

## Suction Assisted Protein Lipectomy (SAPL) For The Treatment Of Chronic Lymphedema

Jay W. Granzow, MD, MPH, FACS

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Suction Assisted Protein Lipectomy (SAPL) lymphedema surgery is a procedure that can effectively remove the excess solids that have accumulated in chronic lymphedema. In many patients, these lymphedema solids build up over time and cause an arm or leg to no longer be reducible to a normal size. The solids are permanent and cannot be effectively treated with conservative, non-surgical lymphedema therapy. In addition, lymphedema surgeries that best address fluid excess, such as Vascularized Lymph Node Transfer (VLNT) or Lymphaticovenous Anastomosis (LVA) cannot effectively address these solids.

SAPL surgery must be offered as part of a comprehensive treatment system that includes lymphedema therapy. The first step in treating patients with lymphedema solids is lymphedema therapy administered by an experienced lymphedema therapist to address any excess fluid component that may be present. Afterwards, SAPL surgery is performed to aspirate the fatty solids that cannot be removed with lymphedema therapy. These volume reductions are permanent with ongoing use of custom fitting compression garments following the surgery.

SAPL surgery also greatly reduces the risk of cellulitis, a type of infection that is particularly dangerous in lymphedema patients. This surgery has been shown in the medical literature to reduce the risk of cellulitis infection over 80%.

SAPL surgery has proven to be safe and there have been no reported cases of patients whose lymphatics have been damaged after the procedure. This has been confirmed by multiple studies published in the medical literature.(1) In fact, clinically, the lymphatic drainage appears to improve after SAPL surgery.

The surgical technique used in SAPL surgery is very different than cosmetic liposuction and should not be performed by lymphedema surgeons without significant training and experience with this technique.

The integration of individualized lymphedema therapy and compression garment use following SAPL surgery is critical in achieving and maintaining a good result. An average volume reduction of 111% in arms and 86% in legs has been reported after SAPL surgery (2). Patients who are unable to maintain long-term compression post SAPL surgery are not good candidates for this surgery.

After a successful SAPL surgery, physiologic lymphedema surgeries such as VLNT or LVA may be used as staged surgeries at a later time to address the residual fluid component and reduce the amount of compression required to maintain the permanent volume reductions. (3)

#### Figures:

1. Photos of patient with 17 year history of primary (congenital) solid predominant lymphedema of left leg. (Left) Legs before SAPL surgery (Right) Legs 10 months after SAPL surgery

2. Photos of patient with 7-year history of solid predominant lymphedema of the left arm following breast cancer treatment. (Left) Arms before SAPL surgery (Right) Arms 28 months after SAPL and subsequent staged lymph node transfer surgery. She maintains the volume reductions with compression garments needed less than 12 hours per day after the staged procedures.

#### Bibliography:

1. Brorson H, Svensson H, Norrgren K, Thorsson O. Liposuction Reduces Arm Lymphedema Without Significantly Altering The Already Impaired Lymph Transport. *Lymphology* 31 (1998) 156-172.
2. Granzow JW, Soderberg JM, Kaji AH, Dauphine C. An Effective System of Surgical Treatment of Lymphedema. *Ann Surg Oncol.* 2014 Apr;21(4):1189-94.
3. Granzow JW, Soderberg JM, Dauphine C. A Novel Two-Stage Surgical Approach to Treat Chronic Lymphedema. *Breast J.* 2014 Jun 19.