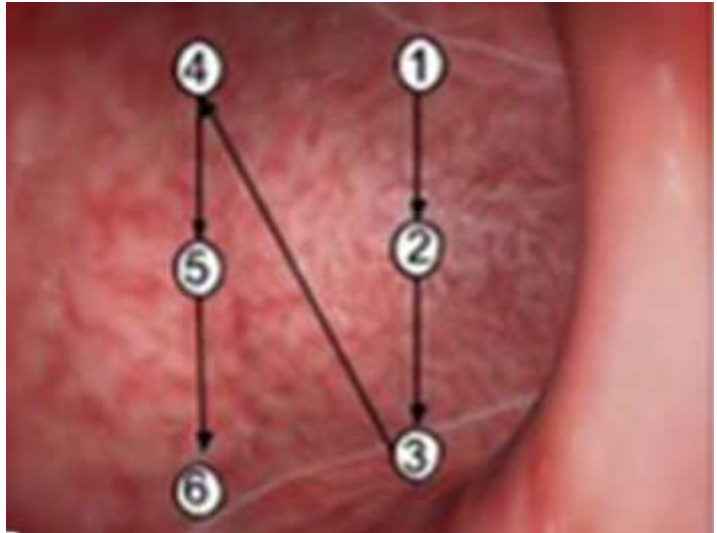
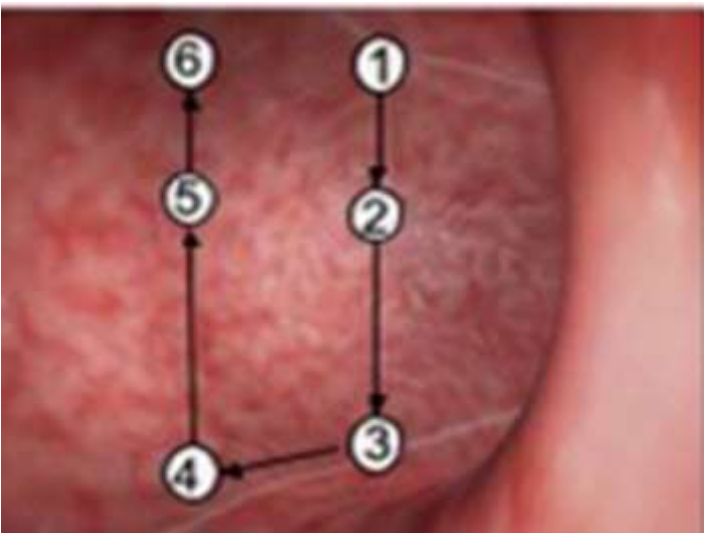
- 1 ESG is widely adopted worldwide
- 2 ESG is safe and effective in the management of obesity and related comorbidities
- 3 ESG is multipurpose



