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Comparison of Sleeve Gastrectomy and SASI Bypass Surgery Outcomes in Patients with Obesity After Seven Months in Shiraz

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The rational goal of bariatric surgeries should not only be to decrease weight but also to ensure the patient's quality of life and wellbeing, including the improvement of vital organ function and alleviating the adverse effects of obesity on the heart, liver, kidneys, and other organs. In this study, BMI decreased significantly with both SG and SASI bypass operations, with a trend toward more weight reduction with the latter. These results are similar to the study by Emile et al., which showed that the percentage of excess weight loss (EWL%) at six months postoperatively was similar between the two groups (15).

In this study, it was shown that insulin levels and HOMA-IR decreased after SASI bypass and increased after SG. This is also in line with Emile et al.'s study results, which showed that the improvement in T2DM after SASI bypass was better compared to SG (15). Our results indicated that HbA1C, a long-term predictor of glucose control, decreased significantly and to a similar degree in both groups, as did the TG level. Emile et al. also reported a better improvement in the metabolic profile in the long term after SASI bypass. They indicated that the EWL% reached 90% at one year and the remission rates of hypertension, hypercholesterolemia, and hypertriglyceridemia were 86%, 100%, and 97%, respectively (15). In another study, Salama et al. showed significant decreases in the plasma levels of FPG, insulin, and LDL and a significant increase in HDL plasma levels following SASI bypass (8).

In this study, adiponectin levels increased significantly, and leptin and ghrelin concentrations decreased considerably after both surgeries ($P < 0.001$ for both). Similar results were reported by Buzga et al. (4). Ghrelin and leptin levels decreased significantly after both types of surgeries, but there were no significant differences between the two groups ($P = 0.571$, $P = 0.414$). Adiponectin levels increased substantially after both surgeries, but the difference was not significant between them ($P = 0.598$, Table 3).

In our study, after SG, the creatinine level significantly decreased ($P = 0.005$). The mean concentrations of liver enzymes decreased but were within the normal range in both groups before and after surgeries, although the decrease was more prominent following SG ($P < 0.05$). The reduction in BMI after SG was inversely correlated with ALT and leptin levels.

The CAP score, an indicator of fatty changes in the liver, decreased significantly after both types of surgeries, with no significant difference between the groups ($P = 0.772$) (Tables 4, 6). The liver fibrosis score decreased significantly only after SASI bypass surgery ($P = 0.034$).

The EF% increased significantly after SASI bypass surgery ($P = 0.008$). The contraction power of the heart also improved due to weight loss, which is a sign of metabolic syndrome improvement.

This study, with a short-term follow-up, revealed comparable efficacy of SG and SASI bypass surgeries in weight loss and several metabolic indicators while showing more rapid improvement of liver fibrosis and cardiac function with SASI bypass. The significance of this advantage of SASI bypass needs to be demonstrated in long-term studies.

5.1. Limitations

This study reports on a small series from a single center, comparing heterogeneous groups (12 SASI vs. 33 SG). There was no matching and no randomization in our groups because the patients chose the type of surgery. The generalization of our findings needs to be confirmed in larger multicenter studies.

5.2. Conclusions

In conclusion, our data revealed that both SASI bypass and SG are effective and safe in the treatment of morbid obesity. The more rapid improvement of cardiac function and liver fibrosis observed with SASI bypass could be an advantage in certain circumstances. However, this finding needs to be confirmed in larger, randomized long-term studies.

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Footnotes

Authors' Contribution: SVH contributed to the conception of the work, conducted the study, revised the draft, approved the final version of the manuscript, and agreed with all aspects of the work. SAH and AM contributed to the conception of the work, drafted and revised the draft, approved the final version of the manuscript, and agreed with all aspects of the work. HKh contributed to the conception of the work, conducted the study, revised the draft, approved the final version of the manuscript, and agreed with all aspects of the work. KBL contributed to the conception of the work, revised the draft, approved the final version of the manuscript, and agreed with all aspects of the work.