



Case Report

# New-onset atrial fibrillation following sub-dissociative ketamine analgesia for renal colic

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## Abstract

**Background:** Low-dose ketamine is increasingly used in emergency departments as an opioid-sparing analgesic for acute painful conditions including renal colic.

Although transient tachycardia and hypertension are recognized as adverse effects, atrial fibrillation following sub-dissociative ketamine dosing has been infrequently reported.

**Key words:** Ketamine; Ureteric calculus; Hypertension

## 1. Case Presentation

A 26-year-old man presented to the emergency department with severe left-sided renal colic secondary to a distal ureteric calculus. Baseline electrocardiography showed normal sinus rhythm. Persistent severe pain despite conventional analgesia prompted administration of intravenous ketamine at 0.2 mg/kg over five minutes under cardiac monitoring. Within minutes, the patient developed palpitations and tachycardia. Electrocardiography demonstrated atrial fibrillation with rapid ventricular response at 140–160 beats/minute. He remained hemodynamically stable throughout the episode. Laboratory investigations including serum electrolytes, cardiac biomarkers, thyroid profile, and transthoracic echocardiography were unremarkable. Intravenous amiodarone 150 mg followed by an additional 150 mg dose was administered, after which the patient reverted to sinus rhythm within one hour. A 24-hour Holter study demonstrated no recurrent arrhythmia.

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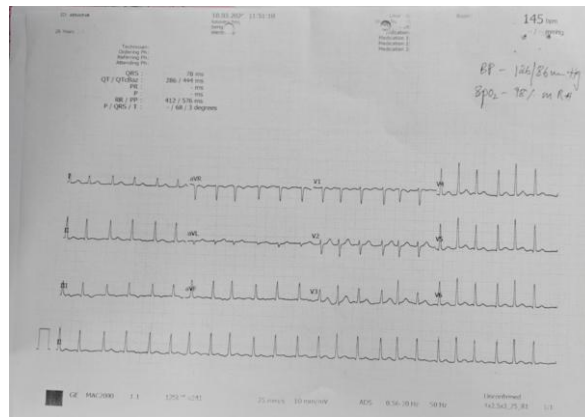
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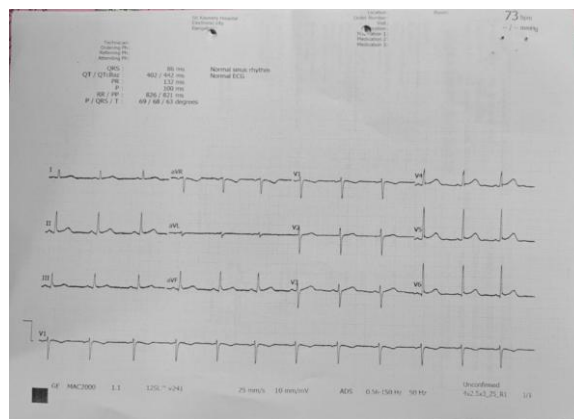


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## 2. Electrocardiographic Findings



**Fig (1):** Electrocardiogram demonstrating atrial fibrillation with rapid ventricular response following ketamine administration.



**Fig(2):** Repeat electrocardiogram demonstrating reversion to normal sinus rhythm after management.

## 3. Discussion

Ketamine exerts sympathomimetic effects through catecholamine release and inhibition of catecholamine reuptake, producing transient increases in heart rate and blood pressure. In susceptible individuals, this adrenergic surge may precipitate atrial arrhythmias. In the present case, the close temporal association between ketamine administration and onset of atrial fibrillation, absence of alternative precipitants, and spontaneous resolution support ketamine as the likely trigger. Similar reports remain limited in literature, particularly in the setting of sub-dissociative analgesic dosing.

## 4. Conclusion

Emergency physicians should remain aware that atrial fibrillation may occur following low-dose ketamine administration, even in young patients without structural heart disease. Appropriate monitoring and early recognition remain important during ketamine analgesia.

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