Noninvasive microscopic imaging of sensory receptors in neuropathy

Figure In vivo reflectance confocal microscopy of Meissner corpuscles (MCs)

Reflectance confocal microscopy of MCs (arrows) of the left (A) and right (B) Vth digits demonstrated reduced MC density on the right, indicating axon loss. MC densities were 5.2/mm² (left) and 1.2/mm² (right) digit V. Left and right medial hand MC densities were 1.6/mm² and 0.17/mm², respectively.

A 53-year-old woman with small fiber neuropathy and right trigeminal neuropathy had numbness in the right hand (digits IV/V) for 2 months, with reduced sharp and vibration sensation and preserved strength. Nerve conduction studies (NCS) disclosed absent right fifth digit and dorsal ulnar cutaneous sensory potentials, with normal ulnar motor NCS. In vivo reflectance confocal microscopy (RCM)¹ was performed to assess skin innervation and distinguish sensory axon loss from demyelination/conduction deficits (figure). Markedly reduced Meissner corpuscle density indicated sensory axon loss, directing diagnostic evaluations away from sensory demyelinating neuropathies; her sensory neuropathy was likely related to Sjögren syndrome. In vivo RCM is painless, noninvasive, and may complement NCS for diagnosis, prognosis, and treatment.¹

Nicholas E. Johnson, MD, David N. Herrmann, MBChB, Rochester, NY

Author contributions: Nicholas E. Johnson: drafting manuscript, design of project. David N. Herrmann: revision of manuscript, design of project.

Acknowledgment: Technical support provided by Michelle Ferguson, Janet Sowden, and Kai Bekar.

The authors report no disclosures relevant to the manuscript. Go to Neurology.org for full disclosures.

Correspondence & reprint requests to Dr. Johnson: Nicholas_Johnson@urmc.rochester.edu

1. Herrmann DN, Boger JN, Jansen C, Alessi-Fox C. In vivo confocal microscopy of Meissner corpuscles as a measure of sensory neuropathy. *Neurology* 2007;69:2121–2127.

Neurology[®]

Noninvasive microscopic imaging of sensory receptors in neuropathy

Nicholas E. Johnson and David N. Herrmann

Neurology 2012;78;1803

DOI 10.1212/WNL.0b013e31825830d2

This information is current as of May 28, 2012

Updated Information & Services	including high resolution figures, can be found at: http://n.neurology.org/content/78/22/1803.full
References	This article cites 1 articles, 1 of which you can access for free at: http://n.neurology.org/content/78/22/1803.full#ref-list-1
Subspecialty Collections	This article, along with others on similar topics, appears in the following collection(s): EMG http://n.neurology.org/cgi/collection/emg Peripheral neuropathy http://n.neurology.org/cgi/collection/peripheral_neuropathy
Permissions & Licensing	Information about reproducing this article in parts (figures,tables) or in its entirety can be found online at: http://www.neurology.org/about/about_the_journal#permissions
Reprints	Information about ordering reprints can be found online: http://n.neurology.org/subscribers/advertise

Neurology® is the official journal of the American Academy of Neurology. Published continuously since 1951, it is now a weekly with 48 issues per year. Copyright Copyright © 2012 by AAN Enterprises, Inc.. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.