

Analysis of the effects of laparoscopic sleeve gastrectomy on weight loss and co-morbidities

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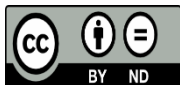


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ABSTRACT

The sleeve gastrectomy was initially developed as the initial step in the gastric bypass procedure, it is now being carried out on its own an increasing amount. As a result, it is essential to report results on the reduction in the number of co-morbidities as well as weight loss. A continuous group of 80 patients diagnosed with morbid obesity were examined. The operative variables, the number of complications, the amount of weight loss, and the requirement for medication to treat co-morbidity at least six months after surgery were the parameters. The median amount of time spent operating a machine has come down to 74 minutes. The typical length of stay in the hospital was three days. The duration of the follow-up, on average, was 9 months. The typical amount of excess weight lost was 45.5 percent of total body weight. The average number of points off of one's BMI was 24.4 percent. Three quarters of the patients were able to reduce the amount of medication they were taking for diabetes, hypertension, and high cholesterol, or stop taking it altogether. The findings of this study demonstrated that the laparoscopic sleeve gastrectomy is a technique that is beneficial in assisting patients in achieving their weight loss goals. The reduction or cessation of medication in seventy-five percent of the patients was clinically significant.



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1. Introduction

Obesity is becoming more prevalent in both developed and developing countries around the world [1]. In the United States and Iraq, 4.7 percent and 1.3 percent of excessively obese people, respectively, have a BMI greater than 40. Obesity rates in the United States are roughly the same for men and women (33.3 percent versus 35.3 percent). Women account for a higher proportion of obese people in Iraq (30% versus 17%) [2- 4]. Obesity is expected to rise to nearly 3-4 percent in the United States by 2020 [5]. In Iraq, this rate will rise from 42.8 percent to 54 percent in women and from 57 percent to 74 percent in men between 2005 and 2015 [6]. Obesity is linked to a number of diseases, including type II diabetes, hypertension, osteoarthritis, sleep apnea, nonalcoholic fatty liver, and cancers of the rectum, colon, esophagus, and

pancreas. Bariatric surgery not only provides people with obesity-related diseases with long-term weight loss but also additional benefits, and this significant weight loss lowers the relative risk of mortality [7]. Bariatric surgery is recommended for people with BMIs greater than 40 or greater than 35 who also have obesity-related diseases [8]. Bariatric surgery is the most effective treatment for morbid obesity; it is both a weight-loss and a metabolic surgery. It leads to excellent long-term sustained weight loss and, as a result, a reduction in co-morbidities. A sleeve gastrectomy is a surgical procedure used to treat morbid obesity. 1 This is a primarily restrictive procedure designed to reduce appetite by reducing the stomach's ability to distend and producing the sensation of fullness with minimal oral intake. Because the sleeve gastrectomie is a more definite procedure than the band without the disadvantages of malabsorptive bypass, and the preliminary results are promising, it is necessary to report results on weight loss and co-morbidity. As a result, we assessed our laparoscopic sleeve gastrectomy outcomes.

2. Patients and Methods

The sleeve gastrectomy was initially adapted as a first step technique by the bariatric surgery section of a large institute that was not academically affiliated. Since August of the year 2020, it has been carried out as a procedure all by itself in Zohor private hospital in Tikrit-Iraq. The laparoscopic sleeve gastrectomy was performed on the patients either at the patients' desire or as an alternative operation in the event that a gastric bypass would be too taxing. After this point, patients who had undergone a laparoscopic sleeve gastrectomy for the treatment of morbid obesity and had a minimum of 6 months of follow-up were eligible to be enrolled in this study.

The patients' characteristics, co-morbidities, and prescribed medications, as well as the operation parameters, length of hospital stay, and postoperative problems, were looked up in their medical charts and examined. Patients are monitored in the outpatient department at 1, 6, and 12 months after surgery, and then annually thereafter. By the end of the year, a research nurse had given each patient a supplementary examination. This checkup was completed on all individuals. Weight, co-morbidity, ability to swallow solid meals, satisfaction with the procedure as measured on a verbal descriptor scale ranging from not at all to highly, and differences in prescribed drugs were the types of data that were collected. The term "co-morbidity" refers to an additional medical condition that requires care beyond the scope of the primary illness.

The patient is anti-Trendelenburg on an extended surgical table with both arms out from the body. After pneumoperitoneum is formed, 5 ports are placed into the abdominal cavity. The right lateral port may be skipped. Subxphoidal abdominal exploration and liver retraction. One gauze holds the omentum laterally and exposes the His angle. Coagulation dissects this angle. The bursa is safely opened at the flexura lienalis (less adhesions to pancreas). Using a 10 mm LigaSure (Covidien), the omentum is divided proximally to the angle of His and distally to 6 cm prepyloric. This site is frequently identified by adhesions on the dorsal side of the stomach and crows' feet-shaped veins ventrally. Using a 34-Fr tube, 60 mm EndoGia cartridges partition the stomach (Covidien). It takes two green (4.8 mm) and three to five blue (3.5 mm) staplelines. Leak tests weren't done intraoperatively. Endoclip (Covidien) is used to stop staple line bleeding. If the angle of His is not initially visible, proximal omentum separation and stomach dissection are alternated. Dissected tissue is removed through a 15 mm trocar and closed with Endoclose (Covidien). Gauze removal follows hemostasis. The ports are removed to prevent abdominal wall hemorrhage.

This study was approved by ethical committee of Iraqi Board of Medical Specializations.

