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Research Communication

Lots of reflux, but no Barrett: real-world data on the incidence of gastroesophageal reflux on routine endoscopic follow-up more than 5 years after sleeve gastrectomy

Anna Carolina Batista Dantas^{a,*}, Jorge Landivar Coutinho^b, José Donizeti de Meira Jr^b, Diogo Turiani Hourneaux De Moura^c, Denis Pajeci^a, Marco Aurelio Santo^a^a Unidade de Cirurgia Bariátrica e Metabólica, Disciplina de Cirurgia do Aparelho Digestivo e Coloproctologia, Departamento de Gastroenterologia, Hospital das Clínicas HCFMUSP, Faculdade de Medicina, Universidade de São Paulo, São Paulo, SP, Brazil^b Disciplina de Cirurgia do Aparelho Digestivo e Coloproctologia, Departamento de Gastroenterologia, Hospital das Clínicas HCFMUSP, Faculdade de Medicina, Universidade de São Paulo, São Paulo, SP, Brazil^c Serviço de Endoscopia Gastrointestinal, Departamento de Gastroenterologia, Hospital das Clínicas HCFMUSP, Faculdade de Medicina, Universidade de São Paulo, São Paulo, SP, Brazil

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Introduction

Sleeve gastrectomy (SG) is the most performed bariatric surgery worldwide, but it has become the most frequently converted procedure because of severe gastroesophageal reflux disease (GERD) [1]. Data on long-term follow-up have demonstrated a high incidence of GERD, with symptoms in 76% of patients and erosive esophagitis in 52% of patients [2]. Moreover, there is a growing concern with the Barrett esophagus (BE) in this set of patients, especially after a report of an 18.8% incidence of BE [3]. The current study aimed to investigate the incidence of GERD and BE in patients with a routine endoscopic follow-up of at least 5 years after SG.

Materials and methods

This study was a retrospective analysis that included all consecutive patients who underwent SG from January 2010 to December 2017 with an endoscopic follow-up of >5 years at an

academic referral public hospital. SG was performed by the same team using a standardized technique as previously published [4], and upper gastrointestinal endoscopy (UGE) was routinely performed pre- and postoperatively under the supervision of a single experienced endoscopist. Data were collected on age, sex (female/male), weight, body mass index (BMI), and UGE findings. Descriptive statistics were used for categorical and continuous variables. Differences were analyzed using the Pearson chi-square test for categorical variables and the Student *t* test for continuous variables. Statistical significance was considered with a *P* value of <.05. Stata (version 15.1; StataCorp) was used for the analysis.

Results

From 143 consecutive patients who underwent SG, 7 were excluded because of endoscopic treatment of perioperative complications (*n* = 3) and revisional surgery to Roux-en-Y gastric bypass (*n* = 4). Furthermore, 68 patients (47.55%) did not adhere to both clinical and endoscopic follow-up, and the remaining 68 patients were included in this analysis. Among our included patients, 63 (92.6%) were female, the mean age at surgery was 47.57 ± 15.69

^{*} Corresponding author.E-mail address: carolbatista.med@gmail.com (A.C.B. Dantas).

Table 1
Demographic and clinical characteristics before and after sleeve gastrectomy

Characteristic	Preoperative	Follow-up	P value
Female	63 (92.6)	–	–
Age, y	47.57 ± 15.69	53.74 ± 15.71	<.001
Weight, kg	123.49 ± 23.02	88.36 ± 20.31	<.001
BMI, kg/m ²	47.97 ± 8.54	34.36 ± 8.20	<.001
EWL, %	–	59.92 ± 31.29	–
TWL, %	–	27.76 ± 14.36	–

BMI, body mass index; EWL, excess weight loss; TWL, total weight loss.
Data are presented as number (percentage) or mean ± SD, unless otherwise indicated.

Table 2
Endoscopic findings before and after sleeve gastrectomy

Variable	Preoperative	Follow-up	P value
Esophagitis, n (%)	10 (14.7)	31 (45.5)	<.001
A	10	11	
B	0	11	
C	0	8	
D	0	1	
Barrett esophagus	0	0	–
Hiatal hernia, n (%)	2 (2.9)	12 (17.6)	<.001

years, the mean weight was 123.49 ± 23.02 kg, and the mean BMI was 47.97 ± 8.54 kg/m², as shown in [Table 1](#).

After a mean follow-up of 73 months (range, 60–143), esophagitis and hiatal hernia on UGE increased from 14.7% and 2.9% preoperatively to 45.5% and 17.6% ($P < .001$), respectively, as shown in [Table 2](#). There was no case of BE based on the biopsy of suspected areas. The mean total weight loss (TWL) was 27.76% ± 14.36%, and the mean excess weight loss (EWL) was 59.92% ± 31.29%. There was no correlation between esophagitis and TWL of < 30.00% ($P = .149$) or EWL of < 50.00% ($P = .098$).

Discussion

De novo GERD is the most prevalent long-term complication of SG. In a real-world scenario, this study found GERD esophagitis in almost half of the patients but, surprisingly, no BE.

Although our findings resonate with recent publications on a high prevalence of erosive esophagitis [2], they contrast with alarming reports of 18.8% of BE on long-term follow-up [3]. This finding raised a great concern in the bariatric community, but it was first outweighed by the SLEEVEPASS study reporting a better scenario for BE with 4% on 10-years follow-up [5] and, more recently, by a large Spanish multicenter study with 0.9% (only 1 patient), despite being a small representation of 150 patients from 4500 SGs in 13 hospitals [6].

Our study is limited by its small sample size, its retrospective nature, and more importantly, the absence of clinical data on GERD symptoms and medication use. More prospective studies with long-term follow-up are still needed to better clarify the epidemiology of GERD and BE after SG.

Conclusion

Despite a high rate of erosive esophagitis on endoscopic follow-up of > 5 years after SG, this study showed no case of BE and no

correlation to weight loss outcomes. The epidemiology of GERD, BE, and its risk of malignant transformation after SG remains unclear.

Ethics approval

All procedures performed in studies involving human participants followed the ethical standards of the institutional and/or national research committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. The need to obtain informed consent for this study was waived due to its retrospective nature.

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Author contributions

ACB Dantas: project development, data collection, data analysis, and manuscript writing; JL Coutinho and JD de Meira Jr: project development and data collection; DTH De Moura: data analysis and manuscript editing; D Pajeccki and MA Santo: project development and manuscript editing.

Declaration of competing interest

The authors declare no competing interests.

Data availability

The data supporting this study's findings are available on request from the corresponding author.

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