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# *Multidisciplinary Assessment and Management of a Complex Patient Who Underwent Bariatric Surgery for Clinically Severe Obesity: A Case Report*

DAVID B. SARWER, PhD[1]; COURTNEY MCCUEN-WURST, PsyD, LCSW[2-3]; JACQUELINE C. SPITZER, MSEd[1]; COLLEEN TEWKSBURY, PhD, MPH, RD, CSOWM, LDN[4]; KELLY C. ALLISON, PhD[2-3]

[1] Center for Obesity Research and Education, College of Public Health, Temple University, Philadelphia, Pennsylvania
[2] Center for Weight and Eating Disorders, Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania
[3] Department of Psychiatry, Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania
[4] Department of Surgery, Perelman School of Medicine, University of Pennsylvania

Correspondence: dsarwer@temple.edu (David B. Sarwer)

## Introduction

Over 40% of American adults have obesity, defined as a body mass index (BMI) $\geq$ 30 kg/m$^2$).[1] Approximately 10% have clinically severe or extreme obesity, often operationalized as a BMI $\geq$ 40 kg/m$^2$.[1] Clinically severe obesity is seen with greater frequency among both African- and Hispanic-Americans and as compared to those of European heritage.[2] Clinically severe obesity is associated with well over 200 comorbidities, including type 2 diabetes, hypertension, heart disease, sleep apnea, osteoarthritis, and several types of cancer.[3] More severe forms of obesity also are associated with higher total health care, medical, and pharmacy costs.[4]

Lifestyle modification (which traditionally includes caloric restriction, increased physical activity, and behavioral modification instruction), pharmacotherapy, and bariatric surgery are the obesity treatment approaches supported by the most robust empirical evidence.[5-6] Bariatric surgery is advised for persons older than 18 years and with a BMI $\geq$ 40 kg/m$^2$ or those with a BMI $\geq$ 35 kg/m$^2$ in the presence of the significant weight-related comorbidities noted above.[7]

Bariatric surgery is considered the most effective treatment for extreme obesity, producing large and durable weight losses far superior to those seen with non-surgical treatments.[3] Patients typically reach their maximum weight loss of 20-35% of body weight in the first year after surgery.[8-9] Weight losses of this magnitude are associated with significant improvements in morbidity and mortality, even after accounting for the risks associated with the surgical procedure.

Like all evidence-based obesity treatments, bariatric surgery is underutilized. Approximately 250,000 individuals are believed to undergo bariatric surgery in the United States annually, representing only 1% of Americans who meet the BMI criteria.[10] African- and Hispanic-Americans, those persons most likely affected by severe obesity, comprise only 25% of individuals who undergo bariatric surgery, representing a profound health disparities issue. The underutilization is likely the result of a number of factors, including insurance coverage, access to quality medical care, weight stigma and bias, as well as suboptimal patient-provider communication.[11-12]

## Multidisciplinary Assessment of Candidates for Bariatric Surgery

Individuals interested in bariatric surgery undergo an intensive preoperative evaluation process. This includes an initial informational session with the multidisciplinary team followed by individual consultations with the surgeon, nurse practitioner, and registered dietitian. Prospective patients then complete monthly medical weight management counseling visits with the dietitian or nurse practitioner, with the frequency and duration typically determined by third-party payers.[13] During this time, other recommended preoperative evaluations and assessments, including evaluations of cardiac and gastrointestinal functioning as well as sleep apnea, are also completed.

Most programs and third-party payers also require that patients undergo a mental health evaluation preoperatively. These evaluations are performed by psychologists or social workers who are part of the bariatric surgery team or who work as external consultant to the program. This evaluation serves several purposes.[14-15] First, it is used to identify significant mental health issues (e.g., substance misuse or poorly controlled depression) that may contraindicate surgery. The evaluation also is psychoeducational in nature, as provides an opportunity to help the patient understand the environmental and behavioral contributors to the development of extreme obesity and, more importantly, provide education on the dietary and behavioral requirements of the procedure.

Here, we present a case report describing the preoperative, multidisciplinary assessment and postoperative management of a complex patient who underwent bariatric surgery. As she was enrolled in a prospective research study investigating the relationship between preoperative psychosocial functioning on postoperative outcomes, we have robust psychometric data to augment the clinical report. We highlight the role that members of the multidisciplinary team played in her care and also discuss where other disciplines could have been consulted to support an optimal postoperative outcome.

