

Original article:

Bariatric surgery clinical outcome in Indian population

Dr Vijay M Thorat ¹ , Dr Motilal C Tayade ²

¹Soham Hospital, Near Rajiv Gandhi Bhavan, Sharanpur Rd, Sharanpur, Nashik, Maharashtra 422002

²Assistant Professor, Department of Physiology, PIMS, Loni, Maharashtra 413736

Corresponding author: Dr Motilal C Tayade

Source of support: Nil, Conflict of interest: Nil

Date of submission: 29 January 2016, Date of publication: 15 June 2016

Abstract:

Introduction: Nowadays obesity is one of important leading lifestyle associated complication is observed in Indian population. Obesity and their complications like diabetes and cardiovascular disease are considered to have serious impacts that increase the public health burden worldwide.

Material and methods: The present work was carried out during last three years data collection . The sample size is estimated with expert statistician. Our bariatric surgery department used three major objectives when it was first established: first, to develop the bariatric surgery pathway based on Internationally developed guidelines; second, to ready a multidisciplinary team to provide comprehensive care for patients before and after surgery; and third, to set up a long-term follow-up plan for all patients who have undergone bariatric surgery at our Hospital .

Results: Patients had lost an average of 32.55 % of their presurgery weight at 12 months after surgery . Fifteen patients (18 %) achieved a BMI of less than 25 kg/m² by 12 months postoperatively. Baseline and 12-month postoperative weights (128.32±11.39 kg and 62.21±11.24 kg, respectively, *P*<0.001) and BMI (48.04±6.09 kg/m² and 28.39±6.01 kg/m², respectively, *P*<0.001) differed significantly in patients with a complete profile at 12 months (n= 58). Men (n= 22) achieved significantly greater weight loss at 12 months

Conclusion: Our results were similar to international outcomes in the short term; however, collection of long-term data is warranted to determine whether Indian population maintain a trend similar to that shown in other countries .

Keywords: Bariatric surgery , Indian population

Introduction:

Nowadays obesity is one of important leading lifestyle associated complication is observed in Indian population. Obesity and their complications like diabetes and cardiovascular disease are considered to have serious impacts that increase the public health burden worldwide. ¹

Number of treatment options exists for the management of obesity, including both nonsurgical as well as surgical treatments. Diet management ,

exercitices , drug therapy , ayurvedic remedies etc are popular methods routinely practiced in India . In the last decade, the number of bariatric surgeries performed worldwide has increased tremendously, doubling between 2003 and 2008 from 143,301 to 344,221 procedures per year.² Similarly, in the UAE, bariatric surgery has become a favored treatment for severe obesity in recent years; 1,963 such surgeries were performed in 2011 alone. ³

However surgical trend is though observed less limited but nowadays this is changing. Especially in urban population this is observed increasing passion concern with benefits of bariatric surgery. With this background present work was carried out to study outcome of bariatric study in India population.

Material and methods:

The present work was carried out during last three years data collection . The sample size is estimated with expert statistician.

Our bariatric surgery department used three major objectives when it was first established: first, to develop the bariatric surgery pathway based on Internationally developed guidelines; second, to ready a multidisciplinary team (Viz . an endocrinologist, bariatric surgeon, nurse, dietitian, anesthesiologist, cardiologist, and psychiatrist) to provide comprehensive care for patients before and after surgery; and third, to set up a long-term follow-up plan for all patients who have undergone bariatric surgery at our Hospital .

All patients offered surgical intervention were at least 18 years old and had been referred to the bariatric unit.

Patients included in this study were those with complete data on demographics, weight, and clinical outcomes, and eligible for the 1-year follow-up. All patients provided written informed consent prior to the surgical procedure after a thorough discussion with the multidisciplinary team during the preoperative care program.

Laparoscopic sleeve gastrectomy was offered, depending on the individualized therapy goals, patient preferences, and risk assessments.

