The Egyptian Journal of Hospital Medicine (October 2016) Vol. 65, Page 696- 698

Impact of Sleeve Gastrectomy on Weight Loss, Comorbidities of Obesity, and Quality of Life in Saudi Arabia

Mohammad E. Mahfouz, Abdulrahman Altowairqi, Haitham Altowairqi, Saif Altalhi, FahadAlotaibi, Fahad Alhazmi, Almutairi, Abdulmajeed Muteb, Maha Aljumaie, Hala El Nashar

Taif University College of Medicine, Saudi Arabia

ABSTRACT

Background and aim of the work: laparoscopic sleeve gastrectomy (LSG) proved to be an effective operation for control of obesity and associated comorbidities. The aim of this study was to evaluate the impact of this operation on weight reduction, improvement of obesity comorbid diseases, and the quality of life (QoL).**Patients and method:** A cross sectional web-based survey was conducted between June and October 2016. A total of 660 patients who was subjected to LSG volunteered in the survey and answered the online questionnaire which consisted of 30 items (multiple choice and short answered questions). **Results:** the study involved 425male patients (64.4%) and 235 female patients (35.6%). The mean preoperative BMI was significantly reduced from 38.6±9.1 kg/m^2 to 28.4±6.9kg/m^2 after a mean duration of 24±5.6 months following LSG. There was highly significant improvement (P< 0.001) in obesity comorbid diseases; however, the improvement was significant (P< 0.05) for improvement in sexual performance. The patient satisfaction from the weight reduction after LSG was rated as excellent by 68.2% of participants, as very good to good by 24.2% of participants, and as just accepted by 1.8%. 5.8% of patients had no changes or even gain weight after LSA (P>0.05). 92.4% considered that their quality of life became better and would recommend the sleeve gastrectomy for other obese people who suffer from the obesity.

Conclusion: laparoscopic sleeve gastrectomy is a good option for those with morbid obese patients as regard weight reduction, improvement of obesity comorbid diseases, and their quality of life.

Keywords: Sleeve gastrectomy, obesity comorbid diseases, quality of life, Saudi patients

INTRODUCTION

More than 1.7 billion people are suffering from obesity around the world and in Saudi Arabia obesity is considered a health and socioeconomic problem [(1)]. There is an increasing of incidence of obese patient who are being referred for surgical treatment due to failure of conservative methods in reducing weight and improving the functional ability , comorbidities, and patient quality of life as whole[(2-4)].Numerous surgical options are practicized and sleeve gastrectomy was initially offered to super obese patients with as the first part of a two part surgical procedure, which was later followed by a gastric bypass or a duodenal switch. However, recent studies verified that the weight loss after sleeve gastrectomy is enough for most of the individuals [(5-8)].The aim of this study was to evaluate the impact of this operation on weight reduction, improvement of obesity comorbid diseases, and the quality of life (QoL).

PATIENTS AND METHOD

A cross sectional web-based survey was conducted between June and October 2016. A total of 660 patients who was subjected to LSG participitated in the survey and answered the online questionnaire which consisted of 30 items (multiple choice and short answered questions), in addition to the socio-demographic information. All patients have been underwent sleeve gastrectomy. The study was conducted after approval of the college ethical board. Non Saudi patients were excluded from the study and those with incompletely answered questionnaires. The survey is divided into two sections; the first section is socio-demographic information that consists of 4 items including sex, age, marital status and nationality. The second section is the 30 items including BMI before and after the LSG, effect of the operation of different obesity comorbid diseases if found and patient satisfaction from weight reduction.

Statistical analysis: Data were gathered, tabulated. SPSS program, version 20.0(SPSS Inc., Chicago, IL, USA) was used. The data were expressed in number and percentage (qualitative) whereas, the quantitative data were expressed as means ±SD. The significance between 2 means was tested by Student's t test. Non-parametric methods were used when data have a ranking but no clear numerical interpretation

RESULTS

The study involved 425male patients (64.4%) and 235 female patients (35.6%) of mean age of

