Outcomes following Reoperative Bariatric Surgery following Laparoscopic Sleeve Gastrectomy at a tertiary care centre

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Introduction

- Revision surgery: Commonest indications: Weight loss failure, Reflux
- Revision surgery associated with a higher complication rate than 1° surgery
- Inadequate weight loss: EWL < 50% at 18-24 months
- Weight regain: Various definitions
  - >5 or 10 kg weight gain from nadir
  - Regain of BMI to >35
  - >25% EBWL regain from nadir

AIM

- To study the outcomes of revision bariatric surgery

Primary Objective

- To evaluate the weight loss following reoperative bariatric surgery

Secondary objective

- To study the complications after reoperative bariatric surgery

Methods

- Design: Retrospective study

Prospectively collected database

- Time period: 2010 until 2021
- Setting: Tertiary care institute

Inclusion Criteria

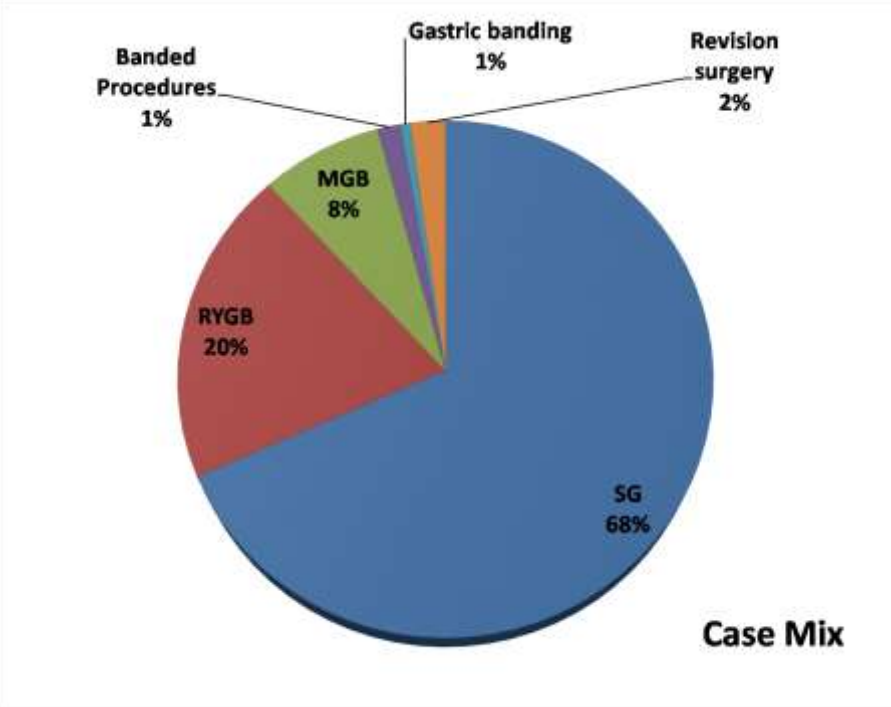
- Patients undergoing reoperative bariatric surgery
- Completed at least 1 year follow up

Exclusion Criteria

- Patients who underwent reoperation for early complication

Results

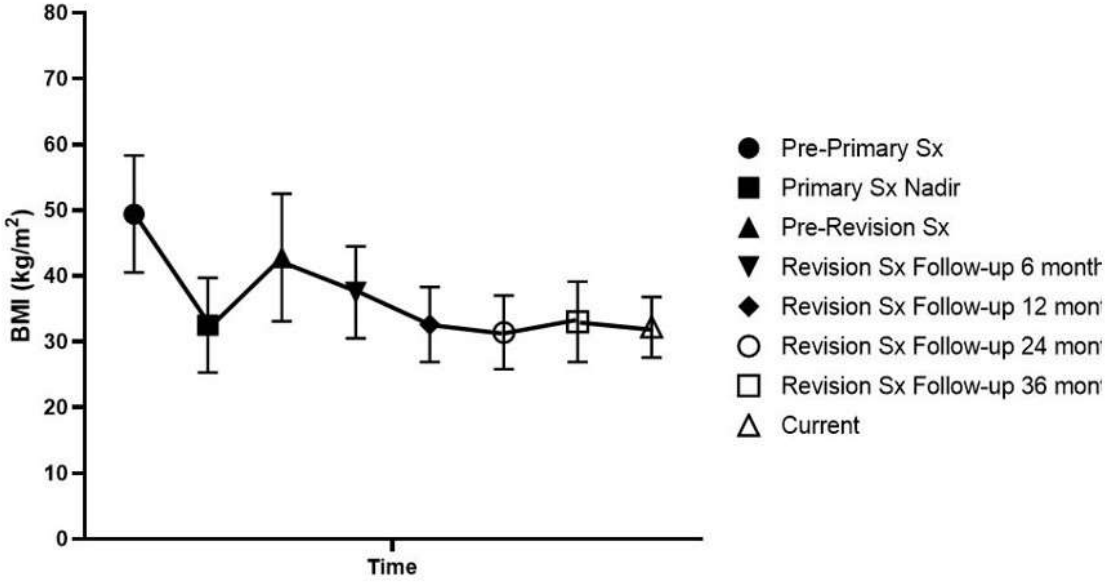
- Total number of patients operated in the time period: 1160
- Total Reoperative surgeries: 26
- Reoperative bariatric surgery: 24/1160 (2.1%)
- Primary surgery in all patients – LSG (788)
- Revision rate in LSG: 3%

