Chapter 28
Manual Lymph Drainage (Földi Method)

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Introduction

Manual lymph drainage is a massage technique that is one of the components of complete decongestive physiotherapy (CDP) (described intensively in Chap. 27). Manual lymph drainage[1,2] is used in the treatment of all forms of lymphedema, but in stages II and III it has to be combined with additional manual techniques to soften and reduce fibrosclerotic connective tissue alteration. The effectiveness of manual lymphedema treatment depends on anatomical and pathophysiological insights of the physiotherapist performing the therapy within the field of microcirculation, as well as the therapist's knowledge about the clinical stages of lymphedema (Figs. 28.1–28.3).

Manual Lymph Drainage (MLD/Vodder I)[1]

The basic Vodder stroke consists of four techniques[1]:

- Stationary circle
- Rotary stroke
- Pump stroke
- Scoop stroke

The application of these four strokes is based on a common fundamental schema. The characteristics of these four techniques are a gentle pressure phase followed by

[1]Manual Lymph Drainage according to Dr. E. Vodder

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B.-B. Lee et al. (eds.), *Lymphedema*,
DOI 10.1007/978-0-85729-567-5_28, © Springer-Verlag London Limited 2011

Fig. 28.1 Stage I

Fig. 28.2 Stage II

Fig. 28.3 Stage III

relaxation. Further aspects play an important role as well, such as the direction of the movement (the thrust and the rhythm). The stretching of the skin has an effect on suprafascial lymph vessels; it causes an increase in the lymphangion pulsation.[3,4] The raise in interstitial pressure promotes lymph formation.[2,5-8] During the relaxation phase, where contact with the skin is barely maintained, the fluid is carried passively out of the tissue so that the vessels can again be filled distally ("suction effect"). The rhythm of the thrust and relaxation must gradually become the so-called 1-sec movement, with five to seven repetitions in one place. The therapist must understand that the diameter of the lymph vessels is small – it can be less than a millimeter. The movement of the hand, therefore, has to be slow and gentle, to not overtax the vessels. The basic strokes of MLD/Vodder I are adjusted depending on the area of the body being treated. The effect of MLD/Vodder I is dependent upon the precondition that functional lymph vessels are present within the treated area. Therefore the basic Vodder strokes are indicated as a lymphedema prophylactic measure to treat lymphedema at stage I, and as a proximal pre-treatment in the trunk region bordering the edematous area in all stages of lymphedema.

Detailed Characterization of MLD According to Dr. E. Vodder

Stationary Circle

The stationary circle consists of an active (pressure) phase and a passive (relaxation) phase. During the active semicircle, the skin is stretched maximally in the direction of drainage (avoiding slipping of the hand). During the passive phase, the release of pressure on the stretched skin leads to the completion of the circle, and the starting position of the circle is reached again.

Rotary Stroke

In the starting position only the fingertips are in contact with the skin. During the next phase the whole hand is in contact with the skin while the thumb gradually abducts. Fingers 2–5 point toward the drainage direction. During the subsequent phase, the palm exerts pressure in the direction of the fingers while the thumb is adducted. The technique ends with the relaxation phase, and a new starting position is reached by moving fingers 2–5 forward.

Pump Stroke

This technique can be applied either with one hand (small areas) or with both hands (large areas). It may be applied in combination with (i.e., alternating with) stationary circles. If one works with both hands, the hands will alternate. One must make sure that the stroke of the first hand is completed before the second hand starts a new stroke (each stroke ends with the relaxation phase). In the starting position of the pump technique, the wrist is palmar flexed, and the thumb and index finger are in contact with the skin. With extension of the wrist, the palm comes into full contact with the skin as well. A flat shearing force toward the drainage direction results. During the subsequent relaxation phase, the distention of the tissue passively pulls the therapist's hand. To reach the starting position again, the wrist is palmar flexed again and the hand moves proximally (the strokes should overlap).