Received: 01/9/2016
Accepted: 07/9/2016

DOI : 10.12816/0033785

41±9.7 years. The mean preoperative BMI was significantly reduced from 38.6±9.1 kg/m^2 to 28.4±6.9 kg/m^2 after a mean duration of 24±5.6 months following LSG (P< 0.05). There were 99/660 patients (15%) with type II diabetes, all of them (100%) showed postoperative improvement (P< 0.001) which was complete in 61/99 patients (61.6%), moderate in 33/99 (33.3%), and minimal in 5/99 (5.1%). Fifteen out of 660 patients (2.3%) had type I diabetes and all of them (100%) showed postoperative improvement (P< 0.001) which was complete in 5/15 (33.3%), moderate in 9/15 patients (60%), and minimal in one patient (6.7%). There were 180/660 patients (27.3%) with hypertension, 176/180 of them (97.8%) showed postoperative improvement (P< 0.001) which was complete in 95/180 patients (52.8%), moderate in 69//180 (38.3%), and minimal in 12/180 (6.7%). Changes in lipid profile were not clear so it was omitted in the final results. There were 430/660 patients (65.2%) with musculoskeletal and joint disorders, 421/430 of them (97.9%) showed postoperative improvement (P< 0.001) which was complete in 124/430 patients (28.8%), moderate in 266//430 (61.9%), and minimal in 31/430 (7.2%). There were 301/660 patients (45.6%) with sleep disturbances (apnea and snoring), 294/301 of them (97.7%) showed postoperative improvement (P< 0.001) which was complete in 240/301 patients (97.7%), moderate in 47/301 (15.6%), and minimal in 17/301 (5.6%). There were 474/660 (71.8%) married participants; 298 of married patients (62.9%) had sexual problems and 219/298 (73.5%) reported postoperative improvement (P<0.05). The patient satisfaction from the weight reduction after LSG was rated as excellent by 450/660 participants (68.2%) and as very good to good by 160/660 (24.2%), and the just accepted in 12/660 patients (1.8%). However, 38 patients (5.8%) had no changes or even gain weight after LSA (insignificant, P> 0.05). 92.4% considered that their quality of life became better and would recommend the sleeve gastrectomy for other obese people who suffer from the obesity. Table 1 shows preoperative patient characteristics.

DISCUSSION

Sleeve gastrectomy has gained popularity amongst bariatric surgeons as simple and reliable procedure for reduction of weight and control obesity comorbid diseases[5-8].The procedure is performed laparoscopically in which a partial gastrectomy is done removing the fundus with most of the greater curvature of the stomach creating a "tubular" stomach[9] .The operation will restrict gastric capacity and without the fundus, it is more resistant to stretching in addition, the cells producing Ghrelin which is a gut hormone involved in regulating food intake will be removed[10-11].leaving the pyloric valve intact means that digestion would not be changed[11].The majority of studies of SG have published short term outcomes from 12 to 36 months. In our study the mean duration after surgery was 24±5.6 months. Brethauer *et al*. in their systematic review of at least 36 studies that have evaluated the use of sleeve gastrectomy as a bariatric procedure for the treatment of morbid obesity , they found that the range of the percent of excess weight loss ranged around 85%[5].In our study there was significant weight loss in more than 92%. The longest published follow-up was performed by Himpens *et al*.who published a prospective randomized study involving 40 patients undergoing LSG. With a median initial BMI of 39 (range 30 to 53), their 3-year follow-up data found a median weight loss of 29.5 kg (range 1 to 48), median BMI decrease of 27.5 kg/m^2 (range 0 to 48) and a median percent of excess weight loss of 66% (range –3.1 to 152.4) after LSG[12].

Mognol *et al.* verified in their study the efficacy and reliability of LSG where significant reduction in mean BMI and associated comorbidities was obtained, especially, sleep apnea, hypertension and sexual performance[13].These results were in accordance of our findings.

In the study of Keleidari *et al.* they verified that LSG is efficient procedure in control of type II diabetes mellitus where more than 95% of their patients showed significant improvement in glucose tolerance [6].In our study similar results were obtained. Buchwald et *al*. in their systemic review recorded excellent impact of LSG on hypertension, hyperlipedemia and glycemic control[7].Our results were in adherence of these findings; however, the results of changes in lipid profile were lacking. In the study of Baltasar *et al.*, the mean excess weight loss ranged from 56.1% in the super-obese patients to 62.3% in the patients with lower BMI which had refractory comorbidities [14] .They reported also a highly significant improvement of obesity comorbid diseases notably, glycemic control, hypertension, sleep apnea, and musculoskeletal disorders [13] .our results were in agreement of the previous study.

In the study of Major *et al*. they confirmed the reliability of LSG in improving the quality of life of obese people which is worse than that in persons with correct body weight and they added that not only the quality of life is related to physical function, as, intolerance of exercise, problems with moving, or joint pain, but also it is related to psychical aspects, including lack of acceptance of themselves, increased stress level, reduced self-esteem and mood, or depressive states. [(15)]In the present study, more than 90% of patients considered that their quality of life became better and would recommend the sleeve gastrectomy for other obese people who suffer from the obesity.

