Teaching Video *NeuroImages*: Myokymia and nerve hyperexcitability as components of Morvan syndrome due to malignant thymoma

Rimas V. Lukas, MD
Kourosh Rezaia, MD
Monica Malec, MD
Ravi Salgia, MD, PhD

Correspondence to
Dr. Lukas:
rlukas@neurology.bsd.uchicago.edu

A 50-year-old woman with a history of metastatic malignant thymoma presented with diffuse neuropathic pain involving the extremities and torso prior to chemotherapy and radiation. She also developed episodic diarrhea, diaphoresis, fevers, insomnia, and encephalopathy. Examination revealed rippling muscles (video on the *Neurology*[®] Web site at www.neurology.org). Prolonged afterdischarges were noted in motor nerve studies, suggestive for nerve hyperexcitability (figures 1 and 2). Electromyography (approximately 8 years after mediastinal radiation) revealed fasciculations, doublets, triplets, and myokymic discharges. Elevated serum antibodies for voltage-gated potassium channel (0.30 nmol/L, normal <0.02) and striational muscle (1:30,720, normal <1:60) were suggestive of paraneoplastic Morvan syndrome, which includes all of the features noted in our case.^{1,2} The CNS features of Morvan syndrome differentiate it from Isaac syndrome, which is most often due to an autoimmune etiology. A substantial proportion of Morvan syndrome cases are paraneoplastic, the majority of which are due to thymomas.¹

Figure 1 Median nerve compound motor action potential

Prolonged afterdischarges (arrow) noted with single stimulation of median nerve at the wrist, recording at abductor pollicis brevis.

Figure 2 Tibial nerve F-wave recording

Prolonged afterdischarges (arrow) obscure the tibial F waves.

AUTHOR CONTRIBUTIONS

Rimas V. Lukas and Ravi Salgia contributed to the design and conceptualization of the study. Ravi Salgia contributed to the recording of the video. Rimas V. Lukas and Kourosh Rezaia contributed to the drafting of the manuscript. Rimas V. Lukas, Kourosh Rezaia, Monica Malec, and Ravi Salgia contributed to the revising of the manuscript.

DISCLOSURE

R. Lukas received honoraria from American Physician Institute for delivering CME Board review courses; received honoraria from the National Brain Tumor Association for composition of patient education materials; has received compensation for medical review of published material for EBSCO Publishing; and received funding for travel from the Wuhan University Medical Education Reform (WUMER) project. K. Rezaia received honoraria for consulting for Depomed Inc. M. Malec's spouse has received funding from AAOS for travel to Boston for LMSA meetings; received research support from Synthes and Arthrocare for SL ligament reconstruction research and from X-blocker for radiation attenuation research; received support from the following sources for the University of Illinois-Chicago orthopedic educational research fund for construction of resident education symposia: Acumed, Arthrex, Biomet, C-Spine, Depuy, Medtronic, Medartis, Orthologic, Smith-Nephew Richards, Synthes, Trimed, X-blocker, and Zymmer; and has provided several treating physician depositions. R. Salgia has received compensation for serving on the scientific advisory boards of Cephalon, Genentech, and Daiichi-Sankyo; receives research support from the following NIH/NCI grants: 5R01CA100750-09, 5R01CA125541-05, 5R01CA129501-05, 3R01CA129501-02S1, 5P01HL058064-17; receives research support from the Respiratory Health Association of Metropolitan Chicago; and receives royalty payments for inventions from the Dana-Farber Cancer Institute. Go to Neurology.org for full disclosures.

REFERENCES

- Irani SR, Pettingill P, Kleopa KA, et al. Morvan syndrome: clinical and serological observations in 29 cases. *Ann Neurol* 2012;72:241–255.
- Hart IK, Maddison P, Newsome-Davis J, Vincent A, Mills KR. Phenotypic variants of autoimmune peripheral nerve hyperexcitability. *Brain* 2002;125:1887–1895.

Supplemental data at
www.neurology.org

From the Department of Neurology (R.V.L., K.R.), Section of Geriatrics and Palliative Medicine, Department of Medicine (M.M.), and Section of Hematology & Oncology, Department of Medicine (R.S.), University of Chicago, Chicago, IL.

Study funding: No targeted funding reported.

Neurology®

Teaching Video *NeuroImages*: Myokymia and nerve hyperexcitability as components of Morvan syndrome due to malignant thymoma

Rimas V. Lukas, Kourosh Rezaia, Monica Malec, et al.

Neurology 2013;80:e55

DOI 10.1212/WNL.0b013e31827f0fa1

This information is current as of January 28, 2013

Updated Information & Services	including high resolution figures, can be found at: http://n.neurology.org/content/80/5/e55.full
Supplementary Material	Supplementary material can be found at: http://n.neurology.org/content/suppl/2013/01/27/80.5.e55.DC1
References	This article cites 2 articles, 0 of which you can access for free at: http://n.neurology.org/content/80/5/e55.full#ref-list-1
Subspecialty Collections	This article, along with others on similar topics, appears in the following collection(s): Clinical neurology examination http://n.neurology.org/cgi/collection/clinical_neurology_examination EMG http://n.neurology.org/cgi/collection/emg Paraneoplastic syndrome http://n.neurology.org/cgi/collection/paraneoplastic_syndrome
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 © 2013 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.