

RESEARCH ARTICLE

Delayed primary retention suture for inset of vascularized submental lymph node flap for lower extremity lymphedema

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Abstract

Background: Vascularized lymph node transfer (VLNT) has become one of the effective surgical treatments for extremity lymphedema. This study was to evaluate the re-exploration and total complication rates of VLNT for lower extremity lymphedema between two different flap inset techniques.

Methods: Sixty-nine patients who underwent 74 submental VLNT transfers between 2008 and 2018 were retrospectively studied. Fifty-six flaps were inset using a new delayed primary retention suture (DPRS) technique and other 18 flaps using conventional interrupted sutures as the non-DPRS group.

Results: The overall flap success rate was 100%. The DPRS group was released at a mean of 1.7 ± 0.7 times and took a mean of 10.3 ± 3.3 days for wound closure. There were no statistical differences in demographics, mean symptom duration, and mean Cheng's Lymphedema Grading between two groups. Mean frequency of cellulitis of 2.5 ± 1.5 times/year in non-DPRS group was significantly greater than 1.4 ± 1.6 times/year in DPRS group ($P = .01$). The re-exploration and total complication rates were 5.4% and 7.1% in DPRS group, and 27.8% and 33.3% in non-DPRS group, respectively ($P = .02$ and $.02$, respectively).

Conclusions: The DPRS technique is a safe, simple, and reliable method for insetting the submental VLNT, which statistically decreased the re-exploration and total complication rates.

KEYWORDS

lymphedema, microsurgery, re-exploration, vascularized lymph node transfer, venous complication, submental flap

1 | INTRODUCTION

The management of extremity lymphedema has evolved over the years. With the rise in popularity of lymphatic surgery and the aid of advancement in specialized equipment and devices, surgical treatments such as lymphovenous anastomosis and vascularized lymph node transfer (VLNT) have become the mainstays of lymphatic surgery. The operative management differs depending on the history and clinical findings of the

patient, and the treatment plan needs to be tailored to each patient. VLNTs are indicated in patients with complete obstruction of the lymphatic ducts and no proximal functioning lymph nodes or in patients with a long history of lymphedema with severe fibrosis.¹⁻³

The reliability of the number of lymph nodes in the submental region has been widely published in anatomical and cadaveric studies.¹⁻³ It is our preference to utilize a vascularized submental lymph node (VSLN) flap and transfer it to a distal recipient site on the affected extremity.⁴⁻⁶ Not only have VSLN flaps been reported in the literature to have promising outcomes but also have been observed through our clinical practice to have minimal donor site morbidity.