# 1. ESG has gained widespread global adoption

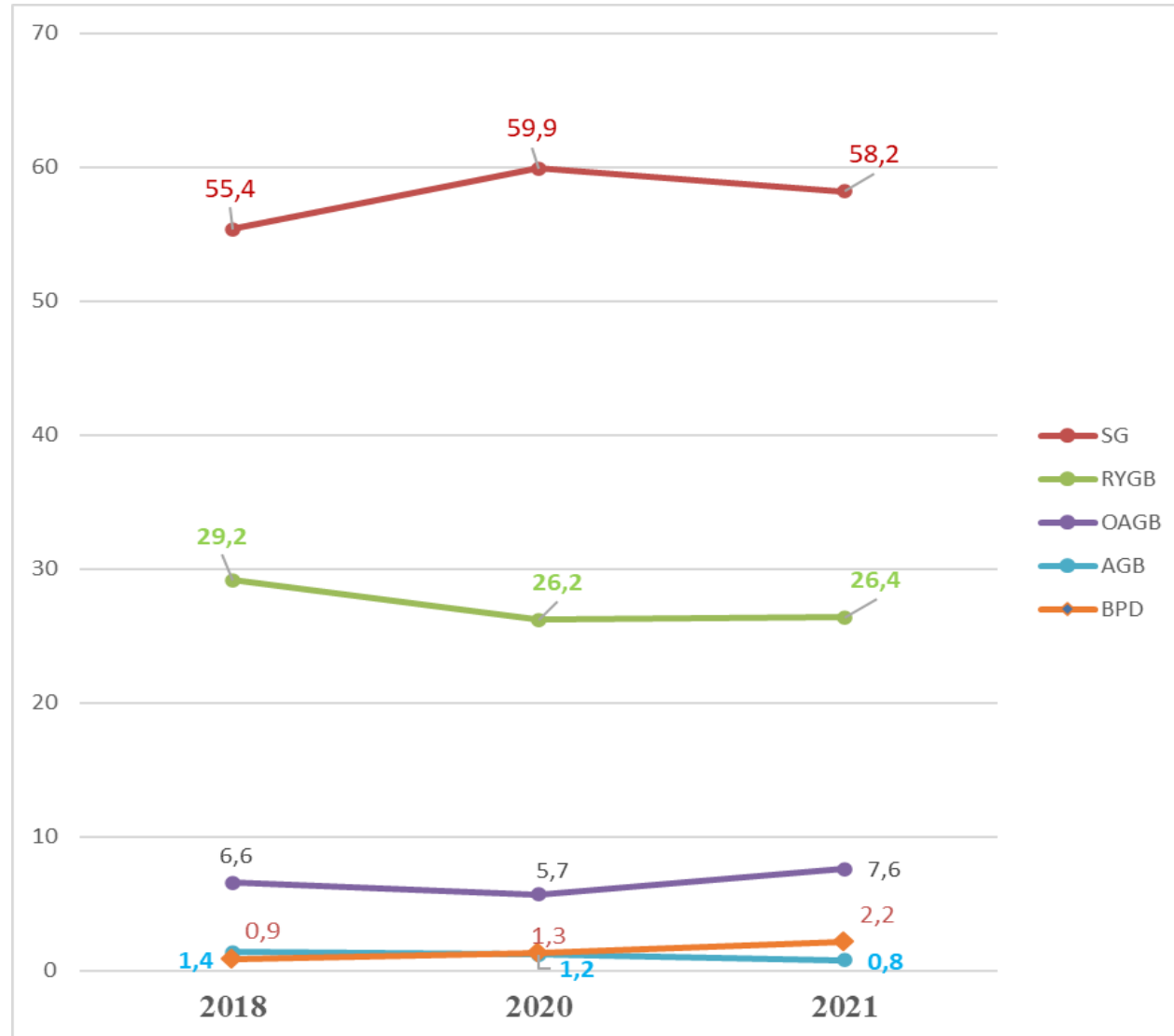
ESG is a transoral, anatomy-sparing endoscopic intervention that was developed to offer a minimally invasive bridge in obesity management and has gained widespread global adoption.







# BARIATRIC PROCEDURES WORLDWIDE (2018-2021) TREND PERCENTAGES



*Unpublished data*

# WORLDWIDE SURVEY 2020-2021

## Number and type of procedures worldwide

*Unpublished data*

	2018	2020	2021
<b>Sleeve gastrectomy (SG)</b>	386,096	304,352	351,689
<b>Roux-en-Y Gastric Bypass (RYGB)</b>	203,769	133,007	159,543
<b>One Anastomosis Gastric Bypass (OAGB)</b>	46,406	29,117	46,113
<b>Biliopancreatic diversion (BPD)</b>	6,506	6,896	13,378
<b>Adjustable Gastric Banding (AGB)</b>	9,757	6,116	5,010
<b>Other surgical operations</b>	14,346	13,949	13,238
<b>Intragastric balloons</b>	27,780	11,492	12,421
<b>Other Endoluminal procedures</b>	1,531	2,877	2,707
<b>Total</b>	<b>696,191</b>	<b>507,806</b>	<b>604,099</b>



# WORLDWIDE SURVEY 2020-2021

- Sleeve Gastrectomy is the most performed surgical procedure worldwide.
- The AGB continues to decrease and it is almost disappearing while the hypo-absorptive procedures are increasing.
- Although, the IFSO bariatric and metabolic community is committed to the standardization of surgical procedures through position statements and guidelines, there are still a consistent number of procedures that are not included in the list of officially recognized interventions.
- **The endoluminal procedures are definitively increasing and current data are largely underestimated because these operations are mostly performed by medical gastroenterologists that are not generally involved in the national bariatric societies.**



