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Endoscopic Sleeve Gastroplasty Using the Over Stitch Apollo System: First Moroccan Case in the Endoscopic Management of Obesity

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Abstract | **Case Report**

Endoscopic sleeve gastroplasty (ESG) is a promising minimally invasive option in the management of obesity, allowing a significant reduction in gastric volume while avoiding the risks associated with bariatric surgery. We report the case of a morbidly obese patient who underwent ESG using the OverStitch Apollo endoscopic suturing system, after a comprehensive multidisciplinary pre-therapeutic assessment and no anesthetic, metabolic or psychiatric contraindication. The procedure, performed under general anesthesia, was completed without incident or early complication, with an estimated 70% reduction in gastric volume and a weight loss of 20 kg at 6-month follow-up. ESG appears to be an effective and safe alternative for selected patients with obesity, and its integration into structured care pathways could help improve weight and metabolic control.

Keywords: Obesity, Endoscopic sleeve gastroplasty, OverStitch, Bariatric endoscopy, Weight loss, Morocco.

INTRODUCTION

Obesity is a chronic multifactorial disease whose global prevalence is constantly increasing, with a major impact in terms of morbidity, mortality and healthcare costs. Despite advances in lifestyle and pharmacological approaches, bariatric surgery remains the most effective option to induce sustained weight loss, albeit at the cost of non-negligible morbidity and limited access.

Endoscopic bariatric and metabolic therapies (EBMT) have emerged as minimally invasive alternatives, particularly attractive for patients who are not eligible for or reluctant to undergo surgery.

Among them, endoscopic sleeve gastroplasty (ESG), performed using the Over Stitch endoscopic suturing system, aims to reduce gastric capacity and slow gastric emptying through full-thickness plications along the greater curvature.

The present study reports the first ESG case performed in Morocco in a university center, and discusses this experience in light of recent data and recommendations on EBMT.

CASE REPORT

A 34-year-old woman was followed for type 2 diabetes and hypothyroidism treated with levothyroxine, with a history of cholecystectomy in 2019.

The patient had morbid obesity with a body mass index (BMI) of 45 kg/m² (weight 110 kg, height 155 cm).

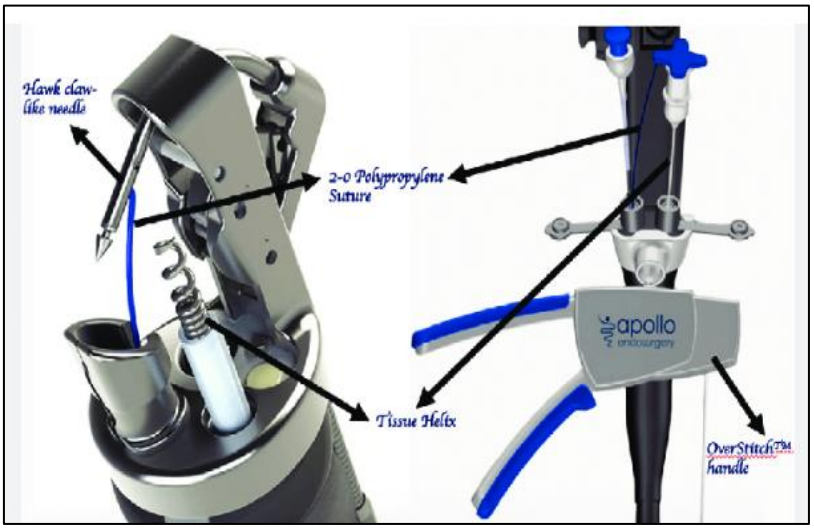
The selection criteria were a BMI ≥ 40 kg/m² with metabolic comorbidities, failure of medical weight-management measures and a preference for a minimally invasive approach.

The pre-procedural work-up included:

