Hill Modified, a Novel Approach: Technique Description and Experience in patients with Laparoscopic Sleeve Gastrectomy.

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Background

Gastroesophageal reflux disease (GERD) is a common disease among patients with obesity, with an associated prevalence of 39 to 61% between the population who attends a bariatric surgery evaluation. Laparoscopic sleeve gastrectomy (LSG) has become a popular and valid option for obesity treatment, even though the literature is ambivalent regarding the increase or decrease in GERD after this surgery. Thus, it is necessary to propose new surgical techniques as a solution to GERD in patients with a concomitant LSG or with a history of it. Therefore, we present a modified technique based on Hill's gastropexy described originally in 1967.

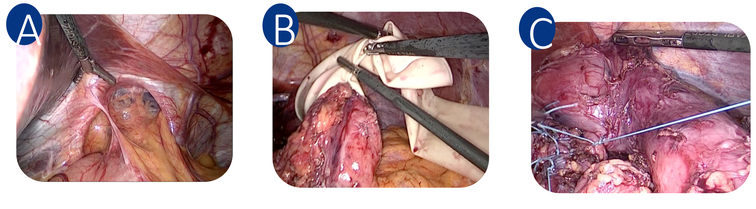
Objective

Describe and propose a surgical procedure for GERD management based on the Hill technique that can be applied in all patients who undergo an LSG or with a history of it.

Methodology

Retrospective observational study with a prospective database in which we described, Hill modified technique in a group of 16 patients with GERD who underwent this procedure concomitantly with an LSG or who presented with GERD after LSG with a 3-year follow-up.

Surgical technique is based on standard five-trocar technique (Two 12 mm three 5 mm Trocars). Dissection is begun in the terminal esophagus to identify the hiatal hernia (A) and reduce it. The calibration bougie is passed (48 French), and then the hiatal hernia defect if closed (B) arcuate ligament is identified, then an intra abdominal esophageal length of minimum 3 cm is verified and posterior fixation of gastro esophageal junction to the preaortic fascia is done (C).



Results

Table 1. Preoperative and intra operative qualitative variables

Endoscopy	Wide diaphragmatic hiatus	5.5%
	Hiatal hernia	89%
	Schatzki ring + hiatal hernia	5.5%
Upper gastrointestinal radiography	Supracarinal reflux	57.1%
	Infracarinal reflux	42.8%
Performed procedure	Hill modified + sleeve gastrectomy + hiatal hernia closure	43.75%
	Hill modified + sleeve gastrectomy + hiatal hernia closure + other procedure (cholecystectomy)	6.25%
	Hill modified + hiatal hernia closure + sleeve gastrectomy	18.75%
	Hill modified + hiatal hernia closure	18.75%
	Hill modified + hiatal hernia closure + other procedures (cholecystectomy/umbilical hernia/inguinal hernia)	12.50%
Hiatal hernia	Yes	81.25%
	No	18.75%

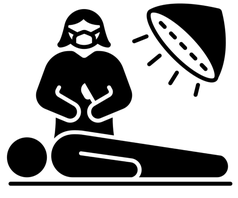


Table 2. Postoperative qualitative variables



		No. of patients	%
Early complications (day 0 to 30)	None	14	87.5
	Pleural effusion	1	6.25
	Dysphagia, emesis, hematemesis	1	6.25
Late complications (after 1st month)	None	16	100.0
GERD symptoms first month control	Asymptomatic	16	100.0
GERD symptoms third month control	Symptomatic	1	6.25
	Asymptomatic	15	93.75
GERD symptoms sixth month control	Asymptomatic	16	100.0
GERD symptoms 6 to 12-month controls	Asymptomatic	16	100.0
GERD symptoms 2 years control	Asymptomatic	16	100.0
GERD symptoms 3 years control	Asymptomatic	15	93.75
	Missing data*	1	6.25
PPI treatment after surgery	Yes	15	93.75
	No	1	6.25
Antacid treatment after surgery	Yes	1	6.25
	No	15	93.75

*Patients have not reached controls due to surgery was performed in a period of time less than the time of the follow-up

Results (continued)

Postoperative controls have shown satisfactory results in the control and management of GERD symptoms in this group of patients, with very few to no complications associated with the procedure and without reintervention or medication out of the standard protocol.

Table 3. Postoperative quantitattive variables.

	Mean	Standard deviation
Days of treatment with PPIs	76.68	38.21
Days of treatment with antacids	*0	*0
Time without PPIs (months)	29.57	9.35

*Median and IR

Conclusions

Hill modified technique can be used and presented as an option for GERD control in patients with LSG.

