



AMERICAN SOCIETY OF
PLASTIC SURGEONS

Practice Parameter for Surgical Treatment of Skin Redundancy for Obese and Massive Weight Loss Patients

I. BACKGROUND

Obesity is classified as a body mass index (BMI) of 30 kg/m² or higher. Obesity has become an epidemic in contemporary America affecting fifty-eight million people. In addition, an estimated 9 million Americans suffer from morbid obesity, defined as a BMI greater than 40 kg/m².¹ The large number of people affected by obesity or morbid obesity is troubling as studies indicate there is a direct relationship between an increase in weight and an increase in mortality.² Many chronic diseases, including type II diabetes, hypertension, pulmonary dysfunction, digestive diseases and endocrine disorders, may all be related to obesity. This has prompted the Centers for Disease Control to call for significant interventions to help people reduce their weight.³

There are various regimens that patients may follow to lose weight including exercise, diet or combinations of these routines. These traditional approaches may provide a partial or complete weight loss for some people. For those morbidly obese patients who have tried traditional weight loss regimens with little success, bariatric surgery offers an alternative treatment approach. In the United States, bariatric surgery is quite common, there were approximately 196,000 procedures performed in 2015 (estimate by the American Society of Metabolic and Bariatric Surgeons).

BARIATRIC SURGERY – MECHANISM FOR WEIGHT LOSS

Bariatric surgery works through two mechanisms which contribute to weight loss; gastric restriction and malabsorption. Gastric restriction is created by reducing the capacity of the stomach and results in a reduction in caloric intake. Malabsorption procedures limit the absorption of nutrients and calories from ingested food by bypassing portions of the small intestine.⁴

In the past, bariatric surgery was typically an open surgery with a midline laparotomy incision. With the advancement of laparoscopic techniques, the laparoscopic approach to bariatric surgery has become more common. This has improved postoperative recovery, resulted in lower morbidity rates, including postoperative wound infections, dehiscence, and incisional hernias.⁴

II. DEFINITIONS

The focus of this practice parameter is on the surgical treatment of the excess skin and fat that occurs in obese patients or remains following massive weight loss. Abdominoplasty and panniculectomy procedures that are performed for circumstances **unrelated to obesity or massive weight loss** are discussed in the (*ASPS Practice Parameter for Abdominoplasty and Panniculectomy Unrelated to Obesity or Massive Weight Loss*).

Numerous procedures and terms describe the techniques developed to treat the wide range of defects associated with massive weight loss.

Some of these terms describe similar procedures and in some cases may be used interchangeably. To clarify the difference in the procedures, ASPS recommends the following definitions:

ABDOMINOPLASTY, typically performed for cosmetic purposes, involves the removal of excess skin and fat from the pubis to the umbilicus or above, and may include fascial plication of the rectus muscle diastasis and a neoumbilicoplasty.

PANNICULECTOMY involves the removal of hanging excess skin/fat in a transverse or vertical wedge but does **not** include muscle plication, neoumbilicoplasty or flap elevation. A cosmetic abdominoplasty is sometimes performed at the time of a functional panniculectomy or delayed pending completion of weight reduction.

CIRCUMFERENTIAL LIPECTOMY (BELT LIPECTOMY, LOWER BODY LIFT) is a circumferential procedure which combines the elements of an abdominoplasty or panniculectomy with removal of excess skin/fat from the lateral thighs

and buttock. The procedure involves removing a “belt” of tissue from around the circumference of the lower trunk which eliminates lower back rolls, and provides some elevation of the outer thighs, buttocks, and mons pubis. A circumferential lipectomy describes an abdominoplasty or panniculectomy combined with flank and back lifts, both procedures being performed together sequentially and including suction assisted lipectomy, where necessary.

TORSOPLASTY is a series of operative procedures, usually done together to improve the contour of the torso, usually female (though not exclusively). This series would include abdominoplasty with liposuction of the hips/flanks and breast augmentation and/or breast lift/reduction. In men, this could include reduction of gynecomastia by suction assisted lipectomy/ultrasound assisted lipectomy or excision.

MEDIAL THIGH LIFT is a procedure that treats the excessive skin and fat of the medial thigh. Incisions in groin or others that extend to the knee can be required to correct the defect. Liposuction may be combined, when necessary. Only in severe cases, would the case of excessive skin in the medial thigh region be considered as a functional abnormality, and therefore, not cosmetic.

BREAST REDUCTION is usually performed for relief symptoms such as back, neck, and shoulder pain, and skin irritation, rather than to enhance the appearance of the breasts.

GYNECOMASTIA is a procedure to remove excess fat, glandular tissue and/or skin from overdeveloped or enlarged male breasts. In severe cases of gynecomastia, the weight of excess breast tissue may cause the breasts to sag and stretch the areola. In these cases, the position and size of the areola can be surgically improved and excess skin may need to be reduced.

