

## EDITORIAL

## MASSAGE AND DAMAGE TO LYMPHATICS

The article by Eliska and Eliskova (*Lymphology*, this issue) confirms once again how vulnerable lymphatics are to external pressure and should be a warning against the use of overly vigorous massage, high pressure pneumatic compression and "tuyautage" ("wringing out") in the treatment of peripheral lymphedema.

McMaster and Hudack (1) had shown 62 years ago that very minor trauma (e.g., light strokes or, in the case of an animal, just scratching itself) injured lymphatics. These observations were extended with respect to electron-microscopy by Casley-Smith (2) who found that light strokes with thin wire caused many of the intercellular junctions of the initial lymphatics to open with a number of tears in the fragile lymphatic wall. The severity of injurious traumatic pressure was estimated at 110 mmHg (3).

But, there is also a serious misunderstanding which needs to be clarified. Eliska and Eliskova start with the statement that "manual lymph *massage* or drainage is a common and proven method of conservative treatment of lymphedema". For emphasis they refer to two papers, the first of which is entitled: "Conservative treatment of lymphedema of the limbs" written by myself, M. Földi and Weissleder (4). The other is an article by Leduc and Leduc entitled "Physical treatment of edema" (5).

Combined physiotherapy which we employ in the treatment of lymphedema is a tetrad phenomenon consisting of skin care, manual lymphedema treatment (MLT), remedial exercises and compression therapy. Compression is applied as long as edema

prevails by circumferential wrapping or "bandaging" and, after the evacuation of edema fluid, by elastic stockings and sleeves. It is not my aim to comment on combined physiotherapy further. I wish only to stress that MLT performed as an isolated therapeutic application has little or no beneficial effect in the treatment of peripheral lymphedema.

Although there are minor differences concerning the technique of the application of MLT between various therapists, there is agreement in one noteworthy respect: it must be applied in an extremely gentle manner. Vodder (6) who introduced MLT pointed out that the tissues were to be handled like a "cat's paw" (very tenderly) and he consciously avoided designating the method as *massage* in order to underline gentleness. Its primary aim is to increase lymphangiocontractile activity by smoothly stretching the wall of the lymphangions and, at a later stage, to push out edema fluid from the lymphostatic area across the lymphatic watersheds into the neighboring unaffected ones where it can be reabsorbed by the healthy lymphatics located there. A premature sudden increase of the lymphatic load in these watersheds without preparation was to be avoided; otherwise, an iatrogenic dynamic insufficiency of these lymphatics with trapped edema is likely to be triggered. Regarding the term *massage*: physiotherapy distinguishes several forms of massage: "petrissage" ("kneading"), "effleurage", "frictionnement" ("to rub down") and "tapotement" ("tapping") (*Fig. 1*). Each of these methods was advocated over a century ago in the treatment of elephantiasis

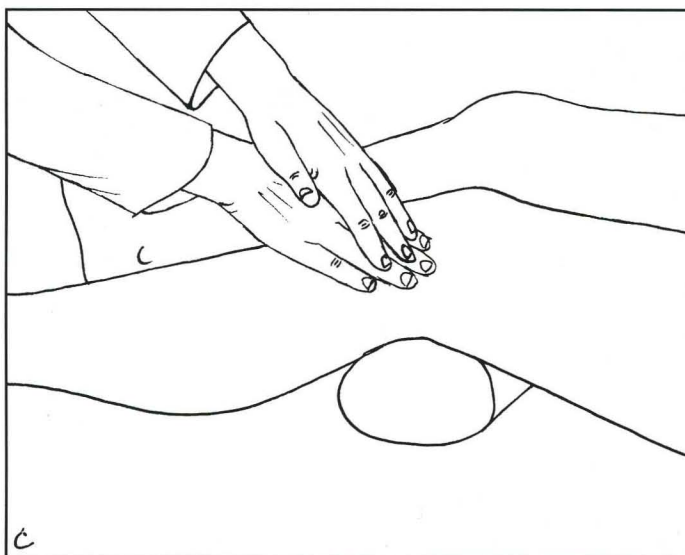
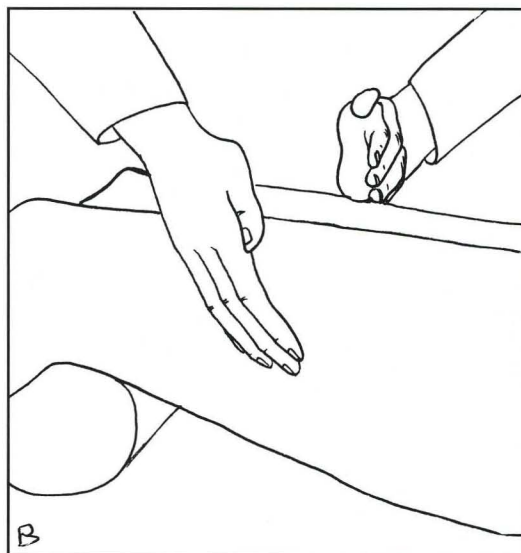


Fig. 1. A. *Frictionnement*; B. *Tapotement*; C. *Stretching effleurage*.

by Winiwarter (7) but his technique had little to do with manual lymphedema treatment as used nowadays. Because the word “stroke” means both “blow” and “caress”, it is somewhat unclear which kind of *massage* Eliska and Eliskova have applied. By their writing, e.g., that “the physiotherapist has

massaged the skin with stroking to and fro movements, while a weight was pressing on the dorsum of his/her hand, would make it probable that either the deep stretching form of *effleurage* was employed, or alternatively *frictionnement*. It should be pointed out, however, that pamphlets on

massage emphasize that with these techniques only minimal external pressure should be used. Stroking the skin with a pressure of 100 mmHg or more has absolutely nothing to do with MLT as currently practiced where pressures are estimated at <30 mmHg.

Despite having said all this, the Eliska-Eliskova data do, nonetheless, suggest extreme caution for sequential pneumatic compression pumps where recommendations for pressure greater than 80, 100, 120, and even higher are advocated. This cautionary note is particularly applicable when this pressure is applied over many months or years.

What would be of interest is an answer to the question: what low pressure MLT (<30mmHg) does, if anything, to lymphatic structure?

#### REFERENCES

1. McMaster, PD, SS Hudack. II. Induced alterations in the permeability of the lymphatic capillary. J. Exp. Med. 56 (1932), 239-253.
2. Casley-Smith, JR: Endothelial permeability. II. The passage of the particles through the lymphatic endothelium of normal and injured ears. Brit. J. Exp. Path. 46 (1965), 25-49.
3. Casley-Smith, JR, M Björlin: Some parameters affecting the removal of oedema by massage - mechanical or manual. In: *Progress in Lymphology X*, Casley-Smith, JR, NB Piller (Eds.), Adelaide, Univ. Adelaide Press, 1985, 182-184.
4. Földi, E, M Földi, H Weissleder: Conservative treatment of lymphoedema of the limbs. *Angiology* 36 (1985), 171.
5. Leduc, A, O Leduc: Physical treatment of edema. *Europ. J. Lymphology* 1 (1990), 8.
6. Vodder, E: Die manuelle Lymphdrainage und ihre medizinischen Anwendungsgebiet. *Erfahrungsheilkunde* 16 (1966), 7.
7. Winiwarter, A: Krankheiten der Haut und des Zellgewebes. Enke. Stuttgart, 1892.

**E. Földi**

**Földiklinik, Hinterzarten, Germany**