

Super micro-surgery offers new hope for breast cancer patients with lymphedema

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Breast cancer patients with lymphedema in their upper arm experienced reduced fluid in the swollen arm by up to 39 percent after undergoing a super-microsurgical technique known as lymphaticovenular bypass, report researchers at The University of Texas M. D. Anderson Cancer Center.

The results from the prospective analysis, presented today at the 88th Annual Meeting of the American Association of Plastic Surgeons, suggest another option for [breast cancer patients](#) considering ways to manage [lymphedema](#), a common and debilitating condition following [surgery](#) and/or radiation therapy for breast cancer.

Lymphedema results when the lymph nodes are removed or blocked due to treatment and [lymph fluid](#) accumulates causing chronic swelling in the upper arm. Currently, there is no cure or preventive measure for lymphedema and it is difficult to manage; the use of compression bandages, massage and other forms of lymphatic therapy are commonly recommended options for patients. According to the National Cancer Institute, 25 to 30 percent of women who have breast cancer surgery with lymph node removal and radiation therapy develop lymphedema.

Researchers evaluated 20 breast cancer patients with stage II and III treatment-related lymphedema of the upper arm who underwent a lymphaticovenular bypass at M. D. Anderson from December 2005 to September 2008. Due to lymphedema, the patients' affected arm was an average of 34 percent larger compared to the unaffected arm prior to the

surgery. Of these 20 patients, 19 reported initial significant clinical improvement following the procedure. In those patients with postoperative volumetric analysis measurements, total mean reduction in the volume differential at one month was 29 percent, at three months 33 percent, at six months 39 percent and 25 percent at one year.

"Patients often resort to lymphatic therapy because other options brought forward to reduce lymphedema haven't proved effective," said lead author on the study David W. Chang, M.D., professor in the Department of Plastic Surgery and Director of the Plastic Surgery Clinic at M. D. Anderson. "Surgical techniques, in particular, have been limited and therefore have been met with skepticism by surgeons, making it extremely important to determine which new techniques promise to bring real benefits to patients."

In lymphaticovenular bypass surgery, surgeons use tiny microsurgical tools to make two to three small incisions measuring an inch or less in the patient's arm. Lymphatic fluid is then redirected to microscopic vessels - approximately 0.3 - 0.8 millimeters in diameter - to promote drainage and alleviate lymphedema. The procedure is minimally invasive and is generally completed in less than four hours under general anesthesia, allowing patients to return home from the hospital within 24 hours. M. D. Anderson is among a few institutions in the United States to offer this technically complex surgery.

"Lymphedema is like a massive traffic jam with no exit," Chang said. "This procedure does a lot to help relieve lymphedema by giving the fluid a way out. While it does not totally eliminate the condition, there is very little downside for the patient and we may see significant improvement in its severity."

Chang notes that while most effective when completed in earlier stages before the affected arm is fibrotic, almost any breast cancer patient

suffering from lymphedema stage I, II or III is a candidate. Though breast cancer was the focus of this study, the surgery can also be performed on patients who have lymphedema in the leg resulting from cancers involving pelvic regions.

Cancer treatment is not the only cause of lymphedema. Primary lymphedema can develop from developmental causes at birth, the onset of puberty or in adulthood. Secondary lymphedema can develop as a result of surgery, radiation, infection or trauma. In developing countries, a form of lymphedema caused by a parasite called Filariasis affects as many as 200 million people worldwide. "As we begin to refine our technique and learn more about the efficacy of this surgery, we have the potential to impact a large number of people," Chang said.

Long-term follow-up with patients who have received lymphaticovenular bypass surgery is necessary to determine if the procedure continues to promote drainage after one year. Chang and his team of surgeons at M. D. Anderson believe that the fluid volume will keep decreasing over time and suggest that the surgery could possibly be used as a preventive measure for lymphedema in the future. "Working toward a definitive technique to cure this encumbering side effect of cancer and improve a patient's quality of life as a cancer survivor is a priority for those of us in this field."

Source: University of Texas M. D. Anderson Cancer Center ([news](#) : [web](#))

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