Five-Year Outcomes of SG VS SG Plus JJB: a single center retrospective study

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I have no potential conflict of interest to report

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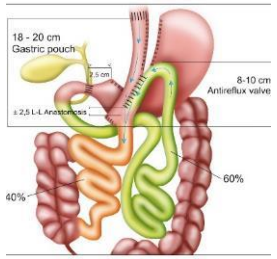
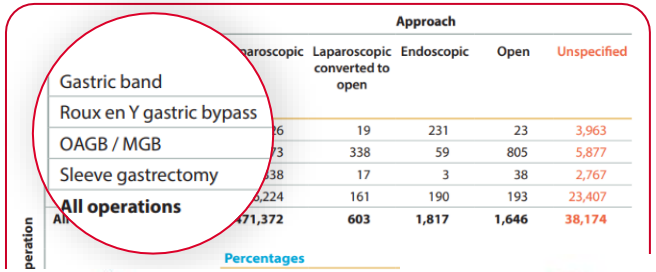
Sleeve Gastrectomy (SG)

Roux-en-Y Gastric Bypass (RYGB)

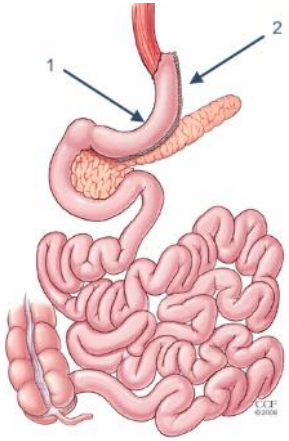
Laparoscopic Adjustable Gastric Banding (LAGB)

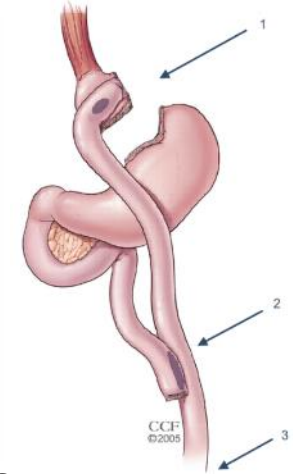


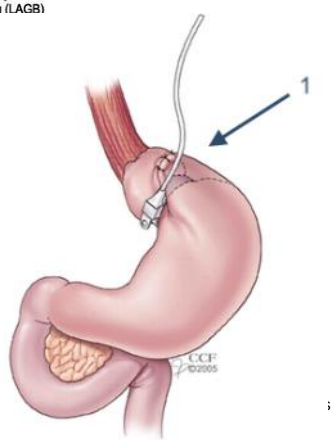


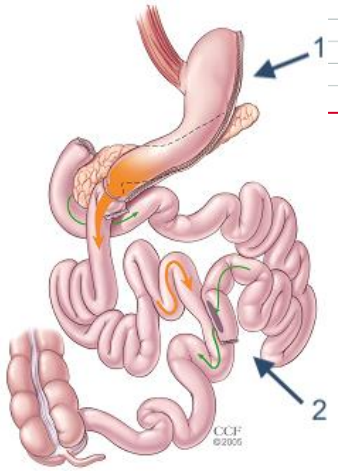
Approach				
Laparoscopic	Laparoscopic converted to open	Endoscopic	Open	Unspecified
Gastric band				
Roux en Y gastric bypass	19	231	23	3,963
OAGB / MGB	338	59	805	5,877
Sleeve gastrectomy	17	3	38	2,767
All operations	161	190	193	23,407
	603	**1,817**	**1,646**	**38,174**

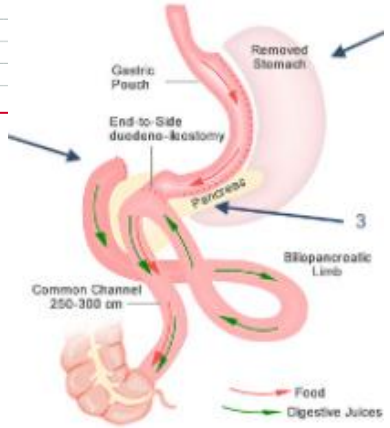
Percentages
0.13%
0.22%
0.09%
0.06%
0.13%











