cancer NEWSLINE

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>> Welcome to Cancer Newsline, your source for news on cancer research and diagnosis treatment and prevention. I'm your host, Lisa Garvin. Dr. Schaverien, what is a lymphovenous bypass?

>> The lymphatic system parallels the cardiovascular system, and it drains the lymphatic fluid from the body, particular from the extremities. This fluid drains through the regional lymph nodes in the axilla and the groin before making its way to drain the venous system at the base of the neck. When patients have surgery for cancer to remove these lymph nodes as part of their treatment, and in particular when they get radiation therapy on top of this, this can result in a scar obstruction that prevents the lymphatics healing. This, then, leads to fluid accumulation in the extremity and lymphedema. Lymphovenous bypass operation targets these sites of obstruction. We image these to precisely identify where they are, and then we bypass the lymphatic into an adjacent vein. These lymphatic vessels are very small. They are a fraction of a millimeter in size, many times smaller than conventional microsurgery. And so this requires specialist skills, specialist instruments, and specialist sutures to perform the surgery.

>> I guess my question would be, lymphedema is something that's a known symptom, a chronic symptom for breast cancer patients and others, especially who lose lymph nodes under the armpits. How -- why did it take so long for surgery to take the place of self-management?

>> So let me explain the process. Patients that develop lymphedema will usually begin a program of compression therapy with a lymphedema specialist physical therapist. Around a third of these patients will have a complete resolution of the lymphedema with adequate compression therapy within the first five to six months. Those that don't will not be improved by -- will not be cured by further compression therapy. And these patients are, therefore, eligible for bypass surgery or other lymphedema procedures. We've been performing this surgery for many years. However, only recently have we developed the instruments and the sutures to be able to perform this surgery very accurately and with a high success rate of technical success.

>> So it's basically a form of microsurgery.

>> It is actually called super microsurgery. These lymphatic vessels can be up to ten times smaller than conventional vessels in microsurgery.

>> Does it halt the symptoms completely?

>> So what we do know is that almost all patients will experience a symptomatic benefit from the surgery. About 75 percent of patients will also experience a volume reduction. In those patients, particularly with a more advanced stage of lymphedema after around 12 months, they can begin to see some mild recurrence of their lymphedema. Because of this, we like to combine these surgeries with

other adjunctive surgeries, in particular vascularized lymph node transfer. This can be done on its own moving lymph nodes from other areas on their blood supply into the affected area, either in the case of breast cancer related lymphedema, the axilla, or the distal arm. Or they can be combined with breast reconstruction surgery when the patient is getting abdominal flat breast reconstruction. And that's a relatively new development in lymphedema surgery. In order to be eligible for surgery, patients have to be compliant with compression therapy. Those patients with minimal or no pitting edema are, in fact, the best candidates for surgery and have the best outcomes. So it is often -- there is often little connection between the clinical stage of the disease and, in fact, the condition of the lymphatics. For this reason, we have to image the lymphatics with lymphoscintigraphy and with fluorescent imaging to accurately diagnose the stage and the condition of the lymphatics to see whether the patients are eligible for bypass procedure. Those with relatively new onset disease tend to be better candidates for lymphovenous bypass surgery. Those with more advanced disease tend to require certainly adjunctive therapies, such as lymph node transfer, although may not be eligible for physiological procedure at all and may require lymphatic liposuction to debulk the limb. Indeed, what isn't commonly understood about lymphedema is the condition of both the fluid and the fat. The fluid, a growth factors cause the fat to grow. And this fat component of the extremity cannot be removed by compression garments. Only can be removed by debulking liposuction alone.

>> Is this procedure growing in popularity? Are more patients asking you about it?

>> Yes, they are. As there is more information, our services are steadily growing. We've been doing this surgery here now since 2005, so we have a very well-developed specialist service from the lymphedema specialist physical therapist to the pre-operative screening to the surgical capabilities and then the ongoing compression therapy with the specialist after surgery. More centers are beginning to offer the surgery. However, it is highly specialized surgery. It's very important that only obstructive lymphatics are bypassed because there have been cases of normal lymphatics being bypassed and causing lymphedema or worsening it. And so it does need to be performed in a special center that performs a high volume of this surgery.

>> When is this happening? When is the surgery happening? Before lymphedema occurs or after?

>> The surgery is typically performed for patients who have had a period of time with compression, five or six months and have failed that period of conservative treatment. We are looking into whether lymphovenous bypass can be a preventative strategy. We'll be looking at this prospectively.

>> Great. Dr. Schaverien, thank you so much.

>> Thank you.

>> For more information, visit mdanderston.org. Thank you for listening to Cancer Newsline. Tune in for the next episode in our series.

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