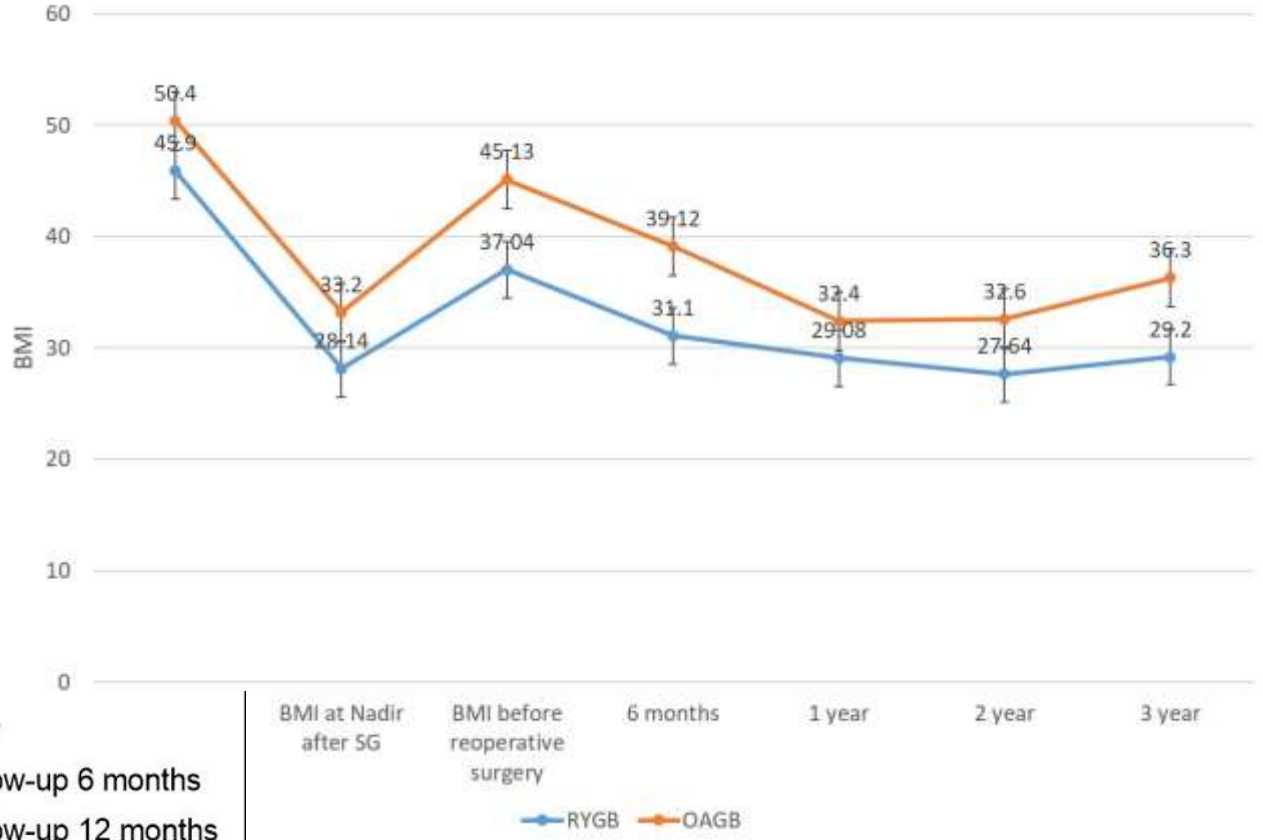


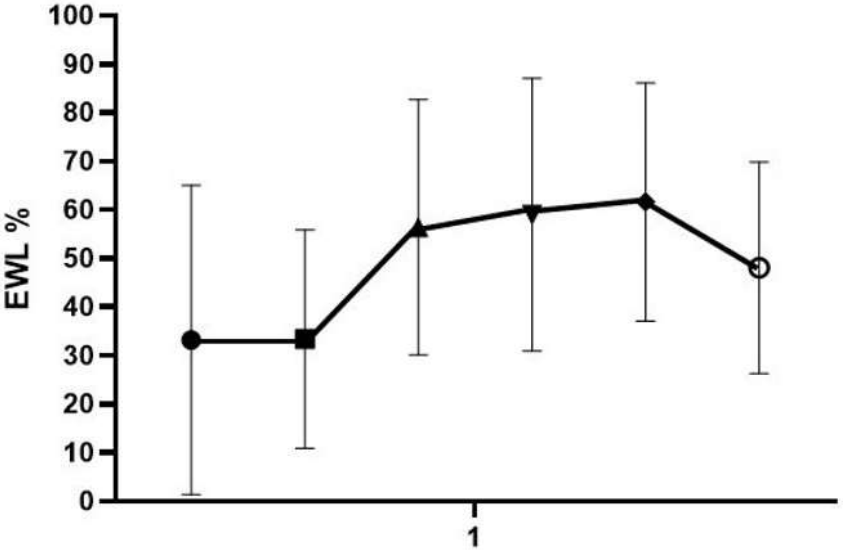
Results

Demographic parameter	Mean (SD)/ n (Percentage)
Age	38.8 (10.8) years
Females	21 (80.7%)
Weight at the time of primary surgery	124.6 (22.4) kg
BMI at the time of primary surgery	49.4 (8.9) kg/m2
Nadir Weight after primary surgery	83 (18.6) kg
Nadir BMI after primary surgery	32.5 (7.2) kg/m2
Time from primary surgery to nadir weight	13.1 (4.5) months
Weight before revision surgery	109.1 (26.3) kg
BMI before revision surgery	42.8 (9.7) kg/m2
Weight regain before surgery	23.8 (13.4) kg
T2DM before primary surgery	3 (11.5%)
T2DM before revision surgery	1 (3.8%)

Weight Loss


BMI (kg/m²)
Time
Pre-Primary Sx
Primary Sx Nadir
Pre-Revision Sx
Revision Sx Follow-up 6 month
Revision Sx Follow-up 12 mon
Revision Sx Follow-up 24 mon
Revision Sx Follow-up 36 mon
Current


BMI
50.4
45.9
33.2
28.14
45.13
37.04
39.12
31.1
32.4
29.08
32.6
27.64
36.3
29.2
BMI at Nadir after SG
BMI before reoperative surgery
6 months
1 year
2 year
3 year
RYGB
OAGB


EWL %
1
Primary Sx Nadir
Revision Sx Follow-up 6 months
Revision Sx Follow-up 12 months
Revision Sx Follow-up 24 months
Revision Sx Follow-up 36 months
Current

Correlation of Weight loss following revision surgery

