New disease

Ketamine bladder syndrome: an important differential diagnosis when assessing a patient with persistent lower urinary tract symptoms

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Summary

The recreational use of ketamine is increasing in popularity due to its dissociative and paralytic effects, ease of availability and low cost. However, serious and frequently irreversible damage to the urinary tract is a recently recognised side effect of recreational ketamine use. The authors present a case of a young male patient with a 2-year history of troublesome lower urinary tract symptoms and a 5-year history of ketamine consumption. Medical management of such patients is largely limited to analgesia alone, and cessation of ketamine use before irreversible damage occurs remains the best means of avoiding the radical reconstructive surgery required in end-stage disease. This case and an accompanying review of the available literature illustrate the importance of early recognition of ketamine bladder syndrome in recreational users.

BACKGROUND

Ketamine is a complex drug with potent anaesthetic, analgesic, stimulant and psychedelic properties. It can be injected, snorted, ingested or smoked in a variety of forms. The potential paralytic effects (known as the 'K-Hole') give a sensation of detachment from body and surroundings with a 'floating, out-of-body' experience. The effects are short-lived and tolerance to the drug quickly develops, forcing users to seek larger and more frequent doses to experience the same effects. Of extra concern, it has a tenuous reputation as a 'safe' drug, with limited potential for overdose or dependence and few side effects. Inadvertent usage may occur when ketamine is used to 'cut' cocaine or when falsely sold as ecstasy.

Since the early 1990s, ketamine has increased in popularity as a party drug due to its dissociative and hallucinogenic effects. Readily available and relatively inexpensive (around £21 per gram), 'Special K' has recently been reported as the fourth most popular recreational (and sixth most commonly used) drug in the UK. The British Crime Survey (BCS) 2010/11 reports a doubling in the number of users of ketamine since it was classified as a Class C drug under the Misuse of Drugs Act in 2006.¹ The BCS 2010/11 estimates that around 714 000 of 16-year-olds to 59-year-olds are estimated to have taken ketamine in their lifetime, and 207 000 in the last year. Elsewhere, ketamine is very popular in some countries in the Far East and in Australia aided by cheap production.²

The clinical syndrome associated with chronic usage includes a small, very painful bladder, frequency, incontinence, haematuria, upper tract obstruction and papillary necrosis. Infrequent users may exhibit mild, 'cystitis'-type symptoms and typically do not associate these symptoms with ketamine use. Furthermore, the association of these symptoms with recreational drug use is not recognised by

many healthcare professionals, and such patients have frequently been treated with numerous courses of antibiotics prior to urology referral. All the while, continued usage with larger doses of ketamine will cross a threshold with the potential for significant and irreversible damage.

As the old adage states, prevention is better than cure and early cessation of use remains the best opportunity for symptom resolution. Current medical treatment is only partially effective in controlling symptoms and a proportion of patients with significant symptoms will require major reconstructive surgery (eg, cystectomy) as the only means of relieving the morbidity associated with end-stage disease. Unfortunately, early recognition of the syndrome remains limited and the opportunity for symptom resolution by means of abstinence alone has passed in all too many patients presenting to specialist centres.

CASE PRESENTATION

A 30-year-old man presented to his general practitioner with a 2-year history of troublesome lower urinary tract symptoms (LUTSs) and microscopic haematuria. The patient reported hourly voiding with nocturia up to four times at night and daytime frequency and urgency significantly detrimental to his quality of life. He reported using ketamine for 5 years, having ceased using the drug 3 months previously.

INVESTIGATIONS

Rigid cystoscopy revealed ulceration and active bleeding from most of the urothelium with a significantly reduced functional bladder capacity.

TREATMENT

There is no readily available treatment regime at present and management is directed towards symptom and pain

control. A high index of suspicion is essential as many users do not associate LUTSs with ketamine usage. Once established, the urinary tract damage is tricky to manage. Immediate and absolute cessation of ketamine use is the obligatory starting point. Many users self-medicate to relieve the symptoms of ketamine bladder, medical therapy consists largely of alternative analgesics to avoid continued ketamine use.

Fortunately, cessation often results in a degree of reversibility in symptom severity, although this is frequently prolonged, variable and incomplete. Patients should be counselled to stop use and be referred to a local urologist, chronic pain team and drug support agency. In secondary care, patients will usually undergo a full assessment including urine microscopy and culture, cystoscopy and CT scan of the renal tract.

OUTCOME AND FOLLOW-UP

Reconstructive surgery was avoided in this patient. Continued abstinence from ketamine and basic analgesia was sufficient to adequately control, but not entirely resolve, his symptoms.

DISCUSSION

It has been estimated that over 20% of ketamine users experience urinary tract symptoms, although studies from Spain (n=13) and Hong Kong (n=40) report a much higher prevalence of LUTSs (46% and 90% respectively) among users.³ First described in 2007, recent reviews of the literature describe the ketamine bladder syndrome as a phenomenon familiar to urology units in the UK and worldwide. There have also been reports in the national press warning of the urinary tract complications associated with ketamine abuse.

The largest study group in the literature is of 59 ketamine users from Hong Kong, in which patients had

developed an ulcerative cystitis and contracted bladder. The intensity of symptoms correlated with quantity and frequency of ketamine consumption. Furthermore, damage to the upper urinary tracts included papillary necrosis and ureteric obstruction leading to hydronephrosis and renal failure.

Learning points

- ▶ Enquire specifically about recreational drug use in any young patient presenting with persistent and unexplained lower urinary tract symptoms (LUTSs), especially in male patients, where cystitis is uncommon.
- ▶ Ongoing LUTSs with negative urine culture or poorly responding to antibiotics should prompt questions.
- ▶ Timely recognition may be the difference between mild troublesome LUTSs and radical reconstructive surgery.
- ▶ In those with a positive history of ketamine use, encourage immediate cessation and refer to a urologist for assessment.

Competing interests None.

Patient consent Obtained.

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