

COMMENTARY

**ADIPOSE TISSUE IN LYMPHEDEMA: THE IGNORANCE OF
ADIPOSE TISSUE IN LYMPHEDEMA**

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Comments such as “Adipose tissue in lymphedema? I have never seen it. Is that something peculiar to Swedes?” followed my presentation of “High Content of Adipose Tissue in Chronic Arm Lymphedema Limits Treatment Outcome” (1) at the 2000 National Lymphedema Network Conference in Orlando, Florida. When I participated in my first ICL meeting in Madrid in 1997, I presented several papers (2-4) demonstrating the dramatic effect liposuction had on chronic non-pitting postmastectomy arm lymphedema. I emphasized the abundance of adipose tissue found in these lymphedemas. In 1998, I summarized this research in a dissertation (5), which was based on peer-reviewed papers (6-9). I also presented my research on lymphedema and adipose tissue at the 18th ICL-meeting in Chennai, India in 2001 (10,11), and few accepted these conclusions. The late professor Charles L. Witte MD, the opponent on my public defense of my dissertation in 1998, encouraged me to continue my research. Over the next several years, I presented this objective information at several meetings.

Lymphedema was believed to produce only high-protein fluid, which progressed to fibrosis over time (M. Földi, personal communication). Adipose tissue was never described. Later analysis with modern objective equipment like DEXA (Dual Emission X-Ray Absorptiometry), aspirate

analysis, VR-CT (Volume Rendering Computer Tomography), and MRI have supported my initial findings of more than 90% adipose tissue in liposuction aspirate of patients with non-pitting lymphedema (12,13).

In light of these events, I enjoyed reading a recent comment by Professor Terence Ryan in *Lymphology* (14). He wrote: *“Moreover, the epidermis and adipose tissue are not simply passive players but are likely factories of growth factors and mediators of inflammation. These agents are probably responsible for the soft tissue overgrowth observed in lymphedema... Like the epidermis, fat cells have long been regarded as bystanders rather than active participants in lymphedema. It is clear, however, that fat cells also can generate cytokines and hormones and a catalogue of their activities increases on a monthly basis.”* When I met Professor Ryan at the ICL-meeting in 2003, I was encouraged by his recommendation for a “Lymphedema and Adipose Tissue” session at the next ICL meeting. Professor Sumner Slavin at Harvard Lymphedema Clinic of the Beth Israel Deaconess Medical Center has also noted the excess adipose tissue when performing liposuction on non-pitting lymphedema (S. Slavin, personal communication).

It is perplexing that this new technique, removing excess adipose tissue through liposuction, is so negatively viewed by many

members of the ISL. For example, in the new book by Prof. M. Földi (15), he writes without giving any references: "Liposuction promoted by Brorson is basically amputation of the suprafascial space... However, in the course of seven years he has only performed a total of 74 liposuctions. No conclusions can be drawn from this small number." Such a statement can be disputed. In fact, conclusions can be drawn from even a single case as future Nobel prize winning physician Joseph Murray proved when he performed skin grafts on identical twins and paved the way for the first successful kidney transplant. Many remember that when insulin was tested for the first time, one patient was enough to prove its significance. Insulin radically changed the care of diabetes. Although the finding of adipose tissue in lymphedema does not reach the level of such a momentous discovery as insulin, its presence has been demonstrated by accurate scientific methods. It would be helpful to our patients if this finding stimulated further research that would lead to expanded options.

Prof. Földi has authored a well-cited article of 1989 in which he describes the many deficits in lymphedema science and treatment (16). Over the last decade, researchers from many different nations have begun conducting controlled clinical trials in order to learn more about lymphedema management. What is also needed are controlled studies on CPT. Hopefully, such trials would provide clear substantiation and will help to reduce the "lymphedema chaos." Finally, those authors who criticize liposuction should provide references to any published papers that support negative comments regarding liposuction for peripheral lymphedema as I continue to provide references for its positive use. The purpose of such references and citations would be to allow readers to evaluate and objectively form their own conclusion rather than blindly accept the opinion of the author. Progress and change often requires letting go of "some" of the past. Collaborative thinking

and research, along with open minds and constructive dialogue, should reduce "lymphedema chaos."

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