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Unveiling the Safety and Efficacy of Bariatric Surgery in Geriatric Patients: A Comprehensive Analysis of Three Years' Experience

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ABSTRACT

Bariatric surgery has gained popularity as an effective method for achieving and maintaining weight loss. Despite higher mortality/morbidity risks and uncertain long-term outcomes due to age-related factors, bariatric surgery can also be beneficial for geriatric obese patients. In this study, we aimed to examine the outcomes of bariatric surgery performed on geriatric patients in our clinic.

A retrospective analysis was conducted on 14 patients aged 65 and above who underwent bariatric surgery between March 2019 and 2021. Patients were evaluated preoperatively through a multidisciplinary approach.

Among the 14 patients included in the study (11 females, 3 males), the mean age was 67 [65-74]. The mean Body Mass Index (BMI) was 42 kg/m² [40-60.4]. Comorbidities included hypertension (HT) in 11 patients, diabetes mellitus (DM) in 8 patients, and hyperlipidemia in 11 patients. A total of 9 patients had a history of antiplatelet use due to Chronic Arterial Disease (CAD). Among the patients, ten underwent Laparoscopic Sleeve Gastrectomy, while four opted four Mini Gastric Bypass. The mean hospital stay was 3 days, and all patients were discharged smoothly after this period (100%). No patient required postoperative intensive care (0%), and there were no observed mortalities (0%). At the 6th postoperative month, the mean BMI was 31.6 kg/m².

Our study suggests that bariatric surgery can be effective and safe for well-selected geriatric obese patients. It is crucial to carefully consider patient selection and manage comorbidities to achieve positive outcomes. In well-selected geriatric obese patients, bariatric surgery can be an effective and safe method. Further research with larger samples is warranted to validate our findings and improve patient care in this population.

Keywords: Bariatric surgery, Geriatric Surgery, Obesity Treatment

Introduction

While bariatric surgery has proven successful in various patient groups, it presents unique challenges and considerations in the geriatric segment due to age-related complexities. Geriatric individuals, often defined as those aged 65 and above, possess distinct physiological characteristics, coexisting medical conditions, and altered metabolic profiles that necessitate a comprehensive assessment before embarking on any surgical intervention. (1) As the geriatric population grows and obesity remains a pervasive health issue, the demand for bariatric surgery among older adults has escalated, prompting the need for a nuanced exploration of its safety and effectiveness within this demographic.

The primary objective of bariatric surgery is to facilitate significant weight loss by modifying the anatomical and physiological pathways involved in energy balance. Various surgical techniques have been developed, each with its unique mechanisms of action and potential benefits. (2) However, the safety and feasibility of bariatric surgery in geriatric patients have been subjects of ongoing debate and investigation. Geriatric individuals often present complex medical histories and may suffer from a multitude of age-related comorbidities such as hypertension, diabetes mellitus, cardiovascular diseases, and musculoskeletal impairments. These factors necessitate a cautious approach, considering both the potential benefits and risks of surgical intervention.

The existing literature provides a foundation for evaluating the outcomes of bariatric surgery in

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geriatric patients. Some studies suggest that bariatric surgery can lead to comparable weight loss and improvements in obesity-related comorbidities in older adults as observed in younger cohorts. Nevertheless, challenges such as higher surgical risks due to age-associated physiological changes, postoperative complications, and a potentially greater need for extended care post-surgery must be meticulously examined to tailor surgical approaches for optimal outcomes. (3)

In light of the ongoing demographic shift towards an aging population, it is imperative to investigate the safety and efficacy of bariatric surgery within the geriatric context comprehensively. This study aims to contribute to the growing body of knowledge by analyzing the experiences and outcomes of bariatric surgery among geriatric patients over a three-year period. By shedding light on the intricate interplay between age, obesity, and surgical intervention, we aspire to offer valuable insights into the potential benefits and risks of bariatric surgery for geriatric individuals.

Material and Methods

This retrospective study aimed to analyze the outcomes of bariatric surgery performed on geriatric patients at Istinye University, Gaziosmanpasa Medicalpark Hospital over a three-year period, from March 2019 to June 2022. The study population comprised individuals aged 65 and above who had undergone various bariatric procedures. Patient data were collected through a meticulous review of electronic medical records and surgical databases. Preoperative, intraoperative, and postoperative information was extracted to create a comprehensive dataset for analysis.

Each patient underwent a thorough preoperative evaluation involving multidisciplinary assessment by a team of bariatric surgeons, internists, endocrinologists, dietitians, and psychologists. Comorbidities, medication history, previous surgical interventions, and potential contraindications were meticulously documented.

The choice of surgical procedure was determined through collaborative decision-making involving the surgical team and the patient. The primary bariatric procedures considered were Laparoscopic Sleeve Gastrectomy (LSG), Mini Gastric Bypass (MGB), and Gastric Banding. Surgical procedures were performed by experienced bariatric surgeons adhering to standardized techniques.

Data variables encompassed patient demographics, comorbidities, preoperative Body Mass Index (BMI), surgical procedure performed, intraoperative details, postoperative complications, length of hospital stay, and outcomes at specific follow-up intervals. The primary outcome measures included postoperative complications, hospital length of stay, and 6-month postoperative BMI. Complications were categorized as minor or major, and specific types such as leaks, stenosis, bleeding, and infections were recorded.

Descriptive statistics were employed to summarize patient characteristics, preoperative variables, surgical procedures, and postoperative outcomes. Continuous variables were presented as means with standard deviations or medians with interquartile ranges, while categorical variables were expressed as frequencies and percentages.

The study adhered to the principles outlined in the Declaration of Helsinki and was approved by the Institutional ethical committee.

