MORPHOLOGY OF LYMPHATICS IN HUMAN VENOUS CRURAL ULCERS WITH LIPODERMATOSCLEROSIS

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ABSTRACT

A morphological evaluation of lymphatic vessels of skin leg ulcers was performed in 39 human subjects with longstanding venous insufficiency and lipodermatosclerosis. Light and electron microscopy demonstrated that the superficial fibrin and inflammatory cell layers and intermediate blood capillary layer of the ulcer bed, which were primarily granulation tissue, did not contain lymphatics. Moreover, lymphatic capillaries were present only sporadically in the transition zone from granulation tissue to the deeper collagenous scar layer of the ulcer. In some instances, in the deepest part of the ulcer bed near the crural fascia, there were one or two thicker lymphatic collectors with valves, which were continuations of collectors from the plantar foot region. Lymphatics were present at the border of the ulcer and in lipodermatosclerotic skin, but the endothelium and muscle lining layer were partially destroyed. Lymphatic capillaries were characterized by open interendothelial junctions in conjunction with subendothelial edema. In lipodermatosclerotic skin, the morphologic changes suggest that absorption of interstitial fluid and lymph is markedly disturbed adjacent to the ulcer bed, which likely contributes to both slow healing and high recurrence of skin ulcers associated with longstanding venous insufficiency.