- Gender, Preop BMI, weight regain, Duration between primary and revision surgery, and T2DM: No correlation with weight loss following revision surgery
- Age: Negative correlation ($r=-0.79$) with weight loss ($p>0.05$)
- Pre revision excess weight correlated with post revision weight loss ($r=0.99$, $p<0.001$)

Complications

- Symptomatic reflux one patient each following resleeve and banded RYGB
- Band erosion with GGF (B RYGB) - Band excision and fistula disconnection: 2yr
- Band slippage (B MGB): Removal of band: 18 months
- Postoperative bleeding (2): endoscopic clip application (1 RYGB)
- One mortality: Postoperative LRTI

Discussion: Resleeve: Is it still an option

- Reported initially for patients with dilated pouches
- No clear relationship between “sleeve dilation” and weight regain
- Around 26% of variability in weight loss can be attributed to residual gastric volume
- Currently limited to cases with fundal regrowth: Expected EWL upto 70% at 1 year in these cases

Mahawar KK. Practices concerning revisional bariatric surgery: a survey of 460 surgeons. Obes Surg. 2018.
Iannelli A Laparoscopic sleeve gastrectomy followed by duodenal switch in selected patients versus single-stage duodenal switch for superobesity: case-control study. Surg Obes Relat Dis. 2013

Obes Surg. 2018 Dec;28(12):3843-3850. doi: 10.1007/s11695-018-3435-1.

