An Unusual Case of Kratom Withdrawal

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Introduction

This case describes a gentleman who presented with acute withdrawal from Kratom, *Mitragyna speciosa.* Kratom's leaves, teas and extracts have traditionally been used to treat pain and fatigue, and more recently for the management of anxiety, depression and opioid withdrawal. 'Experience' reports of individual use and withdrawal can be readily found online, however there are few published case reports, and limited scientific research into Kratom withdrawal. The case described provides insight into several clinical manifestations not previously documented, and supports the use of benzodiazepines for the management of withdrawal symptoms.

Case Presentation

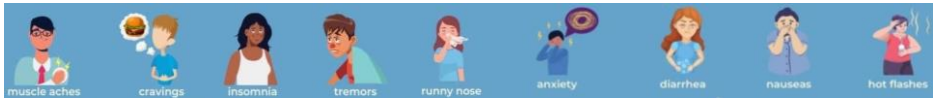
Overview: 68YM admitted with AKI, hyponatraemia, and UTI. Commenced on IV antibiotics and fluids: AKI and inflammatory markers improved over 3 days. Four days after admission, patient began to exhibit unusual behaviour as outlined below. Collateral history revealed regular use of Kratom pre-admission
Background: Psychiatric History: mild social anxiety. PMHx: Insulin-Dependent Type 2 Diabetes Mellitus (good control); previous urinary retention + prostatic hypertrophy with intermittent self-catheterisation (not known to urology services; not catheterised at time of admission); non-smoker, abstinent of alcohol for 2 years; RTA 6y previously – commenced using Kratom: found online as 'natural pain killer' following overuse of codeine and paracetamol; regularly consuming approximately 25grams of kratom daily via extracts in cups of tea.
Examination and Investigations: see flow chart
Differential diagnosis: delirium, intracranial event, hypertensive encephalopathy. Behaviour + normal investigations suggest Kratom withdrawal. Psychiatric opinion concurred likely diagnosis of Kratom withdrawal.
Treatment and Progression: benzodiazepines and anti-psychotic for intense agitation as per rapid tranquilisation protocol. Urinary catheter inserted for urinary retention; discharged with same and referral to urology team. For follow up with psychiatric liaison team and addictions services.

Timeline of Events

Day 1	**Presentation:** Last use of Kratom (25mg) Admitted with LUTS **Investigations:** elevated CRP, eGFR 48 (baseline >60), Na 118 mmol/L (asymptomatic) **Treatment**: IV antibiotics, IV fluids
Day 3	**Presentation:** Patient reports poor concentration + disturbed sleep; Onset of confusion
Day 4	**Presentation:** AM: Peaked confusion, agitation; PM: onset of bizarre behaviour: sliding off bed onto floor, repetitive motions with limbs like breast stroke whilst on floor, twirling in circular motion, crawling on floor, vacant episodes, inappropriate grimacing; no evidence of response to auditory/ visual hallucinations. No focal neurological signs; GCS 11/15 – E4V1M6 **Investigations**: urgent CT-Brain = NAD, Bloods: improved inflammatory markers, normalization of hyponatraemia, ABG NAD; Urinalysis negative
Day 5	**Presentation**: Throughout Day - Agitated + Urinary retention; sBP 177-208mmHg; Nocte: same symptoms as D4. Collateral history revealed 6y history of Kratom consumption pre-admission. **Investigations**: ECG: NSR; bloods (U&E, FBC, CK, LFTs within normal limits), inflammatory markers improved **Treatment**: Insertion of Urinary Catheter; 1mg haloperidol & 2mg Lorazepam required for agitation; in evening, treated with 1mg haloperidol + 2mg lorazepam with sedative effect achieved; Anti-hypertensive medication
Day 8	**Presentation:** Resolution of confusion + unusual behavior **Plan:** Discharged with urinary catheter in situ; referral to urology services, for follow up with psychiatric liaison service + addictions team

Discussion

Kratom, the most popular product of *Mitragyna speciosa*, belongs to the *Rubiacaea* (coffee) family. It is a psychoactive plant, indigenous to Thailand, Indonesia, Malaysia, Myanmar and Papua New Guinea. Due to its psychoactive effects, it became an increasingly popular recreational drug. Kratom currently has no approved medicinal uses, and its use was prohibited in the UK in 2016. Its use remains uncontrolled in many US states.
In low doses (1-5g of raw leaves), Kratom has stimulant properties at low doses, whilst when consumed in higher doses (5-15g raw leaves), it has sedative properties. Literature states that Kratom's intended uses and side effects are as a result of it's complex molecular structure, which enables it to act upon opioid receptors, and via adrenergic, dopaminergic, GABA-ergic and serotenergic pathways. [1,2,4].
More than half of regular Kratom users develop severe dependency and 45% develop Kratom dependency [5]. Common unwanted side effects include constipation, nausea and vomiting, hypertension, insomnia and tachycardia, some of which were described in the above case. Chronic use can result in anorexia, hepatotoxicity, nystagmus, prostatic hypertrophy, psychosis, rhabdomyolysis, tremor, urinary frequency and weight loss. Of note, the described patient had urinary retention and prostatic hypertrophy. It is possible that kratom may similarly produce urinary retention in a comparable manner to opioids (i.e. via sympathetic stimulation), however this association has not previously been documented to date. Limited studies have found that only 9.9% individuals experience withdrawal symptoms on cessation of use [5, 6]. Such symptoms include: anxiety, depression, emotional lability, cravings, restlessness, sweating, tremors, sleeping difficulties, jerky movements, myalgia, arthralgia and rhinorrhoea. In later reviews, a "Kratom withdrawal psychosis" with confusion, delusions and hallucinations has been described [3].
Limitations: Despite Kratom having been widely used traditionally, limited information of its use, side effects and withdrawal is available. 'Experience reports' of individual use and withdrawal are abundant on the internet, however there are few published case reports and limited scientific research into kratom withdrawal.
Future research potential: There has been limited research into kratom and thus remain many gaps in our knowledge of its medical properties, side effects and withdrawal profile. Further research, including supportive clinical trials, is therefore essential.
Take Home Messages: The described case highlights that "natural" drug does not equate to "safe" drug. The above case serves as a reminder of the importance of taking a detailed drug history when interview patients, including over the counter drugs and herbal remedies. Increasing awareness among the medical profession of this drug and its potential side effects and toxicity is needed.



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