ORIGINAL ARTICLE

Laparoscopic Sleeve Gastrectomy: Determine the Outcomes of Approach in Patients with Morbid Obesity

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ABSTRACT

Aim: To examine outcomes in term of excess weight loss of laparoscopic sleeve gastrectomy in morbid obesity.
Study design: Prospective/observational study.
Place & duration of study: Capital Hospital CDA Islamabad from 20th Aug 2018 to 30th September 2019.
Methods: Thirty two patients of both genders with ages 25 to 65 years presented with morbid obesity were enrolled. Patients detailed demographics including age, sex and co-morbidities were recorded after written consent. Laparoscopic sleeve gastrectomy procedure was done on all the patients. Weight loss, BMI and excess weight loss were examined pre and postoperatvely. Outcomes were analyzed by BAROS scoring system.
Results: Twenty three (71.88%) patients were females while 9(28.13%) were males with mean age of 39.69±9.35 years. Co-morbidities such as hypertension, diabetes mellitus, hypelipidemia and obstructive sleep apnea were recorded as 8(25%), 15(46.88%), 4(12.5%) and 6(18.75%) patients respectively. A significant difference was observed regarding excess body weight loss pre and postoperatively 119.3±25.63kg and 89.62±16.42kg (p=<0.001). Mean difference of EBWL was 29.70±9.88 kg at 12 months follow-up and mean BMI was 13.85±3.45 kg/m^2. Postoperative systolic blood pressure improvement was observed in 18 (56.25%) patients.
Conclusion: Laparoscopic sleeve gastrectomy in patients with morbid obesity was safe and effective treatment modalities with very low rate of complications.
Keywords: Laparoscopic sleeve gastrectomy, Morbidobesity, Excess body weight loss, BAROS score

INTRODUCTION

The number of laparoscopic sleeve gastrectomies (LSGs) performed worldwide has increased markedly in the past few years and it has earned a place as a primary bariatric surgery. It was initially performed as the first of a two-step surgery, biliopancreatic diversion with a duodenal switch. However, it proved to be effective as a stand-alone procedure for both weight loss and comorbidity resolution.[1-4]laparoscopic sleeve gastrectomy produces early satiety by reducing the ability of the residual stomach to distend and resulting in a reduced level of plasma ghrelin. Levels of ghrelin are decreased after the LSG procedure as the predominant part of the ghrelin-producing gastric fundus is resected out, resulting in less stimulation of hunger and greater appetite suppression.[5]

The fact that this technique has been considered simple and easy has led to its adoption by a large number of surgeons. Compared with gastric bypass and biliopancreatic diversion, and given that the procedure is performed under laparoscopy; it may seem to involve less risk.[6] Among the advantages of this surgical method is the lack of digestive anastomosis, mesenteric defects that may cause internal hernias and foreign material such as gastric bands.[7,8]

The resection of a part of the stomach is done along a calibrating orogastric tube or bougie with diameter from 32 to 60 Fr.[9-11] The success of this restrictive bariatric operation may be limited by dilatation of the remaining gastric tube at longer follow-up, thus diminishing the restrictive effect.[12]The present study was conducted aimed to examine the outcomes in term of excess body weight loss in patients underwent laparoscopic sleeve gastrectomy presented with morbid obesity.

MATERIALS AND METHODS

This prospective/observational study was conducted at Capital Hospital CDA Islamabad from 20th Aug 2018 to 30th September 2019. A total of 32 patients of both genders with ages 25 to 65 years presented with morbid obesity were enrolled. Patients detailed demographics including age, sex and co-morbidities were recorded. Patients with severe gastric disorders, patients with previous history of bariatric surgery and patients with no consent were excluded. Laparoscopic sleeve gastrectomy procedure was done on all the patients. Weight loss, BMI and excess weight loss were examined pre and postoperatvely. Outcomes were analyzed by BAROS scoring system as excellent, very good, good, fair and poor. Follow-up was taken at 12 months after surgery. All the data was analyzed by SPSS 24. Chi-square test was done to examine the difference of EBWL and BMI pre and postoperatively P-value <0.05 was set as significant.

