

IMAGING IN INTENSIVE CARE MEDICINE



Spinal-cardiac crosstalk

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In the context of multiple drug intoxication (alprazolam, tramadol and alcohol), a 43-year-old female was admitted to our ICU for hypotension, alteration of consciousness and C4-level tetraplegia. She was found unconscious with her neck in prolonged hyperflexion (90°) for at least 12-h. Oro-tracheal intubation was performed for respiratory failure. A spinal MRI showed cervical myelitis, major para-vertebral and muscular edema facing the lesion (Fig. 1) while echocardiography found an aspect of stress-induced cardiomyopathy with development of a refractory cardiogenic-shock requiring venoarterial-ECMO.

She recovered a normal cardiac function and consciousness with persistence of C4-tetraplegia and mechanical ventilation dependency due to central diaphragm paralysis. The cerebrospinal fluid showed a mild hyperproteinorachy without leukocytes, auto anti-body, IgG intrathecal synthesis, or viral genome detection. In addition, cerebral MRI was normal. Despite corticosteroid bolus, her neurological condition did not improve and she passed away from ventilator-associated pneumonia one month later.

This cervical myelitis was explained by an ischemic spinal cord injury secondary to venous and/or arterial

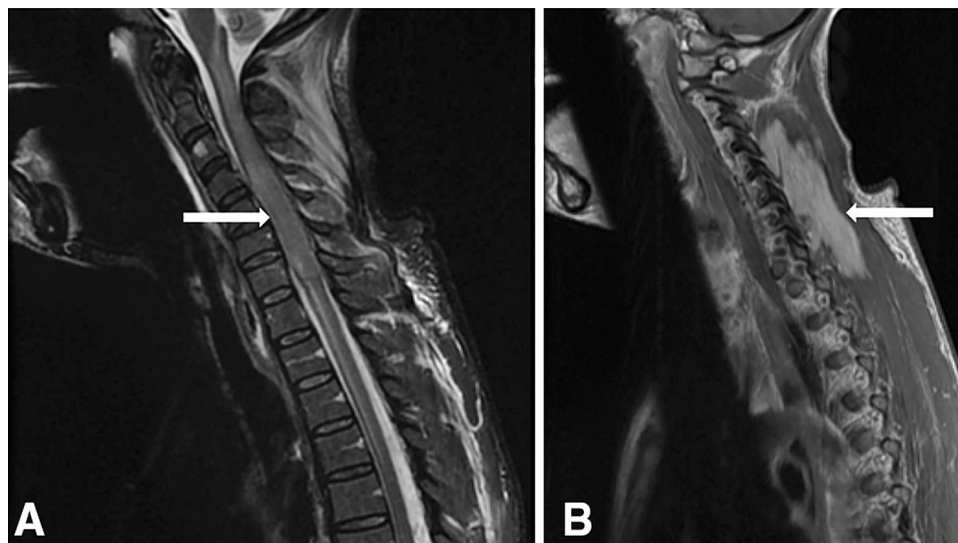


Fig. 1 Spinal MRI in sagittal plane showing (white arrow **a**), T2 hypersignal of the cervical spine and paravertebral swelling (white arrow **b**)

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compression. This compression was likely related to viscous hyperbending attitude of the head for a prolonged period. In addition, the MRI hypersignal of paravertebral muscles observed with regard to the spinal lesion strongly supported this diagnosis. Association with stress cardiomyopathy is uncommon although significant dysfunction of the sympathetic nervous system has been described as a consequence of the loss of supraspinal control of the sympathetic nervous system [1]. Acute non-traumatic cervical spinal cord injury is traditionally reported among patients with prolonged hyperextension of the back (surfers myelopathy) and is associated with poor neurological recovery [2].

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Compliance with ethical standards

Conflicts of interest

No conflict of interest relative to this case.

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