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## Serotonin Syndrome Misdiagnosed in a Patient Who Used a Cannabis Dab Pen

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erotonin syndrome can be triggered by many pharmacologic agents, including the use of serotonergic drugs either at recommended doses or intentional overdose.<sup>1</sup> This condition can be life-threatening.<sup>1</sup> It can be caused by use of other psychiatric agents that increase serotonin activity individually or in combination with nonpsychotropic medications.<sup>2</sup> Additionally, emergency departments have seen a rise in cannabis toxicity that presents with symptoms similar to serotonin syndrome with lower extremity rigidity with hyperreflexia.<sup>3</sup> Symptoms of serotonin syndrome include mental status changes, autonomic hyperactivity, and neuromuscular hyperactivity. We present the case of a patient with cannabis intoxication who was mistakenly suspected of suicide attempt by overdose and serotonin syndrome.

## **Case Report**

A 15-year-old girl, with a history of 2 prior suicide attempts and currently taking sertraline and aripiprazole daily, presented to the emergency department due to altered mental status. She was found lethargic, with difficulty ambulating, staring into space with generalized tremors, dilated pupils, and confusion.

The neurologic examination was notable for delayed responses, hyperreflexia, tongue fasciculations, mydriasis with sluggish pupils, and slight tremors in her extremities. Vital signs showed tachycardia of 107 beats/minute, blood pressure of 134/98 mm hg, and respiratory rate of 14 breaths/ minute. An electrocardiogram demonstrated no cardiac abnormalities. Routine laboratory results were unremarkable except for a positive urine drug screen for cannabis.

Serotonin syndrome was suspected due to the patient's clinical presentation, use of psychotropic medications, and history of suicide attempt by overdose. She was hydrated and received lorazepam with improvement in symptoms. She was then admitted to a psychiatric inpatient facility due

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## Discussion

"Dabbing" is a method wherein a "dab," a cannabis concentrate with a significant amount of THC, is heated.<sup>4,5</sup> The vapor, which can be as high as 90% pure THC, is then inhaled.<sup>3,4</sup> Our patient was unaware of the high concentration of THC that is found in a dab pen and subsequently developed symptoms of altered mental status, hyperreflexia, and autonomic hyperactivity. As noted by Baltz and Le,<sup>3</sup> hallmarks of serotonin syndrome can be seen in dabbing users since potent cannabinoid receptor agonists may activate the serotonin receptors and THC inhibits serotonin reuptake, thus increasing serotonin levels. Since dab overuse and serotonin syndrome may present with similar clinical findings, one should have a high level of suspicion when treating patients with history of substance use and those taking medications that can increase serotonin levels. Thus, both serotonin syndrome and cannabis intoxication should be considered in the differential diagnosis of a patient with these similar clinical features.

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