

The FESSH Travelling and Training Award 2014: **Current concepts of microsurgical procedures in the treatment of lymphedemas of the upper extremity.**

Awarded to: Jens Wallmichrath, MD

The Hand Surgery Training Committee administered financial support for Jens Wallmichrath (Plastic Surgeon, Hand Surgeon, LMU University Hospital, Munich, Germany) both to visit other centres specialized on lymphatic surgery with the purpose of furthering the knowledge. The aim was the exchange of current microsurgical concepts and to spread best practice in this field.

Lymphedemas of the arm still are a serious problem for the patient and also even for the hand surgeon or plastic surgeon. The main complaints are the stigmatisation by the obvious edema of the hand, heaviness and fatiguability of the extremity, and the risk of serious infections. The incidence of lymphedemas of the arm is about 9-41% after axillary lymph node dissection and even 4-10% following Sentinel lymph node biopsy, depending on the literature.

In our institution we have substantiated clinical experience e.g. with autologous lymphatic transplants in patients with a lymphedema of the upper extremity. However, some cases do not qualify for this procedure e.g. due to a lack of lymphatic transplants. Thus, some cases require another procedure or a combined approach.

The spectrum of minimally invasive or microsurgical procedures consists of

lymphaticovenous anastomoses (LVA), lymphatic transplants (LTX), vascularized lymph node transfers (VLNT), and lympholiposuction (LLS).

Learning goals from the clinical visits:

The learning goal of the visits is the exchange of information and concepts in lymphatic microsurgery in Europe. The technique of the vascularized lymph node transplantation (VLNT) seems to be a promising alternative or adjunct to our regimen, since it can be performed even in patients who are not suitable for harvesting lymphatic grafts. The technique has been favoured by Anne Saaristo (Turku, Finland), Corinne Becker (Paris, France) and Jaume Masia (Barcelona, Spain). Their results with this technique are promising [1,2].

- 1) Saaristo et al.: *Microvascular breast reconstruction and lymph node transfer for postmastectomy lymphedema patients. Ann Surg* 255;3:468-73 (2012)
- 2) Becker et al.: *Postmastectomy lymphedema: long-term results following microsurgical lymph node transplantation. Annals of surgery*, 243;3:313-5, (2006)

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Anne Saarikko, Ph.D. (University of Helsinki, Finland) transplants vascularized lymph node flaps which can be harvested from the axillary region, the groin or the supraclavicular region. These flaps can be transplanted into the axillary region (here also combined with a breast reconstruction with a DIEP-flap), the region of the elbow and the wrist.

Jauma Masià, Ph.D. (Hospital de la Santa Creu i Sant Pau, Barcelona, Spain): Professor Masia is well known for his ambition to define treatment algorithms or indications for each lymphatic surgical procedure. His term TBAR (total breast axillary reconstruction) means a flap for breast reconstruction together with a lymph node flap (VLNT), i.e. a DIEP-flap with a inguinal extension of soft tissue including lymph nodes. The DIEP-vessels are usually anastomosed to the parasternal vessels; the vessels of the inguinal extension are anastomosed to the axillary / thoracodorsal vessels if the intraoperative ICG-controlled perfusion of the lymph node flap seems to be insufficient. He also routinely performs lympholiposuctions (according to the method of Brorson) and LVAs. Preoperatively, he routinely uses the photodynamic eye (PDE) to localize lymph collectors.

Corinne Becker, MD (Clinique Jouvenet, Paris, France): The majority of the routine operations of Dr. Becker are VLNTs. The surgical spectrum also comprises LVAs, lympholiposuction, and open debulking procedures as well as breast reconstruction with DIEP- and TDAP-flaps.

She performs VLNTs also in primary lymphedemas. Here, she stresses the high benefit of doing the surgery very early (1-2 years of age). In severe lymphedemas, she sometimes performs two simultaneous VLNTs in one extremity. In all cases, she demands only a preoperative lympho-MRI of the edematous extremity. If lymph nodes and lymphatic collectors are visible, she starts a conservative approach. Depending on the localization of the edema in the MRI she chooses the recipient site for the VLNT. All VLNTs are harvested without skin island; there is no fixed rheological regimen for the perioperative treatment. Patients are usually discharged from hospital after less than five days. The standard follow up consists of circumferential measurements of the extremity and a lympho-MRI three to six months postoperatively. The clinical results seen in the outpatient clinic are promising, including patients showing healing of chronic ulcers of the lower leg following VLNT).