

## Diagnosis Approach of Reversible Cerebral Vasoconstriction Syndrome after Naphazoline Use: case report

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**Introduction:** Reversible cerebral vasoconstriction syndrome (RCVS) is an uncommon condition characterized by rapidly self-resolving vasospasm, usually associated with a severe sudden-onset headache known as a thunderclap headache. Its diagnosis can be challenging, especially when presented without headache symptoms. **Case Report:** A 35-year-old man, smoker and alcohol user, presented with sudden right hemiparesis and central facial paresis. He was a chronic user of intranasal naphazoline and had used a large amount the day before admission. Cranial computed tomography angiography (CTA) showed stenosis of the left middle cerebral artery (MCA) segment M2 and also bilateral vascular narrowing. On transcranial Doppler (TCD), a reduction in left MCA velocities was observed simultaneously with higher velocities in the ipsilateral anterior cerebral artery (ACA), suggestive of left MCA stenosis. Both CTA and TCD abnormalities were completely resolved within 24 hours. **Comments:** RCVS is a benign condition in the majority of cases (over 90%). The principal mimics include other arteriopathies common at this age, such as primary angiitis of the central nervous system, moyamoya disease, and premature atherosclerosis. Its diagnosis relies on clinical and imaging features. In 2019, the RCVS score was published as a simple method for diagnosing RCVS. Factors most associated with RCVS include recurrent or single thunderclap headache, carotid artery involvement, vasoconstrictive trigger, sex, and subarachnoid hemorrhage (range -2 to +10). TCD is not required for diagnosis; however, it's a noninvasive, available, and fast method that may be useful in challenging cases. Dynamic vessel imaging with TCD is abnormal in 69% to 81% of RCVS cases and may also provide prognostic value. Our patient scored 3 on the RCVS score due to a vasoconstrictive trigger (naphazoline). Score 3-4 has 86% specificity for diagnosing RCVS. The patient had full recovery of the symptoms without any intervention. Furthermore imaging abnormalities were completely resolved within 48 hours after the onset of neurological deficit, reinforcing the diagnosis. Early recognition of this condition is important to ensure appropriate management. This report also highlights the care required with the widespread use of naphazoline, which is mistakenly considered harmless by many.