## Case Report: Preoperative Presentation

The patient was a 46-year-old African-American woman. She reported a height of 5'3" with a weight of 280 pounds, yielding a BMI of 49.6 kg/m$^2$. She reported an 8$^{th}$ grade education. She stated that she was single and living with her romantic partner. She reported an adult child living outside of the home. She was unemployed and receiving social security disability.

The patient reported struggling with her weight since the age of 25. Since then, she had experienced steady weight gain, with larger gains following her pregnancy and the start of psychiatric medications for bipolar disorder. She reported that her mother was overweight; she described her father as thin. She reported one brother, who had normal weight, and one sister, who had obesity before she died in her 30s.

In a self-report questionnaire, the patient reported that eating large portions and eating an excessive amount of fried foods regularly may have contributed to her weight gain over the past two decades. In response, she reported that she had engaged in several self-directed weight loss attempts using meal replacement shakes and cutting back on portion sizes. She reportedly did not lose weight from these attempts and was unable to sustain these behavior changes over time. She denied current symptoms of binge eating or night eating. She denied a history of inappropriate compensatory behaviors, such as self-induced vomiting or laxative misuse.

She reported that she had started to make changes to her eating habits in advance of surgery. She had begun to drink meal replacement shakes up to 3 times per day. However, she also reported that she had continued eating unhealthy foods such as fried chicken and macaroni and cheese. She had been unable to completely stop eating these types of foods, but she was making an effort to reduce the frequency with which she ate these foods.

Additionally, the patient reported poor sleep and sleep habits, going to bed between 6-7 PM and rising at 1-2 AM. She also stated that she did not eat in the summer, just drinking water each day. Despite being pressed by the program's dietitian, the patient continued to deny that she ate during the warmer months.

Upon direct questioning during her mental health evaluation, the patient described her mood as "alright." She described fluctuating levels of depressive symptoms since the death of her sister 11 years ago. At that time, she began treatment with an outpatient psychotherapist as well as a psychiatrist and she has been involved in this level of treatment consistently since that time. A psychometrically validated assessment of depressive symptoms suggested moderate symptoms of depression. She reported regular suicidal ideation, stating she feels this way most of the time, but later retracted this statement and said she feels suicidal about once per month. Upon further questioning, she explained that she had no plans to act on these thoughts and would not carry these thoughts out because she wanted to be here for her family. She reported that her relationship with her partner was a significant stressor and trigger of her depressive episodes.

The patient reported a history of drug abuse (cocaine) for more than 20 years, but that she stopped using 4 years ago and has not used since. She stated that she discontinued her drug use without any specific substance abuse treatment; her main motivation was to save money. She also reported that she smoked cigarettes for over 30 years and quit 2 months ago.

The mental health professional contacted the patient's therapist, who confirmed that she has been working with the patient for the past 3 years on a biweekly basis. The therapist reported that the patient has been drug-free for the past 4 years and believes her to be at low risk for relapse. She noted that the patient had not expressed any suicidal ideation to her, but planned to discuss her articulation of those thoughts to the mental health professional from the bariatric team with her during their next session. Overall, the therapist believed that the patient was an appropriate candidate for surgery.

As noted above, the patient was enrolled in a research study investigating the relationship between preoperative psychopathology and postoperative outcomes. Thus, additional objective assessments of her mental health functioning was available. These findings were separate from her clinical care and confidential, so they were not accessible to the surgery team. Based on a structured psychiatric interview, she met current diagnostic criteria for pervasive depressive disorder and bipolar disorder II. She was diagnosed with a lifetime history of a stimulant/cocaine use disorder. Her urine drug screen was negative. She reported no symptoms of an eating disorder. Her responses to a patient-reported outcome measure suggested very poor health-related quality of life.

