Intra-arterial milrinone may differentiate fulminant RCVS from vasculitis

Figure 1 CT angiogram, brain CT, and diffusion-weighted imaging (DWI) on MRI consistent with both reversible cerebral vasoconstriction syndrome and vasculitis

Substantial narrowing of vessels in the anterior circulation bilaterally (A) and the basilar artery (C). Bilateral medial parietal and left lateral parietal infarcts on noncontrast CT (B) and DWI (D).

A 39-year-old woman taking a monoamine oxidase inhibitor presented with a 1-week history of severe non-thunderclap headache and visual field deficits. Brain CT showed infarcts in both parietal lobes, with narrowing of intracranial vessels on CT angiogram (figure 1), suggesting either vasculitis or reversible cerebral vasoconstriction syndrome (RCVS). Despite treatment with both methylprednisolone and nimodipine, she experienced progressive aphasia and right leg weakness. She underwent an urgent cerebral angiogram (figure 2), during which intra-arterial milrinone reversed both the vasoconstriction and its symptoms, thereby confirming RCVS. Intra-arterial milrinone may be useful to differentiate vasculitis from RCVS¹ and may serve as a treatment for RCVS, but requires prospective evaluation.

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Left internal carotid artery angiogram before (A) and after (B) intra-arterial milrinone injection. Left vertebral artery angiogram before (C) and after (D) intra-arterial milrinone.

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