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EDITORIAL – RECONSTRUCTIVE ONCOLOGY

Editorial on "Simultaneous Ipsilateral Vascularized Lymph Node Transplantation and Contralateral Lymphovenous Anastomosis in Bilateral Different-Severities Extremity Lymphedema"

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COMMENTRY

The article entitled "Simultaneous Ipsilateral Vascularized Lymph Node Transplantation and Contralateral Lymphovenous Anastomosis in Bilateral Different-Severities Extremity Lymphedema?" by Dr. Cheng et al reports outcomes of a surgical approach to treat bilateral asymmetrical presentation extremity lymphedema.[1] Lymphedema is the most significant survivorship burden for patients treated for cancer with profound negative impact on quality of life. With cancer survivorship increasing, lymphedema is a growing burden on healthcare systems. The clinical phenotype of bilateral extremity lymphedema is an uncommon presentation, as evidenced by only ten patients being included in this series over a five-year period at a center treating a large number of patients with lymphedema. These unusual presentations will likely become more common, however there remains a knowledge gap in how these patients should optimally be managed.

There are currently intense efforts by investigators to evaluate the effectiveness of microsurgical procedures in ameliorating the symptoms and disability of patients with lymphedema and reducing the risk of future episodes of cellulitis; studies to date have demonstrated significantly improved outcomes following surgery when compared with conservative therapy alone.[2,3] The focus of this study was on the surgical management of asymmetrical extremity lymphedema with vascularized lymph node transplantation (VLNT) to treat the most severely affected extremity, and synchronous lymphovenous anastomosis (LVA) for the less affected contralateral extremity. The rationale for different treatments between the extremities was that in the more severely affected limb, which the authors found correlated with the duration of the lymphedema, there were no patent lymphatic ducts visualized on indocyanine green (ICG) lymphography for LVA, and therefore VLNT was indicated. In the less severely affected extremity, patent lymphatic vessels were visualized, allowing side-to-end LVA to be performed.

The authors excluded patients with bilateral extremity lymphedema who underwent the same surgical procedure to both limbs. The study included three patients with primary bilateral lower extremity lymphedema, five patients with bilateral secondary lower extremity lymphedema following pelvic interventions, and two patients with bilateral upper extremity breast cancer-related lymphedema. The authors found that simultaneous ipsilateral VLNT and contralateral LVA was an effective treatment for asymmetrical severity bilateral extremity lymphedema, resulting in improvements in circumferential measurements, episodes of cellulitis and improvement in the validated LYMQoL lymphedema questionnaire at 12 months postoperatively.

Management of lower extremity lymphedema remains a significant clinical challenge, with disease progression with conservative therapy alone,[4] outcomes of surgery worse than for the upper extremity,[5,6] and patients with advanced disease typically require ongoing conservative therapy.[7] In this series, five patients with lower extremity lymphedema following pelvic interventions had an asymmetrical clinical presentation with different disease severities between the limbs, indicating differences in lymphedema progression; this suggests that the obstruction is partial in one lower extremity and complete in the extremity that is

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clinically most severely affected. Longer-term outcomes studies will determine if outcomes in the less severely affected lower extremity treated by LVA alone are sustained or if there is disease recurrence necessitating secondary VLNT.

Although the authors disclosed a limitation of their study being the small group size, the study is prospective and this clinical phenotype is rare even in a center treating a large number of lymphedema patients. This is likely also the reason for the authors combining primary and secondary lymphedema, and lymphedema affecting the upper and lower extremities, despite it being known that clinical outcomes from lymphedema surgery differ between these groups.[5]

In summary, the findings of this study provide much need guidance for surgical management of this increasingly common presentation. Dr. Cheng and colleagues are to be congratulated for their significant addition to the literature on the effective surgical management of bilateral asymmetrical upper and lower extremity lymphedema.

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REFERENCES

1. Cheng MH, Tee R, Chen C, Lin CY, Pappalardo M. Simultaneous ipsilateral vascularized lymph node transplantation and contralateral lymphovenous anastomosis in bilateral different-severities extremity lymphedema. *Ann Surg Oncol*. 2020. https://doi.org/10.1245/s10434-020-08720-2.
2. Engel H, Lin CY, Huang JJ, Cheng MH. Outcomes of lymphedema microsurgery for breast cancer-related lymphedema with or without microvascular breast reconstruction. *Ann Surg*. 2018;268:1076–83.
3. Dionyssiou D, Demiri E, Tsimponis A, Sarafis A, Mpalaris V, Tatsidou G, Arsos G. A randomized control study of treating secondary stage II breast cancer-related lymphoedema with free lymph node transfer. *Breast Cancer Res Treat*. 2016;156:73–9.
4. Akita S, Mitsukawa N, Kuriyama M, Hasegawa M, Kubota Y, Tokumoto H, Ishigaki T, Hanaoka H, Satoh K. Suitable therapy options for sub-clinical and early-stage lymphoedema patients. *J Plast Reconstr Aesthet Surg*. 2014;67:520–5.
5. Ciudad P, Manrique OJ, Bustos SS, Coca JJP, Chang CC, Shih PK, Nicoli F, Torto FL, Agko M, Huang TC, Maruccia M, Chen HC. Comparisons in long-term clinical outcomes among patients with upper or lower extremity lymphedema treated with diverse vascularized lymph node transfer. *Microsurgery*. 2020;40:130–6.
6. Boyages J, Kastanias K, Koelmeyer LA, Winch CJ, Lam TC, Sherman KA, Munnoch DA, Brorson H, Ngo QD, Heydon-White A, Magnussen JS, Mackie H. Liposuction for advanced lymphedema: a multidisciplinary approach for complete reduction of arm and leg swelling. *Ann Surg Oncol*. 2015;22:S1263–70.
7. Akita S, Mitsukawa N, Kuriyama M, Kubota Y, Hasegawa M, Tokumoto H, Ishigaki T, Togawa T, Kuyama J, Satoh K. Comparison of vascularized supraclavicular lymph node transfer and lymphaticovenular anastomosis for advanced stage lower extremity lymphedema. *Ann Plast Surg*. 2015;74:573–9.