Elevated Troponin Levels and Seizures Associated with Synthetic Cannabinoid Use: A Case Report

William Reckley
The University of Texas Rio Grande Valley, william.reckley01@utrgv.edu

Kennedy Olson
The University of Texas Rio Grande Valley, Kennedy.olson01@utrgv.edu

Roy Kondapavuluru
The University of Texas Rio Grande Valley, roy.kondapavuluru@utrgv.edu

Elimar Gonzalez
The University of Texas Rio Grande Valley, elimar.gonzalez@utrgv.edu

Victor Tran
The University of Texas Rio Grande Valley, Victor.tran@utrgv.edu

See next page for additional authors

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William Reckley, Kennedy Olson, Roy Kondapavuluru, Elimar Gonzalez, Victor Tran, Anthony Alanis, Andres Suarez

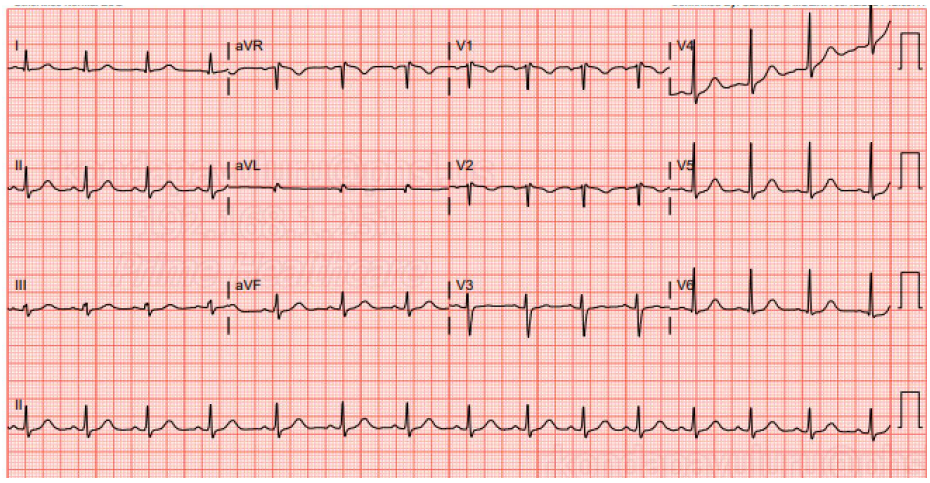
University of Texas Rio Grande Valley, Knapp Medical Center

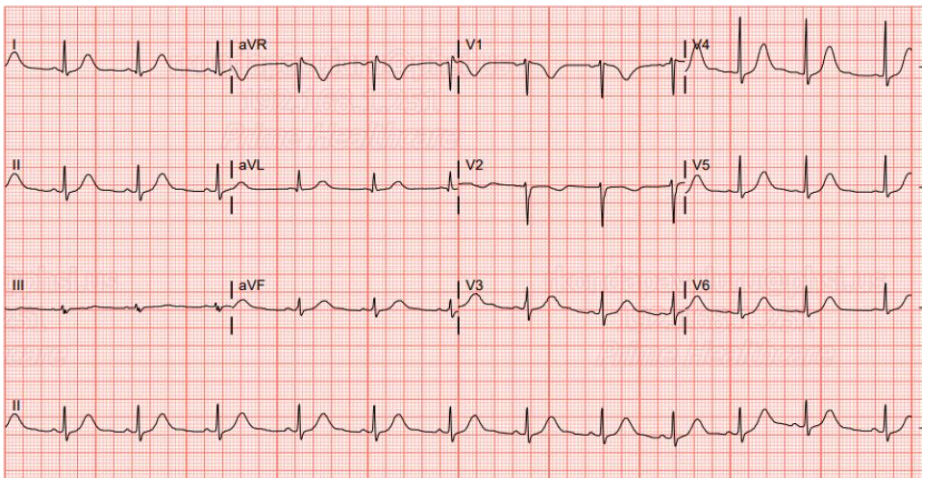
Introduction

Marijuana is the most commonly used illicit drug in the U.S. and the third leading cause of drug-related emergency room visits. It is known to have potential long-term negative effects on health, particularly impacting the neurological and cardiovascular systems. The most common associated issues include strokes and myocardial infarctions; however, there have been very few documented cases of seizures and coronary vasospasms following synthetic cannabinoid use in adolescents and young adults. In this case, we describe a young woman who came to the emergency room with altered mental status and seizures, along with elevated troponin levels and subtle EKG changes, following the use of synthetic cannabinoids.

Case Presentation

A 21-year-old woman with a history of depression and polysubstance abuse was brought to the emergency room after a friend witnessed her having a convulsive episode and altered mental status shortly after smoking synthetic marijuana. During transport, she continued to have convulsions and was given 10 mg of diazepam and 5 mg of midazolam. She was found to be tachycardic and tachypneic, but her other vital signs were normal. The physical examination revealed agitation and altered mental status, with no other significant findings. EKG showed minor, nonspecific T wave changes. High-sensitivity troponin levels were elevated (134, 1431, 1389, and 1205 ng/L), but there were no electrolyte imbalances. Additional tests showed elevated leukocyte count and lactic acid levels (12.08 and 10.45), but these were considered reactive since she was afebrile and showed no signs of infection. Urinalysis detected the presence of benzodiazepines and cannabinoids. She underwent evaluation for seizures and altered mental status, including lab work, EEG, and imaging, all of which returned normal results. She was treated with quetiapine over four nights and showed improvement. The patient later revealed that she had smoked synthetic marijuana contaminated with insect repellent, which explained her seizures and elevated troponin levels due to synthetic cannabinoid toxicity. She was advised to stop using drugs and was discharged with a follow-up appointment to manage her psychiatric condition.





Conclusion

This case emphasizes the importance of obtaining a detailed social history that includes a thorough inquiry into drug use, beyond just common substances like cocaine and marijuana, especially when traditional risk factors for coronary artery disease are absent and initial drug screenings are negative. It also highlights the necessity for readily available urine and blood tests to identify potentially harmful drugs. Most crucially, it emphasizes the need to address psychosocial factors to effectively manage recreational drug use among teenagers and young adults, advocating for a holistic approach to drug abuse intervention.

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