RESULTS

Twenty three (71.88%) patients were females while 9 (28.13%) were males with mean age of 39.69±9.35 years. Co-morbidities such as hypertension, diabetes mellitus,

hypelipidemia and obstructive sleep apnea were recorded as 8 (25%), 15 (46.88%), 4(12.5%) and 6(18.75%) patients respectively (Table 1). Preoperative mean value of weight was recorded as 119.3±25.63kg and post operative findings of weight at 12 months after surgery was and 89.62±16.42kg with mean difference of EBWL was 29.70±9.88kg (p=<0.0001) at 12 months. Pre and postoperative findings regarding Body mass index were noted as 46.28±6.84 kg/m^2 and 33.53±3.44 kg/m^2 with mean difference of 13.85±3.45 kg/m^2at 12 months after surgery with p-value <0.001. Preoperative Excess weight was mean 70.01±20.83 kg and post-operative after 12 months the mean value was 40.30±2.03 kg. Post-operative % EWL at 12 months was mean 47.28±14.75 (Table 2).

Postoperative systolic blood pressure improvement was observed in 18(56.25%) patients. According to the BAROS score, 4(12.5%) showed excellent, 12(37.5%) showed very good, 14(43.75%) showed good, 2(6.25%) showed fair and no patient showed poor outcomes (Table 3)

Table 1:Demographical characteristics of all the patients

Variable	No.	%
Age (years)	39.69±9.35	
Gender		
Male	9	28.13
Female	23	71.88
Co-morbidities		
Hypertension	8	25.0
Diabetes Mellitus	15	46.88
Hyperlipidemia	4	12.5
Obstructive sleep apnea	6	18.75

Table 2: Pre and Postoperative at 12 months findings regarding weight, BMI and EWL

Variables	Pre-operative	Postoperative 1 year	Difference
Weight Kg	119.3±25.63	89.62±16.42	29.70±9.88
BMI Kg/m	46.28±6.84	33.53±3.44	13.85±3.45
EWL	70.01±20.83	40.30+2.03	29.70±9.88
% EWL	-	47.28±14.75	-

P-value <0.0001

Table 3: BAROS findings at final follow-up

BAROS	No.	%
Excellent	4	12.5
Very Good	12	37.5
Good	14	43.75
Fair	2	6.25
Poor	-	-

DISCUSSION

Laparoscopic sleeve gastrectomyis increasingly being performed as a potentially stand-alone bariatric operation, performed with some ease laparoscopically. In 2009, the American Society for Metabolic and Bariatric Surgery issued an updated statement on sleeve gastrectomy, accepting LSG as an approved bariatric surgical procedure primarily because of its potential value as a first-stage operation for high-risk patients, with the full realization that successful long-term weight reduction in an individual patient after LSG would obviate the need for a second-stage procedure.[13] The present study was conducted aimed to examine the outcomes of laparoscopic sleeve gastrectomy in patients presented with morbid obesity. In our study majority of patients were females 71.88% as compared to males 28.12% with mean age 39.69±9.35 years.These results showed similarity to many of previous studies in which females patients population was quite high 75 to 90% as compared to males and majority of patients were ages above 35 years.[14,15]

In our study, we found diabetes mellitus was the most frequent co-morbidity 46.88% followed by hypertension and obstructive sleep apnea. A study conducted by El-Anwar A et al [16] regarding LSG reported diabetes mellitus 16.6% was a most frequent comorbidity followed by hypertension.

We found that the preoperative mean value of weight was 119.3±25.63kg and post operative findings of weight at 12 months after surgery was and 89.62±16.42kg with mean difference of EBWL was 29.70±9.88 kg (p=<0.0001) at 12 months. Many of studies showed similarity to our study findings in which a significant difference was demonstrated regarding weight loss pre and postoperatively. In these studies majority of patients had good outcomes in term of excessive body weight loss.[17,18]

In the present study, pre and postoperative findings regarding Body mass index were noted as 46.28±6.84 kg/m^2 and 33.53±3.44 kg/m^2 with mean difference of 13.85±3.45 kg/m^2at 12 months after surgery with p-value <0.001. Preoperative excess weight was mean 70.01±20.83 kg and post-operative after 12 months the mean value was 40.30±2.03 kg. Post-operative % EWL at 12 months was mean 47.28±14.75. These results were comparable to many of previous studies and these studies illustrated that laparoscopic sleeve gastrectomy is very useful and safe treatment modality for reducing the excess body weight with very low rate of complications.[19,20]

According to the BAROS score, 4 (12.5%) showed excellent, 12 (37.5%) showed very good, 14 (43.75%) showed good, 2 (6.25%) showed fair and no patient showed poor outcomes. These results were similar to several other studies regarding laparoscopic sleeve gastrectomy in which majority of patients had good outcomes score ranges 50% to 70%.[21,22]

CONCLUSION

Laparoscopic sleeve gastrectomy is considered a best treatment modality in patients with morbidly obesed. It is concluded from this study that laparoscopic sleeve gastrectomy in patients with morbid obesity is very useful, safe and better treatment approach with high rate of patients satisfaction and better treatment outcomes.

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