## 2. ESG has shown effectiveness and safety

- The ESG with the OverStitch System meets and exceeds the minimum **safety and effectiveness thresholds** for endoscopic bariatric therapies defined by the joint task force convened by the American Society for Gastrointestinal Endoscopy and the American Society for Metabolic and Bariatric Surgery.
- ESG induced clinically **meaningful weight loss** with **improvements in obesity-related comorbid conditions** of metabolic syndrome, type 2 diabetes, hypertension, quality of life, eating behaviours, and depression, and **did not lead to worsening of gastroesophageal reflux disease**, while maintaining a high patient satisfaction.



- Sullivan S et al. ASGE position statement on endoscopic bariatric therapies in clinical practice. *Gastrointest Endosc* 2015; 82: 767–72.
- ASGE/ASMBS Task Force on Endoscopic Bariatric Therapy. A pathway to endoscopic bariatric therapies. *Surg Obes Relat Dis* 2011; 7: 672–82

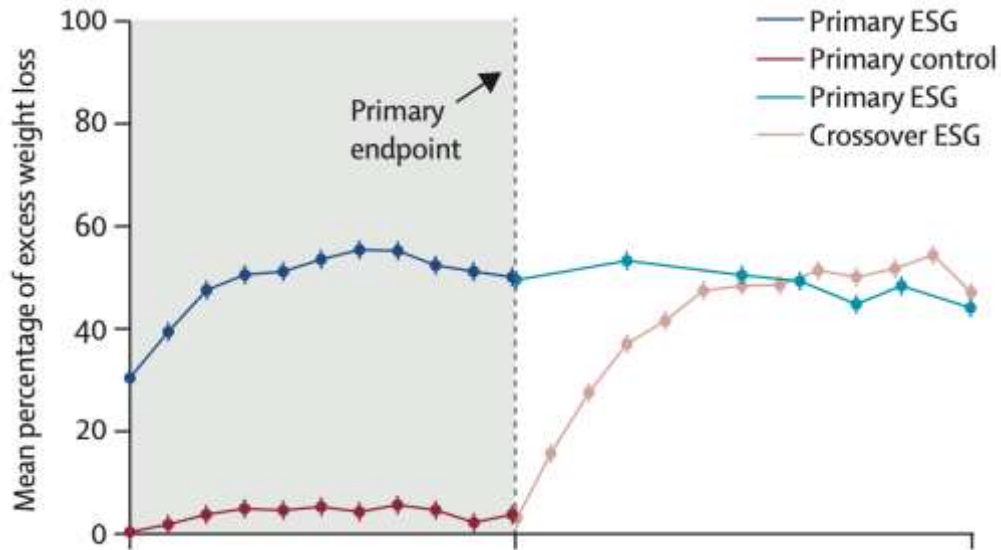


# The studies:

## Endoscopic sleeve gastroplasty for treatment of class 1 and 2 obesity (MERIT): a prospective, multicentre, randomised trial

Barham K Abu Dayyeh, Fateh Bazerbachi, Eric J Vargas, Reem Z Sharaiha, Christopher C Thompson, Bradley C Thaemert, Andre F Teixeira, Christopher G Chapman, Vivek Kumbhari, Michael B Ujiki, Jeanette Ahrens, Courtney Day, the MERIT Study Group, Manoel Galvao Neto, Natan Zundel, Erik B Wilson

