

## Morbid Obesity And Lymphedema Management

By Caroline E. Fife, MD, Susan Benavides, CLT-LANA, & Gordon Otto, PhD

**T**he population of morbidly obese patients is growing. Caring for morbidly obese LE patients requires additional staff time and patience, as well as specialized equipment. It is important to establish clear criteria for participation in the MLD program. Weight control is critical if obese patients are to realize benefit from therapy.

### BACKGROUND

In cultures where food may be scarce, obesity is a sign of health and beauty. However, the increasing girth of American patients is creating serious health and economic problems which are far from beautiful. The majority of U.S. states can boast that 20-24% of residents are considered obese (usually defined as being 20% over one's ideal body weight), roughly 40 million individuals in America. There are two definitions of "morbid obesity": weighing 100 lbs. over ideal body weight, or a body mass index (BMI) of 40 or higher.

Over the 10-year period between 1990 and 2000, the prevalence of morbid obesity increased from 0.78 % to 2.2%, sending the U.S. healthcare budget

needed to treat obese patients to over \$11 billion that year. In 2003, obesity-attributable medical expenses reached \$7.67 billion in California alone. The cost of caring for morbidly obese patients is nearly double that for normal weight patients due to additional costs of in-patient care and obesity-linked chronic health conditions such as diabetes, hypertension and cardiovascular disease. In fact, 80% of adult-onset diabetes is related to obesity, as is 70% of cardiovascular disease. Approximately 75% of the morbidly obese have at least one co-morbid condition which significantly increases their risk of premature death.

### OBESITY IN OUR CLINIC

Between 1976 and 1980, the prevalence of obesity in the U.S. was only 15%, compared to 1999-2002 during which the prevalence had increased to 31%. Although our clinic was initiated in 1989, we did not begin to keep records of weights on all patients until 1999. To determine whether our patients were getting heavier as we perceived, we reviewed a total of 1463 adult patient records, 575 males and 889 females (60.8%), between 1999 and 2005. The distribution of all adult patient weights is shown in **Graph 1**. Taken as a group, African American patients were the heaviest. African American women had a median weight around 215 lbs which is almost the same as that of white males in our clinic. Without corresponding height data, BMIs cannot be determined, but evaluating only patients weighing over 350 lbs (210), the males (all races) showed a trend towards increasing weight in the 5-year period we surveyed as shown in **Graph 2**.

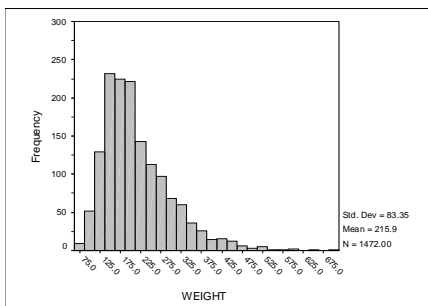
Nearly 1% of patients weighed more than 500 lbs.

### OBESITY-RELATED PROBLEMS IN THE LYMPHEDEMA CLINIC

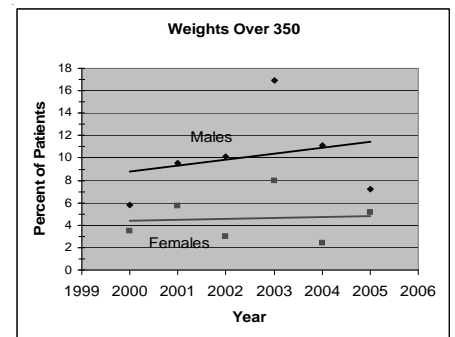
Lymphedema clinics are seeing an increasing variety of obesity-related problems including secondary lymphedema, usually due to severe venous insufficiency and/or obstruction from pendulous abdomens. Skin changes usually seen only on the lower extremities can also occur on the overhanging abdominal pannus such as lipodermatosclerosis and chronic draining abdominal wounds. Skin breakdown can occur in redundant folds and pressure sores on areas of massive localized lymphedema. Numerous hygiene issues, such as *Candida*, are exacerbated by diabetes.

### OBESITY AND RESPONSE TO THERAPY

Morbidly obese patients have serious mobility problems which may affect their participation in treatment. Exercise is a lynchpin of edema treatment, but many



GRAPH NO. 1:  
All adult patient weights



GRAPH NO. 2:  
Trends in patients weighing over 350 lbs from 1999 to 2005, by gender.

morbidly obese patients may not be able to ambulate. They often become dependent on electronic transport devices which, while providing them with more social opportunities, may worsen their obesity by making ambulation unnecessary. Morbidly obese patients often have serious transfer problems which can prevent them from getting onto an examination table for treatment. They may be unable to lie supine, sometimes due to heart failure but often due to obstructive apnea, and this severely limits the benefit which can be obtained from manual lymphatic drainage. Indeed, patients may be so short of breath secondary to cardiac or respiratory factors that MLD therapy is not even safe for them since MLD may move even more fluid back to the heart, further overloading it.

The physical challenges of bandaging large patients are well known to therapists. It often requires two or three therapists to accommodate the mobility limitations of obese patients. More bandaging materials are required, as well as a significant increase in staff time to apply them, and these additional efforts cannot be recuperated by an increase in billed charges.

## CHALLENGES FOR THE LYMPHEDEMA CLINIC

Ten years ago we had no patients over 500 lbs in treatment. Now it is relatively common for us to see 500 pound patients (1% of all patients, or 12 total at present), and we now have two patients weighing more than 600 lbs.