III. PREOPERATIVE ASSESSMENT AND SCREENING

Medical disorders associated with obesity decline as patients decrease their weight. However, patients may not experience complete resolution of their obesity related co-morbidities. Rubin suggests massive weight loss patients should be screened for the following conditions prior to surgery:⁵

- A. Depression – Bariatric surgery patients have a high incidence of depression, if on antidepressants, they should be stabilized on the medication for at least several weeks.
- B. Diabetes mellitus – As a routine screen, preoperative serum glucose and hemoglobin A₁C should be checked in all patients.
- C. Gastroesophageal reflux disease (GERD) – High BMI is associated with increased GERD symptoms. Individuals with active GERD should be referred to their bariatric surgeon or a gastroenterologist for stabilization prior to surgery.
- D. Nutrition – Long-term nutrient deficiencies are not uncommon for bariatric surgery patients. Protein, calcium, vitamin D, vitamin B12, and iron are the most common deficiencies.
- E. Abdominal wall hernias – Patients that undergo open gastric bypass procedures have a high risk of incisional hernia development. Hernias are typically not repaired until sufficient weight loss has occurred to decrease intra-abdominal pressure. Once sufficient weight loss occurs, small to moderate hernia repairs are often combined with body contouring procedures. Large hernia repairs may need to be staged.
- F. Excess intra-abdominal content – Excess intra-abdominal content combined with the rectus fascia plication performed in abdominoplasty or circumferential surgical procedures, lead to an increase in intra-abdominal pressure. This increased pressure may result in an increased risk of wound dehiscence and DVT and can push the abdominal contents against the diaphragm exacerbating respiratory conditions. Monitoring of the end expiratory pressure intra operatively during plication (< 30 cm H₂O) may be of assistance in preventing postoperative complication¹⁸. Plication over 13.5 cm may place the patient at increased risk¹⁷.
- G. Preoperative lab work / diagnostic testing: Laboratory or diagnostic tests that are often ordered include complete blood count, prothrombin time, partial prothrombin time, serum electrolytes (including calcium, magnesium and phosphorus), albumin, prealbumin, iron, TIBC, B12, folate, serum glucose, Hemoglobin A₁C, and serum HCG (in premenopausal female patients). Chest x rays should be ordered when there is a history of smoking or multiple procedures are planned, and ECG should be ordered for patients over age 50 or when the patient has a history of hypertension or cardiac disease.

Medical clearance by the patient's family physician or appropriate specialist should be obtained if indicated by the results of the preoperative assessment and screening. Smokers should be instructed to stop smoking prior to surgery as studies indicate it can impair postoperative wound healing as well as increase the risk of untoward events and unfavorable outcomes. Smoking status can be confirmed with pre-operative nicotine testing. Some surgeons choose not to operate on smokers because of the high risk. If the patient is unable to stop smoking, is diabetic, or has been treated with steroids, the surgeon should consider delaying or limiting the extent of the procedure, especially the amount of tissue undermining performed.

IV. MANAGEMENT

NONOPERATIVE TREATMENT

There are very few alternative treatment options for those patients who are not surgical candidates. The excess skin and folds are virtually impossible to correct by diet, weight loss, or exercise⁶. Modalities such as radiofrequency or ultrasound have been proposed as alternatives to surgery, but thus far the evidence demonstrates minimal effect and result.

TIMING

Body contouring surgery is ideally performed after the patient maintains a stable weight for two to six months. For post bariatric surgery patients, this often occurs 12-18 months after surgery or at the 25 kg/mg² to 30 kg/mg² weight range.⁵ Sometimes procedures are staged. An initial functional panniculectomy with limited tissue undermining and/or reduction mammoplasty may be necessary to increase the patient's comfort and facilitate the ease of exercise and further weight loss. Once the patient approaches his/her ideal body weight more refined body contouring surgery may be performed to address aesthetic issues.⁵

INDICATIONS / OPERATIVE TREATMENT

Deformities associated with massive weight loss vary greatly depending on the patients' body type, their fat deposition pattern, and the amount of weight gained or lost.⁷ These deformities can lead to patient dissatisfaction with appearance, inability to exercise, impaired ambulation, chronic back, neck and shoulder pain, difficulty with hygiene and symptoms such as uncontrolled intertrigo, infections, and skin necrosis. A discussion of the specific anatomical regions follows.

