

ANALYSIS OF LYMPHATIC DRAINAGE IN VARIOUS FORMS OF LEG EDEMA USING TWO COMPARTMENT LYMPHOSCINTIGRAPHY**P. Bräutigam, E. Földi, I. Schaiper, T. Krause, W. Vanscheidt, E. Moser**

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ABSTRACT

The anatomical and functional status of the epifascial and subfascial lymphatic compartments was analyzed using two compartment lymphoscintigraphy in five groups of patients (total 55) with various forms of edema of the lower extremities. Digital whole body scintigraphy enabled semiquantitative estimation of radiotracer transport with comparison of lymphatic drainage between those individuals without (normal) and those with leg edema by calculating the uptake of the radiopharmaceutical transported to regional lymph nodes. A visual assessment of the lymphatic drainage pathways of the legs was also performed.

In patients with cyclic idiopathic edema, an accelerated rate of lymphatic transport was detected (high lymph volume overload or dynamic insufficiency). In those with venous (phlebo)edemas, high volume lymphatic overload (dynamic insufficiency) of the epifascial compartment was scintigraphically detected by increased tracer uptake in regional nodes. In patients with deep femoral venous occlusion (post-thrombotic syndrome), subfascial lymphatic transport was uniformly markedly reduced (safety valve lymphatic insufficiency). On the other hand, in the epifascial compartment, lymph transport was accelerated. In those patients with recurrent or extensive skin ulceration, lymph transport was reduced. Patients with lipedema (obesity) scintigraphically showed no alteration in lymphatic transport.

This study demonstrates that lymphatic drainage is notably affected (except in obesity termed lipedema) in various edemas of the leg. Lymphatic drainage varied depending on the specific compartment and the pathophysiologic mechanism accounting for the edema. Two compartment lymphoscintigraphy is a valuable diagnostic tool for accurate assessment of leg edema of known and unknown origin.