

# SHOULD SURGERY BE CANCELLED WHEN SURREPTITIOUS COCAINE USE IS DISCOVERED BEFORE ELECTIVE NON-CARDIAC SURGERY?

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**Answer:** Patients presenting for elective non-cardiac surgery requiring general anesthesia who test positive for cocaine but are asymptomatic and clinically nontoxic are at no greater risk for surgical complications than cocaine-free patients. Routine cancellation of surgery for these patients is unwarranted. Such patients need careful preoperative history and physical examination along with screening electrocardiogram (ECG) looking for QT prolongation. Patients who display signs of acute cocaine intoxication or those with a prolonged QT interval will need to have elective surgery delayed. However, there is paucity in literature and no guidelines supporting this practice and clinician practicing perioperative medicine and anesthesia should be vigilant till more prospective studies are done to support this practice.

## Discussion

One of the goals of the preoperative evaluation is to ensure that the surgical patient is optimized for the stress of surgery. In the patient with a history of cocaine use, it is reasonable to avoid the combined stress of acute cocaine exposure and surgery; however, postponing surgery well beyond the time cocaine is physiologically active may be unnecessary and cause a delay in patient care.

Cocaine blocks the reuptake of norepinephrine, dopamine, and serotonin at the synaptic junctions producing an excess of transmitter at the postsynaptic receptor sites<sup>1</sup>. Signs include an increase in systolic, diastolic and mean arterial blood pressure, heart rate, body temperature and the potential for coronary artery vasospasm and arrhythmias. Cocaine toxicity is a clinical diagnosis, as signs of toxicity do not correlate well to measured blood concentrations of cocaine<sup>2,3</sup>. The most reliable supporting evidence for cocaine toxicity is a confirmed history of active use<sup>4</sup>.

Many cocaine abusers are not going to admit to it<sup>5</sup>. Patients with surreptitious cocaine abuse may manifest feelings of excitation, report weight loss, anxiety, requests for sedatives and pain medicine and complain of digestive problems. Cocaine abusers should be asked for timing, amount, route of cocaine in the last 24 hours, and length of addiction<sup>6</sup>.

Cocaine users are known to experience a higher cardiac related mortality associated with arrhythmia and coronary artery disease<sup>7</sup>. The mechanism for the induction of these arrhythmias is a combination of coronary artery vasospasm and cocaine-induced sodium and potassium channel blockade that causes lengthening of the QTc interval as well<sup>8</sup>.

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Cocaine has a short half-life in plasma (30-90 minutes) and is rapidly hydrolysed into metabolites by plasma and liver esterases<sup>9</sup>. Cocaine metabolites pose no cocaine-like stimulation effects and have long half-life which is responsible for positive urine testing for 6 to 14 days after cocaine ingestion. As a result, urine tests for cocaine are poor markers of acute intoxication, but may reflect surreptitious cocaine abuse in the past<sup>10,11</sup>.

The cancellation of surgery among patients who screen positive for cocaine use is a common practice in many surgical centers. However, there is paucity in literature studying the management of these patients going for urgent or elective surgery. We found two studies that addressed this issue. Ryb GE et al<sup>12</sup>, studied cocaine-positive patients (n = 465) undergoing surgery and compared those patients with recent (<24 hours) cocaine use vs. patients who did not use cocaine

immediately before injury (>24 hours). Outcomes were similar for mortality (3% vs. 4%), infectious (18% and 19%) and neurologic (2% vs. 1%) complications. Another study investigated the role of screening ECG as a safety protocol among patients going for elective surgery (N =<sup>13</sup>40). No significant differences in episodes of ST segment elevation/depression >1 mm, recovery room stay, intraoperative body temperature, duration of anesthesia and total anesthesia/analgesic dose, were found when compared with controls that did not have a positive cocaine urine test. We should be careful in interpreting these two studies giving the small sample size.

In summary, surreptitious perioperative cocaine use does occur. Patients with a normal ECG and without clinical signs of cocaine toxicity may proceed safely with surgery. However, larger prospective studies are needed to support this practice.

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