

Abstract 34

Is It Safe to Operate on Cocaine-Positive Patients?

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Case Presentation: A 62-year-old gentleman with past medical history significant for hypertension, benign prostatic hyperplasia, and chronic cocaine abuse presented to outpatient clinic for medical clearance for elective prostatectomy. Patient denied chest pain, shortness of breath, dyspnea on exertion, or palpitations. He had smoked cocaine for the last 15 years. Physical exam was negative and his vital signs were: blood pressure 128/56, heart rate 78 bpm, respiration rate 18, and SpO₂ 100% on room air. Patient electrocardiogram (ECG) showed normal sinus rhythm with no QRS, QT, or interval prolongation and no ST-T changes. Chest x-ray was normal. His urine toxicology screening was positive for cocaine. Given the patient's stable ECG and absence of cardiac symptoms, the case was discussed with the anesthesia team and the plan was to go ahead with surgery under general anesthesia. Patient had his surgery 2 days later without any complications. His operative report did not show any accelerated hypertension, tachycardia, ventricular dysrhythmia, body temperature changes, ST-T wave changes, prolonged anesthesia, or recovery room time.

Discussion: Physiologic effects of cocaine ingestion include inhibition of active reuptake of norepinephrine at adrenergic nerve fibers. Thus, the increase in systolic, diastolic, and mean arterial blood pressure, heart rate, and body temperature, and the potential for coronary artery vasospasm resulting in ischemia-induced cardiac arrhythmias, are considered to be caused by a sympathetic stimulation syndrome secondary to increased plasma levels of norepinephrine. Cocaine metabolites possess no cocaine-like effects and can be detected in urine for as long as 60 hours and up to 10 days after cocaine ingestion. Therefore, the cocaine abuser may present with a positive urine test for cocaine metabolites but with normal physiologic variables. General anesthesia in this group of patients is generally considered to have increased risk, particularly if ketamine is used. Cocaine causes sodium and potassium channel blockade resulting in QRS and QTc prolongation, which is considered to be the primary underlying mechanism for the induction of these cocaine-induced arrhythmias, especially the torsades de pointes type of polymorphic ventricular tachycardia. QTc interval of < 500 ms is required by our anesthesia department before proceeding with elective surgery requiring general anesthesia.

Conclusion: Patients presenting for elective surgery requiring general anesthesia who test urine-positive for cocaine but are clinically nontoxic are at no greater risk than drug-free patients. Routine cancellation of these patients is unwarranted and wasteful of medical resources. However, a cocaine-abusing patient with a QTc interval of 500 ms or greater on the preoperative ECG or patients whose vital signs indicate acute cocaine intoxication need cancellation of surgery to avoid perioperative complications.

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