

Cocaine and a Broken Heart (Syndrome)

Matthew Stripp, William Kerns

Carolinas Medical Center, Charlotte, NC, USA

Background:

Takotsubo cardiomyopathy or "Broken Heart Syndrome" is a condition characterized by left ventricular apical ballooning and decreased contractility. It is an unusual consequence of high-catecholamine state and known triggers include amphetamine intoxication. We present a case of cocaine-associated chest pain with Takotsubo physiology.

Case Report:

A 53-year old female with past medical history of depression, anxiety, and nicotine use, sought care for severe, progressive lower chest pain, nausea, and vomiting that began two weeks prior. The patient attributed the discomfort to a punch to the chest sustained during an altercation. Aside from marijuana, she denied any other recreational substances.

She was agitated, afebrile, bradycardic (55 bpm) and mildly hypertensive (154/76 mmHg). ECG demonstrated sinus bradycardia and nonspecific ST wave abnormalities; unchanged from a prior EKG. Chest radiograph was normal. Troponin I was elevated: 1.68 ng/ml (ref: 0.00 - 0.07) Renal indices, hemoglobin, liver function, lipids, and lipase were unremarkable.

The patient was admitted for suspected non-ST elevation infarction. Immunoassay urine drug screen was positive for cocaine metabolite and negative for amphetamine. Echocardiography revealed an ejection fraction of 30-35%, a small circumferential pericardial effusion, and severe hypokinesis of the left ventricle from mid to apex with sparing of the base consistent with Takotsubo physiology. Echocardiogram two years prior was normal. CT angiography of the chest and coronary arteries was normal. Serial troponin I peaked at 3.72 ng/ml. She was discharged home on day 3 with mild residual chest pain.

At one-month follow-up, she complained of mild persistent chest pain and dyspnea. She reported cocaine and nicotine cessation (UDS negative for cocaine), but failed to follow-up for echocardiogram.

Case Discussion:

This patient's clinical scenario and diagnostic studies were consistent with cocaine-induced Takotsubo syndrome. Other etiologies for chest pain were excluded. While cocaine is responsible for a variety of commonly recognized cardiovascular pathology including ischemia, cardiomyopathy, dysrhythmias, and cardiac arrest, it is not typically considered in cases of Takotsubo and is rarely reported in the literature.

Conclusion:

Consider Takotsubo cardiomyopathy in the differential diagnosis for patients presenting with cocaine-associated chest pain. Echocardiography is recommended for diagnostic screening.