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The *Hospital Physician General Surgery Board Review Manual* is a peer-reviewed study guide for residents and practicing physicians preparing for board examinations in general surgery. Each quarterly manual reviews a topic essential to the current practice of general surgery.

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Operative Treatment of Clinically Significant Obesity

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Operative Treatment of Clinically Significant Obesity

Lana G. Nelson, DO, and Michel M. Murr, MD, FACS

INTRODUCTION

According to the National Health and Nutrition Examination Survey data from 1999 to 2000, 67% of all men and 62% of all women are overweight, and 28% of men and 33% of women are considered obese. The prevalence of obesity has been on the rise in all age and racial groups. Moreover, the number of people with morbid obesity has increased from 2.9% to 4.7% over the past 10 years.¹ Obesity has become a health care crisis in the United States, necessitating an ever-increasing financial expenditure secondary to weight-related comorbidities.^{2,3} This rapid increase in the prevalence of obesity is multifactorial and cannot be explained solely by genetics. Weight loss and maintenance of lost weight have been shown to markedly reduce the prevalence of cardiovascular risk.⁴ In most patients, permanent weight loss reverses diabetes, hypertension, and pulmonary dysfunction.⁵

Unfortunately, nonoperative attempts to lose enough weight and to maintain that weight loss are largely unsuccessful in patients with clinically significant obesity. Bariatric surgery has been proven effective for inducing and maintaining satisfactory weight loss as well as decreasing weight-related comorbidities for these patients. Not all patients, however, are candidates for these procedures, and patients must be carefully selected. Additionally, choice of operative treatment should be guided not only by expectations of weight loss but also by improvement in quality of life. This review will discuss the types of bariatric procedures, patient eligibility, and short-term and long-term outcomes of operative treatment. Two cases are presented to illustrate some of the issues involved in the clinical care of obese patients.

DEFINITIONS

Body mass index (BMI) more accurately measures obesity than comparing the patient's weight to the Metropolitan Insurance Company Weight and Height tables.⁶ The **Appendix** shows how to determine BMI based on height and weight. In general, a U-shaped rela-

tionship exists between body weight and risk of death. A 20% increase in weight above average increases mortality by 20% in men and by 10% in women.⁷ Although moderate obesity (BMI = 28 to 35 kg/m²) has inconsistent effects on morbidity, severe obesity (BMI > 35 kg/m²) confers direct and consistent weight-related morbidity and short life expectancy. Such severe obesity has been termed "morbid obesity." For young adults (ages 20–29 years), the 85th percentile for BMI is 27.8 kg/m² for men and 27.3 kg/m² for women.

By strict weight-based criteria, patients are considered to have morbid obesity when they weigh at least 100% more or at least 100 lb more than their ideal body weight. This usually includes women between 240 to 250 lb and men between 270 to 280 lb. However, a strictly weight-based definition is not appropriate. A more useful term is *clinically significant obesity*, which includes patients with weight-related serious morbidity, such as mechanical arthropathy, hypertension, type 2 diabetes mellitus, lipid-related cardiac disease, and sleep apnea.^{1,8}

EVALUATION FOR BARIATRIC SURGERY

CASE 1 PRESENTATION

Patient 1 is a 43-year-old woman who is referred for evaluation and treatment of obesity. She is a mid-level manager in a shipping company and has been obese since completing her second pregnancy 16 years ago. She has tried multiple weight-loss regimens, including a physician-supervised diet, to no avail. She currently weighs 220 lb and is 5 ft 1 in tall. She states that she has fatigue, back pain, and knee pain. She also has frequent, daily episodes of severe heartburn; daytime sleepiness; and urinary incontinence. She takes 2 medications for hypertension and is not diabetic; she had a cholecystectomy 3 years ago for symptomatic cholelithiasis. Physical examination is unremarkable except for obesity.

- **What course of obesity treatment should be recommended to this patient?**