Evaluation of Gastric Bypass Patients 1 Year After Surgery: Changes in Quality of Life and Obesity-Related Conditions

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Abstract

Background Obesity has recently been cited as the number one killer in the USA. This problem is both a national and regional epidemic. The health care costs of obesity and obesity-related illnesses are ever increasing, and gastric bypass surgery is becoming a popular treatment strategy. Recently, reports describe not only surgical outcomes, but also quality of life outcomes. The bigger issue of obesity-related illness resolution is still evolving. Our institution has performed well over 500 gastric bypasses since 2002. We evaluated over 100 patients prior to and 1 year after gastric bypass surgery.

Methods A prospective study was designed in order to systematically examine quality of life in gastric bypass patients and couple the results with both objective and subjective assessment of bariatric surgery outcomes. One hundred nineteen patients undergoing gastric bypass at our institution from January 2005 to December of 2005 were enrolled in the study. In addition to routine preprocedural and postprocedural follow-up, completion of quality of life forms and anthropometric measurements were performed. Using these data, we then correlated the change in quality of life scores with social factors, weight loss success, and status of obesity-related conditions. We also examined the impact of alcohol intake and other demographic factors on both quality of life and obesity related conditions.

Results A total of 119 patients were enrolled in the study during the calendar year 2005. Follow-up at approximately 1 year (average 12.86 months) postsurgery was obtained in 75 patients. A significant reduction in weight (144.4±34.4 vs. 91.5±28.8; \( p<0.0001 \)), body mass index (52.4±12.2 vs. 32.3±8.6; \( p<0.0001 \)), mean systolic blood pressure (140.4±14.7 vs. 130.0±21.7; \( p<0.001 \)), and lipids (194.3±33.8 vs. 165.7±32.1; \( p<0.0001 \)) was noted. Quality of life scores 1 year after gastric bypass surgery were also significantly improved (35.9±19.5 vs. 82.2±23.5; \( p<0.0001 \)). There was also a significant reduction in the reported usage of medications for obesity related conditions. Various measures of success (change in BMI, change in quality of life scores, and follow up health ranking) were compared across demographic and social factors and no significant associations were identified.

Conclusions Gastric bypass is associated with a reduction in weight, BMI, mean systolic blood pressure, cholesterol, and the usage of medications for obesity-related conditions. A significant improvement in quality of life was also noted 1 year after surgery.

Keywords Gastric bypass · Quality of life · Medication usage · Obesity related conditions · Changes in quality of life · Obesity · Laparoscopic gastric bypass · LGB

Introduction

Obesity has recently been cited as the number one killer in the USA [1]. This problem is both a national and regional epidemic. In 2003, it was noted that over 30% of the USA population was obese [body mass index (BMI) >30 kg/m²] [2]. The health care costs of obesity and obesity-related illnesses are ever increasing; therefore, gastric bypass surgery is becoming a popular treatment strategy. Recently, reports describe not only surgical outcomes, but also quality
of life outcomes. The bigger issue of obesity-related illness resolution is still evolving. Patients undergoing gastric bypass have multiple comorbidities related to their obesity. In 2001, Schauer et al. [3] identified an average of 6.8 comorbidities per patient; the most common of which were degenerative joint disease (64%), hypercholesterolemia (62%), hypertension (52%), depression (41%), and type 2 diabetes (22%). In 2006, Nguyen et al. [4] demonstrated a significant reduction in medication costs for patients with these comorbidities after laparoscopic gastric bypass. Bennet et al. [5] in 2007 recognized that superobese patients experience significant improvements in comorbidities and quality of life after Roux-en-Y gastric bypass even if their BMI remains >35 kg/m².

Laparoscopic gastric bypass has been shown to be safe and effective for the treatment of morbid obesity. It has also been associated with resolution of obesity-related comorbidities. This study was designed in order to prospectively evaluate the impact on quality of life as well as the reduction in medication usage in patients who undergo laparoscopic gastric bypass. Our hypothesis was that patients undergoing laparoscopic gastric bypass would have significant improvements in quality of life scores as well as a dramatic reduction in obesity-related medication usage.

Methods

A prospective study was designed in order to systematically examine quality of life in gastric bypass patients and couple the results with both objective and subjective assessment of bariatric surgery outcomes. A total of 119 patients undergoing gastric bypass at our institution from January 2005 to December 2005 were enrolled in the study. In addition to routine preprocedural and postprocedural follow-up, completion of quality of life forms and anthropometric measurements were performed. Using these data, we then correlated the change in quality of life scores with social factors (age, race, and sex), weight loss success, and status of obesity-related conditions as it related to medication usage. We also examined the impact of alcohol intake on both quality of life and obesity-related conditions.

