

[IMAGE]

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Traditional Massage Therapy in the Treatment and Management of Lymphedema

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Editor's note: Joachim Zuther is the founder and director of the Academy of Lymphatic Studies in Sebastian, Florida. Mr. Zuther received his massage therapy degree in 1982 and his physical therapist degree in 1984, both from the School for Physical Therapy and Massage in Ulm, Germany. He is also certified in manual lymph drainage and is the director of the Lymphedema Association of North America (LANA).

Lymphedema is a common condition caused by a reduction in the transport capacity of the lymphatic system. The lymphatic system in the affected area is unable to respond to an increase in lymphatic loads. Massage therapy increases the amount of lymphatic load and can have negative effects on lymphedema if applied incorrectly.

This article discusses the differences between massage therapy and the techniques known as manual lymph drainage (Vodder Technique) and the proper application of massage therapy when lymphedema is present.

Lymphedema is defined as high-protein edema - an accumulation of water and protein in the tissues, caused by a decrease in the transport capacity of the lymphatic system. Lymphedema may be mild, moderate or severe; most often, it affects the extremities, but can also be present in other parts of the body.

Lymphedema can be classified as primary or secondary. In primary lymphedema, transport capacity is reduced as the result of a congenital malformation in the lymphatic system.⁶ Primary lymphedema may be present at birth, but more often develops later in life, with or without obvious cause. Secondary lymphedema is more common, and is caused by surgical interventions involving the lymphatic system. Lymph node dissections, radiation therapy, or incisions that disrupt the natural pathways of the lymphatic system affect the ability of the lymphatics to drain lymphatic loads out of the affected extremity. Secondary

lymphedema may arise immediately after surgery or years later.

What Are Lymphatic Loads?

The lymphatic system is not a closed circulatory system; it works according to the one-way principle. Its main purpose is to drain from the interstitium substances that cannot be absorbed by the venous end of the blood capillaries. These substances, called lymphatic loads, consist of water, protein, cells and fat.⁵

What Is the Transport Capacity of the Lymphatic System?

Transport capacity is the highest possible lymph flow per unit of time.⁴ The relation of the physiological resting lymph flow to the transport capacity of a healthy lymphatic system is approximately 1:10.⁷ This means that the lymphatic system is able to transport 10 times the volume of the normal amount of lymphatic loads. When primary or secondary lymphedema is present, the transport capacity of the lymphatic system falls below the physiological level of water and protein load (mechanical insufficiency).

Massage Therapy vs. Manual Lymph Drainage (MLD)

The term massage means "to knead" (Gr: massain) and is used to describe forms of "classical" or "Swedish" massage.¹⁰ The word is often misused to describe the techniques of manual lymph drainage, which is a gentle, manual treatment technique used in combination with compression therapy, skin care and decongestive exercises. The techniques of MLD are used to effectively treat primary and secondary lymphedema¹ and postsurgical and posttraumatic swelling. Migraine headache, chronic venous insufficiencies and edema of other genesis present additional indications. MLD also has a detoxifying effect.

If applied correctly, MLD increases the activity of lymph vessels and moves interstitial fluid; it exerts little pressure on the skin³ and does not cause any increase in local arterial blood flow.

Effects of Massage Therapy on the Skin

The basic strokes used in massage (e.g., petrissage, effleurage, tapotement, vibration and friction) are generally applied with more pressure than manual lymph drainage techniques. The effects of massage strokes are not limited to suprafascial tissues (e.g., the skin), but also cause reactions in subfascial areas such as muscles, tendons and ligaments. Massage strokes can increase local arterial blood flow and venous and lymphatic return, and can also loosen subcutaneous adhesions.

Many massage therapy publications list edema as one of the indications for these techniques.⁸ This statement, while correct, is often misleading if the distinction between edema and lymphedema is not established. Edema in suprafascial tissues can be caused by various problems, including inflammation or impaired venous return (valvular insufficiency, pregnancy, or prolonged sitting and/or standing). With edema, the lymphatic system remains intact but is overloaded. This condition, called dynamic insufficiency, results in the accumulation of water in the tissues. Massage therapy may be beneficial for some forms of edema, but is contraindicated for others. It should not be applied without prior consultation with a physician.

On the other hand, lymphedema is always caused by mechanical insufficiency of the lymphatic system; water and protein accumulates in the tissues. As discussed earlier, in the case of mechanical insufficiency, the transport capacity of the lymphatic system falls below the physiological level of water and protein load and is not able to appropriately respond to an increase in lymphatic loads.

Negative Effects of Massage Therapy on Lymphedema

Most massage strokes cause an increase in arterial blood flow (active hyperemia) in skin areas where such techniques are applied. Active hyperemia is accompanied by an increase in blood capillary pressure and subsequent increase in ultrafiltration of water in the area of the blood capillaries. This process results in more water accumulating in the interstitial spaces. Water represents a lymphatic load. Due to mechanical insufficiency, the lymphatic system will not be able to manage this additional water load. If massage therapy to lymphedematous tissues, an increase in swelling may result.

Additionally, superficial lymphatics are extremely vulnerable to external pressure. Traditional massage techniques can cause focal damage to anchoring filaments and the endothelial lining of lymph vessels.² This possible damage to lymphatics, and the potential increase in arterial blood flow, must be avoided.

Conclusions

- If lymphedema is present, the application of massage therapy is contraindicated in the affected extremity and the trunkal area bordering the extremity (ipsilateral trunkal quadrant). Massage therapy is also contraindicated in these areas in patients who have undergone surgery involving the lymphatic system, but when lymphedema is not yet present (latency stage of lymphedema). This is often the case in postmastectomy/lumpectomy patients who have also undergone removal or radiation of the axillary lymph nodes. The absence of visible lymphedema in these patients indicates that, although reduced by

the surgical procedure, the transport capacity of the lymphatic system is still sufficient enough to remove water and protein from the tissues. The balance between the reduced transport capacity of the lymphatic system and the lymphatic loads may be fragile, and any additional disturbance may trigger the onset of lymphedema.

- As previously discussed, massage therapy increases the lymphatic load of water (and often cells), and may further decrease the transport capacity of the lymphatic system by causing additional damage to those lymphatics still intact following surgical procedures.
- In patients with primary lymphedema affecting one leg, massage therapy should not be applied to the contralateral extremity, since malformation of the lymphatic system may also be present in this leg.⁵
- The application of massage techniques (those discussed, and any technique that may cause an increase in arterial blood flow) in lymphedematous limbs and bordering trunkal quadrants may trigger the onset of lymphedema or worsen existing lymphedema.
- In instances of upper-extremity lymphedema, massage therapy may be applied safely to the lumbar/gluteal area and to the lower extremities. Negative effects on lymphedema may result if massage strokes are applied to the neck/upper trapezius area. Likewise, neck, thorax and upper-extremities may be treated with massage when lower-extremity lymphedema is present; the lumbar and gluteal areas on the opposite side, and the unaffected lower extremity, present areas "at risk" and should be treated with caution.

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