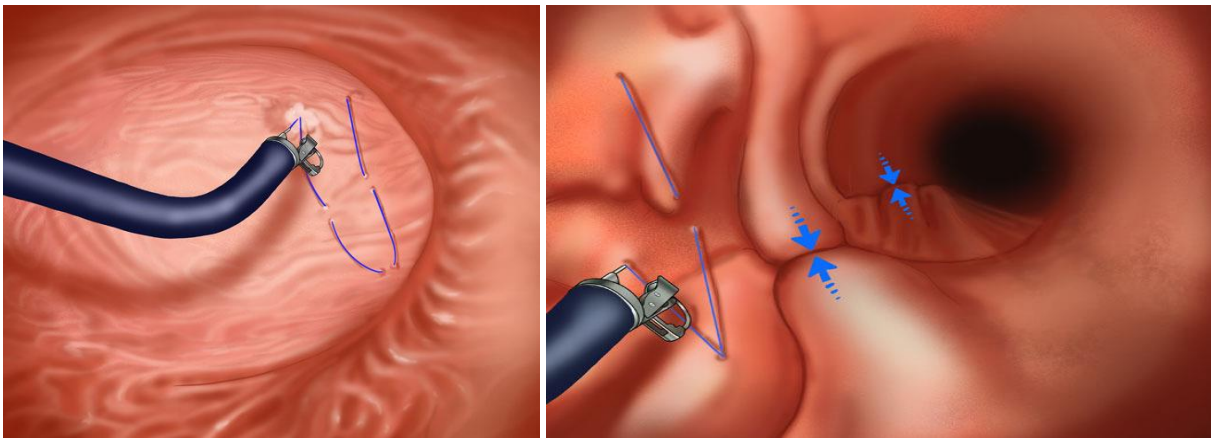
- Upper gastrointestinal endoscopy with biopsies, showing congestive antritis without Helicobacter pylori infection.
- Cardiological, pneumological and endocrine assessment, revealing no contraindication to general anesthesia or major metabolic imbalance.
- Psychiatric evaluation excluding major eating disorders and psychological contraindications to a bariatric procedure.

The patient was admitted the day before the procedure. ESG was performed in the endoscopy suite under general anesthesia, using a Fujinon endoscope

fitted with the OverStitch Apollo endoscopic suturing system mounted on a single-channel endoscope.



The procedure (approximate duration 60 minutes) consisted of placing full-thickness sutures along the greater curvature, from the antrum to the gastric body, according to a pattern allowing an estimated 70% reduction in gastric volume and the creation of an elongated tubular stomach.



A final endoscopic check confirmed lumen patency and the absence of active bleeding or immediate per-procedural complication.

No early severe complication (bleeding, perforation, severe infection or need for surgical conversion) was observed during hospitalization or in the immediate postoperative period.

Post-procedure, the patient received clinical monitoring, symptomatic treatment for pain and nausea, and a progressive reintroduction of diet (liquid phase, then pureed, then solid).

Dietary and educational support as well as nutritional and metabolic follow-up were planned, with visits at 1 and 3 months, in accordance with follow-up recommendations after EBMT.

At 6 months after the procedure, the patient had lost 20 kg compared with baseline, corresponding to a significant total weight loss.

This evolution was accompanied by clinical improvement in exercise tolerance and better control of type 2 diabetes.

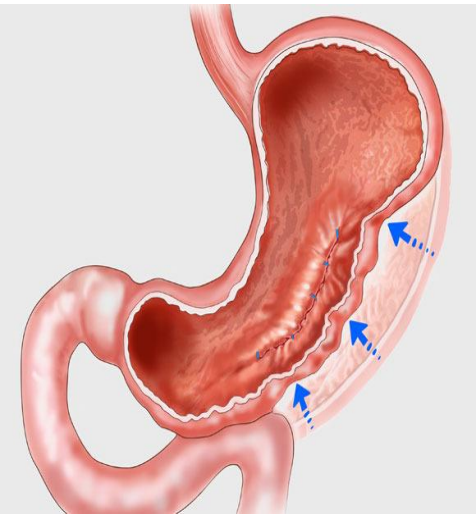
Table 1: Clinical and weight loss follow-up after ESG

	1 month	3 months	6 months
Clinical	Asymptomatic	Asymptomatic	Asymptomatic
Weight loss	5 Kg (4,5%)	12 Kg (10,9%)	20 kg (18%)

DISCUSSION

This first Moroccan case of endoscopic sleeve gastroplasty using the OverStitch system confirms the feasibility and safety of ESG in a university center with expertise in interventional endoscopy and obesity management.

The early weight-loss results observed in this patient, with a loss of 20 kg at 6 months corresponding to about 18% total body weight loss, are consistent with large series and systematic reviews reporting 12-month TBWL between 13% and 20% depending on cohorts and suturing protocols [1,3–5].



The joint ASGE–ESGE guidelines published in 2024 on endoscopic bariatric and metabolic therapies (EBMT) recognize ESG as a validated option in obese adults as an adjunct to lifestyle modification, particularly for patients with BMI ≥ 30 kg/m² or BMI 27–29.9 kg/m² associated with at least one obesity-related comorbidity.

These guidelines emphasize the need for careful patient selection, a multidisciplinary pre-therapeutic work-up including clinical, nutritional, metabolic, psychological and endoscopic assessment, and long-term follow-up comparable to that of bariatric surgery.

Specific position statements devoted to endoscopic sleeve gastroplasty ("Endo-sleeve") confirm that ESG has a favorable safety profile, with serious adverse event rates generally below 5% in multicenter series and international registries.

The most frequently reported complications are postoperative pain, nausea and vomiting, a few cases of gastrointestinal bleeding or perigastric collections, most often managed conservatively or endoscopically, with emergency surgery remaining rare.

