

Surgical therapy of lymphoedema in Switzerland: challenge for the surgeon with benefit for the patient?

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As long ago as 1892, Alexander von Winiwarter first published an article about the treatment of elephantiasis, applying the four cornerstones of conservative complex physical decongestion therapy (CDT) [1]. Today, this concept is still effective and includes gentle massage, local compression, physical exercises and meticulous skin care. In the 1930s, Emil Vodder realised that some specific massage techniques were able to reduce oedema volume. Unfortunately, he was not acknowledged adequately, despite publishing his results. Later on, Johannes Asdonk, a German general practitioner with experience in war surgery, realised the medical significance of these massage techniques, for both oedema treatment and optimised wound healing. Together with Emil Vodder, he launched several schools of massage and established the first clinic dedicated to lymphoedema (Asdonklinik) in the Black Forest, offering specific treatment to patients affected by lymphoedema. Michael Földi, one of his staff members, was the first to demonstrate scientifically the mode of action and efficacy of CDT, and became one of the opinion leaders in lymphology [1].

Nowadays, CDT remains the basis of lymphoedema treatment, as stated in several guidelines, including the important factor of the personal responsibility of the patient [2].

Lymphoedema, whether primary or secondary, is a chronic and, to date, incurable disease. Even though primary lymphoedema is rather rare, we assume that secondary lymphoedema has a yearly incidence of up to 2% in industrialised countries, i.e., ~100,000 in the UK, ~80,000 in Germany and ~8,000 in Switzerland.

Patients affected by lymphoedema often depend on life-long conservative therapy that is only symptomatic and best performed on a regular base to be effective. No form of systemic therapy is available as yet. Accordingly, it is not surprising that specific surgical options have been desperately sought for, in order to improve lymph flow and eventually decrease oedema volume.

Originally, lymphoedema surgery comprised reductive procedures that aimed at decreasing tissue excess resulting from severe lymphostasis. They included circumferential

debulking of skin and subcutaneous tissue followed by defect coverage with skin grafts (1912: Charles procedure) or with skin flaps (1936: Homans-Miller procedure), or linking dermal skin flaps with the underlying fascia and muscle to somehow connect the superficial lymphatic drainage system to the deep one (1927: Sistrunk; 1967: Thompson). Unfortunately, these invasive procedures are associated with a rather high rate of pain, wound healing complications, infection and/or lymph fistulas. Therefore, this type of surgery is nowadays used only occasionally in industrialised countries in cases of severe of elephantiasis. More recently, suction-assisted lipectomy has been promoted as effectively removing hypertrophic fat (1997: Brorson) and fortunately is associated with far less surgery-associated morbidity; however, it requires life-long compression to be effective [3].

Meanwhile, lymphatic surgery has become much more sophisticated, offering physiological procedures that aim at reducing the lymphatic fluid burden by improving lymphatic outflow and/or creating alternative outflow pathways. Basically, three techniques are distinguished: lymph vessel bypass (1981: Baumeister) and lympho-venous anastomosis (1977: O'Brien; 1999: Koshima), which redirect accumulated lymph into healthy lymphatic collectors, or rather veins, and vascularised lymph node transfer (1988: Becker; 1989: Chen), which increase lymph flow by formation of new lympho-lymphatic and lympho-venous vessels. Widespread application of these techniques is based upon newer and more sophisticated diagnostic tools, as well as improved surgical instruments and image magnification [4].

Patients in whom CDT is able to only maintain rather than reduce the grade of irreversible lymphoedema seem to be ideal candidates for these surgical procedures, especially if lymphoedema has not been present for years and affects the arm rather than the leg. Gradually emerging scientific evidence supports the conclusion that physiological procedures may result in reduced intensity of CDT (or even complete cessation of CDT) in selected cases of irreversible lymphoedema, even in a cost-effective way when

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compared with CDT alone. In cases of successful surgical treatment, patients further observe, amongst other things, reduction in oedema volume and infection rate, as well as increased quality of life.

Our personal experience is based upon the fact that patients must be always well informed in order to develop realistic expectations, including pursuing CDT following surgery.

Currently, and foremost due to multimodal treatment of oncological diseases and increased awareness of potential surgical treatment options for lymphoedema, we are seeing more and more patients suffering from advanced lymphoedema despite CDT. Since evidence emphasises more and more the effectiveness, appropriateness and cost-efficiency of physiological lympho-reconstructive procedures, we are of the opinion that, in the future, insurance companies will need to reimburse costs of microsurgical surgical treatment for lymphoedema. Currently, the Swiss healthcare system does not require by law reimbursement of this type of surgery [5]. National and international prospective and standardised evaluations, including patient-reported outcome measures, will emphasise the beneficial effects

of lymphatic surgery and eventually guarantee insurance coverage in the future.

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