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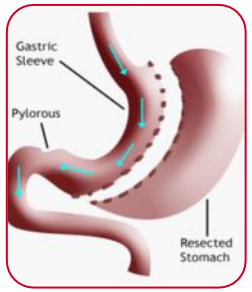

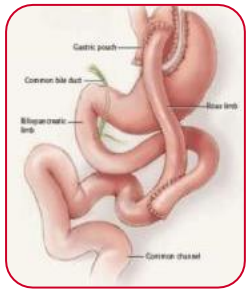

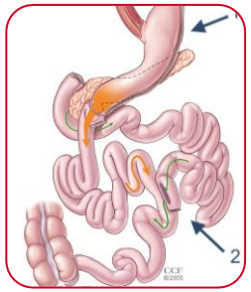

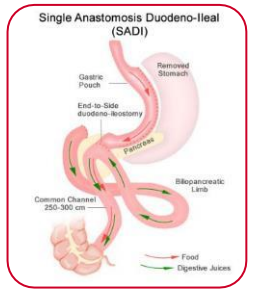

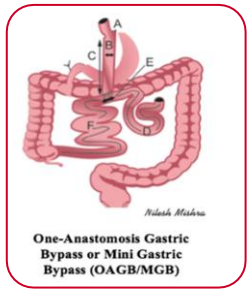

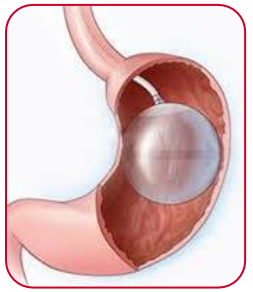

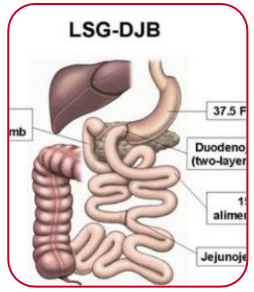

What is SG+JJB? Sleeve Gastrectomy Plus Jejunojejunal Bypass

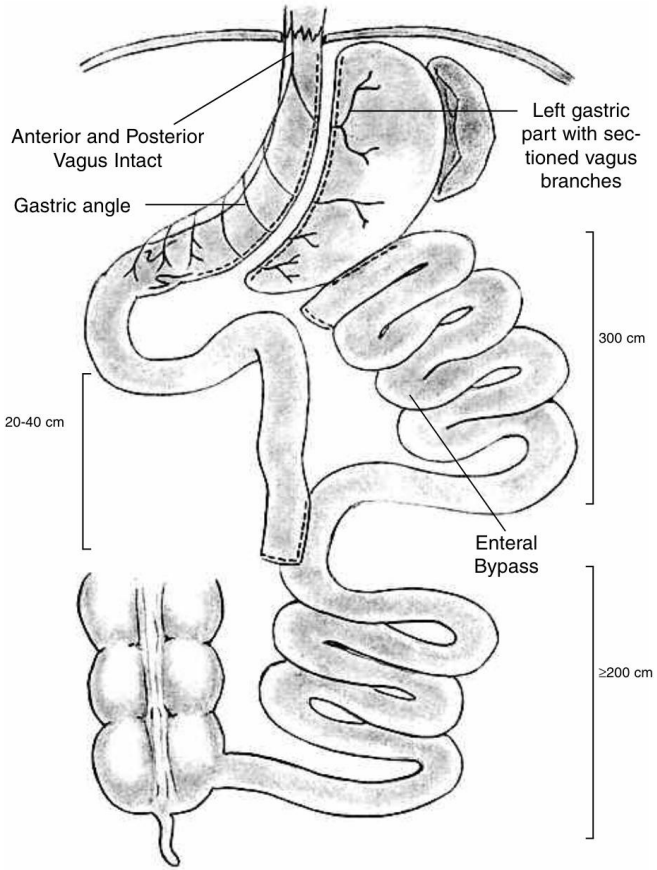

Figure 1. Vertical isolated gastroplasty (VIG) preserving pylorus, with gastro-enteral bypass.