*Lancet* 2022; 400: 441-51



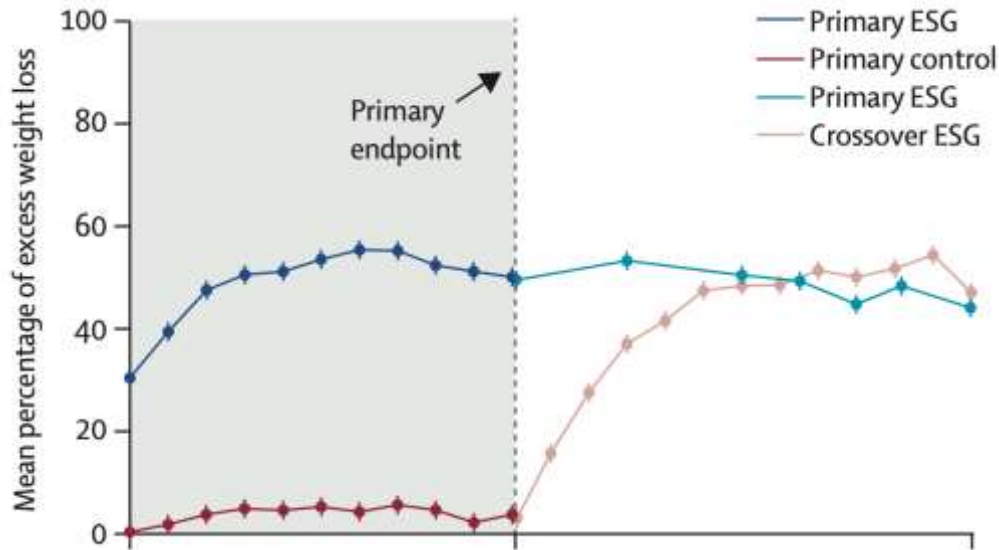
- 209 pts randomly assigned to ESG (n=85) or to control (n=124).
- **At 52 weeks, mean percentage of EWL was 49.2% (SD 32.0) for the ESG group and 3.2% (18.6) for the control group (p<0.0001).**
- Mean percentage of total bodyweight loss was 13.6% (8.0) for the ESG group and 0.8% (5.0) for the control group (p<0.0001), and 59 (77%) of 77 participants in the ESG group reached 25% or more of EWL at 52 weeks compared with 13 (12%) of 110 in the control group (p<0.0001).

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- At 52 weeks, 41 (80%) of 51 participants in the ESG group had an improvement in one or more metabolic comorbidities, whereas six (12%) worsened, compared with the control group in which 28 (45%) of 62 participants had similar improvement, whereas 31 (50%) worsened.
- At 104 weeks, 41 (68%) of 60 participants in the ESG group maintained 25% or more of EWL.
- ESG-related serious adverse events occurred in three (2%) of 131 participants, without mortality or need for intensive care or surgery.

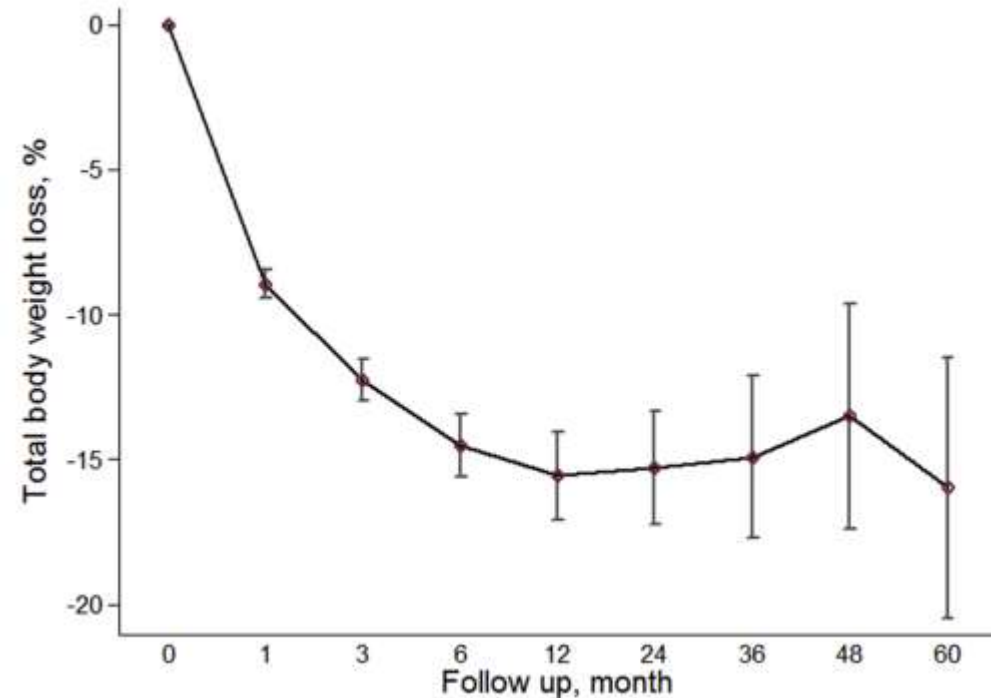
# The studies:

