

Effect of Gastropexy-omentopexy on Early Postoperative Outcome of Laparoscopic Sleeve Gastrectomy: A Prospective Comparative Study

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ABSTRACT

Background: The laparoscopic sleeve gastrectomy (LSG) is a pure restrictive bariatric operation. Gastropexy-omentopexy was proposed to alleviate complications, such as leakage, twist, and vomiting that may occur after sleeve gastrectomy. This study was aimed to compare the effect of gastropexy-omentopexy on the early postoperative complications of LSG.

Methodology: This is a prospective comparative study conducted between August 2021 and January 2024. It included 376 patients who had LSG at Asyut University Hospital. They were randomly divided in two groups, group A (No = 200) with gastropexy-omentopexy and group B (176) without gastropexy-omentopexy.

Results: There was no statistically significant difference in terms of age, sex, and preoperative body mass index. The overall postoperative complications of group B are higher than those of group A ($p = 0.001$). There was no significant difference in postoperative leak, bleeding, stricture, and twist between the two groups. Nausea and vomiting were higher in group B than in group A ($p = 0.001$) gastropexy-omentopexy.

Conclusion: Laparoscopic sleeve gastrectomy with omentopexy had a significant effect on the overall early complications and readmission rates after LSG. More studies are required to provide a strong recommendation of omentopexy as a standard step in LSG.

Keywords: Gastric twist, Laparoscopic sleeve gastrectomy, Omentopexy.

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INTRODUCTION

The laparoscopic sleeve gastrectomy (LSG) is a pure restrictive bariatric operation. It involved constructing a uniformly long gastric tube by removing about two-thirds of the stomach.¹ The consequence is an overall reduction in stomach volume, hormonal capacity, and accelerated duodenal emptying.^{2,3} Although it is a straightforward, one-step procedure, there may be some unfavorable adverse events, such as nausea, vomiting, gastric sleeve twist, leaks, or reflux symptoms.^{4,5} Since its inception in the late 1990s and early 2000s, it has been subjected to several modifications to enhance the outcome and eliminate associated complications as well.^{6,7} Gastropexy-omentopexy was proposed to alleviate these complications.⁸⁻¹⁰

Our study aimed to compare the effect of gastropexy-omentopexy on the early postoperative complications of LSG.

METHODOLOGY

Between August 2021 and January 2024, 376 patients had LSG as a single treatment to treat morbid obesity at Asyut University Hospital. The study group was randomly divided into two groups: group (A) with gastropexy-omentopexy and group (B) without it. Patients with a BMI of 40 kg/m² or more, patients with a BMI of 35 kg/m² or higher and co-morbidities, and those aged 18–65 were all included. We excluded patients with symptomatic reflux or who had undergone prior bariatric surgery. All patients provided informed consents and followed the preoperative assessment process set by the bariatric team. The study was authorized by the local ethics committee. Pre- and postoperative patient care, as well as scheduled follow-up, were provided as previously stated.¹¹

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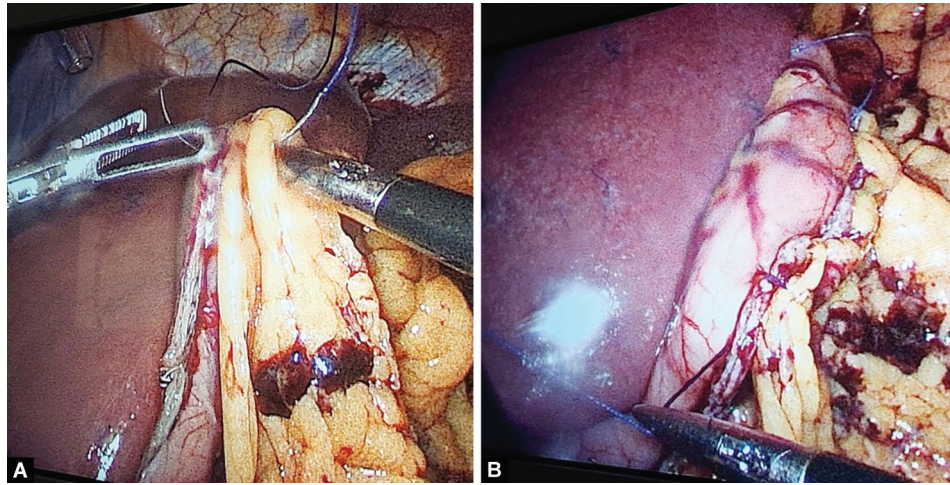
Technique

The same bariatric surgeons conducted all procedures, which followed the same protocol. Our technique for performing LSG has previously been published.¹¹ The additional step in omentopexy was composed of approximating and fixing the previously detached greater omentum to the evolved staple line by a continuous suture, 5–10 cm from the incisura angularis downward toward the pylorus with Vicryl 2-0 (Fig. 1).