CONCLUSION

Laparoscopic sleeve gastrectomy is a good option for those with morbid obese patients as regard weight reduction, improvement of obesity comorbid diseases, and their quality of life.

REFERENCES

1. **Freedman DS, Khan LK, Serdula MK, Galuska DA, Dietz WH (2002).** Trends and correlates of class 3 obesity in the United States from 1990 through 2000. *JAMA.*, 288:1758-61.
2. **NIH conference. Gastrointestinal surgery for severe obesity (1991).** Consensus Development Conference Panel. Ann Intern Med., 115: 956–61.
3. **Major P, Matłok M, Pędziwiatr M, Migaczewski M, Budzyński P, Stanek M, Budzyński A (2015).** Quality of Life After Bariatric Surgery. Obesity Surgery, *25*: 1703–10.
4. **Fuks D, Verhaeghe P, Brehant O*et al.* (2009).** Results of laparoscopic sleeve gastrectomy: a prospective study in 135 patients with morbid obesity. Surgery, 145:106–13.
5. **Brethauer SA, Hammel JP, Schauer PR (2009).** Systematic review of sleeve gastrectomy as staging and primary bariatric procedure. SurgObesRelat Dis., 5:469–75.
6. **Keleidari B, Mahmoudie M., Anaraki A G, Shahraki M S, Jamalouee S D, Gharzi M, and Mohtashampour F (2016).** Six month-follow up of laparoscopic sleeve gastrectomy. Advanced Biomedical Research, *5*: 49-56.
7. **Buchwald H, Avidor Y, Braunwald E *et al*. (2005).** Bariatric surgery: a systematic review and meta-analysis. *JAMA.*, 292:1724–37.
8. **Karmali S, Schauer P, Birch D, Sharma A M and Sherman V (2010).** Laparoscopic sleeve gastrectomy: an innovative new tool in the battle against the obesity epidemic in Canada. Canadian Journal of Surgery, *53*: 126–32.
9. **Sherman V, Brethaer SA, Chand B*et al.*(2007).** Laparoscopic sleeve gastrectomy. In: Schauer PR, Schirmer BD, Brethauer SA, editors. Minimally invasive bariatric surgery. New York (NY): Springer Inc; pp. 173–9.
10. **Karamanakos SN, Vagenas K, Kalfarentzos F, Alexandrides TK (2008).** Weight loss, appetite suppression, and changes in fasting and postprandial ghrelin and peptide-YY levels after Roux-en-Y gastric bypass and sleeve gastrectomy: a prospective, double blind study. *Ann Surg.*, 247:401–7.
11. **Lalor PF, Tucker ON, Szomstein S*et al*. (2008).** Complications after laparoscopic sleeve gastrectomy J. SurgObesRelat Dis., 4:33–8.
12. **Himpens J, Dapri G, Cadiere GB (2006).** A prospective randomized study between laparoscopic gastric banding and laparoscopic isolated sleeve gastrectomy: results after 1 and 3 years. Obes Surg., 16:1450–6.
13. **Mognol P, Chosidow D, Marmuse JP (2005).** Laparoscopic sleeve gastrectomy as an initial bariatric operation for high-risk patients: initial results in 10 patients. Obes Surg., 15:1030–3.
14. **Baltasar A, Serra C, Perez N, Bou R, Bengochea M, Ferri L (2005).** Laparoscopic sleeve gastrectomy: a multi-purpose bariatric operation. Obes Surg., 15:1124–8.
15. **Major P, Wysocki M, Pędziwiatr M, Małczak P, Pisarska M and Budzyński A (2016).** Laparoscopic sleeve gastrectomy for the treatment of diabetes mellitus type 2 patients—single center early experience. Gland Surgery, *5*:465–72.

Table 1: Preoperative characteristics of the patients

Total number	**660**
Males	**64.4%**
females	**35.6%**
Mean age	41±9.7 years
Married	71.8%
Mean BMI ±SD	38.6±9.1
Patients with Type I diabetes	2.3%
Patients with Type II diabetes	15%
Patients with hypertension	27.3%
Patients with sexual disorders	62.9% of married patients
Patients with musculoskeletal and joint disorders	65.2%
Patients with sleep disturbances	45.6%

SD; standard deviation