Perspectives
Recovery Strategies from the OR to Home

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Panniculectomy: Implications for Care

By Susan Gallagher, RN, MSN,CN,CWOON,PhD

T he U.S. and global prevalence of obesity is increasing. Consumers, clinicians, and public policy makers alike are seeking strategies to control obesity-associated co-morbidities. It is important for stakeholders to realize that surgery is a tool that can help patients to lose weight, but only a tool. Once weight loss is achieved, patients may continue to battle with quality-of-life issues, one of which is a large abdominal pannus with its own set of co-morbidities. Panniculectomy is performed to remove a massive pannus (abdominal apron), which often contributes to a number of health concerns.

Panniculectomy is thought to control some co-morbidities and to provide the patient with the opportunity to move forward with daily living activities.

Careful postoperative planning is essential at the beginning of the recovery period. Early ambulation, appropriate use of specialized equipment, attention to the risks of wound and pulmonary complications, IV access, and pain management work together to achieve a positive outcome.

Introduction

Obesity is a serious medical condition that affects millions of Americans. Its prevalence is increasing nationally and globally.1 Recent estimates suggest that one in two US adults is overweight, as defined by a body mass index (BMI) > 25. This ratio has increased by more than 25% in the past 30 years.[2]

In 1985, the National Institutes of Health (NIH) Consensus Conference agreed that obesity-related health risks exist. Excess body weight is associated with an increased incidence of cardiovascular disease, type II diabetes mellitus, hypertension, stroke, dyslipidemia, osteoarthritis, some forms of cancers, and socioeconomic and psychosocial impairment.[3] Although the increasing prevalence of obesity has transcended racial and ethnic backgrounds,[2] obesity-related morbidity and mortality may differ among racial and ethnic groups.[4,5] Obesity is thought to be a factor in 5 of the 10 leading causes of death in America.[6]

From an economic perspective, obesity is a costly condition. Research indicates that more than $100 billion is spent annually on obesity-related issues, including $33 billion in the weight loss industry, while $70 billion is spent on health related interventions. Obesity and other eating disorders claim monetary, physiological, and psychological tolls from individuals whom they affect. Both health professionals and the public are seeking ways to reduce the emotional and physical consequences of what is referred to as severe obesity.

Causes of obesity

Because of mounting concern about increasing prevalence, many researchers are trying to more fully understand the metabolic, psychologic, and genetic factors that lead to obesity.[7] The simplest explanation of weight gain is that it occurs when caloric intake exceeds the energy required to maintain body functions and perform physical activities. Excess calories are stored as fat in adipose tissue.[8]

The traditional view that obese people gain weight because they either eat more or exercise less than people of normal weight is only part of the explanation.[9] There is remarkable variability in individual energy requirements — some people are able to eat twice as much as others with no weight gain. There is only one point of general agreement: obesity is a complex disorder with multiple etiologies; therefore, weight loss options are complex.[8]

Weight loss options

A number of tools are available to help an obese person to achieve permanent weight loss. Some are used more successfully than others. Just as people would not use a single tool to build a house, neither should they use a single tool to manage weight control. Size acceptance, counseling, diet, activity, medication, and surgery are the most commonly used tools. Weight loss surgery, coupled with activity and nutritional changes, offers one path to significant, long term weight loss.

Bariatric surgery

In March 1991, the NIH Consensus Development Conference on Gastrointestinal Surgery for Severe Obesity united surgeons, gastroenterologists, endocrinologists, psychiatrists, nutritionists, other health professionals, and the public to address treatment options for severe obesity.[10] At that conference, it was decided that, in select cases, surgery was an appropriate intervention. Since that time, bariatric surgery has become an increasingly important adjunct in caring for larger patients; therefore, surgeons who have skill in weight loss surgery are increasingly in demand.

Although several health risks are reduced when a person is able to lose body weight, weight loss surgery should only be considered for patients who are severely obese and who have failed other weight loss attempts. Candidates for surgery must be motivated, well informed, and willing to participate in long term follow up. NIH findings suggest that, for morbidly obese people who have failed to lose weight by traditional methods and for whom obesity poses a serious medical and psychological risk, surgery is an effective treatment.[10]

Evolution of weight loss surgery

Between 1950 and 1980, jejunoileal bypass surgery, which bypasses a portion of the small intestine, was the most common form of weight loss surgery. Today, this type of surgery has been replaced by other surgical techniques. This evolution has occurred primarily in response to the numerous complications and high mortality rate of earlier procedures.[11]

Today, two main categories of surgery are used to treat morbid obesity. They are gastric restriction and the combination of gastric restriction plus malabsorption. In gastric restriction, both stomach size and capacity are limited. The stomach pouch is reduced to 15 ml. Gastric restriction can be accomplished by using a vertical band of staples with a banded outlet or by circumgastric banding, in which an inflatable band connected to a subcutaneous reservoir limits stomach size. Circumgastric banding is considered less invasive and may be used in patients who are considered as poor risks for other surgeries. Circumgastric banding can now be performed laparoscopically, further reducing some risks of abdominal surgery.

