

RCVS (Reversible Cerebral Vasoconstriction Syndrome) Associated with Marijuana Vaping



Spectrum
Health



College of Human Medicine
MICHIGAN STATE UNIVERSITY

Anvita Potluri MD, Maria Elisa Samaniego MD, Rameez Fnu MD, Joseph Zachariah MD

Spectrum Health/Michigan State University Neurology Residency
Spectrum Health Department of Neurology



Introduction

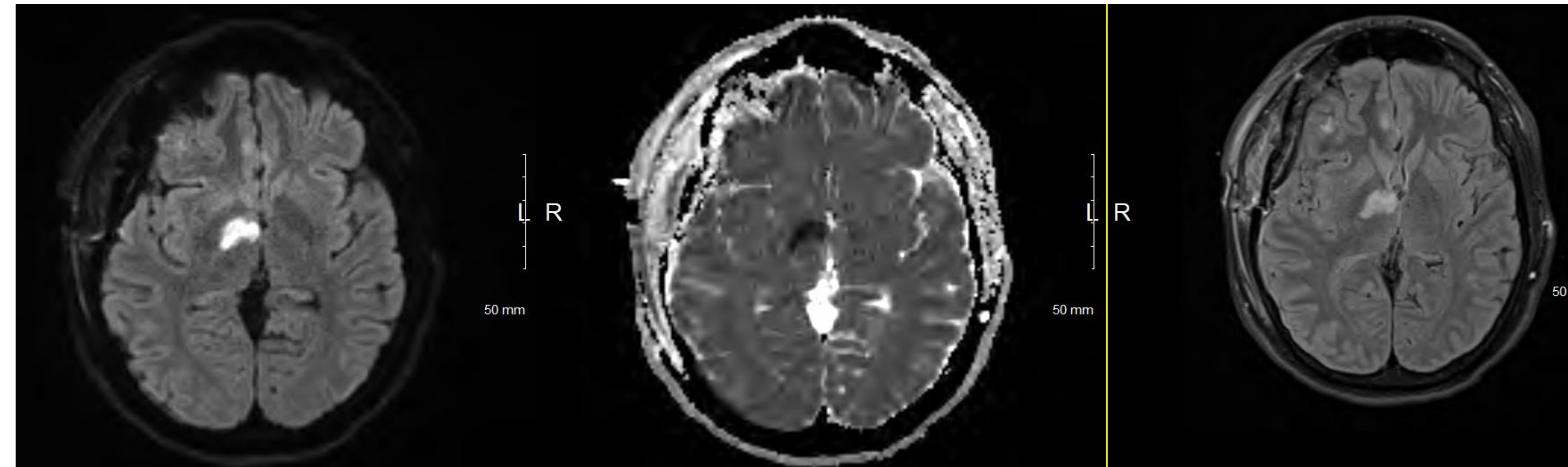
- Higher incidence of cerebrovascular disease is associated with increased use of cannabinoids.
- We report a unique case of reversible cerebral vasoconstriction syndrome (RCVS) associated with marijuana vaping causing strokes due to vasoconstriction.