Type of surgery : **Intake-restricted and malabsorption surgery**

- It was first reported by Alamo in 2006
- sleeve gastrectomy
- Cut the jejunum from 20-40 cm from the l Treitz ligament, distally closed
- Leave the jejunum 200 cm downward
- The proximal jejunal stump is in this position, and jejuno-jejunal anastomosis reconstruction is performed

Alamo Alamo, M.; Sepúlveda Torres, C.; Zapata Perez, L. Vertical Isolated Gastroplasty with Gastro-Enteral Bypass: Preliminary Results. *Obes. Surg.* **2006**, *16* (3), 353–358. https://doi.org/10.1381/096089206776116534.

What is SG+JJB?

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Sleeve Gastrectomy Plus Jejunojejunal Bypass

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SG+JJB VS RYGB

The effect of weight loss and hypoglycemic are comparable

	SG+JJB vs SG		*P* value	SG+JJB vs RYGB		*P* value
	SG+JJB (*N*=31)	SG (*N*=31)		SG+JJB (*N*=33)	RYGB (*N*=33)	
1-year %TWL	38.4±7.3	35.0±6.1	0.011	36.3±5.5	34.1±7.6	0.146
3-year %TWL	35.5±9.1	31.5±7.3	0.031	32.0±7.8	32.9±7.5	0.589
1-year HbA1c (%)	5.9±0.7	5.8±0.8	0.811	5.6±0.6	5.8±0.7	0.422
3-year HbA1c (%)	6.2±0.8	6.4±0.9	0.675	6.3±1.2	6.0±0.8	0.428

Lin, S.; Li, C.; Guan, W.; Liang, H. Three-Year Outcomes of Sleeve Gastrectomy Plus Jejunojejunal Bypass: A Retrospective Case-Matched Study with Sleeve Gastrectomy and Gastric Bypass in Chinese Patients with BMI ≥35 Kg/M2. *Obes. Surg.* **2021**, *31* (8), 3525–3530. https://doi.org/10.1007/s11695-021-05411-z.

SG+JJB VS RYGB

The effect of weight loss and hypoglycemic were comparable

	SGJB *N* (1 year) = 52 *N* (3 years) = 41	RYGB *N* (1 year) = 51 *N* (3 years) = 35	*P* value	
Complete remission (HbA1c < 6%, FPG < 100 mg/dL, no meds)				
At 1 year, % (*n*)	69.2 (36/52)	64.7 (33/51)	0.625	NS
At 3 years, % (*n*)	56.1 (23/41)	57.1 (20/35)	0.927	NS
Complete remission in patients without preop insulin				
At 1 year, % (*n*)	76.7 (33/43)	67.4 (33/49)	0.318	NS
At 3 years, % (*n*)	62.5 (20/32)	57.6 (19/33)	0.685	NS

Sepúlveda, M.; Alamo, M.; Preiss, Y.; Valderas, J. P. Metabolic Surgery Comparing Sleeve Gastrectomy with Jejunal Bypass and Roux-En-Y Gastric Bypass in Type 2 Diabetic Patients After 3 Years. *Obes. Surg.* **2018**, *28* (11), 3466–3473. https://doi.org/10.1007/s11695-018-3402-x

Obesity Surgery
https://doi.org/10.1007/s11695-024-07327-w

ORIGINAL CONTRIBUTIONS

Comparative Study of Laparoscopic Sleeve Gastrectomy With or Without Jejunal Bypass