3. Results

The study comprised a total of 80 different patients. The proportion of males to females was 1:1.4, and the characteristics of both sexes are detailed in Table 1.

Table 1: Properties of studied patients

Age, mean, range	39.5	27-47
Weight, kg mean, range	137.8	95-231
BMI, kg/m ² mean, range	41.6	34-56
Waist mean, range size	141.6	118-234

The median duration of the procedure was 89 min (range 43-48). There was a significant declining trend in time.

The length of time spent following up after surgery, on average, was 9 months. 55 patients were able to eat solid food. The subsequent 19 patients had a shorter amount of time spent on follow-up. On the whole, 69 patients gave a rating of very satisfied on a scale that measured their level of verbal descriptor satisfaction. The discontent that was expressed did not have any connection to any other outcomes, such as problems. The average amount of weight loss due to reduction of excess was 50% (40 of 80). The decrease in points related to BMI was, on average, 21%

Table 2: Duration of procedure.

Cases	Time (min.)		P-value
	Median	Range	
1st 26 case	99	77-237	0.001
2nd 34 case	79	61-183	0.001
Last 20 cases	69	51-128	0.001

Table 3 outlines the many approaches to medical care that can be taken for co-morbid conditions. 7 patients who were being treated for diabetes, 19 hypertension, and 10 hyperlipemia were able to reduce or eliminate the need for their drugs to treat those conditions.

Table 3: Distribution of Co-morbidity in studied patients

	Reoperation Treatment	Treatment same	low doses treatment	no treatment	P-value
type 1 DM	4	1	0	3	0.001
type 2 DM	7	0	2	5	0.001
Hypertension	19	5	4	10	0.001
hyperlipidemia	10	4	2	4	0.001
Total	40	10	8	22	

4. Discussion

The findings of this study demonstrated that the laparoscopic sleeve gastrectomy is a technique that is beneficial in assisting patients in achieving their weight loss goals. It is a practical technique in terms of both the amount of time it takes to operate and the amount of time it takes to recover. The reduction or cessation of medication in seventy-five percent of the patients was clinically significant, and the focus on co-morbidities was the aspect that was most important. Laparoscopic sleeve gastrectomy is a technique that has been shown to be less demanding in terms of the patient's physical condition than laparoscopic gastric bypass. Despite this, a learning curve was evident for even the most experienced bariatric surgeons. The methodology used in this investigation was a little bit different from what had been outlined in previous studies. To begin, a specimen collection bag was not employed at any point [10], [11]. In light of the fact that the evaluation revealed an infection rate of only 2.7 percent, it is highly unlikely that the procedure will be modified to address this specific issue. Second, there was not a consistent practice of over-sewing the stapler line. This is most likely related to bleeding rather than the amount of stomach leakages or fistulas that have occurred [12]. Although there were greater incidences than reported in trials where over-sewing was utilized, also there was no leakage recorded in a trial where over-sewing was not employed [9]. There is no discernible variation in the amount of bleeding that occurred across all of these trials. Regarding the issue of hemostasis, it appeared that the utilization of an endoclip or a suture when it was suggested was a suitable replacement for the practice of over-sewing frequently. A majority of the bleeding that occurred during the operation was located distally, and it was apparent after the gastric tube was removed while the patient was under vision. Following that, an endoclip was utilized [13], [14]. The area around the vasa breva was the source of the majority of the postoperative bleeding. There were no people who lost their lives. The overall number of problems was relatively disappointing, and they were the cause of extended hospital stays that might last up to 126 days. It was thought that first experience and initial larger patients were to blame for 15 out of the 20 complications that occurred after the first 17 procedures that were carried out. Even though the difference was not statistically significant, there was a significant impact that previous gastric banding had on problems. As a result of these experiences, the protocol has been modified to include the removal of a gastric band followed by the performance of a sleeve gastrectomy at least 12 weeks later. Rhabdomyolysis, a severe complication, occurred twice throughout the course of the event. This has been discussed in previous reports. It is believed that this complication has not been encountered since the anesthetic approach for fluid control was optimized. However, there is still a possibility that it could occur. The majority of the difficulties that occurred during the past year were due to delayed stomach emptying, which required readmission to the hospital.

In the middle of the range, the proportion of excess weight lost was 45.5 percent. This finding was close to the percentages that were reported in the previous research despite the fact that the moment of measurement was not set in stone and the follow-up ranged from 6 to 33 months. A reduction in the number of medications required to treat a chronic illness related to obesity was an additional key outcome. In bariatric trials, the influence on co-morbidities is the most relevant outcome that may be measured. Diabetes and metabolic syndrome were found to improve in patients who were very obese, according to [13] findings. Both sleeve gastrectomy and gastric bypass were shown to be equally beneficial for treating obesity in this particular cohort, according to their findings [14- 17].

In conclusion, the laparoscopic sleeve gastrectomie is a beneficial method for reducing weight and the risk of associated diseases. Once the number of complications that occur drops as a result of increased expertise, the method can be considered safe. Additionally, in the event that a sleeve gastrectomie is unsuccessful in reducing a patient's overall body mass, there is always the option of converting the procedure into a gastric bypass. On the other hand, the present outcomes were only of a short term nature, and other long-term follow-up data are absent at this time. Additionally, there is the possibility of regaining weight after a sleeve

gastrectomy, as well as dilatation of the pouch and problems following re-intervention. Therefore, the gastric bypass continues to be the procedure of choice, and patients who undergo sleeve gastrectomy are need to undergo extensive follow-up care.

5. References

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