oncologic axillary and groin lymph node dissection. Vascularized lymph node transfer based on the omental flap has been proposed as a potential solution to lymphedema. However, literature characterizing the gastroepiploic-based omental flap and corresponding lymph nodes does not currently exist. The purpose of this study is to describe lymph node anatomy along the gastroepiploic vasculature using computed tomographic angiography (CTA).

**METHODS AND MATERIALS:** A retrospective review of 110 consecutive CTA studies was performed. Measurements of gastroepiploic pedicle length, gastroepiploic vessel caliber, three dimensional lymph node distance from gastroepiploic origin, and lymph node size were analyzed. T-test analyses were used to compare means; significance was set at $p < 0.05$. A Gaussian mixture model was used to determine lymph node spatial relationships; normalized entropy criterion (NEC) < 1 confirmed clusters.

**RESULTS:** Gastroepiploic artery and vein caliber at the origin was significantly larger in males than females ($p < 0.001$). Both males and females had an average of three lymph nodes along the gastroepiploic vasculature. Average nodal dimensions were 3.08 x 4.48 mm for females which significantly differed from male dimensions of 3.64 x 5.05 mm ($p = 0.02$ and 0.04, respectively). The gastroepiploic artery and vein were found to have six course variations from the pedicle origin. Each course variation contained 2–3 clusters of lymph nodes at distinct locations along the gastroepiploic vasculature.

**CONCLUSION:** Understanding the anatomy and caliber of the omental flap can help preoperative planning of vascularized lymph node transfer. Vascularized lymph nodes along the gastroepiploic vasculature are located at distinct divisions for each of the six vessel courses.

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**Is the Deep Inferior Epigastric Lymph Node Flap an Appropriate Alternative to the Right Gastroepiploic Lymph Node Flap for Treatment of Upper Extremity Lymphedema?**

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**INTRODUCTION:** Upper extremity lymphedema is a debilitating complication of mastectomy that significantly affects quality of life in 6–30 percent of breast cancer patients. In refractory cases, vascularized lymph node transfer (VLNT) from various sites can be used, however threat of donor site iatrogenic lymphedema has led to search for other harvest areas. In recent years, the right gastroepiploic lymph node flap (RGELNF) has gained popularity because it lacks risk of donor site lymphedema. The deep inferior epigastric (DIE) system has been shown to have adequate lymphatic tissue and nodes, making it an appropriate donor site for treatment of lymphedema. The purpose of our study was to compare post-operative outcomes of RGE and DIE sites for upper extremity lymphedema treatment.

**METHODS:** A retrospective review of patients who underwent VLNT for post-mastectomy lymphedema was conducted. Measurements were taken preoperatively and postoperatively at 10 cm above and below the elbow, and 5 cm above the wrist. Circumferential difference (circumference of lesion minus healthy limbs divided by healthy limb circumference) and circumferential reduction rate (preoperative difference between circumferences of lesion and healthy limbs minus postoperative difference, divided by preoperative difference) were calculated from measurements obtained at one and three months post-operatively. Statistical analyses were performed on SPSS 23.

**RESULTS:** 14 patients underwent VLNT between 2014–2015. Group 1 underwent RGELNF (n=11), and Group 2 underwent DIELNF (n=3). There were no significant patient demographic differences. Average follow-up was 134.87 days. Average circumferential difference was not significantly different between Groups 1 and 2 at 1 month (8.72% and 4.79% respectively, $p=0.583$), at 3 months (4.27% vs. 2.82% respectively, $p=0.801$). Circumferential reduction rate was not significantly different at 1 month (26.72% vs 43.06% respectively, $p=0.406$), at 3 months (36.99% vs. 52.94% respectively, $p=0.543$). Abdominal wound infection rates in Group 2 were statistically significant (9% vs 66%, $p=0.031$). There was no flap loss in either group.

**CONCLUSION:** DIELNF offers an alternative treatment approach for post-mastectomy extremity lymphedema. It seems to be just as effective in reducing lymphedema without risk of causing donor site iatrogenic lymphedema. We consider it to be an excellent alternative for patients in which intra-abdominal lymph node harvest is prohibitive due to multiple previous surgeries. Further studies, with larger sample sizes, are needed to determine true long term outcomes with use of this flap.
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Lower Extremity Lymphedema with Leg Dermal Backflow Stage 2–3 Treated by the Superior-Edge-of-the-Knee Incision Method: Is a Single Lymphaticovenular Anastomosis Enough?

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BACKGROUND: Treating lymphedema is always challenging for microsurgeons. Application of the Superior-Edge-of-the-Knee Incision method for lymphaticovenular anastomosis is reported to have a strong therapeutic effect in patients treated for lower extremity lymphedema because lymph-to-venous flow at the anastomosis is enhanced by knee joint movement during normal walking. We investigated whether a single lymphaticovenular anastomosis is adequate for early lower extremity lymphedema.

METHODS: The study involved ten patients with lower extremity lymphedema characterized by stage 2–3dermal backflow and treated by a single lymphaticovenular anastomosis at the thigh via the Superior-Edge-of-the-Knee Incision method. The lymphatic vessel and direction of flow were assessed intraoperatively, and reduction in lymphedema volume was assessed postoperatively.

RESULTS: Use of our incision method yielded five anastomoses in the five patients with stage 2 dermal backflow and five anastomoses in the five patients with stage 3 dermal backflow. Mean diameter of the lymphatic vessel was $0.65\pm 0.08\text{mm}$ ($0.65\pm 0.09$ and $0.65\pm 0.09\text{mm}$ in the stage 2 and stage 3 patients, respectively; $p=1.000$). No venous reflux occurred in any patient. Mean follow up was $7.70\pm 3.30$ months ($9.60\pm 3.29$ months and $5.80\pm 2.17$ months for the stage 2 and 3 patients, respectively; $p=0.068$). The circumference of the affected limb was reduced in all patients. Mean reduction in the lower extremity lymphedema index was $20.160\pm 9.892$ ($22.651\pm 12.272$ and $17.668\pm 7.353$ in the stage 2 and 3 patients, respectively; $p=0.462$).

CONCLUSIONS: A single lymphaticovenular anastomosis created by the Superior-Edge-of-the-Knee Incision method has a strong therapeutic effect in patients with stage 2–3dermal back flow. Our treatment strategy using only a single lymphaticovenular anastomosis has the following advantages: only one microsurgeon with an operating microscope is needed; operation time is shortened by a single site lymphaticovenular anastomosis; largelymphatic vessels of adequate size for anastomosis can be detected; imaging is not needed for detection of lymphatic vessels.

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Diagnostic Accuracy of Lymphoscintigraphy for Lymphedema

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INTRODUCTION: Lymphedema is the chronic enlargement of tissue due to inadequate lymphatic function. Diagnosis is made by history and physical examination and confirmed with lymphoscintigraphy. The purpose of this study was to (1) assess the accuracy of lymphoscintigraphy...