Early Endoscopic Interventions in Bariatric Surgery: Global Practices and Risk Factors from the MBSAQIP Registry

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Introduction

Predictors for early complications following bariatric surgery remain poorly defined. This is particularly true for those associated with endoscopic interventions within 30 days after surgery. This study aims to identify risk factors and indications for early endoscopic intervention following laparoscopic sleeve gastrectomy (LSG) and laparoscopic Roux-en-Y gastric bypass (LRYGB) through a matched case-control analysis of a large international database.

Methods and Procedures

We conducted a retrospective cohort study with matched case-control analysis using Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) data from 2020 to 2022. The study included adults who underwent LSG or LRYGB. Cases were defined as patients requiring endoscopic stenting and/or dilation within 30 days post-surgery. Univariate, multivariable, and nearest 1:1 neighbor matched analysis were performed to identify covariates associated with increased odds of requiring early endoscopic intervention for all indications in both primary and revisional cases. Diagnostic criteria for gastroesophageal reflux disease (GERD) is not a coded subcategory, this active proton pump inhibitor (PPI) as a surrogate for the diagnosis of GERD.

Results

The study included 565,936 adults who underwent LSG or LRYGB. The rates of early endoscopy following primary LSG and LRYGB between 2020-2022 were 0.1% and 0.3%, respectively (0.15% combined). Leading indications for early endoscopic intervention in primary cases were anastomotic/staple line leaks (34%), strictures (40%), and symptoms related to oral intolerance such as nausea, vomiting, and dysphagia (24%). Multivariate analysis demonstrates preoperative active proton pump inhibitor (PPI) prescription is an independent predictor of increased odds of early endoscopic intervention after LSG (OR 1.63, p<0.001) and LRYGB (OR 1.2, p=0.027). While this effect is conserved in sensitivity analyses of primary LSG (OR 1.61, p<0.001), its significance is lost among primary LRYGB (OR 1.16, p=0.13) and revisional LSG (OR 1.2, p=0.47) and LRYGB (OR 0.99, p=0.96).

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Indication	LSG (N=435)	LRYGB (N=593)
Anastomotic or staple line leak	141	39
Gastrointestinal tract stricture	103	339
Dysphagia	59	95
Nausea/Vomiting	31	31
Gastroesophageal reflux disease	6	3
Oral intake intolerance	3	8
Abdominal pain	12	9
Gastrointestinal ulcer	1	31
Other (Gastritis, bleeding, fistula, normal findings, abdominal sepsis, etc.)	77	38

Footnote: The "Other" category includes conditions such as gastritis, bleeding, fistula, normal findings, abdominal sepsis, and other related complications.

DISCUSSION

Early endoscopic intervention following bariatric surgery remains a rare occurrence, but identification of perioperative risk factors may assist with risk triage and outcomes optimization. While an imperfect proxy for pre-existing gastroesophageal reflux disease, active PPI prescription serves as an independent predictor of early endoscopic interventions after primary LSG and LRYGB, largely driven by higher anastomotic/staple line leaks and strictures. These increased odds are maintained in primary sleeve gastrectomy only. Our data is limited by the coding of the data to include appropriate diagnose and indications as well as for multiple subsequent endoscopies within the perioperative period. However, preliminary findings resonate existing concerns regarding operative planning of bariatric patients with reflux disease and heighten need for further investigation into mechanistic explanations behind the association of PPI use and devastating complications such as staple line/anastomotic failures and strictures.

References

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