

FAST FACTS AND CONCEPTS #447
LYMPHEDEMA CONSIDERATIONS IN PALLIATIVE CARE
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Background: Lymphedema occurs when fluid rich in protein accumulates in the soft tissues after disruption of the lymph-conducting pathways in the setting of normal capillary filtration (1). Lymphedema in its advanced stages cannot be cured and requires active management such as physical therapy to prevent worsening morbidity (2). Refractory symptoms are common in illnesses like advanced cancer and can affect quality of life, even contributing to feelings of hopelessness, disgust, and social isolation (2). This *Fast Fact* assimilates the published evidence to offer clinical pearls on identifying and managing lymphedema in patients with serious illness.

Causes and presentation: Primary lymphedema is due to an inherited abnormality of the lymphatic system, so typically runs in families (3). Secondary lymphedema is much more common and due to a lymphatic system damaged either by infection (e.g., cellulitis, parasitic infections), inflammation (e.g., rheumatoid arthritis), cancer, cancer treatment (e.g., radiotherapy or lymph node dissection), obesity, or venous diseases (e.g., varicose veins, deep vein thrombosis). The most common cause of lymphedema is iatrogenic from cancer treatment (4). Signs of lymphedema include hardening or thickening of the skin and swelling of the affected extremity, often unilateral. Symptoms include tightness, tingling, pain, and a sense of heaviness of the affected limb. In severe cases, weeping of the affected skin can develop.

Diagnosis: Lymphedema is diagnosed by clinical assessment. It can be distinguished from more generalized forms of anasarca/edema (e.g., congestive heart failure) via the following clinical clues:

- Slowly progressive unilateral swelling of the ipsilateral extremity following trauma, radiation, sentinel lymph node biopsy, or nodal dissection in the absence of venous thromboembolism.
- Cutaneous or subcutaneous thickening, hardening.
- Edema that transforms in nature from pitting to non-pitting over roughly 1-3 months (5).

Treatment: Goals for lymphedema treatment include not just reducing the swelling but also improving function, quality of life, symptom management, and skin integrity (6). Patients should be informed of the high chance of persistent symptoms if removal of an obstructing source is not possible (e.g., incurable cancer) so that realistic expectations can be set. Specialized lymphedema treatment can be provided by a variety of health care professionals including physicians (often PM&R specialists), massage, physical, and/or occupational therapists, and nurses who have completed specialized training (see reference #7). Many health care systems have lymphedema specialists which are reimbursable by most health care payers. Hospice coverage is more variable for specialized lymphedema care; however, after an initial consultation, hospice providers often can be guided on more basic therapeutic approaches such as compression therapy. Therapeutic response is less likely to occur and typically is less clinically significant with diuretics and elevation when compared to other forms of more generalized edema (8,9). If a trial of diuretics is being considered (e.g., concomitant generalized edema), clinicians should carefully monitor for adverse effects from the diuretics and maximize physical modalities (see below). Regular monitoring of the skin in the affected area is encouraged throughout the treatment course to monitor for signs of infection including erythema, warmth, and tenderness.

The following are four widely recognized management approaches which are unique for lymphedema:

- **Complete decongestive therapy (CDT):** CDT is the most comprehensive approach. It includes five different types of lymphedema treatment provided by a lymphedema specialist including manual lymphatic drainage (see below), multi-layer short-stretch bandaging, lymph-reducing exercises, skin care, and compression therapy (see below). CDT can achieve limb volume reductions of 50-70% (6). Phase 1 consists of MLD followed by specialized extremity wraps followed by compression bandages (6). This is done once to twice daily for 3-5 days per week. Phase II CDT is designed to maintain these volume reductions at night via compression garments (10).
- **Manual lymphatic drainage (MLD):** MLD involves gentle massage designed to mobilize congested lymph for 30-45 minutes followed by application of multilayer compression bandages (10). More research with larger sample sizes is needed to evaluate its effectiveness in treating lymphedema (6),

however, small, controlled studies showed promise in preventing secondary lymphedema among women who underwent breast cancer surgery (11).

- **Compression therapy** includes applying a compression sleeve, elastic therapeutic tape (e.g., Kinesio®), or multiple layers of bandages with extremity elevation for several days. Case studies and observational studies showed reductions in lymphedema reaching 35% (12,13). The optimally effective stiffness and compression pressure for lymphedema remain unclear (12).
- **Closed-controlled subcutaneous drainage:** Often described as a lymphedema treatment of “last resort,” this should be performed selectively for patients with severe (e.g., weeping edema) and refractory symptoms since it has been associated with infection and poor wound healing. The technique consists of inserting needles at the subcutaneous level of the affected extremity. The needles are attached to an enclosed drainage bag and can be left in place for 12 hours to several weeks. Various observational studies and case reports have shown reduction in extremity girth and limb swelling and improvement in patient satisfaction (6,14).

Summary: Early detection of secondary lymphedema and initiation of treatment can result in better outcomes for patients (4). More clinical research is needed to compare the effectiveness of therapies. Until then, feasibility and the severity of symptoms often guides therapeutic approaches.

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