

Reconsidering Nerve Decompression: An Overlooked Opportunity to Limit Diabetic Foot Ulcer Recurrence and Amputation

D. Scott Nickerson, M.D.

Abstract

Nerve decompression for relief of subjective diabetic sensorimotor polyneuropathy pain and numbness has been labeled of “unknown” benefit. Objective outcomes in treatment and prevention of diabetic foot complications are reviewed. There is growing evidence that plantar foot ulceration and recurrence in high-risk feet are minimized with this operation. Avoiding neuropathic and neuroischemic ulcer wounds should theoretically reduce amputations and perhaps mortality risk. Protective effects are hypothesized to act via relief of neurovascular entrapment, thereby improving neurally modulated tissue homeostasis factors. Nerve decompression deserves considerable research attention to understand its role in limiting foot complications. Its apparent benefits challenge the paradigm that diabetic neuropathy is a purely length-dependent axonopathy and may necessitate appreciation of superimposed nerve entrapment as a significant operant factor.

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Author Affiliation: Northeast Wyoming Wound Clinic, Sheridan Memorial Hospital, Sheridan, Wyoming

Abbreviations: (DFU) diabetic foot ulcer, (DSPN) diabetic sensorimotor peripheral neuropathy, (EBM) evidence-based medicine, (IWGDF) International Working Group on the Diabetic Foot, (LDA) length-dependent axonopathy, (NCV) nerve conduction velocity, (ND) nerve decompression

Keywords: diabetic amputations, diabetic foot ulcer, diabetes neuropathy, foot complications, nerve surgery, ulcer recurrence

Corresponding Author: D. Scott Nickerson, M.D., P.O. Box 278, Big Horn, WY 82833; email address thenix@fiberpipe.net