## Five-Year Outcomes of Endoscopic Sleeve Gastroplasty for the Treatment of Obesity

Reem Z. Sharaiha,\* Kaveh Hajifathalian,\* Rekha Kumar,<sup>‡</sup> Katherine Saunders,<sup>‡</sup> Amit Mehta,\* Bryan Ang,<sup>§</sup> Daniel Skaf,<sup>§</sup> Shawn Shah,\* Andrea Herr,\* Leon Igel,<sup>‡</sup> Qais Dawod,\* Enad Dawod,<sup>§</sup> Kartik Sampath,\* David Carr-Locke,\* Robert Brown,\* David Cohen,\* Andrew J. Dannenberg,<sup>||</sup> Srihari Mahadev,\* Alpana Shukla,<sup>‡</sup> and Louis J. Aronne<sup>‡</sup>

*Clinical Gastroenterology and Hepatology* 2021;19:1051–1057

- 216 patients (68% female), mean age of 46–13 years, and mean BMI of 39–6 kg/m<sup>2</sup>
- 203, 96, and 68 patients were eligible for a 1-, 3-, and 5-year FU
- At 5 years, mean TBWL was 15.9% (95% CI, 11.7-20.5,  $p < .001$ ) and 90 and 61% of patients maintained 5 and 10% TBWL, respectively.
- There was an overall rate of 1.3% moderate adverse events (AEs), without any severe or fatal AEs.



### 3. Features in favor of ESG

- Less invasive
- Incisionless
- Outpatient
- **Repeatability, Reversibility, Conversion**
- Multi purpose
  - Treatment for obesity comorbidities
  - Low BMI
  - Bridge to surgery
  - High risk patients
  - Adolescents

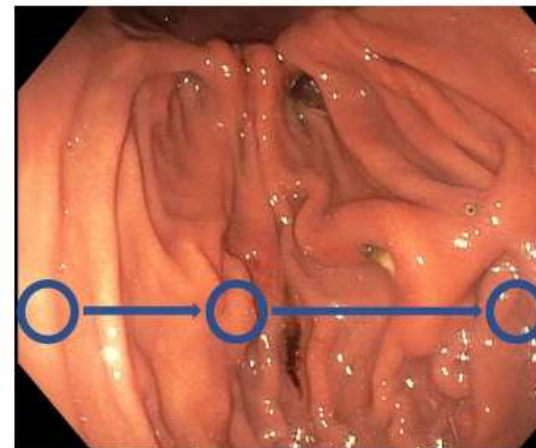
## Redo endoscopic sleeve gastroplasty: technical aspects and short-term outcomes

Ivo Bošković<sup>1</sup>, Valerio Pontecorvi, Camilla Gallo, Vincenzo Bove, Lucrezia Laterza and Guido Costamagna

- As in all endoscopic procedures, ESG is repeatable per definition and the need to perform a redo ESG should not be considered as a failure of the previous procedure, but in selected patients it can be contemplated as a second-step endoscopic treatment approach.
- Optimal timing between the first and the second procedure should be 6–12 months



**Figure 2.** Partial reopening of the sutures placed during the first ESG. Visible suture threads were cut with endoscopic scissors.



**Figure 4.** Suggested sites for re-biting the gastric wall (blue circles) during the redo ESG to avoid high-tension-related perforation.



