REVISIONAL SURGERY AFTER SLEEVE GASTRECTOMY: A MBSAQIP ANALYSIS

Jerry T. Dang, MD, PhD[1]; Juan S. Barajas-Gamboa, MD[2]; Hadika Mubashir, MD[1]; Ricard Corcelles, MD, PhD[1,3]; John Rodriguez, MD[2]; Matthew Allemang, MD[1]; Salvador Navarrete, MD[1]; Matthew Kroh, MD.[1,3]

1. Department of General Surgery, Cleveland Clinic, Cleveland, Ohio, USA
2.Department of General Surgery, Cleveland Clinic Abu Dhabi, Abu Dhabi, United Arab Emirates
3. Cleveland Clinic Lerner College of Medicine of Case Western Reserve University, Cleveland, Ohio, USA

INTRODUCTION

- Sleeve gastrectomy (SG) is safe & effective.
- Increasing need for revisions & conversion after SG identified.
- Evidence reporting outcomes for revisions after SG remains limited to small series & single institution experiences.

OBJECTIVE

To evaluate revisional procedures after sleeve gastrectomy (SG), indications for surgery, and 30-day outcomes.

METHODS

Retrospective study of MBSAQIP Database (2020 & 2021)

Primary outcome was serious complications

Revisions included:

1. Roux-en-Y gastric bypass (RYGB)
2. Biliopancreatic Diversion with Duodenal Switch (BPD-DS)
3. Single Anastomosis Duodenal-Ileal Bypass (SADI),
4. One-Anastomosis Gastric Bypass (OAGB)
5. Re-sleeve Gastrectomy.

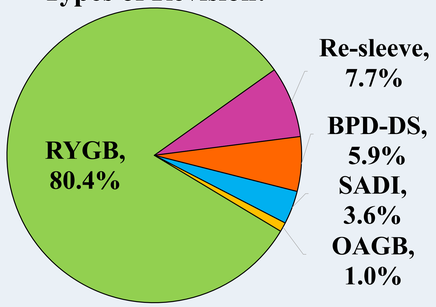
RESULTS

20,050 revisional procedures performed after SG.

Table 1: Patient Demographics & Types of Revisional Procedures Performed.

n (%)	RYGB 16,110 (80.4%)	BPD-DS 1,174 (5.9%)	SADI-S 723 (3.6%)	OAGB 193 (1.0%)	Re-sleeve 1,536 (7.7%)	p-value
Age, years mean ± sd	45.8 ±10.5	44.8 ±10.2	44.3 ±10.1	45.2 ±10.4	45.3 ± 10.6	0.157
% Female	90.7	83.4	83.8	89.6	86.1	< 0.001
Race %White	61.9	60.0	57.3	59.1	55.1	< 0.001
BMI (kg/m²) mean ± sd	39.7 ± 7.8	46.4 ± 8.6	45.1 ± 7.8	40.6 ± 8.8	40.5 ± 7.3	< 0.001

Types of Revision:



Indications for Revision:

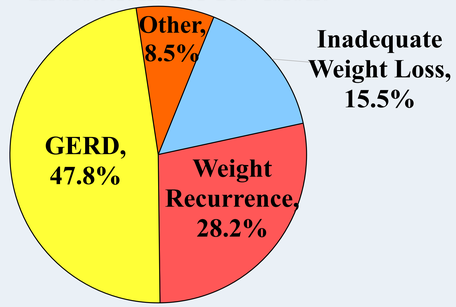


Table 2: Indications for Revisional Surgery

Revisional Procedures	RYGB	BPD-DS	SADI-S	OAGB	Re-sleeve	p-value
- GERD (%)	94.2	0.6	0.4	0.9	2.5	<0.001
- Weight recurrence (%)	67.8	8.6	6.1	0.9	15.6	< 0.001
- Inadequate weight loss (%)	61.6	17.1	9.7	1.3	8.2	< 0.001

Procedural factors for revisional surgery:

Surgical Approach=

Mainly laparoscopic, 5.1% re-sleeves- Endoscopic, BPD-DS- highest Robotic.

RESULTS

Serious complications (p=0.01) were highest after:

OAGB (9.3%) ⇨ RYGB (7.3%) ⇨ BPD-DS (5.8%) ⇨ SADI (5.4%) ⇨ Re-sleeve (5.0%)

Table 3: Postoperative Complications and Mortality.

n (%)	RYGB	BPD-DS	SADI-S	OAGB	Re-sleeve	p-value
Anastomotic leak	99 (0.6)	15 (1.3)	12 (1.7)	1 (0.5)	29 (1.9)	< 0.001
Postoperative bleeding	320 (2.0)	12 (1.0)	8 (1.1)	5 (2.6)	10 (0.7)	0.001
Deep surgical site infection	163 (1.0)	20 (1.7)	13 (1.8)	3 (1.6)	27 (1.8)	0.016
Sepsis	46 (0.3)	5 (0.4)	1 (0.1)	4 (2.1)	6 (0.4)	< 0.001

Postoperative complications- not statistically significant:
Cardiac Events, Pneumonia, Acute Kidney Injury, Venous thromboembolism, Mortality.

Risk factors associated with serious complications- multivariable logistic regression (p < 0.001): Higher body mass index, therapeutic anticoagulation, longer operative time (per hour) and black race.

CONCLUSIONS

SG most often revised to RYGB. Higher BMI increasingly revised to BPD-DS or SADI

GERD- most common indication for revisions & mainly revised to RYGB.

Complication rates: Highest after OAGB, lowest after re-Sleeve.

The optimal procedure after SG depends on various factors but all the revisional procedures have similar profiles.