



# ASO Author Reflections: Simultaneous Ipsilateral Vascularized Lymph Node Transplantation and Contralateral Lymphovenous Anastomosis in Bilateral Different-Severities Extremity Lymphedema

Ming-Huei Cheng, MD, MBA, FACS<sup>1,2</sup>

<sup>1</sup>Department of Plastic and Reconstructive Surgery, Chang Gung Memorial Hospital, College of Medicine, Chang Gung University, Taoyuan, Taiwan; <sup>2</sup>Center for Tissue Engineering, Chang Gung Memorial Hospital, Taoyuan, Taiwan

## PAST

The common etiologies of secondary extremity lymphedema are the surgical removal of axillary or pelvic lymph nodes and subsequent radiation for breast or gynecological cancers. Complex decongestive therapy (CDT), including manual lymphatic drainage and life-long compression garments, was the main treatment of choice.<sup>1</sup> The disadvantages of CDT include poor compliance, cost, everyday effort, risks of continuous swelling, and episodes of cellulitis. A range of major surgical approaches for the treatment of extremity lymphedema, including Charles's excisional procedure, liposuction, lymphovenous anastomosis (LVA),<sup>2</sup> and vascularized lymph node transplantation (VLNT)<sup>3</sup> have gradually developed over recent decades. There is no universal consensus regarding the measurements of lymphedematous limbs, diagnosis, staging or grading of the lymphatic obstruction, indications of each surgical procedure, or outcomes evaluation among different physicians and surgeons. Although the various surgical procedures did not completely cure the extremity lymphedema, they successfully improved the circumference of lymphedematous limbs, decreased episodes of cellulitis, and even eliminated the need to wear compression garments.<sup>4</sup> This study aims to evaluate the indications

and outcomes of ipsilateral VLNT and contralateral LVA for bilateral extremity lymphedema patients with various severities of lymphedematous limbs.<sup>5</sup>

## PRESENT

Lymphoscintigraphy can accurately assess the extremity lymphedema with partial or total obstruction. VLNT is indicated in the total obstruction of Taiwan lymphoscintigraphy stages T4–T6.<sup>4</sup> Indocyanine green (ICG) lymphography can further reveal the patency of superficial lymphatic ducts for partial obstruction in the Taiwan lymphoscintigraphy staging system as an indication for LVA.<sup>4</sup> If ICG discloses diffuse dermal backflow patterns without patent lymphatic ducts, VLNT instead of LVA should be selected. By utilizing both lymphoscintigraphy and ICG lymphography to classify the lymphedema severity in an individual limb, the indications for VLNT and LVA for the respective lymphedematous limb could be clarified and executed effectively.<sup>4</sup> In this study, the average limb circumference improvement was a reduction of 2.4 (range 3.3–7.8) cm in the VLNT group and 2.3 (range 0.3–7) cm in the LVA group ( $p = 1$ ) at an average follow-up of 37.5 (range 14–58) months.<sup>5</sup> The median number of episodes of cellulitis were significantly decreased from 4 to 0.5 times/year and 1 to 0 times/year in the VLNT and LVA groups, respectively ( $p = 0.02$ , and  $p = 0.06$ ). All patients in this study experienced a significant overall quality of life improvement with an overall lymphedema-specific LYMQoL score improvement from 4.5 preoperatively to 7.5 postoperatively ( $p < 0.01$ ).

© Society of Surgical Oncology 2020

First Received: 19 June 2020  
Accepted: 24 June 2020;  
Published Online: 10 July 2020

M.-H. Cheng, MD, MBA, FACS  
e-mail: minghueicheng@gmail.com;  
minghuei@adm.cgmh.org.tw