

Lymphedema and Implications for Oncology Nursing Practice

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Lymphedema (LE) is described as chronic swelling caused by impairment in lymphatic system drainage. The cause of LE is either primary or secondary (Holcomb, 2006). The experience can be disturbing. Patients and healthcare providers often overlook the initial presentation because of subtle changes. With a basic understanding of LE, oncology nurses can monitor for the presence, educate about preventive measures, and assist in treatment of LE.

Primary LE affects one to two million people in the United States (Holcomb, 2006). Causes of primary LE include the following (Holcomb; Story, 2005; Williams, Franks, & Moffatt, 2005).

- **Congenital LE** presents at birth.
- **LE praecox**, which accounts for 65%–80% of primary cases, can present from birth through 35 years of age.
- **LE tarda** develops after age 35 and is the rarest primary form.
- **Gender** is a factor; women are affected more than men.
- The **lower extremities** are affected more often than upper extremities.
- LE generally is **bilateral**.

Secondary LE affects two to three million people in the United States (Holcomb, 2006). Causes of secondary LE include the following (Holcomb, 2006; Story, 2005; Williams et al., 2005).

- Alteration in the lymphatic system
- Trauma, such as burns
- Surgery that dissects or removes lymph nodes
- Radiation therapy
- Infection
- Tumor growth or metastasis to lymph nodes
- Scarring
- Chronic disease such as cerebrovascular accident, rheumatoid arthritis, and spina bifida
- Filariasis—a parasitic infection

Pathophysiology

The lymphatic system is present throughout the body, and its purpose is to remove waste, and foreign material by-products produced when clearing the body of infection and disease (Holcomb, 2006). Fluid in the lymphatic system is composed of protein, water, fats, and cellular waste. The fluid is transported through the lymph vessels to the lymph nodes and empties into the blood vessels. The lymph vessels are thin, allowing larger proteins to filter through easily. When an obstruction develops in the flow of lymphatic fluid, the large proteins filter through the vessels and invade the interstitial tissue, which causes an accumulation of a highly concentrated, protein-filled fluid in an area distal to the blockage. The fluid in the interstitial space causes inflammation that results in skin changes and fibrosis.

Signs and Symptoms

With secondary LE, presentation is either acute or chronic. Acute LE is associated with surgery, radiation, insect

bite, or minor trauma (Dell & Doll, 2006; Holcomb, 2006). Generally, acute LE lasts no longer than three months and develops no later than two years after surgery or causative incident. See Figure 1 for LE risk factors and Figure 2 for upper- and lower-extremity prevalence.

Patients with suspected LE may complain of heaviness, aching, weakness,

- Obesity
- Lack of exercise
- Overuse of an affected extremity
- Hematomas
- Seromas
- Cellulitis
- Wounds
- Tight or constrictive clothes
- Airplane travel
- Long distance travel
- Infection in or trauma to an affected extremity
- Prolonged standing
- Diabetes

Figure 1. Risk Factors for Lymphedema

Note. Based on information from Dell & Doll, 2006; Story, 2005.

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