

RESEARCH ARTICLE

Lymphedema and concomitant venous comorbidity in the extremity: Comprehensive evaluation, management strategy, and outcomes

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Background: The optimal approaches for concurrent vascular lesions with limb lymphedema are not well established. The purpose of the study was to investigate the outcome of the surgical management of lymphedema with concomitant vascular lesions.

Methods: Between August 2010 and November 2015, 15 consecutive patients with extremity lymphedema and concomitant vascular lesions treated with vascularized lymph node flaps were reviewed. The patients had vascular interventions discovered during workup for lymphedema surgery. Outcomes were assessed using circumferential difference (CD) and circumferential reduction rate (CRR) at 12-month and final follow-up visits.

Results: Vascular lesions ($n = 15$) included proximal arterial occlusion ($n = 1$), vascular malformation ($n = 2$), and proximal venous compression/stenosis ($n = 12$). Concomitant vascular lesions had an incidence of 15.8% in patients that underwent vascularized lymph node transfers (VLNTs). We had 100% VLNT survival rate and average number of episodes of cellulitis after VLNTs decreased significantly ($p < 0.05$). The CRR for the below knee/elbow measurement at 12-months follow-up was significantly higher for patients that underwent vascular intervention for venous lesions before VLNT instead of concurrently or after (23.7% vs 12.2%, $P = 0.23$). Final mean CRR was 23.7% and 12.2% respectively.

Conclusion: Preoperative workup of concomitant vascular lesions is important for lymphedema management. We suggest appropriate vascular intervention should be done prior to VLNT to maximize the short-term and long-term outcomes.

KEYWORDS

lymphedema, lymphedema microsurgery, vascular disease, vascularized lymph node transfer, vascularized submental lymph node

Abbreviation: APTT, activated partial thromboplastin time; AV, arteriovenous; CD, circumferential differentiation; CRR, circumferential reduction rate; CT, computed tomography; CTA, computed tomography angiography; ICG, indocyanine green; KT, Klippel-Trenaunay; LVA, lymphovenous anastomosis; PTA, posterior tibial artery; VLNT, vascularized lymph node transfer.

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Neil S. Sachanandani and Sung-Yu Chu have contributed equally to this work.

1 | INTRODUCTION

Chronic lymphedema is a prevalent condition that has a significant impact on health-related quality of life.¹ Chronic lymphedema patients suffer from significantly poorer social well-being, including perceptions related to body image, appearance, sexuality, and social barriers,² with profound burden as demonstrated from a utility outcomes standpoint.³