Luansheng Liang[1] · Rong Gu[2] · Ruibin Zheng[1] · Yi Sun[1] · Huiying Yang[1] · Xia Zhou[1] · Liping Fu[1] · Xiangwen Zhao[1]

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Table 3 Comparison of postoperative % EWL between the LSG and LSG+JJB groups

	1 m	3 m	6 m	12 m	18 m	24 m	36 m
LSG (%)	27.9	48.9	64.8	73.5	74.1	69.1	60.5
LSG+JJB (%)	26.2	42.6	56.5	65.4	69.2	69.8	64.2
P	0.29	0.009	0.005	0.013	0.124	0.814	0.276

Table 4 Comparison of postoperative TWL (kg) between the LSG and LSG+JJB groups

	1 m	3 m	6 m	12 m	18 m	24 m	36 m
LSG (n=68)	10.1	17.9	24.5	27.8	28.4	27.1	24
LSG+JJB (n=82)	14.5	23.7	31.4	36.7	39.1	39.9	36.3
P	0	0	0	0	0	0	0

Postoperative %EWL was similar in both groups. The TWL in the LSG + JJB group was greater than that in the LSG group, and the postoperative recurrent weight gain rate in the LSG + JJB group was lower than that in the LSG group.

Five-Year Outcomes of SG VS SG Plus JJB

Table 1 Comparison of the basic conditions of the two groups

Item	LSG(n=68)	LSG+JJB（n=82）
Gender (m/f)	19/49	24/58
Age (years, x±s)	34.19±9.69	32.78±7.82
BMI(kg/m^2, x±s)	36.29±5.89	42.98±6.50
complication[n(%)]		
Hyperlipidemia	34(50%)	44(53.6%)
hypertensive disease	29(42.6%)	36(43.9%)
T2DM	19(27.9%)	29(35.3%)
fatty liver disease	49(72.0%)	62(75.6%)
OSAHS	18(26.4%)	23(28.0%)
PCOS	11(16.1%)	15(18.2%)
hyperuricemia	30(44.1%)	41(50%)

Table 2 Perioperative indexes of patients in the two groups

indicators	LSG(n=68)	LSG+JJB（n=82）
Duration of surgery（min，x±s）	67.1+11.9	87.5+12.6
blood loss（mL，`x±s)	10.3±7.2	12.7±8.6
Anal exhaust time(d，`x±s)	0.9±0.3	1.1±0.4
hospital stay(d，`x±s)	3.2+1.1	3.4+1.3
complications（n）	2	3

Table 3 %EWL between the two groups

	1m	3m	6m	12m	18m	24m	36m	48m	60m
LSG	27.9	48.9	64.8	73.5	74.1	69.1	60.5	65.8	59.8
LSG+JJB	26.2	42.6	56.5	65.4	69.2	69.8	64.2	64.0	60.7
P	0.29	0.009	0.005	0.013	0.124	0.814	0.276	0.59	0.79

