The surgical anatomy of the vascularized lateral thoracic artery lymph node flap—A cadaver study

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Background: One promising surgical treatment of lymphedema is the VLNT. Lymph nodes can be harvested from different locations; inguinal, axillary, and supraclavicular ones are used most often. The aim of our study was to assess the surgical anatomy of the lateral thoracic artery lymph node flap.

Materials and Methods: In total, 16 lymph node flaps from nine cadavers were dissected. Flap markings were made between the anterior and posterior axillary line in dimensions of 10 × 5 cm. Axillary lymph nodes were analyzed using high-resolution ultrasound and morphologically via dissection. The cutaneous vascular territory of the lateral thoracic artery was highlighted via dye injections, the pedicle recorded by length, and diameter and its location in a specific coordinate system.

Results: On average, 3.10 ± 1.6 lymph nodes were counted per flap via ultrasound. Macroscopic inspection showed on average 13.40 ± 3.13. Their mean dimensions were 3.76 ± 1.19 mm in width and 7.12 ± 0.98 mm in length by ultrasonography, and 3.83 ± 2.14 mm and 6.30 ± 4.43 mm via dissection. The external diameter of the lateral thoracic artery averaged 2.2 ± 0.40 mm with a mean pedicle length of 3.6 ± 0.82 cm. 87.5% of the specimens had a skin paddle.

Conclusions: The lateral thoracic artery-based lymph node flap proved to be a suitable alternative to other VLNT donor sites.

Keywords
anatomy, lateral thoracic artery, lymphedema surgery, vascularized lymph node flap transfer

Abbreviations: LVA, lymphatico-venous anastomosis; VLNT, vascularized lymph node transfer.

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