**New Surgical Innovations for Advanced Stages of Peripheral Lymphedema**

**Introduction:**

Development of microsurgical techniques has significantly advanced the field of Lymphology and the treatment of lymphedema. Nonetheless, advanced stages of peripheral lymphedema are often associated with residual fibro-adipose tissue after microsurgery.

**Aim:**

The authors discuss their lymph vessel sparing technique to remove this excess tissue in a second surgical step.

**Method:**

Our “single-site” microsurgical technique identifies, by Patent Blue Dye / Fluorescent Micro-lymphography (PDE /IC Flow Test), the lymphatics in the axillary or groin and completes derivative multiple lymphatic–venous anastomoses (MLVA). In cases of advanced lymphedema, we use a recently developed Fibro-Lipo-Lymph-Aspiration technique with a Lymph Vessel Sparing Procedure (FLLA-LVSP) where microlymphography techniques highlights the lymphatic pathways and the excess adipose tissue is carefully aspirated.

**Results:**

With “single-site” MLVA, 4800 patients obtained significant reductions in excess limb volume of over 86%, with an average follow-up of 20 years plus. Over 88.5% of patients with earlier stages of disease progressively stopped using conservative therapies and 41% of patients with later stages decreased the frequency of physical therapies.

For 400 advanced cases involving the upper limb, there was an average pre-surgery excess volume of 21.79%, which reduced to 2.77% after the FLLA-LVSP (Z-score =-6.87, p<0.001). Similarly, for the lower limb, there was an average pre-surgery excess limb volume of 23.04% and a reduction to 2.91% post-operatively (Z-score=-3.48, p<0.01).

**Conclusions:**

MLVA techniques when performed at a single-site produce excellent outcomes in the treatment of lymphedema, giving the possibility of complete restoration of lymphatic flow in the early stages of when tissue changes are minimal. In cases of advanced lymphedema, the FLLA-LVSP is efficient with immediate cosmetic results. More importantly, the removal of excess tissue is completed without further damage to lymphatic vessels.