Original Article

Effectiveness of Laparoscopic Sleeve Gastrectomy for Weight Loss in Morbid Obese Patients

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A B S T R A C T

Objective: To determine the effectiveness of laparoscopic sleeve gastrectomy for weight loss in morbidly obese patients at Capital Hospital, Islamabad.

Methodology: This descriptive case series study was done at Capital Hospital, CDA, Islamabad during a period of one-year from February 2019 to January 2020. All the patients with a body mass index of 35 or greater, with or without comorbidities, aged 18 to 65 years of either gender were included. All the patients underwent laparoscopic sleeve gastrectomy for weight loss. At the 1st, third, and 6th month’s follow-up, postoperative weight loss was noted. Effectiveness was taken in terms of > 10% weight loss maintained at 6 months.

Results: The overall study participants’ average age was 57±9.77 years, and females were in the majority (62%). Overall, laparoscopic sleeve gastrectomy was effective in 85% of patients and was not effective in 15% of patients. The average BMI was 37.31 kg/m². Laparoscopic sleeve gastrectomy showed effectiveness in 57 (85%) patients, while 10 (15%) of the patients’ weight was not lost. Effectiveness was statistically insignificant according to age, gender, and comorbidities, p-values were quite insignificant (>0.05).

Conclusion: Laparoscopic sleeve gastrectomy was observed to be an effective technique for weight loss in morbid obese patients. It did decrease the morbidities and improve the quality of life.

Key words: effectiveness, laparoscopic sleeve gastrectomy, weight loss, morbid obesity.

Introduction

Obesity is a medical disorder when extra body fat builds up to the point that it could be harmful to one’s health. The Body Mass Index (BMI), which is calculated by dividing a person’s weight by their height squared, is used to assess and categorize obesity. When a person’s BMI exceeds 30 kg/m², they are typically termed obese, with a BMI of 25 to 30 kg/m² being considered overweight. Class I obesity is defined as a BMI of 30 to 34.9. A Class II obesity BMI ranges from 35.0 to 39.9. BMI 40 is considered Class III Obesity. A combination of excessive food intake, inactivity, and genetic predisposition frequently results in obesity. With rising rates among adults and kids, obesity is the greatest preventable cause of mortality in the globe. 100 million children and 600 million adults (12%) were obese in 2015. Women are more likely than men to be obese. The American Medical Association designated obesity as an illness in 2013. Diet and exercise are considered the main treatments for obesity. To suppress the appetite or minimize the absorption of fat, medications may also be used in conjunction with a healthy diet. Conservative treatments like diet, exercise, and medications have given disappointing long-term results, surgeons are using minimally invasive techniques for the management of Obesity.

One of them is the laparoscopic sleeve gastrectomy, in which a significant section of the stomach is surgically
removed along the larger curve, reducing the stomach to 25% of its initial size. Today, it is well accepted that bariatric surgery is a reliable and secure procedure for treating severe obesity. It also has advantages in terms of reducing mortality, comorbidities, and health care expenditures. The percentage total weight loss is 43% after 6 months of Laparoscopic Sleeve Gastrectomy respectively.

The purpose of this descriptive study is to ascertain that, Laparoscopic Sleeve Gastrectomy proved to be the safest and most effective approach for achieving lengthy-time period weight loss and correction of metabolic abnormalities in patients tormented by morbid obesity.

**Methodology**

This descriptive case study was carried out at Capital Hospital, CDA, Islamabad after taking permission form Hospital’s ethical committee. The study duration was one year from February 2019 to January 2020. All the patients with body mass index of 35 or greater with or without comorbidities, aged 18 to 65 and both genders were included. Patients were excluded if they were unfit for general anesthesia, had active substance abuse, had a minimum experience of more than 5 years. Post operative weight loss was noted on 1st, third, and 6th month’s follow-up. Effectiveness was taken in terms of >10% in 57(85%) patients during post operative six months and was not effective in 10(15%) patients. (Table II)

Effectiveness in laparoscopic sleeve gastrectomy was analyzed as weight loss >10% in 57(85%) patients during post operative six months and was not effective in 10(15%) patients. (Table II)

Stratification of effectiveness laparoscopic sleeve gastrectomy with respect to age, gender, marital status, education, hypertension, diabetes, and hyperlipidemia is given in table III.

