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Long-term Efficacy Measured by Maintenance of Weight Loss for Bariatric Surgery (specifically the gastric sleeve and Roux-n-Y methods) vs. Behavioral Changes.

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Case:

Robert Bronco is a 55-year-old male that presents today with concerns about his weight. Robert has been obese since late childhood. When he became morbidly obese 12 years ago with a BMI of 40 in his early 40's, he and his primary doctor decided to pursue bariatric surgery for his weight management. Robert underwent Roux-n-y surgery 10 years ago and despite the intervention and his initial weight loss of nearly 80 pounds, Robert is back to his original pre-surgery weight. He is concerned that his surgery "didn't work" and is struggling to understand how after going through so much, he is back where he started.

1 Ask: Research Question

For morbidly obese patients seeking significant weight reduction, what is the long-term efficacy measured by maintenance of weight loss for bariatric surgery (specifically the gastric sleeve and Roux-n-Y methods) vs. behavioral changes such as diet and exercise?

2a Acquire: Search Terms

Search terms: Bariatric surgery outcomes, clinical effectiveness of bariatric surgery, weight changes years post bariatric surgery, mortality and bariatric surgery.

Databases: PubMed, Cochrane Library, Western Michigan University Library, JAMA and AMA.

Patient/Client group: Morbidly obese individuals seeking significant weight reduction

Intervention: Bariatric surgery (Roux-n-Y and gastric sleeve)

Comparison: behavioral modifications alone

Outcome: Maintenance of weight loss

2b Acquire: Selected Articles

Arterburn et al. (2018): Comparison of the outcomes of gastric surgeries. Analysis of two randomized trials and 1 observational study to address the safety and efficacy of gastric sleeve and gastric bypass procedures.

Livingston, Edward. (2013): Multicenter randomized clinical trial that combined lifestyle interventions, and intensive medical management versus Roux-n-Y gastric bypass surgery.

Picot et al. (2009): Systematic review of clinical effectiveness of bariatric surgery versus non-surgical management based on 5,386 patients, 26 studies and 52 publications.

3a Appraise: Study Quality

Arteburn et al. (2018): Level I evidence; There were no significant differences in percentage excess BMI loss for sleeve gastrectomy (61.1%) or Roux-n-Y (68.3%) gastric bypass at any point with 94.5% of patients completing the full five year follow up.

Livingston, Edward. (2013): Level II evidence; The surgical group sustained substantially greater weight loss at one year compared with patients in the lifestyle and medical management group. (Weight loss of 26.1% of initial body weight compared to 7.9% respectively).

Picot et al (2009): Level I evidence; Evidence indicates that bariatric surgery is a more effective intervention than non-surgical options. Mean percentage of weight loss was 20% for the surgical groups and an average of 3.5% in the non-surgical group.

3b Appraise: Study Results

No significant differences were observed in the excess BMI loss between the Roux-n-Y and gastric sleeve procedures at any time point. At 5 years, the excess BMI loss was 61% for the sleeve and 68% for the bypass which was not statistically significant. However, both surgical methods were far superior in sustaining weight loss than behavioral modifications alone (average BMI loss 3.5%) and several patients had in fact gained weight.



4 Apply: Conclusions for Practice

These studies showed that overall, the gastric bypass and sleeve gastrectomy were very similar in terms of their overall effectiveness in weight loss and co-morbid conditions. Behavioral modifications alone were far inferior to either bariatric surgery option.

Improvements to the vetting and counseling process to qualify for bariatric surgeries should be undergone in order to avoid situations like the clinical case proposed. Consideration should be taken into account that the outcomes with behavioral modifications are incredibly challenging to accurately report because few individuals are able to incorporate the modifications needed to sustain significant weight loss into their lifestyle. This challenge is what makes bariatric surgeries more efficacious for sustainability of weight loss in morbidly obese patients.

GERD was a significant complication in the gastric sleeve surgery as compared to Roux-n-y and should be taken into consideration when discussing surgical options.

References

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Despite the outcome of the clinical case presented, the long-term efficacy as measured by significant weight loss for morbidly obese patients is significantly superior with both Roux-n-Y and gastric sleeve procedures as compared to behavioral modifications alone.