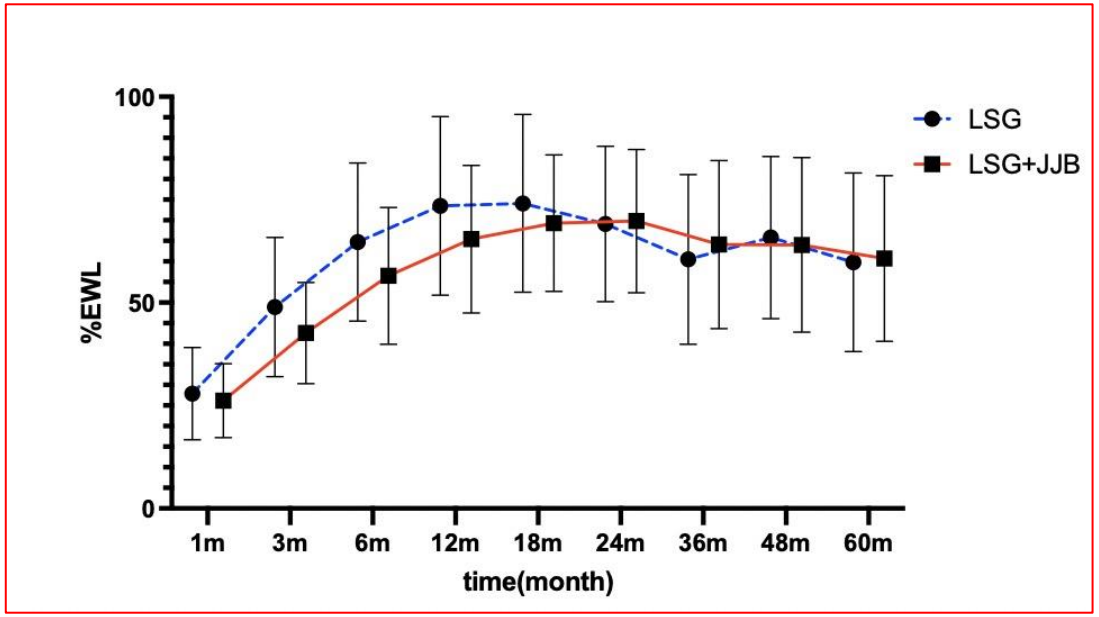
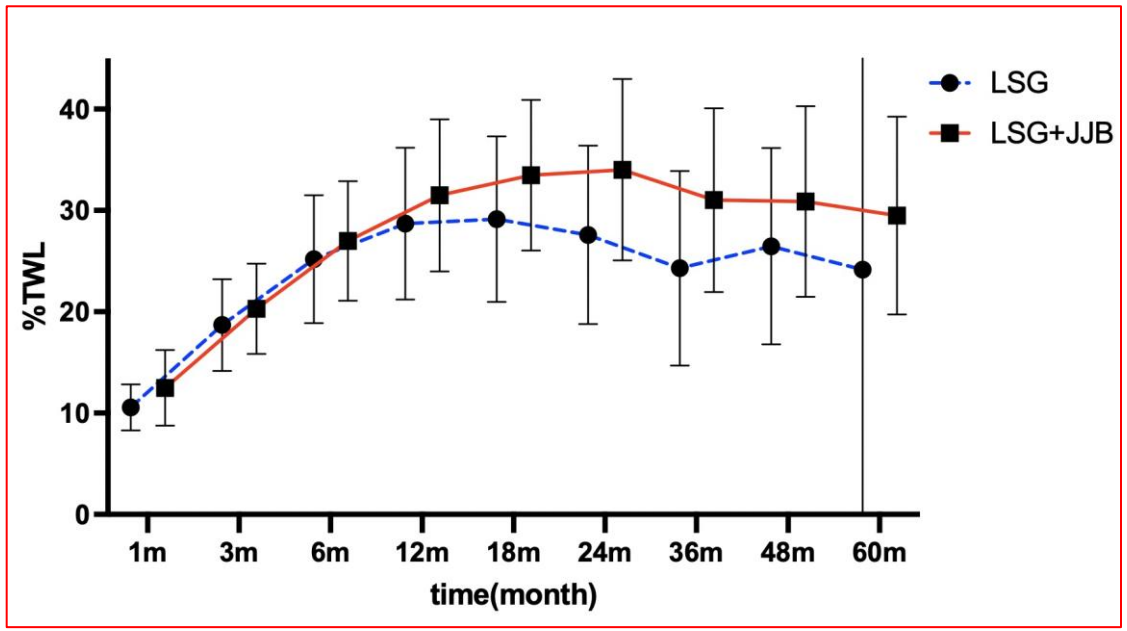
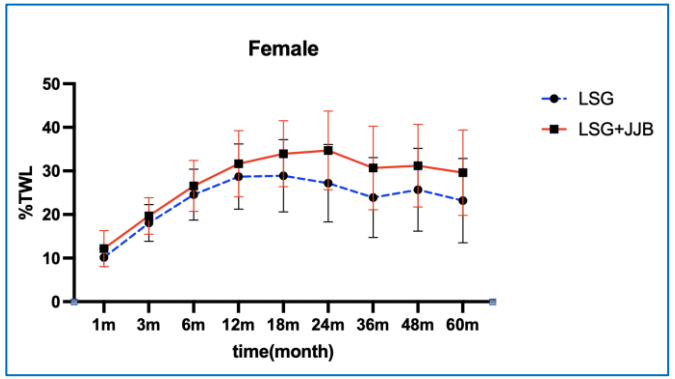


