Published in final edited form as:

Eat Weight Disord. 2016 March ; 21(1): 133–136. doi:10.1007/s40519-015-0230-z.

Development of significant disordered eating in an adolescent following gastric bypass surgery

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Abstract

The development of eating pathology is a concern following bariatric surgery, even in the absence of any pre-surgical psychopathology. No consistent risk factors have emerged in the literature to identify those at greatest risk. However, post-surgical guidelines encourage eating behaviors that would be considered disordered in other contexts. We present a case of an adolescent developing bulimia nervosa following gastric bypass surgery and the escalation of her symptoms from diligently following recommended food behaviors to a full-syndrome clinical eating disorder. We discuss the differences between appropriate post-surgical eating behaviors and disordered eating behaviors. We provide recommendations for clinicians to screen for eating pathology and referrals to an interprofessional treatment team to address eating disordered behaviors and cognitions.

Introduction

Severe obesity in children and adolescents is increasing and a major public health concern in the United States [1, 2]. A growing literature supports the use of bariatric surgery (BS) in adolescents with severe obesity [3, 4]. The concept of “early” intervention by bariatric surgery in select cases of adolescents [5] is supported by the increased risk among adults who develop obesity during childhood [6, 7] and the improvement of obesity-related comorbid diseases after weight loss induced by bariatric surgery [8, 9]. The increasing evidence of the safety and efficacy of bariatric surgery in adolescents has prompted a discussion in the literature about conducting BS in children and appropriate age limitations. The teen longitudinal assessment of bariatric surgery (Teen-LABS) study, the largest

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Compliance with ethical standards

Conflict of interest The authors report no conflicts of interest.

Ethical approval All procedures performed in studies involving the patient in the case report were performed in accordance with the ethical standards of our institutional research board and are in compliance with national and international standards.

Informed consent The patient in the case study provided signed informed consent which is available in the electronic medical record.

prospective study of adolescents undergoing bariatric surgery, enrolled adolescents as young as age 12 [3].

The impact of eating pathology on BS outcomes has been widely discussed in the adult literature. Pre-surgical psychological evaluations are often focused on premorbid eating pathology. The effects of pre-surgical binge eating disorder (BED) on post-surgical outcomes have been investigated [10]; however, the relevance of BED pre-surgically remains controversial. Although several medical societies consider BED a relative contraindication for BS [11], some studies note an improvement in BED symptomatology post-BS [12]. The American Society for Metabolic and Bariatric Surgery best practice guidelines note that an adolescent with a premorbid eating disorder (ED) should seek treatment for the ED prior to undergoing surgery, but do not consider an ED a contraindication for surgery [13].

Of concern, there has been limited attention to factors associated with onset of disordered eating after surgery. Few studies following BS patients longitudinally have reported on the development of eating pathology. Segal and colleagues described a series of five patients post-BS who had similar abnormal eating behaviors that were not consistent with clinical eating disorders [14]. The authors defined this pattern as post-surgical eating avoidance disorder (PSEAD), and proposed a set of criteria for diagnosing this condition. These patients had a tendency toward high calorie, palatable foods, and compensation by self-induced vomiting and restriction of nutritious, less palatable foods.

Few reports have documented the development of full-syndrome EDs post-BS. One recent case series documented 12 patients who were hospitalized for an ED post-BS [15]. One review article describes 14 cases reported in the literature since 1984 [16]. Both of these reports represent a variety of clinical presentations, with heterogeneity in age (age range 19–53; most were over 30).

ED behaviors typically have their onset during adolescence [17], and adolescents with a history of obesity are at risk for the development of EDs [18, 19]. Therefore, it is important to be aware of the potential increased risk for the development of eating pathology in adolescents post-BS. We present the case of an adolescent with no identified premorbid psychopathology developing a full-syndrome ED following gastric bypass surgery. The patient provided informed consent for this case report.

Case report

“Jane” reported being overweight since early childhood. As a child and teen she tried diet and exercise programs, including commercial programs which provide prepared hypocaloric and carbohydrate-reduced meals and snacks, with limited success and weight regain. Although she described herself as an “emotional eater” as a child, she denied any eating disorder behaviors or other psychopathology. She indicated she had always believed that BS would be her best hope to lose weight. At her highest weight, her BMI was 38.7 kg/m². Although she had no medical complaints, her medical team encouraged her to pursue BS. She had a pre-surgical psychological evaluation that consisted of an unstructured clinical interview. No formal testing was done as part of her evaluation. During the interview, she

reported some mild depressive symptoms which she related directly to her size and shape, and overeating without objective bingeing. She reported no purging, laxative or diuretic use. She had Roux-en-Y gastric bypass surgery immediately after turning 18 years old. At the time of her surgery, her height was 167.6 cm and her weight was 105.7 kg (BMI 37.1 kg/m²). Both Jane and her family expected this to be her greatest chance at weight loss success.

Initially after the BS, Jane reported eating according to the prescribed diet plan. Jane only ate food in two-ounce measured increments every 90–120 min. She lost 22 kg over the first three months, which reinforced her strict dieting behaviors.

