

A collaborative approach to wound care and lymphedema therapy: Part 1

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Have you seen legs like those shown in the images below in your practice? These images show lymphedema and venous stasis ulcers, illustrating the importance of collaboration between clinicians in two disciplines: lymphedema and wound care.

My experience

Over the last 12 years as a physical therapist specializing in lymphedema therapy and wound care, I've had the opportunity to treat many patients with wounds in multiple settings. I've also had the opportunity to collaborate with medical professionals in

multidisciplinary treatment centers where lymphedema therapists and wound care clinicians act as a team. Through this experience—and through review of the literature—I've learned that such a team has improved patient outcomes.

To help the team reap maximal benefits, I'd like to share information related to lymphedema, its management, and how collaboration in multidisciplinary treatment centers can enhance outcomes.

In Part 1 of this two-part series, I discuss pathophysiology related to wounds and lymphedema and begin the discussion of collaboration.

The basics

To understand the role of lymphedema therapy as it relates to wound care, it's first necessary to take a step back and define both chronic wound and lymphedema. A chronic wound is a wound that doesn't heal in an orderly set of stages and in the predictable amount of time that most wounds do. Delayed healing may result from a variety of underlying factors,



Lymphedema



Chronic venous stasis wounds

World action on lymphedema and wound care

The World Health Organization (WHO) recognized the benefits of addressing wound care and lymphedema together in October 2009 with the formation of the World Alliance of Wound and Lymphedema Care (WAWLC). The WAWLC's mission statement, "Working in partnership with communities worldwide to advance sustainable prevention and care of wounds and lymphedema in settings of limited resources," is included in the 2010 WHO white paper entitled "Wound and Lymphedema Management." This paper was written to establish and share best practices for patients with lymphedema who have chronic wounds.

such as poor systemic immune function, malnourishment, chemotherapeutic agents, high bioburden, repetitive mechanical trauma, and cytotoxic agents.

Lymphedema is a condition of localized fluid retention and tissue swelling characterized by high-protein edema caused by a compromised lymphatic system. All exterior regions of the body (for example, face, neck, torso, extremities, and genitals) can be affected. Common causes of lymphedema and accompanying diseases that can contribute to lymphedema include heredity, filariasis, trauma, surgeries, lymph node dissections, radiation therapy, malignancy, obesity, diabetes, chronic heart failure, dependent mobility and, of course, venous disease—the principal culprit of our wound for discussion, the venous stasis ulcer.

The venous stasis ulcer is one major debilitating result of advanced venous disease. Venous ulceration is the most common cause of lower-extremity ulcer, accounting for half of these ulcers and affecting 1% to 2% of the U.S. population, with 3% to 5% of patients older than age 65.

Venous stasis ulcers and lymphedema

So how are the venous ulcer and lymphedema related? The venous and lymphatic systems are closely intertwined. When explaining the systems to patients, I often refer to the lymphatics as the sewer system of the venous system.

Most wound care clinicians are familiar with the pathophysiology that results in venous disease and the cascade of events that leads to a venous ulcer. Many clinicians, however, aren't as familiar with the role of the lymphatics in this process.

Under optimal circumstances, the venous system is responsible for the removal of 90% of interstitial fluid at the capillary level. The remaining 10% is the responsibility of the lymphatic system. However, the lymphatics have a built-in safety net to manage excess interstitial fluid that occurs when the veins function inefficiently or ineffectively. Venous reflux may be present, but edema in the tissue isn't yet visible when the lymphatics are able to manage the load. Edema in the lower extremities, as well as other areas of the body, is visible only when both the veins and lymphatics are no longer capable of managing the load.

The lymphatics are also responsible for the removal of large macromolecules from the interstitial space, including proteins that are unable to diffuse back into the venous system at the capillary level. A venous stasis ulcer occurs when the increase in protein concentrations in the tissue results in chronic inflammation and infiltration of white blood cells and fibroblasts. This leads to fibrosis of the edematous tissue, dilation and insufficiency of lymphatic tissue, and damage to endothelial cells, further reducing lymphatic

flow and enhancing the destructive process.

The body's physiologic responses illustrate the close anatomic and physiologic connection between the two systems. Consequently, it should be a priority for us, as clinicians, to address both the lymphatic and venous systems when edema is detectable in the tissue.

Worldwide impact

The anatomy and physiology of these systems have a huge impact on our patient population. Each year in North America, 5 to 7 million chronic wounds occur. Lower-extremity venous stasis ulcer is the most common of these, with an incidence of 2.5 million. In the United States alone, chronic leg wounds account for 2 million lost workdays per year.

When it comes to lymphedema, 1 in 30 people worldwide are estimated to be afflicted with this debilitating disease, not including those suffering from venous disease.

World organizations have begun to recognize the importance of addressing lymphedema and wound care collaboratively. (See *World action on lymphedema and wound care*.) As noted earlier, anatomy and physiology don't separate the venous and lymphatic systems, so wound care and lymphedema clinicians need to work collaboratively to help patients.

Common goals

A good place to start collaborating is to understand that the disciplines of lymphedema therapy and wound care have many common goals, including:

- reducing and stabilizing edema
- achieving ulcer healing
- preventing recurrence
- preventing infection

- maximizing tissue healing.

Multidisciplinary teams are the wave of the future of health care. Consider how a team approach with lymphedema and wound care professionals would enhance your practice, and watch for Part 2 of this series, which will further address common goals, review the gold standard of management (complex decongestive therapy), and illustrate how collaboration in multidisciplinary treatment centers can enhance patient outcomes. ■

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