

# **The Groin vs. Submental Vascularized Lymph Node Flaps: A Head to Head Comparison of Surgical Outcomes following Treatment for Upper Limb Lymphedema**

## **Introduction**

Growing experience in lymphatic microsurgery, particularly vascularized lymph node (VLN) transfer has allowed for the discovery and utilization of new lymph node sources. The groin (VGLN) and submental (VSLN) lymph node flaps have been described as valuable options in the treatment of upper limb lymphedema. Although published reports have shown success with each of these options, no comparative evaluation has been performed of these two valuable lymph node flaps. Therefore, we performed a comparative analysis following submental and groin VLN transfers in the setting of upper limb lymphedema.

## **Methods**

A retrospective review of a prospectively maintained database of patients who received microsurgical treatment for lymphedema was reviewed. Patients who had either submental or groin VLN transfer for upper limb lymphedema were isolated. Patient measurements were obtained at the same follow-up evaluation in both cohorts. Patient characteristics and demographics were compared. Outcomes of interest included flap characteristics, post-operative and intraoperative complications, and limb circumference changes at the designated follow-up following reconstruction.

## **Results**

Nineteen patients were identified and met inclusion criteria. More identified patients underwent VGLN (68%) as compared to VSLN (32%) flaps for upper limb lymphedema. Patient age, BMI, and symptom duration were similar between cohorts ( $p=0.8$ ;  $p=0.7$ ;  $p=0.6$ , respectively). On evaluating flap characteristics, similar vein diameter (2.6 v. 3.0mm;  $p=0.3$ ) and artery diameter (2.1 v. 2.4mm;  $p=0.3$ ) were found between VGLN and VSLN cohorts, respectively. Similar lymph node numbers were found between flaps, respectively (3 v. 4;  $p=0.4$ ). Circumference reduction was higher in the VSLN cohort (35.3%) as compared to the VGLN cohort (23.4%) during the 6-month follow-up evaluation, but did not reach statistical significance ( $p=0.3$ ). Total number of complications was higher in the VGLN cohort as compared to the VSLN cohort (38.5 v. 16.7%;  $p=0.04$ ).

## **Conclusion**

Vascularized groin and submental lymph node flaps are both valuable surgical options in treating upper limb lymphedema. Flap characteristics are similar between VLN flap options. Similar improvements in limb circumference may be expected with both VLN flaps, albeit with an increased complication rate with the VGLN flap.