The second type of surgery, which is described by the NIH, is the rouxeny gastric bypass (RYGB). This procedure combines gastric restriction and malabsorption. The RYGB combines a small stomach pouch with a bypass of 90% of the stomach, the duodenum, and a limb of jejunum of varying length. RYGB reduces stomach capacity, so that the person eats less. It also reduces the absorption of calories that are consumed. When highcaloric foods are dumped into the limb of the small intestine, a feeling of satiety or even discomfort may result, helping to curb the appetite.[12] The reduced consumption or absorption of food leads to weight loss. In certain patients, this procedure can be done laparoscopically.

Choosing between these two procedures involves the surgeon's preference and the consideration of individual patient needs and preferences.

There are limitations to surgical intervention. Continual intake of energy dense foods can circumvent the benefits of gastric restriction. For example, some higher caloric foods, such as cookies, chocolate, or potato chips pass through the pouch quickly. Repeated overdistension can stretch the pouch. Sometimes, a second surgery is required. Finally, some patients may be unable to modify their eating behaviors. Each of these factors is likely to interfere with a successful long term outcome.[13] However, increasing numbers of patients are losing very large amounts of excess weight due to improved bariatric surgical techniques. While they enjoy the physical, social, psychological, and economic benefits of bariatric surgery, they are often left with extra skin, fat, and bodily deformities. These deformities could lead to functional, psychosocial, and medical co-morbidities, which can impair quality of life and daily living activities. To benefit fully from successful weight loss, additional surgical correction may be required.

Reconstructive surgery

Abdominoplasty is a reconstructive surgical procedure intended to correct a problematic abdominal pannus and the associated co-morbidities. A large abdominal pannus (abdominal apron) can be very troublesome after extensive weight loss. It may be associated with cutaneous inflammation, such as panniculitis, cellulitis, intertriginous dermatitis, skin abscesses, gangrene, excoriation, or folliculitis. Other related concerns include lymphedema, ambulatory difficulty, toileting trouble, and hygiene problems that can lead to unpleasant odors. Urinary stress incontinence can be aggravated by extra lower abdominal weight.[14] A large abdominal pannus often poses a barrier to sexual activity. Patients frequently complain of debilitating low back and extremity pain. Physical activity can be uncomfortable. Clothes fit improperly, and patients report body image concerns. A large abdominal pannus can interfere with respiratory function and lead to diminished abdominal wall integrity from attenuated fascia and muscles; umbilical and ventral hernias are not uncommon.[15] Abdominal panniculectomy and reconstructive abdominal surgery may be performed to alleviate these conditions. However, some thirdparty payers are reluctant to provide reimbursement, and most patients are unable to afford the procedure without some financial assistance.

Documentation for reimbursement

Some authors contend that postbariatric, surgical, co-morbidity issues are similar to those following radical mastectomy, where breast reconstruction has become recognized as a humane necessity. Like individuals treated for breast cancer, people experiencing profound weight loss often require corrective surgery. Such surgery should be an accepted part of the surgical package or at least

available on a reasonably permissive, as required basis.[15] Regardless, the indications for panniculectomy require documentation, which serves as a basis for appeal in the event that corrective surgery is initially denied. Third party payers have been known to refuse payment for abdominal panniculectomy for many reasons, one being a lack of photographic evidence, coupled with a lack of clinical evidence. Therefore, it is prudent to document all observed and reported clinical symptoms that are associated with a large abdominal pannus, along with dated photographs. Some payers require that the pannus hang down far enough to obscure the pubic area. Others reportedly look for intertrigo or other signs of inflammation under the pannus. Photographs that best serve the patient's needs include front, side, and under surface views.[15] When all else fails, some patients have asked attorneys who specialize in reimbursement for bariatric needs to assist them in obtaining third party payment.[16]

Panniculectomy

Panniculectomy excises the abdominal pannus. In addition to panniculectomy, a reconstructive abdominoplasty, which involves the anterior muscle wall and fascial plication, is usually performed. A suction lipoplasty may improve the reconstructed abdominal wall contour; the patient may also undergo umbilical or ventral hernia repair. In panniculectomy, the incision creates a scar from the xiphoid process to the pubic bone. There it meets a second, horizontal scar, just above the pubic area, to form what looks like an inverted letter "T." To create this "T," the surgeon frees up fat and skin from the anterior abdomen. At that point, a large triangularly shaped area of loose skin and excess fat is carefully removed. The remaining tissue is then attached to the anterior abdominal wall and to itself. A number of procedures can be completed at the same time, such as exploratory laporatomy, revision of the primary surgery, or repair of abdominal wall/ventral hernia.

