

ANALYSIS OF APPROACHES, COMPLICATIONS AND LONG-TERM RESULTS OF BARIATRIC SURGERY: AN INTEGRATIVE REVIEW

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Abstract: Bariatric surgery has emerged as an effective intervention to address severe and morbid obesity, resulting not only in sustained weight loss but also in improvements in associated health conditions. In this integrative review, we explore a comprehensive analysis of the various surgical approaches, related complications, and long-term outcomes linked to bariatric surgery. The period of analysis covers studies published between 2013 and 2023, with the aim of providing a comprehensive and up-to-date overview of the subject. The research addressed clinical and observational studies that analyzed bariatric surgery procedures in the context of the approaches employed, resulting complications and long-term outcomes. We examined studies that compared different surgical techniques, including multicenter clinical trials and longitudinal studies. The analysis focused on comparing outcomes between procedures such as single-anastomosis gastric bypass (OAGB), Roux-en-Y gastric bypass (RYGB), and sleeve gastrectomy (SG), with an emphasis on weight trajectories, complications, and metabolic results. The results highlighted the importance of comparing different surgical techniques so that one can examine the efficacy and safety of OAGB versus RYGB. Additionally, the Longitudinal Assessment of Bariatric Surgery (LABS) Study provided valuable insights into long-term weight trajectories after bariatric surgery. Discussions of complications highlighted the challenges and potential risks associated with bariatric surgery. By integrating analysis of several studies, this review offers a broad view of the efficacy, safety and complexities of bariatric surgery. Comparisons between surgical approaches, long-term weight and metabolic outcomes, as well as potential complications, provide essential information for clinical decision-making and to guide patients in the management of obesity. Standardization of

results and consideration of diabetes severity are crucial components in determining the most appropriate surgical approach.

Keywords: bariatric surgery, obesity, comorbidity, intraoperative complications and efficacy.

INTRODUCTION

Obesity is a global epidemic that has serious public health implications, including increased risk of cardiovascular disease, type 2 diabetes, metabolic disorders, and a variety of other comorbidities. Bariatric surgery has emerged as an effective approach to sustained weight loss and improved health conditions in patients with severe and morbid obesity. Over the years, different surgical techniques have been developed and refined, each with its own advantages and challenges.

This integrative review aims to analyze approaches, complications and long-term results of bariatric surgery. For this, recent clinical and observational studies will be addressed, covering a comprehensive period of analysis from 2013 to 2021. These studies have contributed to a deeper understanding of the effects of bariatric surgery on weight loss, control of metabolic diseases and quality of life of patients.

Comparison between different surgical techniques is essential for making informed decisions in the treatment of obesity. Among the surgical approaches evaluated, Roux-en-Y gastric bypass (RYGB), gastric bypass of an anastomosis (OAGB) and sleeve gastrectomy (SG) stand out. Studies such as the multicenter clinical trial by Peterli et al. (2021) have investigated the efficacy and safety of OAGB compared to RYGB. In addition, longitudinal studies such as the Longitudinal Assessment of Bariatric Surgery (LABS) Study, conducted by Courcoulas et al. (2018), have contributed to the understanding of long-term weight trajectories after bariatric surgery.

Another crucial dimension is the assessment of complications associated with these surgical interventions. While bariatric surgery has shown positive results in terms of weight loss and improvement of comorbid conditions, it is important to understand the potential risks and complications that can arise. Studies such as the essay by Schauer et al. (2017) have explored the difference between bariatric surgery and intensive medical therapy in terms of long-term outcomes, including complications.

Furthermore, the study by Aminian et al. (2017) introduced the Individualized Metabolic Surgery Score to aid in the selection of procedures based on diabetes severity. Long-term studies, such as the work by Adams et al. (2017), have offered insights into metabolic and weight outcomes up to 12 years after bariatric surgery. Comparative clinical trials, such as the study by Peterli et al. (2018) investigated the difference in weight loss between sleeve gastrectomy and Roux-en-Y gastric bypass. Long-term evaluations after specific surgeries, such as adjustable gastric banding, have also been addressed, as in the work by O'Brien et al. (2013).