Over the next several months, the patient completed all of the standard preoperative medical assessments required by the program and attended all preoperative medical weight management visits. She was scheduled for surgery in October 2016. However, she did not attend her final preoperative visit, which led to surgery being cancelled. She was rescheduled to undergo surgery in December 2016, but did not present for her final preoperative appointment. The patient contacted the surgery office to reschedule surgery and ultimately underwent a sleeve gastrectomy in February 2017. Ultimately, the preoperative assessment process took 218 days; on average this assessment period takes 195 days.[16]

## Psychosocial Status of Candidates for Bariatric Surgery

The last two decades have witnessed a profound growth in the research that has investigated the psychosocial status of candidates for bariatric surgery. The typical candidate is a woman in her mid-40s. Only 20-30% of candidates are from underserved groups. Most patients report at least a high school education; it is relatively rare to have a patient who reports less than a high school education. Such cases intuitively raise concern about the candidate's ability to make the dietary and behavioral changes required of surgery. Approximately 30-40% of candidates report unemployment at the time of their initial evaluation; up to 40% report public health insurance.[17]

At least eight studies have investigated rates of psychopathology in candidates for surgery using structured diagnostic interviews.[15,18-24] Taken together, these studies are indicative of increased psychiatric vulnerability among persons who present for bariatric surgery. Lifetime rates of any psychiatric diagnoses ranged from 36.8%-72.6%; current diagnoses were less common, reported in 20.9%-55.5% of candidates.

Mood disorders are the most commonly seen condition. In the study which included the present case, current mood disorders were diagnosed in 7% candidates for surgery and 44% reported a lifetime history of mood disorders.[24] Approximately 40% of candidates for bariatric surgery report current mental health treatment,[25-26] a percentage higher than typically reported in the general population. Most of this treatment is provided by psychiatrists, psychologists, and licensed clinical social workers.

Up to 50% of candidates for bariatric surgery report some form of disordered eating.[27] While our patient presented with very disorganized eating behaviors and reported consuming an unhealthy diet, she likely was not a reliable historian of her daily eating intake. However, the team was in consensus that she did not meet diagnostic criteria for an eating disorder.

Approximately 10% of candidates report a history of substance use disorders.[21,28] Current substance use is seen in less than 2% of candidates for bariatric surgery; an active disorder is a contraindication to bariatric surgery.[7,29]

There is a strong relationship between obesity and quality of life.[30-32] Individuals often report significant difficulties with physical (walking, climbing stairs) and occupational functioning.[33] While patients present for these issues with some frequency, few are referred to physical, occupational, or recreational therapists pre- or postoperatively.

## Case Report: Postoperative Course

Postoperative visits with the bariatric surgery team are routinely scheduled for 6 weeks, 3 months, 6 months, and 12 months in the first year, and annually thereafter. The patient presented here did not complete her initial follow-up visit with the bariatric surgery team after being discharged from the hospital. She did not respond to repeated calls from the team to check on her status.
Twelve weeks postoperatively, she called the program complaining of nausea and vomiting. She was scheduled for an appointment the next day, which she did not attend. She eventually came into the office and reported an inability to consume anything by mouth coupled with daily vomiting. She was admitted the hospital and diagnosed with a stricture, a narrowing of her sleeve. The stricture was dilated, and the patient was rehydrated and discharged after two days. While the patient was encouraged to follow up as an outpatient, she cancelled two scheduled appointments and did not arrive for a third. The patient did not respond to additional attempts to contact her.

The patient did attend her postoperative research study visits at 6-, 12- and 24 months. At 6 months, she weighed 193 lb., which was a 31% loss from her preoperative weight. At 12 months, she lost 35% of her body weight, which is considered a somewhat larger than expected weight loss.[8-9] While a subset of patients report some weight regain between the first and second year, our patient regained 33% of her weight during those 12 months, a much greater weight gain than typically seen.[8-9]

The patient had a positive drug screen for marijuana at months 12 and 24. Her psychiatric meds were changed several times over the first two postoperative years. The patient acknowledged inconsistent use of these medications and infrequent attendance at regularly scheduled psychotherapy appointments with her therapist. Her eating behavior remained very disorganized. While she never met diagnostic criteria for an eating disorder, she clearly was challenged to follow the recommended postoperative diet.

Over time, her assessor concluded that the patient was a poor historian and inconsistent reporter of her own behavior. As a result, her research data, which included several implausible responses, was censured. However, she remained in need of clinical management by the bariatric team.

