

SKIN BIOPSY – IS THIS A USEFUL DIAGNOSTIC TOOL FOR PAINFUL NEUROPATHIES?

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A punch biopsy of the skin in the painful area allows immunostaining and visualization of the intraepidermal terminals of Adelta and C nerve fibers, and thus measurement of the intraepidermal nerve fiber density. Skin biopsy is a minimally invasive procedure with a very low complication rate. The sensitivity and specificity of skin biopsy in detecting small fiber neuropathy is high and is supported by recent studies. In many patients with small fiber neuropathy, a treatable disorder can be identified if a full workup is done. Furthermore, the correct diagnosis leads to appropriate symptomatic treatment. Skin biopsy should thus be performed in patients with painful/burning feet of unknown origin and clinical impression of small fiber dysfunction. Skin biopsies have further been used to learn more about the pathophysiology of neuropathies, such as the discovery of reduced vascular endothelial growth factor expression in diabetic neuropathy and the increase in cytokine expression in some painful small fiber neuropathies. Quantification of skin innervation can be used as a measure for treatment success in experimental studies and is presently used for follow-up in clinical trials.