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PHYSICIAN PERSPECTIVE

Obesity-related Lymphedema

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Introduction

The purpose of this article is to understand the characteristics and treatment of lymphedema in the context of morbid obesity. The article is a summary of a presentation given at the 2015 Klose Lymphedema Conference in Denver, CO.

Obesity has reached epidemic proportions. The increasing worldwide prevalence of obesity-related lymphedema presents a new challenge in treating patients. To classify obesity we use the body mass index (BMI). The World Health Organization (WHO) defines obesity as a BMI over 30 kg/m^2 and morbid obesity as a BMI over 40 kg/m2. If the BMI is over 50, we call that super obesity. Today, more than one-third of US adults are obese, and the CDC predicts the number of obese adults will continue to rise.[1]

These figures are reflected in the population of lymphedema patients at the Földi Clinic in Hinterzarten, Germany. We compared the number of obese patients in 2003 to that of 2013. There was only a small increase in patients with a BMI between 30 and 39, but an exponential increase in patients with morbid obesity and super obesity (BMI > 50 and 60).

In 2014 we treated approximately 6,000 patients at the Földi Clinic (2,000 inpatient and 4,000 outpatient). 58% were obese and 31% were morbidly obese. There has been a change in the diagnoses of our patient population. We have seen a decrease in secondary lymphedema (eg, cancer-related), but an increase in obesity-related lymphedema.

Pathophysiology

Why are morbidly obese patients prone to developing lymphedema?

We know that adipose tissue is part of the endocrine system and made up of adipocytes (fat cells). These cells produce hormones called adipokines. These adipokines induce biochemical processes that damage the lymph vessels. This can cause lymphatic leakage, which may result in lymphedema.[3,7]

But lymphatic leakage is not the only damage adipose tissue can cause. Adipokines can also impair the contractility of the lymphatic vessels, which can also result in lymphedema.[4]

Other studies have proven that lymph stasis stimulates adipogenesis, and adipogenesis may further impair lymphatic function, making it a vicious cycle.[5,6]

There are also two mechanical problems that can impair the lymphatic function. First, morbidly obese people suffer from greater immobility, so they experience a reduced muscle pump effect from exercise, which further impairs lymphatic function. Morbidly obese patients also often have an overhanging abdominal wall, which can bend or compress the lymphatics of the abdomen and groin.

Therapeutic options

Usually the treatment of obesity-related lymphedema and lipedema consists of complete decongestive therapy (CDT), treatment of the lymphedema-causing disease, and a physician-prescribed diet. But diets fail if the patient is morbidly obese and long-term weight loss results from diets are usually dismal.[9] Patients often return to their initial weight or even gain weight in 3 years or less. **This is because morbid obesity is a disease. The causes of morbid obesity are multiple and complex and cannot be cured by diets!**[8]

This weight gain 2 or 3 years after any diet is very frustrating not only for the patient, but also for the healthcare professionals treating the patient. To reduce this frustration, we have created a comprehensive program for patients with obesity-related lymphedema at the Földi Clinic. We also successfully treat our patients with obesity-related lipedema with this program.

Bariatric surgery plays a central role in this concept. If the patient has a BMI of more than 40 and we are convinced the patient will benefit from this procedure, we admit the patient to the program.

This program consists of different modules that support the patient on the way to better health.

The Földi Clinic program includes:

- Emphasis on CDT
- Movement therapy and encouraging patients to exercise
- Nutritional counseling from our dietician to learn how to eat following gastric bypass or a gastric sleeve
- Counseling and lectures about causes of morbid obesity, health risks, and bariatric surgery
- Extensive medical diagnostics to assess any risk factors
- Evaluation of patients' psychological status

A few months after completing this program, the patient undergoes bariatric surgery. The clinical data for bariatric surgeries are extremely convincing.[10-12]

During the second stay in the Földi clinic, usually 1 to 2 years after the bariatric surgery, our plastic surgeon will do a dermolipectomy to remove the excess skin and fat.

Conclusion:

The number of patients with obesity-related lymphedema will continue to increase. Lymphedema related to morbid obesity shows a complex etiology. It is essential to treat not only the lymphedema, but also the morbid obesity to be successful on a long term basis. To put the patient on a diet is not enough! In the Földi Clinic we treat patients with morbid obesity-related lymphedema with a comprehensive multimodule program, which includes bariatric and plastic surgery.

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