Note the weight distribution table that follows:

One result has been that our waiting room chairs are not wide enough to accommodate all of our clients. Waiting room furniture has been replaced with wider, sturdier furniture, some of which are without arm rests from which patients have had to be extricated. Therapy tables which can manage weights up to 700 lbs were obtained, but unless they are permanently secured to the floor, they have to be counterbalanced by two or three therapists for heavy patients to safely

climb on to them. It was necessary for us to purchase special scales which can weigh patients up to 800 lbs. and which are wide enough to allow patients to stabilize themselves on the scale. Morbidly obese patients are often reluctant to weigh regularly, but the importance of monitoring weight during a course of MLD therapy is critical since we expect patients to at least maintain their current weight (i.e., not gain weight), if they wish to participate in the program.

Patient Weight	Observed	
	Count Above	% Above
300	218	14.8
400	56	3.8
500	12	0.8
600	2	0.14

The transportation of morbidly obese patients represents a separate challenge. Those who do not have their own transport devices usually cannot be safely accommodated in wheelchairs which are pushed manually.

The solution for our clinic was the purchase of an electronic, extra wide wheel chair rated to 750 lbs, operated by a toggle switch at the back. The cost of this chair was in excess of \$10,000 and was controversial in 1998 when we first purchased it. It is now in constant demand by departments all over the hospital.

The purchase or lease of extra wide potty chairs, wide hospital beds, lifting chairs, and all manner of equipment which might be needed for obese patients represents an increasing proportion of hospital budgets across the country. Nevertheless, patients expect us to be prepared to meet their needs. We received this comment on one of our response cards, "Don't you know that overweight people are on the rise and the need is here now to help us?"

## OBESITY AND CAREGIVER INJURY

Health care is becoming one of the most dangerous jobs in the U.S., with back injuries among the fastest growing costs in health care. MLD therapists are

often required to assume awkward positions to bandage obese patients with limited mobility. Specialized equipment is required to lift obese patients who need help making transfers if a safe environment is to be maintained for the patient and the caregiver. While we want to provide our patients with the best possible care, the health and safety of our staff must be a priority. If it is not possible to safely care for a patient, then they cannot participate in therapy.

## MEMORIAL HERMANN GUIDELINES FOR PARTICIPATION IN THE MLD PROGRAM

Many obese patients can participate fully in therapy and benefit significantly. However, it became clear that we needed to establish criteria for participation in our program for the safety of our patients and our staff. It is important to have consistent, preferably written, criteria so that patients do not feel that they have been arbitrarily discriminated against. We have set the following criteria for participation in our program:

- 1) No diseases which prevent safe MLD therapy (e.g., congestive heart failure)
- 2) Must be able to safely get on and off the MLD table
- 3) Must not exceed MLD table weight limit
- 4) Must be ambulatory, even if minimally
- 5) Must not have a BMI > 70 (e.g. 5'2" woman weighing 380 lbs)
- 6) Must commit to maintaining a constant weight, or preferably losing weight, during the course of treatment.

## COMPLIANCE WITH WEIGHT CONTROL

The importance of weight management is illustrated by 3 patients with Prader Willi syndrome, a genetic disorder which causes hyperphagia (uncontrollable eating). Patient #1 had an increase in weight from 507 lbs to 530 lbs over the course of therapy and, despite an initial good response, had a corresponding *increase* of 20,000 cc volume in the affected limb.



*A woman with lipolymphedema and morbid obesity who has developed an area of massive localized lymphedema on the inner thigh. Note that her feet are relatively spared, indicating that this is not a primary lymphedema syndrome.*



*A patient who weighs over 500 lbs and has a pannus which drags the ground when he attempts to ambulate. Note the "cobblestone" changes from inflammation (lymphedema of the abdomen) and hemosiderin deposits ("venous stasis" like changes) which have occurred as a result of chronic dependency of his pannus. The pannus is estimated to weigh over 150 lbs.*

Patient #2 increased his weight from 500 to 530 lbs over the course of treatment with a resulting 10,000 cc increase in volume of the affected extremity. The third patient decreased his weight from 404 to 381 lbs and noted a 23% decrease in limb volume (5,000 cc). In general, we have found that patients who gain weight respond poorly to treatment and those who do not gain, or preferably lose weight, achieve benefit.

This is in contrast to those patients with primary lymphedema whom we have treated during pregnancy, some of whom have reduced their lower extremity leg volume despite advancing pregnancy.

The pregnant patients were highly motivated, highly compliant patients of normal pre-pregnancy weight. The psychosocial factors which interact to produce a morbidly obese individual are complex, but clearly affect participation in, and benefit from, treatment. We often make "contracts" with patients regarding weight loss, attendance at bariatric support groups, weight watchers, or other behaviors upon which our continued participation in their care is contingent. Long term success at weight reduction is difficult to achieve in the

morbidly obese since the contributory factors are complex, but surgical management such as gastric by-pass appears to have a high success rate. "LymphLink" articles in this and subsequent issues will discuss this, as well as other unique issues for the morbidly obese, such as massive localized edema management, which also often requires surgical removal.

### **SETTING LIMITS AND GETTING THE RIGHT EMPHASIS**

Management of the morbidly obese patient with lymphedema requires that the obesity be addressed in a frank and supportive way. Many morbidly obese patients have a strong element of denial about their disease. For most obese patients, getting treatment for their obesity is a life or death decision. Instead, they may be focused on the treatment of their edema, rather than on the treatment of its primary cause. In this way, treatment of the LE and the obesity are linked and need to be approached together.

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