# FEASIBILITY AND SAFETY OF REVISIONAL SURGERY AFTER ENDOSCOPIC BARIATRIC PROCEDURES

## MATERIALS AND METHODS

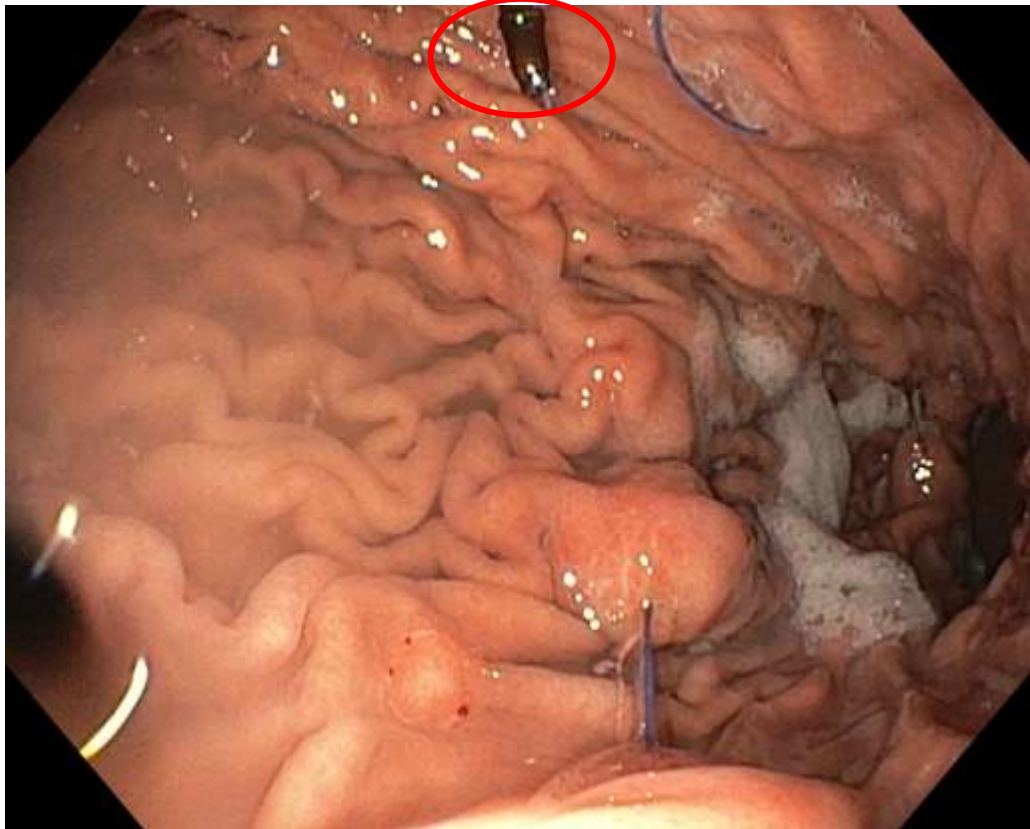
- This is a multicenter retrospective study with a prospective maintained database of patients who underwent primary ESG or TORe that required revision surgery for IWL from 2016 to 2021.
- **35 patients** were enrolled (16 female, mean age= 44,9 years). The mean **BMI** at EP was **40,4 kg/m<sup>2</sup>** (range= 33-51). 26 patients underwent primary ESG and 9 pts underwent TORe for weight regain after RYGB. The timespan between EP and surgery was 20 months (range 6-48).
- At the last follow-up before surgery the TWL was 15% on average (range= 3-65%) with a mean weight regain of 15,4 kg.



