The Safety and Efficacy Profile of Re-redo Bariatric Surgery

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BACKGROUND

While metabolic and bariatric surgery (MBS) offers a safe and effective approach to achieve sustainable weight loss, a certain number of patients require revisional bariatric surgery (RBS) following primary MBS due to weight-related complications or procedure-related/surgical complications. The literature has demonstrated the effectiveness of RBS, but there are still patients that require further revision or re-redo procedures and there is limited research examining the sustainability, safety and efficacy of such bariatric procedures.

As such, we aim to evaluate the safety and efficacy of re-redo bariatric surgery.

METHODS

A retrospective single-center review was conducted for patients who underwent a second revisional bariatric surgery or re-redo between 2000-2023.

Patient demographics, type and approach for primary and revisional procedures, indications for revision, weight outcomes, postoperative outcomes at baseline and after 5 years of surgery.

For continuous variables, as datapoints did not follow a normal distribution, median interquartile values were utilized. For categorical variables, frequencies (n) were calculated.

The primary endpoints of the study were early and late postoperative outcomes.

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Baseline characteristics	N (%) or Median (IQR)
2nd Revisional Bariatric (Re-Redo) Surgery	
Age at the time of re-redo, years (IQR)	51 (39-62)
Female gender, N (%)	44 (89.8)
Weight, kg (IQR)	81 (70-93)
BMI, kg/m² (IQR)	29 (25-35)
Diabetes (DM), N (%)	10 (20.4)
Hypertension (HTN), N (%)	16 (32.7)
Hyperlipidemia (HLD), N (%)	10 (20.4)
Obstructive sleep apnea (OSA), N (%)	5 (10.2)
1st Revisional Bariatric (Redo) Surgery	
Age at the time of redo, years (IQR)	46 (38-53)
Weight, kg (IQR)	85 (73-113)
BMI, kg/m² (IQR)	32 (27-43)
DM, N (%)	7 (14.3)
HTN, N (%)	14 (28.6)
HLD, N (%)	9 (18.4)
OSA, N (%)	4 (8.2)
Primary Bariatric Surgery	
Age at the time of primary bariatric procedure, years (IQR)	38 (33-44)
Weight, kg (IQR)	131 (113-145)
BMI, kg/m² (IQR)	48 (43-53)
DM, N (%)	12 (24.5)
HTN, N (%)	15 (30.6)
HLD, N (%)	10 (20.4)
OSA, N (%)	10 (20.4)

Postoperative characteristics	N (%) or Median (IQR)
Re-Redo Surgery	
Type of procedure performed, N (%)	
RYGB revision	21 (42.9)
Conversion to RYGB	9 (18.4)
Conversion to RYEJ	8 (16.3)
RYGB reversal	6 (12.2)
Other	5 (10.2)
Approach, N (%)	
Open	41 (83.7)
Laparoscopic	6 (12.2)
Robotic	2 (4.1)
Early complication rate, N (%)	16 (32.7)
Late complication rate, N (%)	24 (51.1)
Malnutrition	7 (29.1)
GJ stenosis	3 (12.5)
Marginal ulcer	3 (12.5)
Bile reflux	2 (8.3)
Internal hernia	2 (8.3)
SBO	2 (8.3)
Other	5 (20.8)
Late reoperation rate, N (%)	14 (28.6)
Late mortality rate, N (%)	4 (8.2)
Redo Surgery	
Type of procedure performed, N (%)	
RYGB revision	19 (38.9)
Conversion to RYGB	10 (20.4)
Conversion to SG	6 (12.2)
RYGB reversal	3 (6.1)
Other	11 (22.4)
Approach, N (%)	
Open	31 (63.3)
Laparoscopic	18 (36.7)
Primary Bariatric Surgery	
Type of bariatric surgery, N (%)	
RYGB	28 (57.1)
VBG	10 (20.4)
AGB	6 (12.2)
Loop GB	3 (6.1)
SG	2 (4.1)
Approach, N (%)	
Open	27 (55)
Laparoscopic	22 (45)

Table 1: Patient baseline characteristics and postoperative outcomes following Re-redo surgery
BMI: Body mass index; RYGB: Roux-en-Y gastric bypass; RYEJ: Roux-en-Y esophagojejunostomy; GJ: Gastrojejunal; SBO: Small bowel obstruction; SG: Sleeve gastrectomy; VBG: Vertical banded gastroplasty; AGB: Adjustable gastric banding; Loop GB: Loop gastric bypass

49 patients (89.8% female, median age 51 years (39-62), median preoperative re-redo BMI **29 kg/m2** (25-35)) were included. Roux-en-Y gastric bypass (RYGB) was the most commonly performed primary MBS procedure (57.1%) and **RYGB revision** was the most common re-redo intervention (42.9%), with the open approach (55% for primary, 83.7% for re-redo) being the most utilized (**Table 1**). **Revision of the gastrojejunal (GJ) anastomosis** was the most common subcategory of RYGB revision as a re-redo.

RESULTS

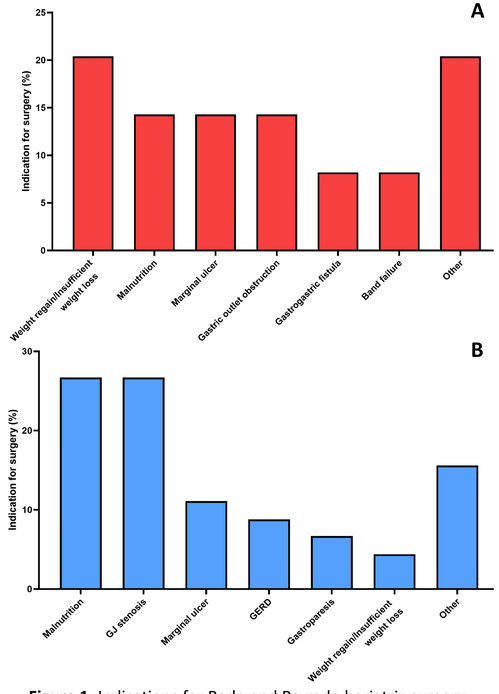


Figure 1: Indications for Redo and Re-redo bariatric surgery
A: Redo Bariatric Surgery; **B**: Re-redo Bariatric Surgery

The most common indication for the **first revision** was **weight-related complications** (weight recurrence or insufficient weight loss) (20.4%) from the primary procedure, while the most common indications for the **second revision** were **malnutrition** (26.7%) and **GJ stenosis** (26.7%), typically considered to be **procedure-related complications** (**Figure 1**).

Re-redo patients did experience postoperative complications with an **early** complication rate (< 30 days) of **32.7%** and **late** complication rate (> 30 days) of **51.1%** with the most common being **malnutrition** (**29.1%**) (**Table 1**). BMI was sustained for over 5 years following re-redo surgery. The overall all-cause mortality rate 5 years after the re-redo procedure was **8.2%** and was unrelated to re-redo surgery complications.

CONCLUSIONS

While re-redo bariatric surgery may carry a risk of postoperative complications, the long-term mortality rate is low. Despite the challenges in establishing a proper patient selection criteria, it should be considered as an effective treatment for patients with weight-related or procedure-related complications following prior bariatric surgeries.

Further long-term studies are required to fully report the safety and efficacy of re-redo bariatric surgery.