Teaching Video NeurolImages: Propriospinal myoclonus as a sequela of Guillain-Barré syndrome

Janis R. Bedarf, MD, Michael Nelles, MD, Jens Reimann, MD, Sebastian Paus, MD, and Julian Zimmermann, MD

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Correspondence

Dr. Bedarf
janis.bedarf@ukbonn.de

Figure 1 Surface multichannel EMG

Propagation pattern of propriospinal myoclonus, recorded by surface multichannel EMG of left-sided muscles. Myoclonic jerks have a duration of 200–400 ms. Note the first jerk of the rectus abdominis muscle, driven by the Th8 myelomere (myoclonic generator), followed by a typical rostral and caudal spread involving the iliopsoas and pectoralis muscles.

A previously healthy 27-year-old woman developed Guillain-Barré syndrome (GBS) with severe tetraplegia, requiring immunoglobulins. During remission, nonrhythmic, stimulus-sensitive abdominal jerks, propagating to the hips, appeared, worsening in supine position. Surface EMG confirmed propriospinal myoclonus (PSM)¹ originating from Th8 (figure 1 and video). Myoclonus ceased with levetiracetam. Normal backward averaging, somatosensory evoked potentials, and absent Bereitschaftspotential argued against cortical or functional origins.

PSM is mainly based on *myelon* lesions.¹ Occurrence as a sequela of GBS is rare, though myoclonus through radiculitis was described before.² Although spinal imaging was within normal range (figure 2), ephaptic transmission following segmental inflammatory demyelination is the likely cause here.

Author contributions

Janis Rebecca Bedarf: study concept and design, acquisition of data, analysis and interpretation of data, manuscript preparation. Michael Nelles: acquisition of data, analysis and interpretation of data, critical revision of manuscript for intellectual content. Jens Reimann: analysis and interpretation of data, critical revision of manuscript for intellectual content. Sebastian Paus: analysis and interpretation of data, critical revision of manuscript for intellectual content. Julian Zimmermann: study concept and design, critical revision of manuscript for intellectual content.

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From the Departments of Neurology (J.R.B., J.R., S.P., J.Z.) and Radiology (M.N.), University of Bonn, Germany.

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Figure 2 Spinal imaging

T2-weighted sagittal (A) and axial (D) spinal cord MRI without focal pathology at Th8, and spinal diffusion tensor imaging with fiber tracking (B, C) without microstructural abnormalities. FA = fractional anisotropy values were lowest within segment Th8, compatible with an altered axonal integrity (B); ADC = apparent diffusion coefficients were normal. ROI = region of interest.

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