Her eating slowly transitioned from following the prescribed meal plan to engaging in disordered eating behaviors. Approximately three months after BS, she began a pattern of eating (from her two-ounce cups) and then vomiting with the intention to maintain her weight loss. Jane would eat 20 or more servings from the two-ounce cup at one time, purging after each portion. After several months of daily bingeing and purging, she began to chew and spit her food. She was adherent with visits with the post-bariatric treatment team until six months post-BS, when she canceled an appointment and did not reschedule. Her weight continued to decline, and at approximately one year post-surgery, her weight was 62.2 kg (BMI 22.1 kg/m²). At this point, she reported to her dietician that she still “felt fat” and desired to lose another 10 lbs. Her bingeing behavior then escalated. She began visiting multiple restaurants and food stores throughout the day and stole money from her family to binge. She described rigidity in her beliefs about food; she vacillated between eating foods she considered unhealthy, such as ice cream or chocolate, and strictly eating one type of food, such as only consuming liquids. She weighed herself throughout the day. Approximately two years post-surgery, she reported her lowest weight, 54 kg (BMI 19.3 kg/m²). Despite her BMI being in the normal weight range, she endorsed poor body image. She avoided eating in public. She began isolating herself, and her relationships suffered.

Jane developed significant anxiety and non-weight-related depression symptoms as well, which were not present before her BS. She felt nervous, worried constantly, felt hopeless and wondered if she had a purpose. She struggled with initial insomnia and frequent nighttime awakening. She reported that these symptoms were directly related to thoughts and judgments about her shape and weight. She also began to have some weight regain, which she found distressing.

Jane self-referred for treatment at an eating disorder program 27 months after her surgery. Her weight was 63.6 kg (BMI 22.6 kg/m²). She endorsed a number of medical complications expected from disordered eating, including weakness and fatigue, orthostatic dizziness, sore and burning mouth, rapid and irregular heartbeats, dry skin, coldness in extremities, heartburn, stomach pain, and constipation. After a structured eating disorder intake by a psychologist and an Adolescent Medicine physician (including both interview and written assessment components), it was determined that she met full diagnostic and statistical manual of mental disorders (5th ed.; DSM-5) criteria for bulimia nervosa [20]. Although she was in a healthy weight range, she reported that she desired to lose another 10–15 pounds. She stated that she was intensely fearful of regaining any weight or changing

the behaviors she engaged into maintain her weight. A summary of Jane's clinical course can be found in Table 1.

Discussion

The case of Jane demonstrates that, even without pre-surgical psychiatric history, adolescents undergoing BS can develop clinical eating disorders. Given the extreme emphasis on weight loss and rigid food rules, adolescents undergoing BS may be at risk for developing eating disorders even in the absence of premorbid psychopathology. Many patients who develop EDs were pre-morbidly overweight [21] and EDs often begin with nutritional and behavioral changes perceived to be healthful. The fear of weight gain seen is often related to concern of returning to premorbid weight. Individuals who lose weight surgically may be susceptible to the same pressure of maintaining weight loss as those who lose weight by non-surgical means. Jane's ED emerged after initially adhering to her routine post-surgical care. Some eating behaviors that would be clearly disordered in a non-surgical patient are common after BS, such as vomiting to relieve plugging, an extremely uncomfortable feeling that food is stuck in the pouch. Other disordered eating behaviors are expected, or even encouraged, such as significantly restricting food intake, chewing food extensively, and carefully measuring portion sizes to eat small amounts of food at a time [22]. Thus, EDs are difficult to identify post-surgically. Even diligent monitoring of eating behaviors by the bariatric treatment team may miss the onset or escalation of an ED.

In the reviewed studies and case, there was no evidence of pre-surgical disordered eating or other psychological condition that would predict post-surgical development of an ED. Close nutritional and medical follow-up should be adhered to post-BS. Since many ED-type behaviors are expected post-BS [6], practitioners should explore the reasons for the behaviors (e.g., is the vomiting or restricting due to resolution of uncomfortable sensations, or because of the fear of weight regain?) and the emergence of eating disorder cognitions (e.g., overvaluations of weight and shape). Formal eating disorder assessments, such as the eating disorder examination questionnaire (EDE-Q) [23], might be valuable both before BS as well as during follow-up visits to assess for disordered eating cognitions.

Considering that large binges are unlikely due to the nature of the procedure, other abnormal eating behaviors, such as excessive grazing, overconsumption of high energy liquids, or loss of control over eating, should be monitored and addressed. Patients should work with their bariatric treatment team to slowly increase the volume of food ingested over time. Practitioners providing follow-up for individuals after BS need to have a high index of suspicion for the development of ED, as pathological ED behaviors may be indistinguishable from typical post-BS complications. For example, vomiting is an expected sequela of BS, but should not persist for more than 6 months after the procedure. Reported vomiting more than 6 months post-procedure should raise concern of an ED.

Most post-BS stereotypic eating behaviors should normalize within a year post-surgery [3]. Those who continue to display ED symptoms or who endorse ED cognitions should be evaluated by an eating disorder specialist. Continued contact with an interprofessional team,

including a physician, nutritionist, and psychologist, should continue until most of ED behaviors and cognitions are resolved.

In conclusion, adolescents and young adults, who fall within age ranges at high risk for developing EDs, should be monitored closely following BS for development of ED symptoms, and a prompt referral to an ED specialty team should be initiated if there appear to be behaviors that fall out of the typical range following BS.

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Table 1

Summary of “Jane's” clinical course

Months post-BS	Weight (kg)	Change in clinical status
0	105.7	Had Roux-en-Y gastric bypass surgery
3	83.7	Adherent with BS treatment team to this point; initiated bingeing on multiple 2 oz. cups at one sitting and self-induced vomiting
6	None on file	Canceled appointment with BS treatment team; began to chew and spit food
12	62.2	Severe bingeing; stealing money to binge; extreme food rigidity
24	54	Avoidance of eating in public; social isolation; increasing anxiety and depression
27	63.6	Self-referral to eating disorders treatment team

BS bariatric surgery