## Postoperative Weight Loss and Psychosocial Outcomes

Up to 25% of patients who undergo bariatric surgery regain a clinically significant amount of weight in the first few postoperative years.[8-9] The reasons for this are not well articulated but likely involve some combination of physiological and behavioral variables. Weight regain is associated with deterioration of many of the health benefits associated with bariatric surgery and raises concerns about the need for adjunctive treatment, such as nutritional and/or mental health counseling.[34-35]

Success following bariatric surgery also requires chronic adherence to a rigorous, reduced calorie diet. Patients are encouraged to eat meals that are dramatically smaller than they consumed prior to surgery, eating no more than 1200-1500 kcal/d on average.[5] Consuming large amounts of food at a given meal, or drinking beverages while eating, can trigger nausea and/or vomiting, as seen with the patient described here. Many patients cannot tolerate certain foods, particularly those high in fat content, as they may trigger vomiting or diarrhea, both of which can be physically and psychologically uncomfortable. As the patient was a poor historian, it was difficulty to clearly identify which foods triggered her vomiting or whether it was the result of the surgical stricture.

Lack of regular follow up with the bariatric program also has been associated with suboptimal outcomes and weight regain.[36-38] Regular follow-up, as well as engagement in monthly support groups, provides an opportunity to promote engagement in the behavioral and dietary changes necessary for success. Our patient, unfortunately, was challenged to keep regularly scheduled appointments. We suspect that her low level of formal education and her mental health history contributed to her inconsistent attendance at scheduled appointments.
A number of studies have found that the presence of a mood disorder is associated with smaller postoperative weight losses.[39-41] Mood disorder symptoms often improve, at least initially, with weight loss. This may have been the case with our patient, but her inconsistent engagement with the bariatric team made that difficult to confirm.

There is great concern about the increased risk of substance abuse after surgery. Our patient had a history of substance abuse and tested positive for marijuana at both the 12 and 24 month postoperative assessments. She endorsed symptoms of alcohol misuse on the patient reported outcome measures used in the research study, but denied using alcohol at all during the accompanying interviews. Her history of substance abuse, coupled with her inconsistent reporting, left the clinical team concerned that she may have been abusing other substances, but this was unable to be confirmed.

## Summary

This case represents some of the clinical complexity and challenges common to bariatric care. The patient's BMI and medical history made her an appropriate candidate for surgery. However, her lack of formal education intuitively raised concerns about her ability to fully understand the dietary and behavioral requirements of surgery and appropriately engaged in postoperative care. This was a valid concern and, over time, the team concluded that she was a poor historian and unreliable reporter. While such observations could lead some to conclude that she was not an appropriate candidate for surgery, many patients who present for surgery have very complicated psychosocial histories. Others may not have the ready availability of cognitive or tangible resources, or stable social support, believed to be critical to promoting long-term success. While the team worked diligently to re-engage her in postoperative care, as did her therapist, the patient was challenged to take advantage of those resources.

Despite these complexities, the patient did experience a clinically significant weight loss and anticipated improvement in her physical health. While the size of the weight regain in the second postoperative leads to concern about her ability to maintain a clinically significant weight loss in the future, she is healthier today than she would have been otherwise. Weight loss treatment with a more conservative approach, such as lifestyle modification or use of a weight loss medication approved by the Food and Drug Administration, would have been unlikely to promote a weight loss of this size. While engagement in postoperative care, or use of a specific behavioral and psychotherapeutic intervention postoperatively, would likely increase the odds that she will maintain her weight over time and improve her nutrient intake, her psychosocial issues appear to prevent her from engaging in those treatments.

Weight regain and impairments to one's ability to eat in a typical fashion after bariatric surgery often leads to criticism of the surgical treatment of obesity and skepticism about its use on larger number of individuals. Nevertheless, it is important to remember that even a suboptimal loss of 20% of initial body weight is superior to that typically seen with non-surgical treatment. A loss of that magnitude often decreases the risk of morbidity and mortality. In addition, it often leads reduced health care costs. In cases like this, the multidisciplinary team is challenged to generate novel strategies to promote engagement and long-term success for the individual patient. While this case included psychologists,

nurses, and dietitians—professionals typically involved in bariatric care—we wonder if engagement with a social worker, occupational therapist, or recreational therapist may have beneficial to the patient postoperatively. Some bariatric programs have professionals with expertise in physical activity on the multidisciplinary team. Perhaps the number of Americans with clinically severe obesity and who may present for bariatric surgery in the future warrants consideration of regular participation of these professionals and with the goal of promoting the best possible postoperative outcomes for the largest number of patients.

## Disclosures and Conflicts of Interest

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