Furthermore, the standardization of the presentation of results in metabolic and bariatric surgery is essential for the adequate understanding and comparison of studies. In this sense, the work by Brethauer et al. (2015) highlights the importance of standardized results reports in this area.

Studies comparing bariatric surgery with intensive medical therapy for diabetes also provided relevant information, as demonstrated by the trial by Schauer et al. (2014). Furthermore, systematic reviews, such as the study by Puzifferri et al. (2014), have contributed to a comprehensive understanding of long-term outcomes after bariatric surgery.

By bringing together an integrative analysis

of these studies, this review aims to provide valuable insights into the efficacy, safety, and challenges of bariatric surgery, with a focus on the approaches used, associated complications, and long-term outcomes. This information is essential for making informed decisions by health professionals and patients in the management of obesity.

METHODOLOGY

The central research question of this integrative review is to investigate the different surgical approaches to bariatric surgery, their associated complications, and long-term outcomes in patients with severe and morbid obesity.

The search was performed in electronic databases, including PubMed, MEDLINE and Scopus, using the keywords bariatric surgery, obesity, comorbidity, intraoperative complications and efficacy. Studies published between 2013 and 2023 were included to ensure a comprehensive and up-to-date analysis.

Clinical and observational studies that investigated surgical approaches to bariatric surgery, its complications and long-term results were considered. Studies with inadequate samples, lack of relevance to the topic and approaches unrelated to bariatric surgery were excluded.

Two independent reviewers performed the initial screening of the titles and abstracts of the studies identified in the search. After initial screening, relevant studies were selected for full reading and assessment of adequacy to inclusion criteria.

Selected studies underwent standardized data extraction. Information extracted included details about surgical procedures, sample characteristics, primary and secondary outcomes, reported complications, and long-term outcomes.

The extracted data were pooled and

analyzed qualitatively, focusing on different surgical approaches, associated complications, and long-term outcomes. The information was organized according to the main themes and trends identified in the studies.

It is important to recognize that the integrative review depends on the availability of published studies and may be subject to selection bias. In addition, variations in research methods and sample characteristics across studies may influence the generalizability of results.

The methodology adopted in this integrative review seeks to ensure a systematic and comprehensive approach in the analysis of surgical approaches, complications and long-term results associated with bariatric surgery. The standardization of the selection criteria and the rigorous analysis of the selected studies contribute to the reliability and validity of this review.

RESULTS

The integrative review covered studies that investigated different surgical approaches to bariatric surgery. Among these, Roux-en-Y gastric bypass (RYGB) has emerged as a widely studied intervention, with its efficacy in weight reduction and improvement of comorbidities well documented. Gastric bypass of an anastomosis (OAGB) has also been the subject of recent studies, including the multicenter clinical trial by Peterli et al. (2021), who compared OAGB with RYGB, highlighting their differences in efficacy and safety.

Analysis of the studies revealed a variety of complications associated with bariatric surgery. Studies such as that by Schauer et al. (2017) compared bariatric surgery with intensive medical care, highlighting the specific complications of surgical intervention, such as infections, dehiscence, and stenoses. Furthermore, Aminian et al. (2017) developed

an individualized metabolic surgery score to select procedures based on diabetes severity, contributing to a better assessment of risks and benefits.

Long-term outcomes after bariatric surgery have been extensively evaluated. Studies such as that by Adams et al. (2017) followed patients for 12 years after gastric bypass and reported continued improvement in weight and metabolic health. Comparative results between different procedures were also investigated, as in the SM-BOSS study by Peterli et al. (2018), who compared sleeve gastrectomy (SG) with RYGB, highlighting the differences in weight loss patterns.

The Longitudinal Assessment of Bariatric Surgery (LABS) Study, conducted by Courcoulas et al. (2018), provided valuable insights into long-term weight trajectories after bariatric surgery. The results of this longitudinal study indicated that weight trajectories varied between patients and over time, emphasizing the importance of long-term follow-up to optimize outcomes.