Patient Description

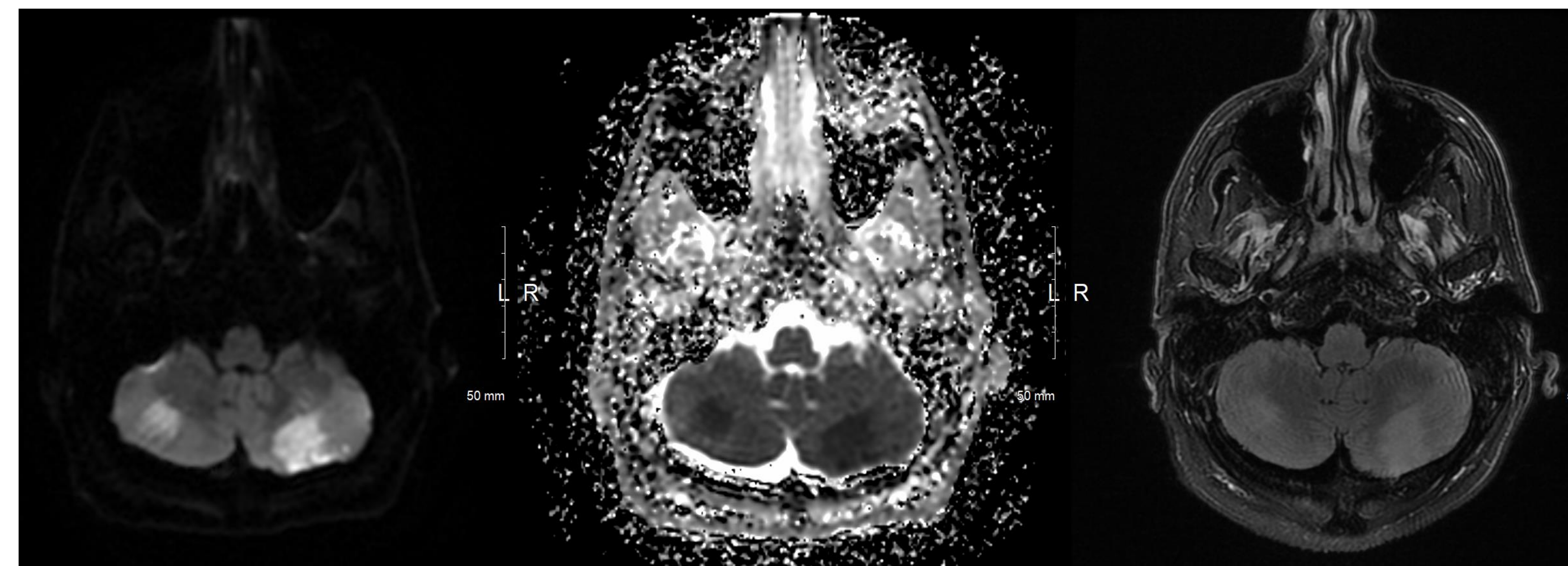
- A 40-year-old male presented with severe headache for one week followed by incoordination.
- Patient has no significant past medical history apart from daily marijuana vaping.

Workup

- Computed tomography angiography (CTA) of the brain revealed 3 aneurysms at the right carotid terminus, as well as the right middle and posterior cerebral arteries.
- Magnetic resonance imaging (MRI) revealed a subacute infarction in watershed territories and the right parietal frontal cortex.
- Lumbar puncture was negative for xanthochromia.
- Diagnostic cerebral angiogram showed diffuse vasospasm with right posterior communicating (PCOMM) aneurysm which was surgically clipped.



MRI brain revealed restricted diffusion with ADC correlation and associated T2 FLAIR changes in right thalamo-capsular region suggestive of ischemic stroke.



MRI brain revealed restricted diffusion with ADC correlation and associated T2 FLAIR changes in bilateral cerebellar hemispheres.



Angiogram revealing multifocal vasospasm

Intervention

- The hospital course was complicated by intermittent left sided weakness attributed to diffuse vasospasm confirmed with transcranial doppler (TCD) and diagnostic cerebral angiogram. The vasospasm was treated with intra-arterial verapamil and intraventricular cardene.
- A right posterior communicating (PCOM) aneurysm was surgically clipped.
- Repeat MRI brain revealed acute right thalamocapsular and bilateral cerebellar infarctions due to delayed cerebral ischemia. Diagnosis of RCVS secondary to marijuana use was made and he was discharged to rehab after stable TCD's.

Discussion

- RCVS is a clinical-radiological syndrome represented with headache and neurological symptoms secondary to reversible vasoconstriction.
- Legalization of marijuana may be correlated with a surge in several cerebrovascular diseases including ischemic strokes, arterial dissections, and RCVS.
- Several mechanisms have been proposed to theorize vasoactive substances in marijuana causing oxidative stress and endothelial dysfunction.

Conclusion

- This case highlights the growing association between cannabis use and ischemic stroke, especially in young people.
- Further studies should be done to understand long term consequences of synthetic marijuana use.