Table 4 %TWL between the two groups

	1m	3m	6m	12m	18m	24m	36m	48m	60m
LSG	10.5	18.7	25.2	27.8	29.1	27.1	24.3	26.4	24.2
LSG+JJB	12.5	20.3	27	31.5	33.4	39.9	31	30.9	29.5
P	0	0.034	0.08	0.02	0	0	0	0.05	0.01





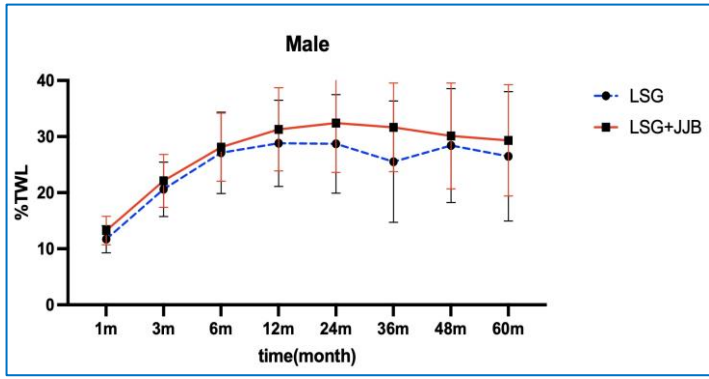


Table 6 Complications between the two groups

	LSG	LSG+JJB	χ
GERD	6/68	5/82	<0.05
Anemia	4/68	2/82	<0.05
complications	leakagen=1 pulmonary infection n=1	Bleeding n=1 ncomplete intestinal obstruction n=1 Intussusception n=1	

limitations

- **Small Sample Size**: The study had a limited number of participants, which may affect the reliability of the results.
- **Differences in Preoperative Mean BMI**: Ther was a notable difference in the preoperative mean BMI between the two groups, which could introduce bias in the outcomes.
- **Limited Observation Parameters**: The study focused primarily on changes in body weight, with few other indicators being observed.
- **Lack of Randomized Controlled Trial**: The absence of a randomized controlled trial reduces the study's ability to establish causality.
- **Short Follow-up Period**: The follow-up duration was not long enough, and more long-term data are needed for a comprehensive analysis.
- **Insufficient Analysis of Comorbidities**: The study lacked a thorough comparative analysis of data regarding the remission of comorbidities, which is crucial for evaluating the full impact of the interventions

Conclusion

- **Weight Loss Effect**: The Sleeve + JJB group demonstrated a slightly better and more durable weight loss effect compared to Sleeve alone, with a lower likelihood of weight regain.
- **Postoperative Complications**: The incidence of postoperative cmplications did not significantly increase with Sleeve + JJB; however, attention should be given to potential complications related to intestinal anastomosis, such as bleeding, obstruction, and intussusception.
- **Suitability for High BMI Patients**: For patients with a high BMI (>40 kg/m^2), Sleeve + JJB may be considered an ideal option for bariatric surgery.
- **Need for Further Research**: Further randomized controlled trials are needed to evaluate the long-term efficacy and safety of Sleeve + JJB compared to LSG and LRYGB.

Acknowledgments

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