Supraclavicular Lymph Node Flap for Lymphedema: Early Experience and Technical Refinements

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BACKGROUND: Lymph node flaps (LNF) for lymphedema are increasing in popularity. Several donor sites have been described in search for the optimal one. The supraclavicular lymph node flap has several advantages, including modifiable arterial and venous-based harvest, multiple lymph node donor flap permutations, and no reported associated iatrogenic lymphedema. The learning curve can be a significant factor for this flap, due to anatomic variations and patient morphology. The purpose of this study was to review our supraclavicular lymph node flap experience and present our technical refinements for successful flap survival.

METHODS: A retrospective review was performed of consecutive patients who underwent a supraclavicular lymph node flap transfer for lymphedema by the senior author from 2011 to 2014. Patient demographics, surgical indications, perioperative details, and flap survival outcomes were reviewed.

RESULTS: Fourteen patients were identified, with a mean age of 56 years (range 34 to 80). All cases were secondary lower limb lymphedema with late-stage disease, ISL stage II (4) and III (9), with an average duration of symptoms of 43 months (range 3 to 120 months). Etiologies included pelvic cancer-related lymphedema (57%), infectious or immunosuppressed state (21%), posttraumatic (14%), and postpartum (7%). Flap survival rate was 100%, with one reexploration for venous congestion representing a complication rate of 7%. The mean operative time was 579 minutes, and the mean ischemia time was 113 minutes. Key steps in flap harvest were inclusion of both the deep and superficial veins (Figure 1), preservation of the fatty and lymphatic tissue bridging them, microscopic dissection in altering flap size and vessel selection, and emphasis on protecting cutaneous nerves to minimize donor site morbidity. All flaps were harvested without skin and from the right side, and covered with a local flap and small skin graft for monitoring. Arterial anastomoses were single, while 9 cases had double venous anastomoses; all anastomoses were end-to-end. Average follow-up was 18.5 months.

CONCLUSIONS: The supraclavicular lymph node flap is a safe option for the treatment of extremity lymphedema. Technical refinements simplify and help harness the potential of this versatile donor site for multiple flap permutations.

LEGENDS:
Figure 1. Flap location in the posterior triangle and key vessel identification.