Absent F-waves in conus medullaris stroke mimicking Guillain-Barré syndrome

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DESCRIPTION

A 51-year-old female patient presented to the emergency room with sudden-onset weakness and pain in both legs, urinary retention, as well as loss of sensation in the genitourinary area. The symptoms appeared after bending forward and worsened over 3 hours. Initial neurological examination revealed incomplete left-dominant proximal and distal flaccid paraparesis, reduced tendon reflexes (right patellar jerk and both ankle jerk reflexes), reduced sphincter tone and incomplete sensory loss below Th12 consisting mainly of reduced sensation to light touch, pin prick and pain in both legs and in the genitourinary area. In contrast, both strength and sensation were normal in the arms. Given a normal spinal MRI and lumbar puncture on admission day, electroneurography was ordered. Whereas motor and sensory conduction velocities were normal, F-waves for both peroneal and tibial nerves on day 2 were absent. Thus, the diagnosis of early-stage Guillain-Barré syndrome was made, and the patient was treated with intravenous immunoglobulins (IVIg) for 5 days, with only a weak response. Spinal MRI was therefore repeated on day 7, now showing a swelling of the conus medullaris and an increased signal of the anterior horn on

T2-weighted imaging, indicating an acute ischaemic stroke (figure 1). Retrospectively, this increase in the anterior horn signal could also be depicted on the initial MRI on the admission day.

This case emphasises that, while typically associated with acute demyelinating polyneuropathy, absent F-waves can also be indicative of conus medullaris stroke,¹ and that early spinal cord MRI may be falsely negative.² Therefore, repeated MRI should be enforced in case of lacking response to IVIg treatment in suspected Guillain-Barré syndrome.

Learning points

- ▶ Sudden-onset weakness in the legs, urinary retention and loss of sensation in the genitourinary area require an immediate diagnostic workup.
- ▶ Key diagnostic testing includes spinal MRI, lumbar puncture and electroneurography.
- ▶ While early spinal cord MRI may be falsely negative, absent F-waves are non-specific and may also be indicative of conus medullaris stroke.

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Figure 1 Sagittal (A–D) and axial (E–F) spinal MRI (day 7). Restricted diffusion on diffusion-weighted imaging (A, arrow), swelling and T2-hyperintensity (B, arrow) and contrast enhancement (D, arrow) compared with native T1 (C) in the conus medullaris are shown. At T12 level, the conus medullaris demonstrates focal contrast-enhancement (E, T1) and swelling (F, T2).

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