Several comparative studies and meta-analyses have shown that ESG is overall less morbid than surgical sleeve gastrectomy, with significantly lower serious adverse event rates, around 0.5–5% for ESG versus 5–20% for surgery depending on the series [1–4].

Large series and propensity-score analyses report a lower mean rate of peri- and postoperative complications after ESG, with fewer bleeding events, leaks and complications requiring surgical reintervention than with sleeve gastrectomy [1–3].

Some studies, however, note a slightly higher rate of early readmissions after ESG, but these readmissions most often correspond to endoscopic or medical management, which is clearly less invasive than the surgical reoperations observed after sleeve gastrectomy [2–4]. Overall, these data confirm that ESG offers a more favorable safety profile than conventional restrictive bariatric surgery, while allowing clinically meaningful weight loss, which reinforces the interest of this technique in selected patients or those at increased surgical risk [1–4].

From a metabolic standpoint, several real-life studies and registries show that ESG not only induces a significant reduction in BMI, but also improves major obesity-related comorbidities, particularly type 2 diabetes, hypertension and dyslipidemia [3–5,8].

These findings have led scientific societies such as IFSO and ASMBS to position ESG as an intermediate option between optimized medical therapy and bariatric surgery, particularly in patients reluctant to surgery or not meeting the classical surgical criteria.

It is nonetheless clearly stated that bariatric surgery remains the reference treatment for eligible patients, due to greater and more durable weight loss; ESG should therefore not be considered a systematic substitute for surgery, but rather a complementary option within a structured care pathway.

In this context, ESG must be performed by specifically trained operators in centers with a multidisciplinary organization involving gastroenterologists, surgeons, nutritionists, endocrinologists and psychologists.

This case also highlights the importance of:

- A standardized pre-procedural work-up including upper gastrointestinal endoscopy, cardiopulmonary and endocrine assessment, and psychiatric evaluation, as recommended by recent guidelines and position statements.
- Reproducible technical protocols (suturing pattern, target volumetric reduction of about 60–70%) in order to optimize the efficacy/safety balance and limit heterogeneity of outcomes
- Close nutritional, metabolic and behavioral follow-up, identified as a key factor in the durability of weight loss and control of comorbidities in medium-term follow-up studies [3–5,7].

The limitations of this work are its single-case nature and relatively short follow-up, which do not allow evaluation of the stability of weight loss beyond the first year or of the long-term impact on metabolic comorbidities.

However, this first experience in Morocco contributes to real-life data and supports the establishment of national or multicenter registries dedicated to endoscopic bariatric techniques, in order to better document the efficacy, safety and predictors of response to ESG in our setting.

CONCLUSION

Endoscopic sleeve gastroplasty using the OverStitch Apollo system appears to be an effective and safe therapeutic option for selected patients with obesity and comorbidities, particularly when bariatric surgery is not desired or feasible.

This first Moroccan case highlights the feasibility of the procedure in a university center, with significant early weight loss consistent with international data and scientific society recommendations.

A major advantage of ESG is that it is performed without gastric resection, without visible skin scars and without permanent modification of digestive anatomy, while achieving clinically meaningful weight loss.

The development of ESG in Morocco should be accompanied by structured care pathways, specific training of operators and the creation of follow-up registries in order to better define the place of this technique within the therapeutic arsenal for obesity.

REFERENCES

1. Baratte C *et al.,* Position statement and guidelines about Endoscopic Sleeve Gastroplasty (ESG) also known as “Endo-sleeve”. 2025 ; 162(2) :76-85
2. ASGE–ESGE guideline on primary endoscopic bariatric and metabolic therapies for adults with obesity. Gastrointest Endosc. 2024;99(6):1031-1056
3. Stier CK, *et al.,* Endoscopic sleeve gastroplasty (ESG): indications and results—a systematic review. Obes Surg. 2025 ;35(1) : xx-xx.
4. Sullivan S, *et al.,* Endoscopic Sleeve Gastroplasty: A Practice Pattern Survey. Obes Surg. 2023 ;33(8) :2419-2430
5. Smith ZL, *et al.,* Practice patterns and outcomes of endoscopic sleeve gastroplasty in large multicenter cohorts. Obes Surg. 2024 ;34(5) :2103-2115
6. Boškoski I, *et al.,* Devices and techniques for bariatric and metabolic endoscopy: ESGE Technical and Technology Review. Endoscopy. 2025 ;57(9) :873-894
7. ASGE–ESGE EBMT educational summary on endoscopic bariatric therapies. VideoGIE. 2024 ;9(4) : e1-e10
8. Dayyeh BKA, *et al.,* IFSO Bariatric Endoscopy Committee evidence-based review and position statement on endoscopic sleeve gastroplasty. Obes Surg. 2024;34(12):3456-3478