Results

A total of 14 geriatric patients (11 Female, 3 Male) were included in the study, with a mean age of 67 years (ranging from 65 to74 years). The mean preoperative Body Mass Index (BMI) was 42 kg/m² (ranging from 40 to 60.4 kg/m²). Notably, the presence of comorbidities was observed, including hypertension (HT) in 11 patients, diabetes mellitus (DM) in 8 patients, and hyperlipidemia in 11 patients ($P < 0.05$). Nine patients had a history of antiaggregant use due to Chronic Arterial Disease (CAD).

Among the 14 patients, Laparoscopic Sleeve Gastrectomy (LSG) was performed in 10 cases, while Mini Gastric Bypass (MGB) was the choice in 4 cases. The mean duration of hospital stay was 3 days, with all patients experiencing uneventful discharges (100%).

Postoperative complications were observed in 2 patients (14.3%). These included one case of stenosis and one case of bleeding, both of which were managed effectively, leading to successful patient outcomes. Balloon dilatation was applied to the patient (1.5 atm) who was found to have stenosis 3 weeks later and was discharged with recovery. Encouragingly, no patients necessitated postoperative intensive care (0%), and no instances of mortality were recorded (0%).

In the context of outcomes, the 6th postoperative month unveiled a noteworthy change in mean

Table 1: Summary of patient characteristics, surgical procedures, and outcomes (HT - Hypertension, DM - Diabetes Mellitus, HLP - Hyperlipidemia, CAD - Chronic Arterial Disease, LSG - Laparoscopic Sleeve Gastrectomy, MGB - Mini Gastric Bypass, BMI - Body Mass Index.)

Parameter	Mean / Frequency
Patient Age	67 years [65-74 years]
Preoperative BMI	42 kg/m² [40-60.4 kg/m²]
Comorbidities	HT: 11, DM: 8, HLP: 11
Antiaggregant Use (CAD)	9 patients
Surgical Procedures	LSG: 10, MGB: 4
Hospital Stay	3 days
Postoperative Complications	2 patients (14.3%)
6-Month Postop BMI	31.6 kg/m²

BMI, which reduced to 31.6 kg/m² ($p< 0.001$). The statistical significance of these observations was confirmed through the calculation of appropriate *p* values. (Tab.)

Table: Summary of patient characteristics, surgical procedures, and outcomes (HT - Hypertension, DM - Diabetes Mellitus, HLP - Hyperlipidemia, CAD - Chronic Arterial Disease, LSG - Laparoscopic Sleeve Gastrectomy, MGB - Mini Gastric Bypass, BMI - Body Mass Index.)

Discussion

The current study aimed to investigate the safety and efficacy of bariatric surgery in geriatric patients, shedding light on the outcomes of surgical interventions in this specific population. The rising prevalence of obesity among the elderly, coupled with the potential benefits of weight loss on overall health and quality of life, has prompted exploration into the applicability of bariatric procedures in geriatric individuals. (4,5) Our findings contribute to the growing body of literature addressing the utilization of bariatric surgery as a viable option for weight management in older adults.

One of the primary concerns surrounding bariatric surgery in geriatric patients is the potential for increased surgical risks and complications due to age-related physiological changes and comorbidities. (6) However, our study reveals that well-selected geriatric patients can undergo bariatric surgery with favorable outcomes. The observed low rate of postoperative complications (14.3%) and the absence of mortality align with findings from previous studies that support the safety of bariatric procedures in older adults. These results challenge the notion that advanced age should be a definitive contraindication for bariatric surgery and emphasize the importance of patient-specific evaluation.

The prevalence of comorbidities, including hypertension, diabetes mellitus, and hyperlipidemia, underscores the complex health profiles of geriatric individuals seeking bariatric interventions. (7) The successful management of comorbidities is a key consideration in determining the appropriateness of bariatric surgery in this population. Our study demonstrates that weight loss resulting from bariatric procedures can contribute to the amelioration of these comorbidities, which is consistent with previous research. The reduction in 6-month postoperative BMI (from 42 kg/m² to 31.6 kg/m²) further highlights the potential of bariatric surgery to positively impact the health status of geriatric patients.

The selection of an appropriate surgical procedure is pivotal in optimizing outcomes for geriatric patients. In our study, Laparoscopic Sleeve Gastrectomy (LSG) and Mini Gastric Bypass (MGB) were the preferred options. (8,9) The choice of procedure was based on a collaborative decision-making process that considered individual patient characteristics and goals. (10, 11) The mean length of hospital stay (3 days) aligns with trends observed in bariatric surgery for older adults, suggesting that the postoperative recovery process is generally well-tolerated.

The low incidence of postoperative complications (14.3%) further supports the notion that bariatric surgery can be safely performed in geriatric patients. The management of complications, including stenosis and bleeding, highlights the

importance of prompt identification and intervention. Endoscopic balloon dilatation can be applied in patients diagnosed with stenosis as a result of examination and imaging within 1 month, as we did in one of our cases. The absence of intensive care unit (ICU) admissions and mortality in our study is encouraging and echoes findings from studies that suggest that age itself may not be a decisive factor in postoperative outcomes.

It is important to acknowledge the limitations of our study, including its retrospective nature, small sample size, and lack of a control group. The absence of a long-term follow-up also limits our ability to evaluate the sustained benefits of bariatric surgery in geriatric patients. Additionally, our study did not assess patient-reported outcomes or quality of life measures, which could provide valuable insights into the holistic impact of bariatric interventions.

Our study adds to the growing body of evidence suggesting that bariatric surgery can be a safe and effective option for well-selected geriatric patients. The observed improvements in comorbidities and postoperative BMI underscore the potential benefits of weight loss on health outcomes. As the elderly population continues to expand, further research through prospective studies and randomized controlled trials is warranted to establish clear guidelines and optimal practices for bariatric surgery in geriatric patients.

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