RESULTS

Demographic Data

There was no significant difference between the two study groups in terms of age, sex, and mean BMI (Table 1).



Figs 1A and B: Omentopexy by 2-0 Vicryl

Table 1: Demographic data

	Group A (omentopexy) No = 200	Group B (without omentopexy) No = 176	p-value
Mean age (range) years	36 ± 10 (range, 24–61)	35 ± 12 (range, 19–65)	0.3788
F:M	111:89	99:77	0.8917
Mean BMI	44 ± 8	43 ± 9	0.2547

Table 2: Postoperative outcome

	Group A (omentopexy) No = 200	Group B (without omentopexy) No = 176	p-value
Leakage (%)	0	1 (0.56)	0.3174
Stricture	1 (0.5)	2 (1.1)	0.5101
Gastric twist	0	1 (0.56)	0.3174
GERD	4 (2)	6 (3.4)	0.4001
Nausea and vomiting	4 (2)	12 (6.8)	0.0214
Bleeding	1 (0.5)	2 (1.1)	0.5101
Readmission	4 (2)	15 (8.5)	0.0041
Overall complications	10 (5)	24 (13.6)	0.0037

Perioperative Outcome

The mean operative time was 53 ± 9.5 minutes in group A and 68 ± 11.2 minutes in group B ($p = 0.02$). Groups A and B had a mean hospital stay of 24 ± 8 and 28 ± 9 hours, respectively ($p = 0.06$). No mortality was reported in both groups.

Postoperative Surgical Outcome

Within the first 2 weeks, postoperative leakage was detected in one patient (0.5%) in group B. He was treated with an endoscopic stent for 4 months and had satisfactory outcomes. While no leakage was noted in group A. Similarly, within the first 2 weeks, 4 patients in group A and 12 in group B had nausea and vomiting ($p < 0.001$). Nausea and vomiting were severe in group B, prompting readmission, and requiring antiemetics and proton pump inhibitors, but they were mild in group A and treated as outpatients. In group B, one patient experienced epigastric pain and frequent vomiting.

He was readmitted, and an upper endoscopy identified a gastric twist. They responded satisfactorily to endoscopic dilatation within 6 months of surgery. In group A, there was no definitive diagnosis of gastric twist (Table 2).

DISCUSSION

Laparoscopic sleeve gastrectomy is a well-established and successful bariatric treatment among surgeons worldwide.^{12–14} Bleeding, leakage, gastric twist, and vomiting are among the most frequent surgical complications that prolong stay and impair quality of life.^{15,16} Gastropexy-omentopexy was supposed to reduce early postoperative adverse event by staple line reinforcement, fixing the gastric tube, and straightening of the gastric sleeve.^{17–19}

The effect of gastropexy on the early outcome of LSG is controversial. Several studies reported a significant lower incidence of overall complications and readmission among sleeve gastrectomy

with omentopexy patients.^{9,20,21} While others found no significant difference in readmission and postoperative complications rate.²²⁻²⁴ Our study indicated that gastropexy-omentopexy patients had fewer overall early postoperative complications than those who did not have gastropexy-omentopexy. This finding is consistent with the preceding data.^{10,17,25} The additional step of gastropexy-omentopexy resulted in a statistically significant increase in the operational time of group A, which is consistent with previous study results.^{21,26} As with previous data, we reported a leakage in one patient (0.5%) in group B and zero leakage in group A,²⁴ with no statistical significance. Furthermore, there was no statistical significance in bleeding, stomach twist, or stricture in the two groups; these findings were consistent with prior studies.²⁷⁻²⁹ In similar manner with earlier findings, we noted that nausea, vomiting, and GERD symptoms were more in group B than group A, but the result was not significant.^{8,23,24,30} Although we provide a randomized control trial, it has several limitations, such as a limited sample size and single center experience; thus a multicentered study with a large population size is required. Based on our results, we concluded that LSG with omentopexy had a significant effect on overall early complications and readmission rates after LSG. More studies are required to provide a strong recommendation of omentopexy as a standard step in LSG.

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