Scoop Technique

The scoop technique is characterized by a continuous movement of the therapist's hand without a clear separation between the pressure and the relaxation

phases. As with the pump technique, this stroke starts with the wrist in palmar flexion while the thumb and index finger touch the lateral surface of the extremity. During extension of the wrist the hand slides to the back surface of the extremity, where the whole hand establishes contact with the skin. Eventually, the palm and the fingers become parallel with the longitudinal axis of the extremity (perpendicular stretching of the lymph vessels occurs). At the conclusion of this phase the longitudinal pressure is increased and, thus, further sliding is impossible (emptying of the lymph vessels). To reach the starting position again, the wrist is flexed without losing contact with the skin, so that the thumb and index finger automatically reach the next position.

Manual Lymph Drainage (MLD/Vodder II)[2]

In cases in which the treatment of lymphedema starts at stage II or III a modification of the basic Vodder strokes is necessary. The pressure that is applied is higher and the rhythm is slower. The stretching must not only have an effect on the skin, it must extend deeper in to the area of the fascia. In addition to the therapeutic goals of MLD/Vodder I to increase lymph flow and lymph formation, the aim of the treatment is to soften and reduce fibrosclerotic tissue. One must consider that the resistance to lymph flow is higher, the function of the existing lymph vessels is hampered because of the tissue alteration, and the prelymphatic channels are partially closed in stages II and III of lymphedema. Therefore, the stroke must be calibrated to the degree of the fibrosclerotic alteration of the connective tissue.

Additive Manual Techniques

The additive manual techniques can be indicated already in stage II of lymphedema treatment. The manual treatment of lymphedema of the extremities at stages II and III requires substantial experience from the therapists. Because it is not technically feasible to measure massage pressure, it is not possible to prescribe an optimal treatment pressure. However, elevated stroke pressure in manual lymph drainage, as well as other types of massage technique, are indicated for the treatment of fibrosclerotic tissue. In addition to the "classic massage," we use length and crossway friction, petrissage, and kneading.

These types of techniques can generally be used for treatment of myogeloses and contractures of tendons. The application of these additional strokes is permitted

[2]Manual lymph drainage according to Dr. E. Vodder: higher pressure, slower rhythm

Table 28.1 Manual treatment of lymphedema

Stage	Location	MLD/Vodder I and Vodder II	Additive manual measures
0		MLD Vodder I – if lymphedema risk factors are present	
I	Extremities	MLD/Vodder I	–
	Trunk region	MLD/Vodder I	–
II	Extremities	MLD/Vodder II	Length and crossway friction
		+ →	Petrissage
			Kneading
	Trunk region	MLD/Vodder I	–
III	Extremities	MLD/Vodder II	Length and crossway friction
		+ →	Petrissage
			Kneading
			Joint mobilization techniques
	Trunk region	MLD/Vodder I	–

only in the area of pronounced fibrosclerotic tissue alteration. To optimize the therapeutic results, especially in the treatment of lymphedema stage III, joint mobilization techniques may be necessary (Figs. 28.1–28.3).

Indication and Contraindication

Manual lymph drainage (MLD/Vodder I) is indicated (Table 28.1):

- In fluid retention syndrome
- Severe cases of premenstrual syndrome
- Polycystic ovary syndrome
- After lymph node dissection to prevent lymphedema
- Lipedema
- Lymphedema in stage I
- As a proximal pretreatment generally

Manual lymph drainage (MLD/Vodder II) and additional strokes are indicated in the treatment of chronic lymphedema at stages II and III.

General contraindications for manual lymph drainage/combined manual lymphedema treatment:

- Decompensated cardiac insufficiency
- Acute inflammation caused by pathogenetic germs (bacteria fungi, viruses, the germs could be spread by the manual lymph drainage with resulting sepsis)
- Acute deep venous thrombosis
- Severe untreated cardiac arrhythmia

Relative contraindication:

- Sudeck syndrome (sympathic reflex dystrophy)
- Lymphedema caused by malignancy
- Acute episode of severe dermatological disease

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