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## Teaching NeuroImage: Neurovascular Consequences of Autonomic Dysreflexia

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An 18-year-old man with C6 quadriplegia presented with two 30-minute episodes of thunderclap headache, vision loss, new urinary incontinence, hypertension (200s/90s), and bradycardia over 24 hours. Imaging demonstrated multifocal cerebrovascular narrowing (Figure 1), restricted diffusion and hyperintense T2/FLAIR signal (Figure 2); transcranial dopplers (TCDs) displayed increased velocities. Reversible cerebral vasoconstriction syndrome (RCVS) was diagnosed.

Neurogenic bladder perhaps triggered autonomic dysreflexia (AD) and thus RCVS.

Injury above T6 spinal cord eliminates supraspinal modulation, and can result in AD, defined as episodic hypertension and bradycardia initiated by unrestrained sympathetic reflexes.<sup>1,2</sup> After suprapubic catheter placement, episodes ceased, TCD velocities normalized, and vision returned.

## References

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Figure 1:

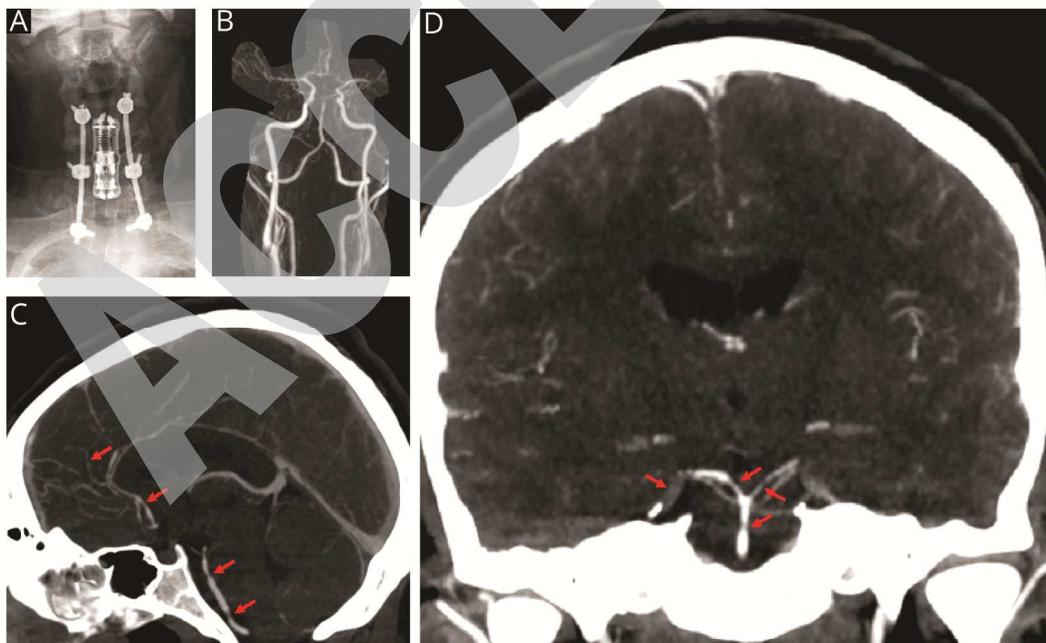
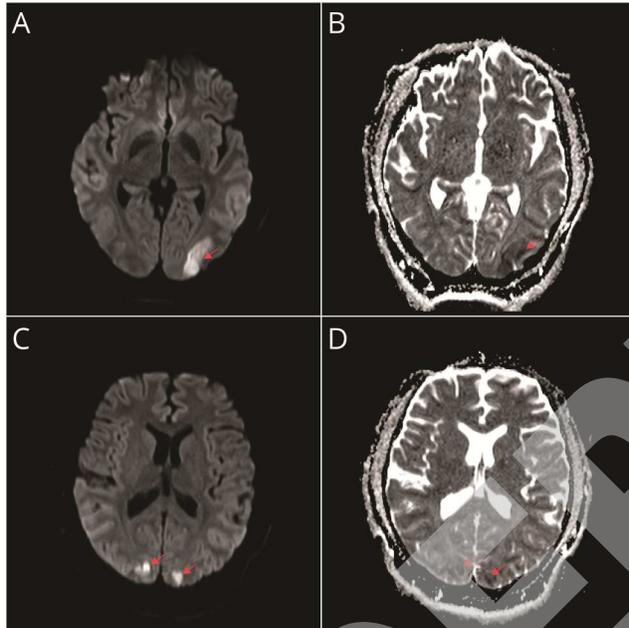


Figure 2:

MRI brain images illustrate evolution of the patient's clinical course. Panels A and B were obtained upon admission; Diffusion weighted imaging (DWI) (A) and apparent diffusion coefficient(ADC) map (B) demonstrated a left parieto-occipital lobe acute infarct. Panels C and D were completed upon acute worsening of headache and vision loss, with DWI (C) and ADC map (D) showing additional ischemic infarcts.



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