- A. **TRUNK** – Excess skin and fat affect the entire trunk region; however, the area that is usually emphasized is the anterior abdomen. The severity of abdominal deformities is graded as follows:
1. Grade 1: panniculus covers hairline and mons pubis but not the genitals
 2. Grade 2: panniculus covers genitals and upper thigh crease
 3. Grade 3: panniculus covers upper thigh
 4. Grade 4: panniculus covers mid-thigh
 5. Grade 5: panniculus covers knees and below⁵

A panniculectomy or abdominoplasty alone will eliminate the large hanging abdominal panniculus and its associated symptomatology, but may leave redundant tissue known as “dog ears” posterior to the excision. Circumferential approaches such as belt lipectomy, and circumferential lipectomy provide a superior aesthetic result because the anterior deformities as well as back and side rolls are addressed and the buttocks lifted. Abdominoplasty and circumferential lipectomy typically would be considered cosmetic procedures.

Panniculectomy could be considered as a functional correction in patients who are of appropriate height and weight, and have a history of problems including panniculitis or chronic back pain that have persisted despite an adequate trial of non-surgical management, or have a functional impairment in activities of daily living/ work, etc.

There is a strong relationship between increased BMI and surgical complication across the surgical spectrum. Specific to body contouring Arthurs reports that a BMI over 25 increases the risk of complications 3.3 fold (1). In 1999 Vastine reported that 80% of obese patients who had received a panniculectomy developed complications compared to 32.5% in normal weight patients (2). Acarturk (3) retrospectively compared the surgical outcomes of 21 patients that had simultaneous panniculectomy and bariatric surgery to 102 patients that delayed panniculectomy following bariatric surgery by a mean of 17 months. Those who had simultaneous surgery had significantly more complications and higher mortality. Most recently a level 2 retrospective study from Ann Arbor demonstrated a strong linear relationship between increasing BMI and increasing complications rates (4). These range from roughly 20% with a BMI of 20 to over 50% with a BMI of 50.

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5. Payer, M. et al. Panniculectomy-An Option for People who are Morbidly Obese. *AORN Journal*, volume 77, issue 4, April 2003, Pages 780-794.

- B. BREAST – Excess hanging breast tissue can be treated with reduction mammoplasty, while some women may elect breast elevation (mastopexy) and/or augmentation. Mastopexy or augmentation would typically be considered cosmetic procedures.
- C. ARMS – There are various surgical procedures available to treat upper arm laxity called “bat wings.” The brachioplasty technique varies depending on the severity of the upper arm deformity and include liposuction, short scar brachioplasty and long-axis arm incision with axillary Z-plasty.^{9,10} Regardless of the technique, the scar placement is a high priority. Only in severe cases would brachioplasty be considered as functional surgery.
- D. THIGHS – Patients that do not lose their thigh fat may require suction assisted lipectomy before a thighplasty can be undertaken as a cosmetic or contouring procedure. If possible, the integrity of the long saphenous vein should be preserved during resection.

POSTOPERATIVE CARE

The facility setting and the type of anesthesia utilized depends upon the extent of the procedure(s) performed and the patient’s health and co- morbidities. Extensive circumferential procedures are usually performed in the hospital setting under general anesthesia; length of stay ranges from one to four days. However, some surgeons practice in localities where patients can be carefully monitored in outpatient facilities for the early postoperative period and this may be an acceptable alternative. Less extensive procedures such as anterior panniculectomy/abdominoplasty, brachioplasty or thighplasty may be performed in a variety of settings including a hospital, an ambulatory surgery center or an office-based surgery facility. Regardless of the setting, the facility should be accredited and fully equipped to provide adequate monitoring and life support techniques.

In more extensive procedures, a foley catheter is utilized to monitor the patient’s fluid status. Some surgeons use an epidural catheter during the first 24 to 48 hours for postoperative pain control and to aid in early ambulation. Depending on the extent of the procedure, patients may have one or several drains which may be in place for a variable period of time depending on the amount of fluid draining.

Recovery time and physician follow up visits will vary depending on the extent of the procedure(s). Patients are typically seen on a weekly basis until all drains are removed and seromas are resolved, and then monthly for three months. Additional follow up visits are usually scheduled at six months and one year. Patients may be seen intermittently for one to two years as final body contour usually requires 12 to 24 months to mature.⁷ Patients that undergo extensive circumferential procedures will require on average a four- to six-week recovery period. Swelling above the circumferential scar persists for two to four months.

V. POSSIBLE SIDE EFFECTS

Side effects are dependent on the type and extent of the procedure. Possible side effects include:

- A. Seroma
- B. Dehiscence
- C. Infection
- D. Hematoma
- E. Skin necrosis
- F. Lymphedema
- G. Deep vein thrombosis/pulmonary embolus
- H. Psychiatric difficulty
- I. Residual localized fat and/or fat necrosis leading to contour irregularities
- J. Temporary or permanent numbness
- K. Unattractive or hypertrophic scarring
- L. Malposition of the umbilicus
- M. Relapse or recurrent laxity
- N. Folds and Wrinkles
- O. Additional Surgical Procedures

VI. PROVIDER QUALIFICATIONS

The individual performing this procedure, regardless of the location of the surgical facility, should have fully approved hospital privileges for this procedure and be qualified for examination or be certified by a surgical Board recognized by the American Board of Medical Specialties, such as the American Board of Plastic Surgery.

