A comparison of one- and two-stage laparoscopic single anastomosis gastric bypass following failed laparoscopic adjustable gastric banding

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Introduction

Bariatric surgery:

- The only effective and durable treatment for morbid obesity (BMI≥40 kg/m^2).
- LAGB is a minimally invasive, restrictive procedure that has shown efficacy in short- and intermediate-term weight loss.

Revisional Bariatric Surgery:

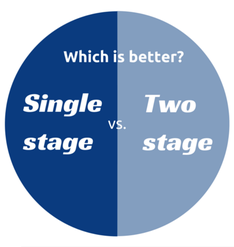
- LAGB has been reported to be associated with several late postoperative complications, including slippage, erosion, mechanical malfunction, and band intolerance.
- Approximately 40-50% of patients who undergo LAGB regain weight after 5 years and require another procedure for weight loss.
- Revisional bariatric surgery is the fastest-growing field in bariatric surgery and constituted 15.4% of all the bariatric procedures performed in the US in 2018.
- The evidence is limited regarding the appropriate revisional surgery following failure of a previous bariatric procedure. Revisional surgery following LAGB can be performed in either a single or a two staged procedure.
- In a one-stage procedure, the gastric band is removed, together with the new bariatric procedure's performance in the same operation. In a two-stage procedure, the band is initially removed, and the second bariatric procedure is performed in a separate surgery.
- Laparoscopic One anastomosis gastric bypass (OAGB) is an option for the revision of a failed gastric band. It can be performed synchronously with band removal or during two separate procedures: band removal first, and OAGB later on.

Aim

Our study aimed to compare single- and two-stage LSAGB following a failed OAGB in terms of short- and mid-term outcomes, with an emphasis on post-operative aspects and complications.

Methods

A retrospective cohort study comparing revisional OAGB's safety and efficacy after failed LAGB removal over 3 years.
Data were collected from the patients' medical files, as well as op reports and clinic visits. Patients' demographics, weight loss, postoperative complications, and length of stay were compared.





Results

75 patients were enrolled in the study. Of these 54 (72%) underwent a single-stage revisional OAGB, and 21 (28%) a two-stage procedure.
There were 19 males (25.3%) and 56 females (74.7%) with a mean age of 41.9 years (±9.8).

Table 1. Patient demographics and comorbidities

Variable	Values	Two stages (N=21)	One stage (N= 54)	p-value
Age, average ± SD	Upon revisional surgery	43.4±8.6	41.4±10.3	0.443
Gender, n (%)	Male	6 (28.6)	13 (24.1)	0.688
	Female	15 (71.4)	41 (75.9)	
Prior non bariatric operations, n (%)	Yes	1 (4.8)	10 (18.5)	0.166
	No	20 (95.2)	44 (81.5)	
HTN, n (%)	Yes	4 (19.0)	6 (11.1)	0.452
	No	17 (81.0)	48 (88.9)	
DM status, n (%)	Yes	5 (23.8)	6 (11.1)	0.273
	No	16 (76.2)	48 (88.9)	
OSA, n (%)	Yes	7 (33.7)	12 (22.2)	0.321*
	No	14 (66.7)	42 (77.8)	

Table 2. – Comparison of intra and post-op complications

Variable	Variable description	Two-stage procedure (N=21)	One-stage procedure (N= 54)	p-value
Any type of complications		12 (57.1)	18 (33.3)	0.059
Type of complication (%)	Re-operation within index operation	4 (19)	1 (1.9)	0.02
	Complication within index operation	6 (28.6)	12 (22.2)	0.563
	Re-admission	4 (19)	1 (1.9)	0.02
Clavien-Dindo	I	1 (10)	9 (52.9)	0.011
	II	4 (40)	6 (35.3)	
	III	3 (30)	2 (11.8)	
	IV	1 (10)	0 (0)	
	V	1 (10)	0 (0)	

Table. 3 Hospitalization length

Variable	Two-stage procedure (N=21)	One-stage procedure (N= 54)	p-value
Length of first hospitalization only (days) ± SD	9 ± 17.1	4.15 ± 2.1	0.208
post op days only ± SD	8 ± 17.1	3.15 ± 2.1	0.208
Total day the patient was admitted (not only during index operation) ± SD	18.3 ± 45.0	4.15 ± 2.1	0.165
Length of operation (minutes) ± SD	112.0 ± 36	107.3 ± 28	0.269

Selected Bibliography

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Discussion

- This study examined patients who underwent revision of a failed gastric band followed by OAGB.
- The common belief was that the rate of complications when both procedures are performed during the same surgery is higher, given the increased complexity of the surgery.
- The main purpose of the current study was to test this hypothesis. First, the groups' baseline preoperative data were compared to ensure that there were no other factors that could affect the results.
- Basic demographics like gender, co-morbidities, BMI prior to operation, and smoking status were the same in these groups. 60 days Re-admission rate and re-operation rate in the index hospitalization were higher in the 2-staged procedure (1.9% vs. 19% in the singe phased procedure, p=0.002).
- A similar trend was seen in the overall complication rate, which was higher in the 2-staged procedure (57.1% vs. 33.3% in the single-staged procedure, p=0.059). Procedure length in minutes, as well as total hospitalization and post-op length, did not differ between the groups.
- This brings us to the understanding that upon revisional surgery, in the issue of OAGB post gastric band, it seems safer and easier to both the patient and the surgeon to do this in a single staged operation.

Conclusions

Laparoscopic single anastomosis gastric bypass as a revision for a failed gastric banding in one stage is safer than a two-staged procedure in terms of short- and mid-term complications.
We believe that there is a benefit in performing elective surgery in a single-stage procedure due to the fact there are fewer adhesions and a less challenging procedure, unless there are clinical indications for a 2-staged procedure such as band erosion.