Conversion of Sleeve Gastrectomy to Roux-en-Y Gastric Bypass

Joshua P Landreneau [1], Andrew T Strong [2 3], John H Rodriguez [2 3], Essa M Aleassa [2],

- 89 patients underwent conversion of LSG to RYGB
- Planned operation in 36, weight regain in 11, and complications (mostly GERD and stenosis)
- Patients treated for weight regain: Additional weight loss was 32.7% of EWL or 16.1% of TWL at 15 months
- Leak (3/89), PE (1/89)

Conversion of LSG to OAGB

Obesity Surgery
https://doi.org/10.1007/s11695-020-04461-z

ORIGINAL CONTRIBUTIONS

Laparoscopic Conversion of Sleeve Gastrectomy to One Anastomosis Gastric Bypass for Weight Loss Failure: Mid-Term Results

Tarek Debs[1] · Niccolò Petrucciani[2] · Radwan Kassir[3] · Gildas Juglard[4] · Jean Gugenheim[1] · Antonio Iannelli[1] · Francesco Martini[4] · Arnaud Liagre[4]

- N = 77
- Impact on weight loss:

	12 months after OAGB	**24 months after OAGB**
Mean %EWL	80.2%	84.1%
Mean %BMIL	70.7%	79.9%

- Observed complication rate: 3.9% *(postoperative pneumonia / fistula to the GJ anastomosis / hematemesis)*

Debs T et al, Obes Surg. 2020;30.

Obesity Surgery (2022) 32:2035–2046
https://doi.org/10.1007/s11695-022-06020-0

REVIEW

Treatment Options for Weight Regain or Insufficient Weight Loss After Sleeve Gastrectomy: a Systematic Review and Meta-analysis

Rutger J. Franken[1] · Nina R. Sluiter[1] · Josephine Franken[1] · Ralph de Vries[2] · Dennis Souverein[3] · Vitor E. A. Gerdes[4,5] ·

Definite complication rate

- Complication rates of various revision surgeries after LSG
- Major complication rate after RYGB: 8%
- GJ Leak: 1.3%

	ESG $n=116$	Re-SG $n=224$	RYGB $n=309$	OAGB $n=484$	SADI $n=150$	DS $n=21$
Mortality	0	1 (0.4%)	0	0	1 (0.7%)	0
Major (CD III/IV)	1 (0.9%)	15 (6.7%)	25 (8.1%)	22 (4.5%)	9 (6.0%)	2 (9.5%)
Anastomotic leakage		8 (3.6%)	4 (1.3%)	6 (1.2%)	2 (1.3%)	
Anastomotic stenosis	1 (0.9%)	4 (1.8%)	8 (2.6%)	1 (0.2%)		
GI bleeding		3 (1.3%)	2 (0.6%)	5 (1.0%)		
Internal herniation			3 (1.0%)		1 (0.6%)	
Cicatricial herniation			1 (0.3%)	2 (0.4%)	2 (1.3%)	
Abscess			2 (0.6%)	2 (0.4%)	3 (2.0%)	
Small bowel perforation				1 (0.2%)	1 (0.6%)	
GI ulceration			5 (1.6%)	5 (1.0%)		
Severe malnutrition						2 (9.5%)
Minor (CD I/II)	8 (6.9%)	5 (2.2%)	43 (13.9%)	11 (2.3%)	54 (36.0%)	1 (4.8%)
GERD	6 (5. 0%)	1 (0.4%)		3 (0.6%)		
Nutritional deficiency		2 (0.9%)	42 (13.6%)	1 (0.2%)	48 (32%)	1 (4.8%)
Dehydration	4 (3.4%)	2 (0.9%)				
Steatorrhoe					6 (4.0%)	
Biliary reflux				3 (0.6%)		
Pneumonia				1 (0.2%)		
Wound infection				3 (0.6%)		
Pseudomembranous colitis			1 (0.3%)			

Conclusions

- Reoperative bariatric surgery leads to significant weight loss and amelioration of reflux
- Band placement in reoperative surgery might lead to a high rate of band related complications

Thank You