Preoperative care

As a prerequisite for enrolling in the preoperative program, all suitable patients attended a group

seminar describing the benefits and risks of bariatric surgery. The entire multidisciplinary bariatric team was involved in that educational session. Investigative individual consultations with the multidisciplinary team then followed, in which all potential candidates were screened for inclusion/exclusion criteria according to the American Society for Metabolic and Bariatric Surgery (ASMBS) guidelines.⁴

The ASMBS inclusion criteria for bariatric surgery candidates are as follows: BMI ≥ 40 kg/m² with no comorbidities or BMI ≥ 35 kg/m² with obesity-associated comorbidities, including type 2 diabetes, hypertension, hyperlipidemia, obstructive sleep apnea, and nonalcoholic fatty liver disease; failure in previous nonsurgical attempts to lose weight; and the expectation that the patient will comply with postoperative care (follow-up visits with the health care team, and compliance with dietary supplements postoperatively and any instructions regarding the surgical procedure).

Patients were excluded from the bariatric program based on ASMBS exclusion criteria, which are as follows: current drug or alcohol abuse; reversible endocrine or other disorder that can cause obesity; uncontrolled/severe psychiatric illness; and lack of comprehension of the risks/benefits/expected outcomes/lifestyle changes associated with bariatric surgery.

Postoperative care

Surgeries were performed by bariatric surgeon.

Outcome measures

The following information was obtained from patient medical records: sociodemographics, including age and sex; anthropometric data, including weight and height, as measured by the bariatric nurse for all patients, BMI , body composition analysis, based on

fat mass (kg), muscle mass (kg), water mass (kg), as measured by bioelectrical impedance etc.

Statistical analysis

All collected data are presented as the mean \pm standard deviation, and categorical data are presented as frequencies. Student's *t*-tests (paired and unpaired) were used to test the significance of differences between values for continuous variables measured at baseline and at various time points. Differences with *P*-values <0.05 were considered to be statistically significant.

Results:

Patients had lost an average of 32.55 % of their presurgery weight at 12 months after surgery .

Fifteen patients (18 %) achieved a BMI of less than 25 kg/m² by 12 months postoperatively. Baseline and 12-month postoperative weights (128.32 \pm 11.39 kg and 62.21 \pm 11.24 kg, respectively, *P* <0.001) and BMI (48.04 \pm 6.09 kg/m² and 28.39 \pm 6.01 kg/m², respectively, *P* <0.001) differed significantly in patients with a complete profile at 12 months (n= 58). Men (n= 22) achieved significantly greater weight loss at 12 months

Percentage of excess weight loss

By 12 months postoperatively, 81 % (n= 51) of patients had achieved more than 50% EWL, compared with 52% (n=38) at 6 months

Body composition

The body component that decreased the most following surgery was fat mass. At 12 months, fat mass was reduced by 48%, muscle mass was reduced by 13.64%, and water mass was reduced by 17.68% .

Metabolic marker outcomes

Systolic and diastolic blood pressure decreased by 5.2% and 2.9 %, respectively

Discussion:

Our study demonstrated the short-term positive impact of laparoscopic surgery on weight, body composition, and comorbidities, including lipid profiles. Likewise, glucose control was improved in patients with type 2 diabetes, and the use of antidiabetic medications decreased accordingly. Additionally, no evidence of major postoperative complications was found.

These positive outcomes of surgery are attributable to a complex interaction between several mechanisms. It causes weight loss mainly through gastric restriction and surgical malabsorption.⁵ It has also been suggested that the surgery affects eating behavior. Patients normally experience appetite changes and reduced hunger after surgery, possibly due to changes in appetite and in the levels of satiety hormones including ghrelin, glucose-dependent insulinotropic peptide, GLP-1, and peptide YY.⁶ Moreover, patients might be cautious in their food selection and in the quantities consumed to avoid unpleasant symptoms associated with dumping syndrome .

Despite the increased use of bariatric surgery, published data on its outcomes in this population are lacking. The baseline demographics of the population studied here are similar to those reported internationally.

Other important findings of our study included the changes in body composition that followed the laparoscopic procedure. Several studies have used different remission/resolution definitions for type 2 diabetes, possibly contributing to the variance in rates observed in the literature.

Conclusion:

Our results were similar to international outcomes in the short term; however, collection of long-term data

is warranted to determine whether Indian population maintain a trend similar to that shown in other countries .

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