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Minimally Invasive Catheter System for Improved Treatment of Lymphedema

Stanford researchers have created a minimally invasive catheter-based system designed to treat Breast Cancer Related Lymphedema (BCRL). This novel medical device facilitates lymphatic flow, aiming to reduce extremity volume in patients with stage I and II lymphedema secondary to breast cancer treatment.

The current treatment for BCRL often involves cumbersome volume control strategies (wearing compression garments indefinitely) and complex ultramicrosurgical procedures. These methods can be physically challenging, limited in their efficacy, and require specialized surgical skills that are not widely available. Also, over 90% of patients do not have access to advanced surgical treatments. There is a critical gap in the field for a lymphedema treatment that can offer better results, simpler procedures, and greater accessibility.

The proposed technology, MiLNVA, is a minimally invasive catheter-based system primarily tailored for the treatment of lymphedema. This innovative device addresses the problem of impaired lymphatic drainage, a common issue following breast cancer treatment, by employing a procedure known as Lymph Node-to-Vein Anastomosis (LNVA). Serving as a more efficacious and accessible alternative to volume control compression strategies and intricate ultra-microsurgeries, this technology facilitates lymphatic flow and reduces extremity volume in patients with stage I and II lymphedema.

Applications

- Minimally invasive catheter-based system to treat Breast Cancer Related Lymphedema (BCRL)

- Application in surgical procedures by interventional radiologists and vascular surgeons
- Widespread therapeutic potential for managing lymphedema secondary to many cancer types in patients with appropriate anatomy

Advantages

- Minimally invasive, streamlined surgical process
- Improved outcomes for patients
- Lower cost compared to standard of care

Patents

- Published Application: WO2025226710

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