Operative management

In addition to the usual preoperative workup, some authors suggest endoscopic or radiographic studies of the primary weight loss surgery, because if revisions of the initial surgery are needed, this is thought to be the best time to make them.[15]

From 13% to 47% of patients who have abdominoplasty experience perioperative complications. The literature suggests that elderly patients, those who smoke, and those who have hypertension have a greater incidence of postoperative complications.[17]

A number of conditions influence the postoperative course of patients who have surgery. Some patients have lost considerable weight prior to panniculectomy surgery, while others may still be large enough to develop weight related postoperative complications. Early mobilization is criti cal in the recovery period. Many larger pa tients are able to turn, ambulate, and trans fer soon after surgery, while others may have difficulty because of pain or sedation.[18] A physical therapist can assess the postop erative strength and endurance needs of patients.

Patients who weigh more than 300 pounds generally require some level of special accommodation. Often, the only special accommodations that patients need are a bed that is wide enough to allow them to turn independently, a walker to support their weight for the first few postoperative days, and an overhead trapeze to help them to reposition themselves. These three items are thought to help patients to maintain their strength and independence. Clinicians report that independent patients who have adequate supportive equipment are less likely to injure themselves or caregivers during the early postoperative period.[19]

At this time, patients may have a higher morbidity from surgery and anesthesia due to atelectasis, deep vein thrombosis, and pulmonary embolism.[15] Sequential compres sion devices are available to accommodate larger legs. Foot "squeezers" are useful in that they better accommodate larger patients. Full body rotation therapy may control the risk of atelectasis in postoperative patients with limited mobility. Abdominal binders can help promote postop activity by encouraging deep breathing, turning and coughing.

Although hematoma formation rarely occurs, wound dehiscence, seroma formation, and wound infection are common problems. [14] Drains are routinely placed after surgery, and it is important to look for drain clotting or the unintentional removal of drains by patients, who are often discharged with drains still in place. To prevent accidental dislodgement of the drainage bulbs, the clinician may choose to secure the suction reservoirs with a commercially available holders with an elastic waistband and Velcro closure (fig. 1). The holder may discourage patients from pulling out or tampering with the drainage bulbs. Patients or their caregivers will need to learn how to empty and care for tubes as well as to develop an emergency plan in case clots form or the tube falls out.

Infection can be a problem, because many morbidly obese patients have other medical problems, particularly type II diabetes mellitus. It contributes to delayed wound healing. Additionally, unexcised fatty tissue can become devitalized, leading to fat necrosis and subsequent infection.

Care should be taken when assessing the low midpoint of the "T" in the abdominal incision, as this is where a wound separation is most likely to occur.[14] All wounds should be kept clean and dry, especially those in skin folds. It is important to contain any drainage, clean the area frequently with a nontoxic cleanser, and secure dry dressings to absorb excess moisture. In the event of wound separation, patients can be taught to cleanse the opened area gently with a nontoxic wound cleanser. They should avoid cytotoxic cleansers, such as betadine and Dakin's solution, unless specifically indicated for bacterial invasion. Irregular body contours present a challenge for securing dressings. Flexible cloth tapes can mold to the contours as necessary to ensure that dressings are fixed securely to the intended area.

Freiberg explains that some wound complications can be avoided or at least minimized by the use of abdominal binders and, later, girdle supports with gapfree stitching in widths up to 15' and lengths up to 94" (such as the Dale Abdominal Binder). Abdominal binders should be worn for the first 4 weeks after surgery. Binders not only provide a degree of comfort, they minimize shearing forces between the abdominal skin and wall. Binders are designed to control unnecessary edema and to reduce ecchymosis.[14] If the patient has lost considerable weight, then special oversized binders may not be necessary. However, if some binders do not fit properly, they can lead to skin breakdown or failure to comply with the care plan. The binder with a Velcro closure with limitless sizing can accommodate a wide range of body shapes (Fig. 2). As the patient loses weight, the binder can be closed at different points and/or panels can be removed. A clinical nurse specialist, as a member of the interdisciplinary team, can ensure that properly sized equipment is available.

Pain is thought to interfere with mobility and must be considered as part of the recovery plan. Excess body fat can alter drug absorption, depending on the medication. For example, drugs such as diazepam and carbamazepine are highly soluble in fat and therefore absorbed mostly in adipose tissue. Dosages of these drugs must be calculated by using the patient's actual body weight. Drugs that are absorbed mainly into lean tissue, such as acetaminophen, should be calculated using the patient's ideal body weight – what the patient should weigh.[20] Trying to remember which drugs fall into which category is almost impossible. A clinical pharmacist can be an important resource to ensure that drug dosages are accurate.