| Variables                        | Effectiveness | Total | p-value |
|----------------------------------|---------------|-------|---------|
| Age groups                       |               |       |         |
| 18-30 years                      | 04            | 01    | 05      | 0.982 |
| 31-40 years                      | 10            | 02    | 12      |       |
| 41-50 years                      | 19            | 03    | 22      |       |
| 51-65 years                      | 24            | 04    | 28      |       |
| Gender                           |               |       |         |
| Males                            | 22            | 03    | 25      | 0.601 |
| Females                          | 35            | 07    | 42      |       |
| Diabetes                         |               |       |         |
| No                               | 20            | 03    | 23      | 0.754 |
| Yes                              | 39            | 07    | 46      |       |
| Hypertension                      |               |       |         |
| No                               | 18            | 03    | 21      | 0.920 |
| Yes                              | 35            | 06    | 41      |       |
| Hyperlipidemia                    |               |       |         |
| No                               | 22            | 04    | 26      | 0.933 |

**Discussion**

A medical disease called obesity occurs when extra body fat builds up to the point where it could be harmful to
one's health. Body Mass Index (BMI), a number calculated by dividing a person's weight by their height, squared, is used to assess and categories obesity. BMIs exceeding 30 kg/m² are typically regarded as obese, with values between 25 and 30 kg/m² being considered overweight. This study shows that the mean age of the study subjects was 57 ± 9.77 years, females were in the majority (62%), and the overall average of BMI was 37±2.31 Kg/m². Similarly, Murshid KR et al⁸ reported that the participant’s average age was 47.54 ± 10.791, females were in majority 78.0% and pre-operative average of BMI was 49.29 kg/m². On the other hand, the study reported that the out of all study participants who underwent the surgery, the females were (68%) and males were (32%).⁹ Interestingly in that study stated that another important risk factor for postoperative mortality and morbidity is male gender, along with high BMI, and is linked to technical challenges during surgery. In actuality, men frequently possess a mechanical body habit in which extra body fat is located in the hepatic left lobe and the peritoneal cavity is frequently enlarge,⁹,¹⁰ making access to the stomach and hiatal area challenging. As a result, the literature's relatively high proportion of male patients receiving SG indicates the bariatric surgeon's preference for SG that would be less difficult than other operations necessitating more extensive anastomoses of intestine and dissections.⁹

In this study laparoscopic sleeve gastrectomy found effective in 85% of the participants and was not seen effective in 15% patients. Consistently Eid GM et al¹¹ reported that the seventy-four cases underwent LSG, and the mean age was 50 years, the occurrence of the long and the short-term complications was 15% post-operatively and mortality rate was 0. In their study, the overall follow-up duration average was seventy-three months and excess weight loss (EWL) (52%) at till 72 months, 43% till the 84 months, and 46% at 96 months after LSG, having a 48 percent EWL overall, while average BMI reduced from 66 kg/m² with range of 43 to 90 kg/m² to 46 kg/m² with range of 22 to 73 kg/m². Furthermore, they reported that seventy-seven percent of individuals having diabetes, achieved improvements or illness remission.

On other hand Berry MA et al⁷ reported that one of them is the laparoscopic sleeve gastrectomy, wherein a along the broader curvature, a sizeable portion of the stomach is removed surgically, reducing the stomach to 25% of its initial size. Today, it is well accepted that bariatric surgery is a reliable and secure procedure for treating severe obesity. It also has advantages in terms of reducing mortality, comorbidities, and health care expenditures. The percentage the overall weight loss after six months is 43% of laparoscopic sleeve gastrectomy, respectively. In the line of this study, El Moussadui I et al¹² and Elsawaf M et al¹³ concluded that the LSG for adolescent obesity was found to be a safe therapy with notable short-term clinical and metabolic results. On the other hand, in the studies of Kumar S et al¹⁴ Sakran N et al¹⁵ reported that, an effective, simple and repeatable surgical procedure to manage morbid obesity is the laparoscopic sleeve gastrectomy, and it is safe to use and has minimal death and morbidity rates. El-Anwar A et al¹⁶ also reported that the excess body weight loss percentage in group 1 was 53.6± 10.96 percent at 6 months and 69.4± 15.6 percent at 1 year postoperatively, while it was 52.7± 11.27 percent at 6 months and 66.4 13.4 percent at 1 year postoperatively without significant difference in both study groups. Neither intraoperative issues nor postoperative fatalities occurred. There were 15 individuals that experienced complications overall, and the two groups did not differ statistically significantly from one another (in group I 14 percent versus in group II 15.4 percent). In comparison to group 2, group 1’s postoperative hospital stay was longer, lasting 2.3 days. Six months after sleeve gastrectomy, there was a complete remission of 58.8% of diabetes mellitus, a remission of 60% of hypertension, and an eradication of 87.5 % of sleep apnea, without a difference in statistical significance between the two groups.

Conclusion

Laparoscopic sleeve gastrectomy was observed to be the effective technique for weight loss in morbid obese patients do decrease the morbidities and improve the quality of life. Although further large-scale studies are recommended on such subject.

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