Truncal Lymphedema

By Esther Muscari-Lin, RN, MSN, APRN, BC, AOCN

Truncal Lymphedema is the accumulation of protein-rich fluid in the extra-cellular space of the skin and subcutaneous tissue anywhere in the thorax or trunk. It does not necessarily include the extremity of the affected region and can occur in isolation of lymphedema (LE) elsewhere. For purposes of this discussion, lymphedema of the abdominal area will not be addressed. This discussion will focus instead on truncal lymphedema occurring in the back, the breast, along a mastectomy scar line, between scar lines from biopsies, drain sites, or surgeries, or extend under the mid-axilla to the posterior thorax. Truncal lymphedema is not often reported and is even excluded from discussions (Meek, 1998).

Truncal lymphedema occurs most often as a secondary LE. It can present any time after treatment for breast cancer, but has been reported as occurring most typically during the first three years after treatment. Due to surgical removal of thoracic lymph nodes or disruption of the superficial plexus and/or radiation to thoracic lymph nodes or disruption of the treatment. Due to surgical removal of typically during the first three years after treatment for breast cancer, but can present any time after treatment for breast cancer. In addition, truncal lymphedema can occur as a secondary LE. It can present any time after treatment for breast cancer, but has been reported as occurring most typically during the first three years after treatment. Due to surgical removal of thoracic lymph nodes or disruption of the superficial plexus and/or radiation to thoracic lymph nodes or disruption of the treatment. Due to surgical removal of typically during the first three years after treatment for breast cancer, but can present any time after treatment for breast cancer.

Risk Factors for truncal lymphedema are similar to the risk factors associated with limb LE. In addition to lymph nodes within the axillary basin, supraclavicular or cervical nodes also can have altered function if removed for biopsy, or if they lie within the radiation field. Breast edema due to acute (within three months of treatment) radiation side-effects have an average onset time of three months following radiation and can result in inflammation, tissue swelling and desquamation—all contributing to an added lymphatic workload. The lymphatic transport capacity is below the necessary requirements with resulting leakage or back-up from the blood stream into the interstitium (fluid movement from the blood stream is normal, with insufficiency of the lymphatic system causing the back up of fluid in the interstitium). With chronic inflammation, there may be increased ultrafiltration at the capillary bed, but diminished lymph transport capacity does not necessarily mean that there is more leakage into the interstitium (Consensus Document, 2003). Radiation fibrosis is a side-effect of the tissue and lymph nodes that fall within the radiation ports, and generally occurs anytime after six months following completion of radiotherapy. Fibrosis of lymph nodes is a long-term permanent result following the initial inflammatory acute period (Johansson, 2002).

Avoidance of weight gain and increase in body mass index (BMI) beyond 30 BMI can be an added challenge for the patient going through treatment for breast cancer since there is an average 10-15 lb. weight gain associated with women (not studied in men) following the diagnosis. There also is some suggestion that larger-breasted women have a greater risk than those with smaller breasts of edema occurring to the breast alone after radiation therapy (Mondry, et al., 2002). Seroma formation has a 14% incidence, noted by Paci et al., and occurs almost immediately following surgery. Infection or hematoma development also place a considerable amount of stress on the workload of the lymphatics, as those affected have more fluid, cell breakdown, debris from hemolysis, and bacteria to remove with these conditions. Hematoma drainage and post-operative echymoses increase the risk for a breast cellulitis, possibly increasing the risk for lymphedema (Brewer, et al.). The additional strain can be just enough to trigger lymphedema.

Assessment of the patient’s daily routine provides insight into possible movements, habits, or job responsibilities that cause arm strain or increased tissue temperature. Also, avoiding a heavy breast prosthesis is best taught to patients prior to surgery, rather than once they present with problems; this needs to be considered since the added weight can contribute to upper extremity strain. Practical daily routine assessment is important in planning for modifying how individuals perform daily tasks and work, to determine what muscle building exercise might be helpful, and when a compression garment or chip/foam piece may provide added benefit.

Presentation of symptoms in patients with truncal lymphedema can vary from obvious swelling, with or without discomfort, to no signs of swelling, but significant pain. The sensations can include shoulder discomfort or pain that is...
Localized, or radiates across their trunk. Other sensations can be described as “feelings of fullness,” “heaviness,” or “tingling” under the arm. It is important to keep in mind that arm “tingling” can sometimes be confused with the numbness and tingling that is due to the surgical procedure and position in which the patient lies on the operating room table.

Lower back pain can be reported if there is enough posterior LE that requires the individual to alter body stance for comfort. If the patient has peripheral hand neuropathies from Taxane chemotherapy, it is possible that their finger numbness might be worse with posterior LE.

Signs of truncal lymphedema include swelling in the breast, fullness over the clavicle or fullness over the anterior chest, with bulging along the mastectomy or lumpectomy scar lines. Posterior view examination may reveal extra “rolls” of skin along the lateral trunk, or fullness anywhere along the scapular or upper back area.

In addition to the history and routine physical examination, focused examination includes measurement of patient’s arm on the affected side. There is not a routine means of measuring the trunk, although the use of calipers is reported in the literature (Roberts, et al., 1995). Serial photographs can be extremely useful to document changes, with photos taken from both anterior and posterior views.

Applying a grading scale to truncal lymphedema can be difficult since these scales relate to appearance, skin color, skin texture, the presence of lichenification, and the presence of weeping vesicles. It is more practical to compare the affected breast in comparison to the contralateral breast in size, shape, color and texture (Bruns, et al., 2003).