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MATERIALS AND METHODS

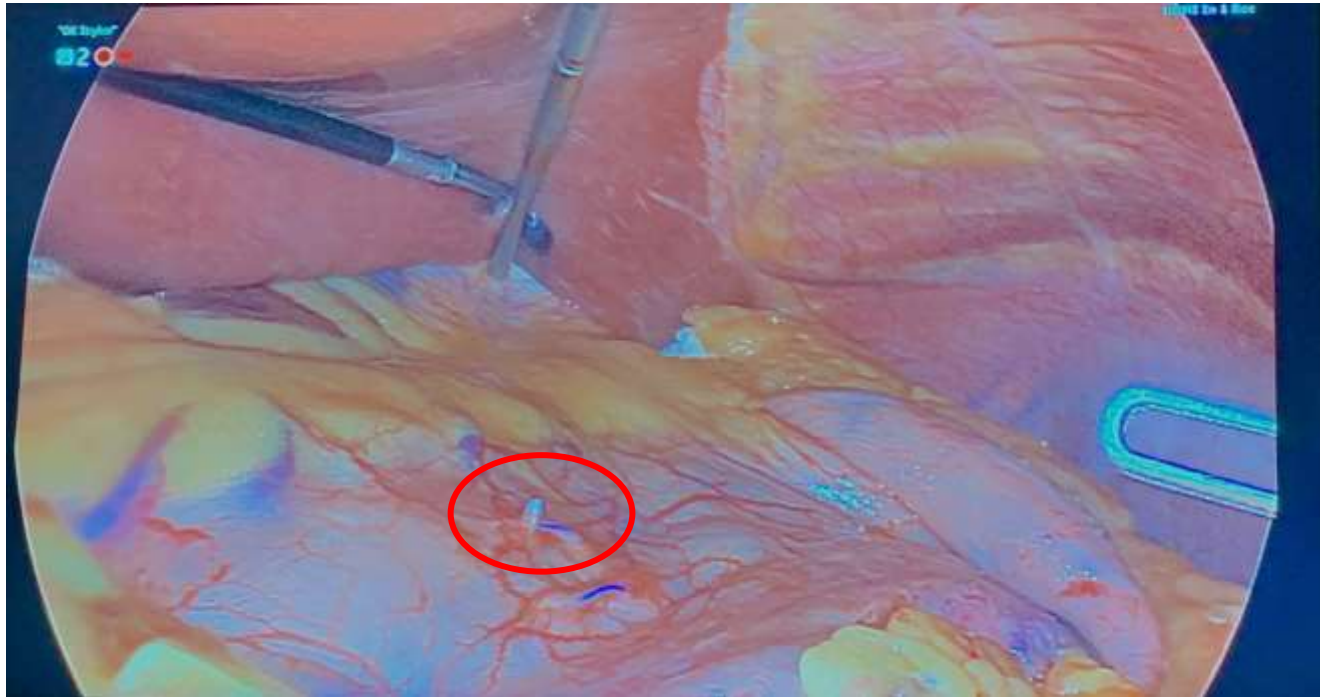
Preoperative endoscopic view of a primary ESG



# FEASIBILITY AND SAFETY OF REVISIONAL SURGERY AFTER ENDOSCOPIC BARIATRIC PROCEDURES

MATERIALS AND METHODS

**Intraoperative view**





# Endoscopic Sleeve Gastroplasty (ESG) for High-Risk Patients, High Body Mass Index (> 50 kg/m<sup>2</sup>) Patients, and Contraindication to Abdominal Surgery

Renjie Li<sup>1</sup> · Wilfried Veltzke-Schlieker<sup>2</sup> · Andreas Adler<sup>2</sup> · Maximilian Specht<sup>1</sup> · Wael Eskander<sup>1</sup> · Mahmoud Ismail<sup>3</sup> · Harun Badakhshi<sup>4</sup> · Manoel Passos Galvao<sup>5</sup> · Ricardo Zorron<sup>1</sup>

