

# **ASO Author Reflections: Immediate Lymphatic Reconstruction: A Proactive Approach to Breast Cancer-Related Lymphedema**

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## **Past**

Lymphedema is a chronic, progressive, and incurable condition. The published incidence of breast cancer-related lymphedema after axillary lymph node dissection (ALND) and radiation therapy ranges from 13 to 52%.<sup>1,2</sup> Historically, lymphedema has been treated reactively after it occurs, with compression garments, liposuction, and surgical debulking.<sup>3</sup> The development of immediate lymphatic reconstruction (ILR) has had promising results in proactively decreasing lymphedema risk following ALND.<sup>1,2,3,4</sup> This study assessed the efficacy of lymphaticovenous anastomosis (LVA) in reducing the incidence of breast cancer-related lymphedema at our institution.<sup>5</sup>

## **Present**

Our results demonstrated a 9.1% lymphedema rate in patients who underwent concurrent ALND and LVA; 6.1% of patients developed transient arm swelling that resolved. Obese patients and those with a larger number of lymph nodes removed had higher rates of lymphedema. Previous researchers have exhibited similar results in lymphedema risk reduction, but long-term outcomes of sustained efficacy are limited.<sup>1,2,3,4</sup> In addition, it is possible that these results may be confounded if oncological surgeons modify their technique to facilitate ILR.

## **Future**

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This is the author's manuscript of the work published in final edited form as:

Cook, J. A., & Hassanein, A. H. (2021). ASO Author Reflections: Immediate Lymphatic Reconstruction: A Proactive Approach to Breast Cancer-Related Lymphedema. *Annals of Surgical Oncology*, 28(3), 1388–1389. <https://doi.org/10.1245/s10434-020-09110-4>

Although ILR is a promising prospect, two requirements to prove its efficacy are needed: (1) a randomized controlled trial (RCT) and (2) long-term follow-up (> 3 years) with quantifiable outcomes (e.g., lymphoscintigraphy). Lymphedema develops at an average of 1 year postiatrogenic injury. Assessing the success of treatment with patients who already have lymphedema has been hindered by outcomes that are difficult to measure. ILR gives the opportunity of a binary outcome (lymphedema presence) if there is proper length of follow-up. An RCT would control for confounding variables such as oncological surgeon technique modification, close follow-up, and early compression. Despite the limitations of the current evidence, we believe ILR should be considered when performing ALND. The mystery of lymphedema remains why some patients acquire lymphedema, others have transient arm swelling which resolves, and most do not get lymphedema.

## References

Boccardo F, Casabona F, DeCian F, et al. Lymphatic microsurgical preventing healing approach (LYMPHA) for primary surgical prevention of breast cancer-related lymphedema: Over 4 years follow-up. *Microsurgery*. 2014;34(6):421–424.

Feldman S, Bansil H, Ascherman J, et al. Single institution experience with lymphatic microsurgical preventive healing approach (LYMPHA) for the primary prevention of lymphedema. *Ann Surg Oncol*. 2015;22(10):3296–3301.

Mehrara BJ, Zampell JC, Suami H, Chang DW. Surgical management of lymphedema: past, present, and future. *Lymphat Res Biol*. 2011;9(3):159–167.

Johnson AR, Kimball S, Epstein S, et al. Lymphedema incidence after axillary lymph node dissection: quantifying the impact of radiation and the lymphatic microsurgical preventive healing approach. *Ann Plast Surg*. 2019;82(4S):S234–S241.

Cook JA, Sasor SE, Loewenstein SN, et al. Immediate lymphatic reconstruction after axillary lymphadenectomy: a single institution early experience. *Ann Surg Oncol*. 2020.  
<https://doi.org/10.1245/s10434-020-09104-2>.