Standard preprocedural evaluation was completed. This included group meetings for education and support, a preoperative history and physical by the primary physician, and a meeting with the gastric bypass coordinator at which time a letter of medical necessity which included past medical history, family history, past surgeries, medications, BMI, and any prior attempts at weight loss was constructed. At that time, standard labs were drawn; these included liver function tests, complete blood count, pre-albumin, gamma-glutamyltransferase, international normalized ratio, hemoglobin A1C, and lipid panel. Anthropometric measurements were also taken at the preoperative appointment. In addition to routine preoperative evaluation as outlined above, this study required completion of the following forms: impact of weight on quality of life (IWQOL), “alcohol intake form”, and “background and medications”. IWQOL is a 66-item self-report (designed by Duke University) condition-specific instrument designed to measure the perceived effect of weight on quality of life [6]. The “background and medications” form included both demographic and social factors as well as a check list indicating medication usage for each of the obesity-related conditions (arthritis, hypertension, diabetes, cholesterol, and depression). Number of medications or dosages taken for the various obesity-related conditions was not assessed.

A brief follow-up was conducted by the surgery coordinator at 2–3 days postoperation, and then a formal appointment was completed at 1 week. Two weeks postsurgery, a routine follow-up with the coordinator was initiated. A minimum of once monthly for the next 1 year the patients were contacted by the coordinator.

At 1 year postsurgery, a routine follow-up examination was performed which included laboratory and anthropometric measurements. In addition, the forms completed at preoperative evaluation (IWQOL, “alcohol intake form”, and “background and medications”) were once again completed. If 1 year follow-up exam was unable to be performed, a telephone follow-up quality of life survey was attempted for the remaining subjects by a member of the research team.

Data Analysis

This prospective study was designed in order to systematically examine quality of life in gastric bypass patients and couple the results with both objective and subjective assessment of bariatric surgery outcomes. Using statistical analysis comparison of presurgical with follow-up quality of life, laboratory measurements, and medication usage for obesity-related conditions were performed. The statistical analysis department assisted in the analysis, interpretation, and presentation of data.

Summary statistics for continuous variables such as BMI, blood pressure and various laboratory values were reported as mean±standard deviation. Categorical variables such as use of various medications and health rankings were reported using percentages. The changes in continuous
variables were analyzed using paired t tests, and the changes in categorical variables were analyzed using McNemar’s test for correlated proportions. P values less than 0.05 indicated statistical significance.

Results

A total of 119 patients were enrolled in the study during the calendar year 2005. Follow-up at approximately 1 year was obtained in 75 patients (63%). Upon follow-up, mean weight in kilograms (144.4±34.4 vs. 91.5±28.8, p<0.0001) and BMI (52.4±12.2 vs. 32.3±8.6, p<0.0001) were both significantly lower as was mean systolic blood pressure (140.4±14.7 vs. 130.0±21.7, p<0.001). Lower use of medications was also reported (Table 1). Several laboratory values including total cholesterol (194.3±33.8 vs. 165.7±32.1, p<0.0001) were significantly changed as well. The mean quality of life score (35.9±19.5 vs. 82.2±23.5, p<0.0001) and self-ranking of health upon follow-up were also significantly improved. Various measures of success (decrease in medication usage, weight loss, change in blood pressure and other laboratory data) were compared across demographic and social factors (age, race, and sex) and no significant associations were identified. No significant association was noted with alcohol use. Improvement in quality of life scores was also independent of amount of weight loss achieved (Fig. 1).

Discussion

Morbid obesity has reached epidemic proportions in the USA and is associated with multiple medical comorbidities [7]. Due to this, bariatric surgery has emerged as an effective method of weight reduction. Recently, reports have described not only bariatric surgery outcomes, but also quality of life outcomes after gastric bypass surgery. Quality of life issues and the impact on surgical outcomes are now getting more attention in the medical literature. Multiple quality of life scales, including the SF-36 and IWQOL, have been developed to evaluate this. Numerous studies have evaluated the change in quality of life and how it relates to bariatric surgery outcomes; however, few have addressed the impact on obesity-related conditions. In our study, we addressed the quality of life improvement after gastric bypass surgery and the change in obesity-related conditions.

A large reduction in medication usage for obesity-related conditions was noted. Subjects taking medications for diabetes reported a reduction by 72%. Subjects with depression also noted a marked reduction in medication
usage by 50%. Medication usage for other obesity-related conditions such as hypertension, hyperlipidemia, and arthritis were also significantly reduced. Further studies could be performed evaluating medication usage including dosages and quantity of medications for obesity-related conditions and the subsequent cost savings after gastric bypass surgery.

This dramatic reduction in medication usage for obesity-related conditions in patients who undergo laparoscopic gastric bypass will significantly impact budgets of individuals, insurance companies, and institutions as well as help curb the costs of future obesity-related procedures and other complications. It has been estimated that within 7 years of surgery the prescription medication cost savings will surpass the cost of bariatric surgery.

In conclusion, this study has shown that significant weight loss is achieved after gastric bypass surgery and that there is a significant improvement in both quality of life scores and obesity-related conditions. A rather dramatic reduction in medication usage for multiple obesity-related comorbidities was also noted.

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References