**Examination** of the tissue for erythema, tenderness, ecchymoses, infection and inflammatory breast cancer (in the patient with a previous history) documents the tissue status and contributes to a plan of care for other simultaneously occurring problems. Tissue is palpated, noting pitting of the tissue and areas of fibrosis.

Lymph nodes in the axillary, cervical and supraclavicular region are usually only palpable when there is infection, scarring, or possible recurrence. The referring healthcare provider should be contacted for any noted adenopathy.

It is important to rule out other possible conditions or contraindications to treatment before deciding on a plan of care. Ascertaining that a recurrence has not occurred is best achieved with a mammogram, chest x-ray or biopsy. Ruling out a vascular thrombosis or deep vein thrombosis (DVT) is achieved with Doppler studies, or, in the case of a patient with a central line, injecting the catheter with dye and observing for a possible retrograde fibrin sheath that can extend up from the superior vena cava where the catheter tip rests. Localized infection anywhere in the thorax or breast is usually obvious with erythema, a smooth red rash, or significant tenderness or shooting pains when palpated. A systemic infection is usually associated with fevers, chills and a rapidly extending redness. The presence of these signs and symptoms requires immediate contact with the referring or primary healthcare provider—nurse practitioner or physician.

Potential problems from truncal lymphedema include localized or referred pain, worsening neuropathic pain of the fingers, infection from the stagnant protein-rich fluid, and emotional distress because of changes in body image and altered cosmesis (Price & Purcell).

Management of truncal lymphedema may only be necessary during the initial period when it occurs because of a temporary acute increase in lymph load in the area due to seroma, infection, or hematoma after surgery or radiotherapy. However, truncal lymphedema may flare up throughout the person’s life and might need only intermittent management. Management can consist of routine MLD, with work focused on the upper trunk anteriorly and posteriorly. If the breast is non-tender, MLD techniques focused on the breast to facilitate drainage are employed after the upper chest, back and contralateral axilla have been cleared. Lymphatic structures that are treated with manual therapy are: cervical; supraclavicular and sternoclavicular; contralateral axillary; parasternal and bilateral inguinal nodes; axilloaxillary pathways; axilloinguinal pathways; and the affected breast. Treatment of edema around scar lines should be directed away from the scar toward available functioning pathways and nodes.

**Compression Bandaging** is very important during the acute phase of treatment, to minimize rapid fluid accumulation. Two rolls of specialized bandages are sufficient in order to achieve layered compression. Medium stretch bandages are preferable in the truncal region, as little muscle pumping activity can be anticipated. Therefore, a higher elastic bandage is needed to facilitate fluid evacuation. Foam chips, foam mats, personalized cut cushions, or foam strips used underneath the bandaging should cover the congested area and extend to the closest normally functioning lymph territories. A foam strip might need to extend from the upper extremity over the shoulder. This may be bulky, but extremely effective during the intensive phase of treatment. Fortunately, truncal lymphedema typically responds quickly to treatment, with significant improvement often seen within two weeks. Utilizing a sports bra, with sides wide enough to cover scar lines without cutting across them, assists in supporting the bandages or foam pieces. A sports bra or a bra designed for breast LE management should be used following the acute period of treatment. Avoiding narrow bra straps that compress and potentially obstruct the shoulder collaterals needs to be emphasized; aids such as bra strap pads can be bought which widen the strap and disperse weight of the breast. Commercially manufactured compression bras specifically designed for truncal lymphedema are now available, but remain subject to study and further experience.

**Exercise** is a critical element in the...
The management of truncal lymphedema during the acute as well as the maintenance phase of treatment. Weight training utilizing a gradual progression of weight and intensity helps strengthen the muscles of the arms and chest, thereby decreasing future chances of arm strain. Aerobic exercise is helpful in promoting drainage within the superficial and deep lymphatic structures of the abdomen. A recommendation for aerobic exercise as documented by the American Cancer Society is 30-40 minutes/day at moderate intensity (40% of max heart rate) performed three or four days each week. This recommendation is consistent with exercise studies in the breast cancer population. These studies have shown statistical significance in decreasing symptoms from breast cancer treatments while enhancing women’s mood, outlook and self-help abilities (Mock, Pickett, Ropka & Lin, 2001). Using these studies as benchmarks from which to set reasonable exercise goals, we can begin to recommend program goals for patients with breast cancer-related LE. It is also a place from which to begin studying and evaluating how well patients are feeling with their LE maintenance programs and exercise. This is a practical clinical goal that can be used in conjunction with patients’ use of a daily diary (see below), which validates for the patient the efficacy of treatment and enables them to notice differences in trunk and arm sensations, depending upon the amount and type of exercise in which they engage each week. They then can adjust their exercise regimen based on their signs and symptoms.

Follow-up care of the patient with truncal lymphedema is similar to that of patients with extremity LE. Patients should be encouraged to keep a diary to grade and describe their chest sensations, tightness of shirts/bra, etc. Providing the patient with a sample diary page may be helpful. Describing daily activities that result in altered sensation or appearance is helpful to the practitioner, as well as empowering to the patient. It can help the patient gain control over contributing factors in their life. Connecting patients with an exercise facility that has a trainer specialized in post breast cancer surgery and lymphedema, who is willing to build a program around the individual patient, can be an immediate and long-term asset. The daily diary can help both the trainer and the patient identify what exercises are most effective and which movements could exacerbate the symptoms.

REFERENCES:

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