Standardized 1 to 1.5 inch needles may not be able to penetrate adipose tissue in a patient with especially thick hips. In this case, either a longer needle or a drug that uses another route should be considered.

Sometimes, veins in a larger person's arm are deeply buried and starting an IV can be difficult. The use of a bendable armboard which can be custom shaped to each individual patient and secured with Velcro straps can help protect the IV site and prevent the cather from being dislodged. If it takes more than two tries, consider using a peripherally inserted, central catheter (PICC) or a midline catheter instead of a standard peripheral catheter. Both will stay in place for weeks or months, thereby eliminating the need to stick the patient repeatedly.[21]

Postoperative care is essential at the beginning of the recovery period. Early ambulation, appropriate use of specialized equipment, attention to the risks of wound and pulmonary complications, IV access, and pain management work together to achieve that end.

Summary

It is important for consumers to realize that weight loss surgery is a tool to help them lose weight – but only a tool. Once weight loss is achieved, they may continue to battle with quality of life issues, one of which is a large abdominal pannus, which often contributes to a functional deficit as well as hygiene and wound care problems. Panniculectomy is

thought to control some of these co-morbidities and to provide patients with an opportunity to move forward with daily living activities.

References

1. World Health Organization. Obesity: preventing and managing the global epidemic. Report of a WHO Consultation presented at: World Health Organization; June 3-5, 1997; Geneva, Switzerland. Publication WHO/NUT/NCD/98.1.
2. Flegal KM, Carroll MD, Kuczmarski RJ, Johnson CL. Overweight and obesity in the United States: prevalence and trends. 1960-1994. Int J Obes Relat Metab Disord. 1998;22:39-47.
3. Burton BT, Foster WR, Hirsch J, Van Itallie TB. Health implications of obesity: NIH consensus development conference. Int J Obes Relat Metab Disord. 1985;9:155-169.
4. Stevens J, Plankey MW, Williamson DF. The body mass index-mortality relationship in white and African American women. Obes Res. 1998;6:268- 277.
5. Savage PJ, Harlan HR. Racial and ethnic diversity in obesity and other risk factors for cardiovascular disease: implications for studies and treatment. Ethn Disease 1991;1:200-211.
6. Dietel M & Cowan GSM. Update: Surgery for the Morbidly Obese Patient. Toronto, Canada: FD-Communications. 2000:20.
7. Angel A, Winocur JT, Roncari DAK. Morbid obesity: the problem and its consequences. In: Dietel M & Cowan GSM. Surgery for the Morbidly Obese Patient. Philadelphia: F-D Communications, Toronto, Canada. 1998.
8. Gustasfson NJ. Managing Obesity and Eating Disorders. Western Schools Press: Brockton, MA. 1997:86.
9. Frontline Fat. A PBS Home Video: Seattle, Washington. 1998.
10. NIH Consensus Statement. Gastrointestinal Surgery for Severe Obesity. [online] 1991;9:1-20.
11. Payne JE, DeWind LT, Commons RR. Metabolic observations in patients with jejunocolic shunts. Am J Surg. 1963;106:273-289.
12. David JD, Collins BJ. Distension of the small intestine, satiety, and the control of food intake. Am J Clin Nutr. 1978;3:S255-S258.
13. Halverson JD, Koehler E. Assessment of patients who have failed gastric operations for morbid obesity. Am J Surg. 1983;145:357-363.
14. Freiberg A. Plastic surgery after massive weight loss. In: Dietel M. Surgery for the Morbidly Obese Patient. FD Communications: Toronto, Canada. 1998.
15. Cowan SM, Wallace RD, Marx A, Hiller ML. Plastic surgery after loss of massive excess weight. In: Dietel M & Cowan GSM. Update: Surgery for the Morbidly Obese Patient Toronto, Canada: FD-Communications. 2000.
16. Lindstrom W. So you want your insurance to cover your obesity surgery? Accessed 9/22/00 at: http://www.obesitylaw.com/insurancearticle.htm
17. Floros C & Davis KB. Complications and long term results following abdominoplasty: a retrospective study. Br J Plast Surg. 1991;44:190- 194.
18. Gallagher SM. Tailoring care for the obese patient. RN. 1999;62:43-50
19. Gallagher SM. Restructuring the therapeutic environment to promote care and safety

for obese patient. JWOCN. 1999;26:292-297.
20. Goodell TT. The obese trauma patient: treatment

Susan Gallagher, RN, MSN, MA, CNS, CWOCN, PhD, is an adjunct faculty member of the University of Southern California (LA) Department of Nursing. She is a consulting editor of the Journal of Wound, Ostomy Incontinence Nursing and contributing editor of Ostomy/Wound Management. She worked as a WOCN/CNS at Huntington Memorial Hospital, Pasadena, California, for seven years before returning to USC to earn a PhD in Religion and Social Ethics, specifically in public policy ethics in obesity.