



IMAGE ARTICLE

Renal Artery Thrombosis Following Synthetic Cannabinoid Ingestion

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Abstract

Cannabis and synthetic cannabinoids have been associated with cardiovascular events including myocardial infarction, arrhythmias, and stroke. The psychoactive cannabinoid delta-9-tetrahydrocannabinol (THC) is a partial agonist for cannabinoid receptors found in the brain, vascular endothelium, liver, and adipose tissue. THC has been implicated in cases of cannabis arteritis and vasculopathy. We describe a case of acute renal artery infarction following synthetic cannabinoid ingestion, with successful thrombolysis and revascularization.

Introduction

Marijuana, or cannabis, is one of the most widely used psychoactive substances in the world. Its use continues to increase with its legalization in several states. Cannabis and synthetic cannabinoids have been associated with cardiovascular events including myocardial infarction, arrhythmias, and stroke. The psychoactive cannabinoid delta-9-tetrahydrocannabinol (THC) is a partial agonist for cannabinoid receptors found in the brain, vascular endothelium, liver, and adipose tissue. THC has been implicated in cases of cannabis arteritis and vasculopathy. Clinicians must be aware of potential cannabis-related complications to inform patients about risks of cannabis and synthetic cannabinoid use.

Case Description

A 22-year-old African American male college student presented with acute abdominal pain radiating to the right flank with associated fever, dark urine, and non bilious non bloody vomiting. There was no dysuria or change in bowel habits. Medical history was notable for nephrotic syndrome due to biopsy-proven minimal change disease diagnosed at age 17, which was in remission with the use of tacrolimus and prednisone. He had ingested synthetic cannabinoids the night before, and experienced a brief episode of diaphoresis, palpitations, and anxiety. Exam was notable for right CVA tenderness. Labs were remarkable for leukocytosis of 17,400/microliter and microscopic hematuria. Urine protein to creatinine ratio suggested proteinuria of 1.2 g/day. Cardiolipin antibodies and homocysteine levels were not elevated. Factor V Leiden and prothrombin gene G20210A mutation was negative. Abdominal CT with contrast showed an acute right kidney infarction, and the patient was placed on heparin gtt (Figure 1). Angiography showed an 18 mm thrombus in the distal aspect of the right main renal artery, with impaired perfusion to the superior two-thirds of the kidney but sparing of the inferior pole due to an accessory renal artery (Figure 2) [1-6].

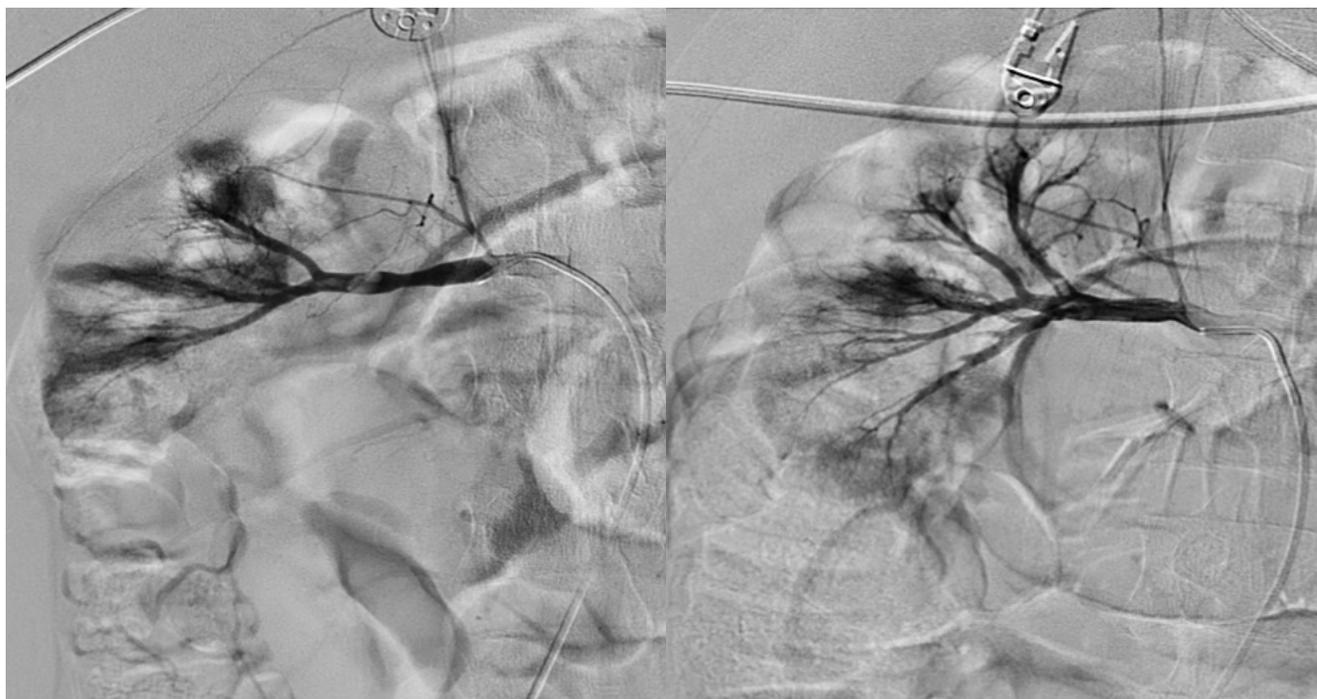


Figure 3: Renal angiography. Angiography before (left) and 24 hours after catheter-directed TPA (right) showing revascularization of segmental renal arteries.

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Disclosures

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Statement of Contribution

Joyce Ho and Remus Popa contributed to writing, editing, and image review. Youhanna Gad contributed with image acquisition and review.

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