VII. DISCLAIMER

Patient care parameters are strategies for patient management, developed to assist physicians in clinical decision making. This patient care parameter, based on a thorough evaluation of the scientific literature and relevant clinical experience, describes a range of generally acceptable approaches to diagnosis, management, or prevent specific diseases or conditions. This patient care parameter attempts to define principles of practice that should generally meet the needs of most patients in most circumstances.

However, this patient care parameter should not be construed as a rule, nor should it be deemed inclusive of all proper methods of care or exclusive of other methods of care reasonably directed at obtaining the appropriate results. It is anticipated that it will be necessary to approach some patients' needs in different ways. The ultimate judgment regarding the care of a particular patient must be made by the physician in light of all the circumstances presented by the patient, the diagnostic and treatment options available and available resources.

This patient care parameter is not intended to define or serve as the standard of medical care. Standards of medical care are determined on the basis of all the facts or circumstances involved in an individual case and are subject to change as scientific knowledge and technology advance, and as practice patterns evolve. This patient care parameter reflects the state of knowledge current at the time of publication. Given the inevitable changes in the state of scientific information and technology, periodic review, updating and revision will be done.

VIII. CODING

This coding is provided as a guideline for the physician and is not meant to be exclusive of other possible codes. Other codes may be acceptable depending on the nature of any given procedure.

Diagnosis

Cosmetic Procedures

Plastic surgery for unacceptable cosmetic appearance

Functional Diagnosis Codes

ICD-10 Code

Z41.1

Localized adiposity – fat pad	E65
Lymphedema	I89.0
Hypertrophy of breast	N62
Cellulitis – trunk	L03.319
Cellulitis of axilla & upper arm	L03.111 – L03.114
Cellulitis of lower limb	L03.115, L03.116
Intertrigo	L26, L30.4, L53.8
Shoulder pain	M25.511 – M25.519
Neck pain	M54.2
Pain in thoracic spine	M54.6
Lumbago	M54.5
Diastasis recti	M62.00, M62.08
Panniculitis	M79.3

Procedure

Panniculectomy (Functional or Cosmetic)

Excision, excessive skin and subcutaneous tissue infraumbilical panniculectomy

CPT Code

15830 (includes lipectomy); abdomen,

Procedure

Abdominoplasty (Cosmetic)

Excision, excessive skin and lipectomy), abdomen (eg, abdominoplasty) (includes umbilical transposition and fascial plication) (List separately in addition to code for primary procedure)

CPT Code

+15847 subcutaneous tissue (includes

(Use 15847 in conjunction with 15830)

(For abdominal wall hernia repair, see 49491-49587)

(To report other abdominoplasty, use 17999)

Excision, excessive skin and (includes lipectomy); thigh

15832 subcutaneous tissue

leg	15833
hip	15834
buttock	15835
arm	15836
forearm or hand	15837
submental fat pad	15838
other area	15839
Mastectomy for gynecomastia	19300
Mastopexy	19316
Reduction mammoplasty	19318

CODING HERNIA REPAIRS

In rare circumstances plastic surgeons may perform a hernia repair in conjunction with an abdominoplasty or panniculectomy. A true hernia repair involves opening fascia and/or dissection of a hernia sac with return of intraperitoneal contents back to the peritoneal cavity.¹¹ A true hernia repair should not be confused with diastasis recti repair, which is part of a standard abdominoplasty. When a true hernia repair is performed, the following codes may be utilized.

Diagnosis Codes

Umbilical hernia

ICD-10 Code

K42.9

Ventral, unspecified
Incisional

K43.9
K43.2

Procedure	CPT Code
Repair initial incisional or ventral hernia; reducible	49560
Repair initial incisional or ventral hernia; incarcerated or strangulated	49561
Repair recurrent incisional or ventral hernia; reducible	49565
Repair recurrent incisional or ventral hernia; incarcerated or strangulated	49566
Implantation of mesh or other prosthesis for incisional or ventral hernia repair (List separately in addition to code for the incisional or ventral hernia repair)	+ 49568
Repair epigastric hernia (eg, preperitoneal fat); reducible	49570
Repair epigastric hernia (eg, preperitoneal fat); incarcerated or strangulated	49572
Repair umbilical hernia, age 5 or over; reducible	49585
Repair umbilical hernia, age 5 or over; incarcerated or strangulated	49587

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