Ketamine-associated vesicopathy

An 18-year-old male with a 3-year history of weekly recreational ketamine abuse had developed severe irritative lower urinary tract symptoms (LUTS, including urinary urgency, frequency and dysuria) and suprapubic pain of 6-months duration. He was otherwise well and denied other substance use. Physical examination revealed localized suprapubic tenderness. A urinalysis showed non-bacterial pyuria and was negative for tuberculosis. Results of all the blood tests and urine cytology were normal. An intravenous urogram (IVU) in standing position demonstrates a small, poorly distended urinary bladder with thick trabeculation and marked thickening on the bladder wall (Figure 1A). The differential diagnosis included ketamine-associated cystitis, interstitial cystitis, tuberculous cystitis and transitional cell carcinoma. Cystoscopy revealed inflammatory changes with neovascularization and petechial hemorrhages (Figure 1B). Bladder biopsy showed infiltrations of lymphocytes and a variable number of eosinophils within the bladder tissue (Figure 1C), and no evidence of malignancy. After discontinuation of ketamine, the symptoms subsided significantly within 2 weeks.

Figure 1. (A) IVU in standing position showed a small, poorly distended urinary bladder with thick trabeculation (thin arrow), and marked thickening on the bladder wall (between arrows). (B) Cystoscopy revealed inflammatory changes with petechial hemorrhages. Note a fulguration electrode in place. (C) Bladder biopsy showed infiltrations of lymphocytes and a variable number of eosinophils within the bladder tissue (H&Ex200).
Initially introduced as an anesthetic and analgesic agent in the 1960s, ketamine is an N-methyl-D-aspartic acid receptor antagonist and is increasingly used as a recreational drug.\textsuperscript{1,2} Ketamine-associated vesicopathy were suggested to be caused by repeated irritation of ketamine toxicity and its active metabolites on the bladder mucosa, and can occur a few days to a few years after initial abusive use.\textsuperscript{1} Affected patients tend to be young with a peak age range of 16–35 years.\textsuperscript{2} Clinical presentations include irritative LUTS and suprapubic pain, with or without gross hematuria. Currently, ketamine cessation is the most effective treatment modality.\textsuperscript{1–2} Cystectomy with formation of a neobladder or long-term catheterization may be required in some cases with severe disease.\textsuperscript{2} Early diagnosis is the key to the effective management of ketamine-associated bladder pathology. Keeping a high index of suspicion in those with a higher incidence of ketamine abuse with unexplained LUTS is therefore essential.

\textbf{References}
