

Retrograde Manual Lymphatic Drainage following Vascularized Lymph Node Transfer to Distal Recipient Sites for Extremity Lymphedema: A Retrospective Study and Literature Review

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Background: Vascularized lymph node transfer is an efficacious treatment for extremity lymphedema. This study investigated the outcome of retrograde manual lymphatic drainage for vascularized lymph node transfer to distal recipient sites.

Methods: Lymphedema patients who underwent either complete decongestive therapy or vascularized lymph node transfer between 2013 and 2018 were retrospectively included. Retrograde manual lymphatic drainage was started with intermittent manual compression and the assistance of a sphygmomanometer and proximal-to-distal massage of the limb 1 month postoperatively. Outcomes evaluations used the circumferential reduction rate and the Lymphedema-Specific Quality-of-Life Questionnaire. Outcomes of vascularized lymph node transfer to proximal versus distal recipient sites in the literature between 2006 and 2018 were also compared.

Results: One hundred thirty-eight unilateral extremity lymphedema patients, including 68 patients in the complete decongestive therapy group and 70 patients in the vascularized lymph node transfer group, were included. The mean circumferential reduction rate of 38.9 ± 2.5 percent in the vascularized lymph node transfer group was statistically greater than the 13.2 ± 10.1 percent rate in the complete decongestive therapy group ($p = 0.01$). At a mean follow-up of 36 months, the improvement of overall Lymphedema-Specific Quality-of-Life Questionnaire score from 3.8 ± 0.3 to 7.5 ± 1.8 in the vascularized lymph node transfer group was statistically greater than that in the complete decongestive therapy group (from 4.7 ± 0.9 to 5.0 ± 1.9 ; $p < 0.01$). In total, 536 lymphedema patients who underwent 548 vascularized lymph node transfers in 23 published articles were reviewed; the distal recipient-site group was found to have more efficacious results than the proximal recipient-site group.

Conclusion: Vascularized lymph node transfer to a distal recipient site with standard retrograde manual lymphatic drainage significantly improved circumferential reduction rates and Lymphedema-Specific Quality-of-Life Questionnaire scores. (*Plast. Reconstr. Surg.* 148: 425e, 2021.)

CLINICAL QUESTION/LEVEL OF EVIDENCE: Therapeutic, III.

Breast cancer patients who undergo axillary lymph node dissection and/or radiotherapy are the most common patients with

secondary lymphedema, accounting for approximately 20 to 49 percent of cases, and reasons related to gynecologic, cutaneous, genitourinary, and head and neck cancers follow.¹⁻⁸ Historically, extremity lymphedema has been treated by complete decongestive therapy, consisting of manual lymphatic drainage for 6 weeks by means of massage, muscle exercise, compression, bandaging, and skin care. In addition, the patients must

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