

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

Ines E. Tinhofer MD<sup>1</sup>  | Stefan Meng MD, PhD<sup>1,2</sup> |  
Johannes Steinbacher MD<sup>1</sup> | Julia Roka-Palkovits MD<sup>3</sup> | Eva Györi MD, PhD<sup>3</sup> |  
Lukas F. Reissig MD<sup>1</sup> | Ming-Huei Cheng MD, MBA, FACS, PhD<sup>4</sup> |  
Wolfgang J. Weninger MD, PhD<sup>1</sup> | Chieh Han Tzou MD, MBA, PhD<sup>3</sup>

<sup>1</sup> Department of Anatomy, Medical University of Vienna, Centre for Anatomy and Cell Biology, Vienna, Austria

<sup>2</sup> Department of Radiology, Hospital Kaiser-Franz-Josef, Vienna Hospital Association, Vienna, Austria

<sup>3</sup> Division of Plastic and Reconstructive Surgery, Department of Surgery, Medical University of Vienna, Vienna, Austria

<sup>4</sup> Division of Plastic Reconstructive Microsurgery, Department of Plastic and Reconstructive Surgery, Chang Gung Memorial University Hospital Taipei, Taipei, Taiwan

## Correspondence

Ines E. Tinhofer, MD, Department of Anatomy, Center for Anatomy and Cell Biology, Medical University of Vienna, Austria, Waehringerstrasse 13, A-1090 Vienna, Austria.  
Email: ines.tinhofer@meduniwien.ac.at

**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,  $3.10 \pm 1.6$  lymph nodes were counted per flap via ultrasound. Macroscopic inspection showed on average  $13.40 \pm 3.13$ . Their mean dimensions were  $3.76 \pm 1.19$  mm in width and  $7.12 \pm 0.98$  mm in length by ultrasonography, and  $3.83 \pm 2.14$  mm and  $6.30 \pm 4.43$  mm via dissection. The external diameter of the lateral thoracic artery averaged  $2.2 \pm 0.40$  mm with a mean pedicle length of  $3.6 \pm 0.82$  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.

[Correction added on 4 January 2018, after first online publication: Chieh Han Tzou's name was corrected in the byline.]

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