Long-term follow-up studies, such as that by O'Brien et al. (2013), Puzziferri et al. (2014) and Schauer et al. (2014), provided additional insights into the durability of results after bariatric surgery. These studies highlighted maintenance of weight loss and continuous improvement of comorbidities over time, reinforcing the long-term benefits of the intervention.

The integrative analysis of the studies allowed a more complete understanding of the surgical approaches to bariatric surgery, associated complications and long-term results. The results suggest that the choice of surgical procedure must be individualized based on patient characteristics and underlying medical conditions. In the long term, bariatric surgery has been shown to be effective in sustaining weight loss and improving comorbidities in patients with

severe and morbid obesity.

Studies such as those by Brethauer et al. (2015) and Puzziferri et al. (2014) emphasized the importance of standardization in the presentation of results in metabolic and bariatric surgery. Standardization of assessment criteria and outcome reporting is essential for consistent evaluation of surgical interventions and to allow for meaningful comparisons between studies.

The results of this integrative review highlight the importance of bariatric surgery as an effective approach to weight loss and improved metabolic health in patients with severe obesity. The analysis of surgical approaches, complications, and long-term outcomes provide valuable information for healthcare professionals and patients in making informed decisions about treating obesity. However, it is essential to recognize that procedure selection.

DISCUSSION

Bariatric surgery has proven to be an effective intervention in the treatment of severe and morbid obesity, providing significant weight reduction and improvements in associated comorbidities. This discussion focuses on analyzing the surgical approaches, complications, and long-term outcomes presented in the integrative review, based on evidence provided by a comprehensive selection of recent studies.

The studies included in this integrative review highlight two main surgical approaches: the Roux-en-Y gastric bypass (RYGB) and the gastric bypass of an anastomosis (OAGB). The multicenter study by Peterli et al. (2021) directly compared these approaches and revealed notable differences in terms of weight loss, complication rate, and improvement in comorbidities. These findings indicate that the choice between these procedures must be carefully considered based on individual

patient characteristics.

Several studies, including the clinical trial by Schauer et al. (2017) and the individualized metabolic surgery score proposed by Aminian et al. (2017), highlight the positive impact of bariatric surgery in the treatment of type 2 diabetes. Long-term results of the study by Schauer et al. (2014) also demonstrate the superiority of bariatric surgery compared to intensive medical therapy in improving glycemic control. The study by Adams et al. (2017), following patients for 12 years after gastric bypass, provided insights into the maintenance of long-term beneficial metabolic outcomes.

Although bariatric surgery offers significant benefits, the potential associated complications cannot be ignored. The integrative review addressed a variety of complications, from postoperative infections to anastomotic dehiscence. These complications must be carefully considered when assessing the risks and benefits of bariatric surgery. The study by Courcoulas et al. (2018), who analyzed weight trajectories over seven years, also showed variability in the results, highlighting the need for long-term follow-up to optimize the success of the surgery.

The standardization of evaluation criteria and results reports, as emphasized by Brethauer et al. (2015), it is essential to compare studies and fully understand the effects of bariatric surgery. Furthermore, long-term studies, such as those by O'Brien et al. (2013) and Puzifferri et al. (2014), highlight the durability of long-term results and the need for continuous monitoring to ensure long-term success.

This integrative review provides a comprehensive overview of surgical approaches, complications, and long-term outcomes of bariatric surgery. Discussion of the results highlights the importance of a personalized approach in the selection of surgical procedures, considering patient

characteristics and treatment goals. Despite the potential complications, the benefits of bariatric surgery are consistent, including improved metabolic health and sustained weight loss. The long-term success of these interventions depends on standardization of outcome reporting and continued patient follow-up.

FINAL CONSIDERATIONS

Bariatric surgery has proven to be an effective intervention in the treatment of severe and morbid obesity, providing significant weight reduction and improvements in associated comorbidities. This discussion focuses on analyzing the surgical approaches, complications, and long-term outcomes presented in the integrative review, based on evidence provided by a comprehensive selection of recent studies.

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