

A 69-year-old woman with a “sweet” cause of instability

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Practical Implications

Consider inadvertent cannabis consumption in elderly patients with neurologic and psychiatric disturbances of unclear origin.

A 69-year-old woman presented to the emergency department with dizziness and instability. She had a history of peripheral vertigo, tinnitus, and one episode of orthostatic syncope in recent years; her only daily medication was zolpidem. Her past medical history was unremarkable.

She was cooking at home when she noticed sudden-onset dizziness with a sensation of impending fainting while standing. Dizziness was described as intense, without “room spinning,” and was accompanied by unstable gait. She described the event as different from her prior episodes of vertigo. She went to bed without improvement; dizziness persisted in recumbent position.

After calling emergency services, she was examined at home by a doctor who found her with skin pallor, garbled and slow speech, and bradypsychia. Blood pressure and capillary glucose levels were normal.

The patient was referred to the hospital, where she was still dizzy. She was afebrile, alert, and disoriented to date, with scanning speech and very slow responses to the examiner’s orders. Gait examination showed marked instability with a broad-based gait. Pupillary size was normal. There was a grade 1 bilateral gaze-evoked nystagmus. Strength was normal in all extremities, and Babinski sign was absent. There was no limb ataxia, meningeal signs, or any other abnormalities on neurologic and general examination. Recumbent blood pressure was 112/67 mm Hg and did not significantly change after 3 minutes of standing.

Blood chemistry abnormalities were ruled out first. All of the following were normal in serum: urea, ammonium, creatinine, liver enzymes, lipid profile, protein electrophoresis, sodium, potassium, calcium, syphilis serology, erythrocyte sedimentation rate, and C-reactive protein.

Considering the sudden onset and duration of the symptomatology with dysarthria, dizziness, and instability, an acute stroke in the vertebrobasilar territory was initially suspected, and the patient was placed on aspirin therapy. Cranial MRI was then performed and revealed no evidence of acute ischemic lesions. Magnetic resonance angiography showed only slight

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atheromatosis of the left carotid bulb, without evidence of intracranial or extracranial artery stenosis. A 24-hour cardiac rhythm monitoring showed no arrhythmia.

Twelve hours after admission, the patient had regained her previous baseline mental status and had a normal examination, including gait and balance. She received general support measures but no specific medications. A TIA could not be ruled out, even though TIAs lasting hours are usually evidenced by a lesion on MRI.

The final diagnosis was reached 24 hours after admission, when one of the patient's daughters revealed that the patient had inadvertently eaten a homemade cake that had been baked with butter mixed with marijuana (cannabis butter). The urine toxicologic analysis confirmed the diagnosis of cannabis intoxication.

DISCUSSION

This patient presented with a cannabis intoxication that resembled an acute vertebrobasilar ischemic stroke with cerebellar dysfunction. There is increasing evidence of an association between cannabis use and increased risk of stroke, especially in young patients without cardiovascular risk factors and usually with a temporal relationship between the consumption of the cannabis and the ischemic event.^{1,2}

Acute cannabis intoxication is more frequent in young people and usually results in relaxation, sleepiness, and mild euphoria. It is usually smoked and is less frequently taken orally, as in this patient. Eating marijuana can cause slower, longer-lasting, and sometimes less predictable effects, particularly in the elderly. Occasionally, the symptoms of acute cannabis intoxication may mimic a cerebrovascular event with no evidence of injury on neuroimaging.

In this case, the lack of a clear focal neurologic deficit combined with the inadvertent cannabis consumption, absence of a lesion on MRI, and the rapid clinical resolution confirmed the diagnosis of cannabis intoxication. This patient had a prior episode of orthostatic syncope in recent years, which may have made her prone to cannabis-induced orthostatic hypotension. However, evidence of orthostatic hypotension was not found at any point during admission.

The active compound of cannabis, Δ -9-tetrahydrocannabinol (THC), exerts its central effects through the CB₁ cannabinoid receptor, located in GABAergic interneurons and neurons of the hippocampus, amygdala, brain cortex, and cerebellum. Central effects of cannabinoids include disruption of psychomotor behavior and psychosis, short-term memory impairment, stimulation of appetite, antinociceptive actions (particularly against pain of neuropathic origin), and antiemetic effects.³ Intoxication may be accompanied by mydriasis and dry mouth, which were absent in our patient but may provide a clue to the diagnosis. In contrast to smoking, which gets THC into the bloodstream in 5–10 minutes, orally consumed cannabis gets metabolized by the liver. Δ -9-THC becomes 11-hydroxy-THC, which crosses the blood-brain barrier easily and produces a longer and more intense effect, usually starting 1–2 hours after consumption. Thus, the effects of smoked marijuana can be felt within minutes, and users can generally pick the point when they have had enough. However, those who eat cannabis have difficulties estimating the dose, and any unpleasant effects will take longer to go away.

Cannabis is the most prevalent illicit drug worldwide, and its consumption is on the rise, not only for recreational purposes in the young but also for therapeutic indications (i.e., multiple sclerosis spasticity, cancer pain, and hyperemesis). However, cannabis intoxication is not usually considered in the elderly, in whom it can result in serious neurologic disorders, including delirium as well as instability and dizziness, as in our patient. A case of "cookie encephalopathy" was recently reported in an 82-year-old woman who ate several cookies that had been baked with marijuana and that were meant for her daughter's birthday party.⁴

Complications related to marijuana consumption may be serious and often require hospitalization. More than 200 hospitalizations associated with marijuana consumption were identified in 6 hospitals in France over a period of 3 years.⁵ Marijuana consumption should be considered in elderly patients with neurologic and psychiatric disturbances of unclear origin and may result in avoiding costly diagnostic procedures and lengthy hospital stays.

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