## Key Points

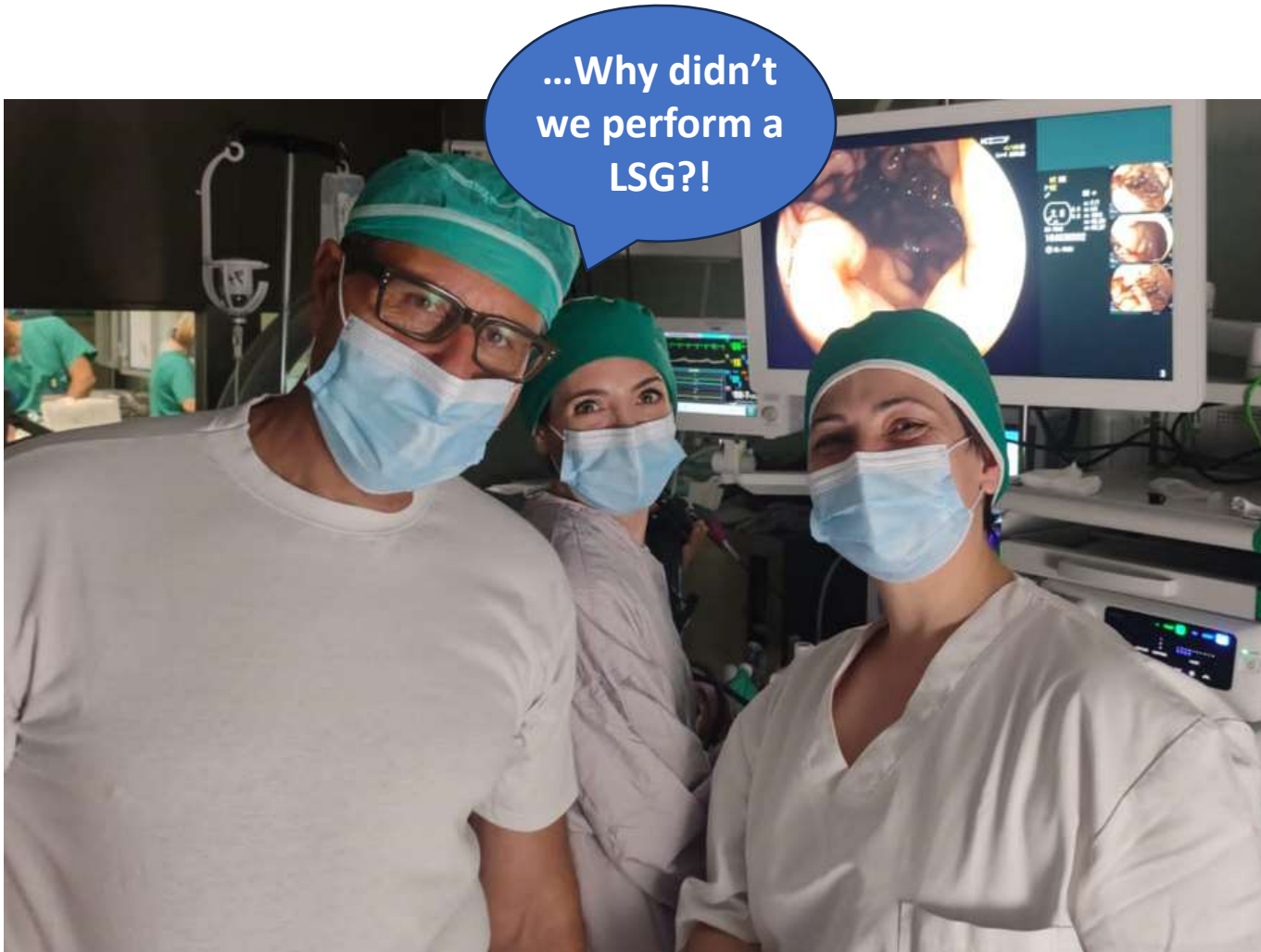
- Endoscopic sleeve gastroplasty (ESG) was not yet broadly used for patients with superobesity.
- Safety, feasibility, and efficacy of ESG was evaluated for high-risk, high-BMI patients, and contraindication to abdominal surgery.
- ESG in this set of patients had a good safety profile with satisfactory weight loss outcomes.
- The results of this study may potentially extend the current clinical indications of ESG.



## CONCLUSIONS

- ESG is a transoral, incisionless, anatomy-sparing, repeatable, reversible, convertible, endoscopic intervention that has gained widespread global adoption.
- The increase in the endoscopic procedures is a rising phenomenon in BMS worldwide and could be due to their minimally invasive nature with a transoral access, but also because the gastroenterologists devoted to therapeutic endoscopy are more and more directly involved in the management of people with obesity.
- Low BMI patients are a target population to take care of to prevent future morbid obese patients. The current BMS guidelines are oriented towards this concept.
- High risk patients are increasingly eligible for BMS. Although there is no consensus concerning the best procedure, the ESG can be used as a safe, feasible, and effective option for the therapy of patients with superobesity, high-risk patients, and patients contraindicated to abdominal surgery.





**Thank you!**