Renal keratinising desquamative squamous metaplasia: all that hurts is not stone

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DESCRIPTION

A 66-year-old Caucasian man with history of hypertension, hyperlipidaemia and 16 pack-year smoking was referred to us for evaluation of recurrent right-sided flank pain and suspected nephrolithiasis. His first episode of pain was 2 years prior to presentation, which was recurrent. There was no associated haematuria, dysuria, fever, chills, urinary hesitancy or incontinence. There was no family history of stones. He underwent multiple ureteroscopies, which have shown glistening, soft, acellular debris in the upper ureter. Last ureteroscopy and pyeloscopy showed normal underlying mucosa, renal pelvis and calyces with no evidence of malignancy. Subsequent MRI also did not show any malignancy. The last available pathology showed minute fragments of acellular keratin debris. Interestingly, he never had imaging evidence of renal stone, although had mild hydronephrosis one time. CT urogram demonstrated an ill-defined filling defect in the anterior right renal pelvis measuring approximately 13×3 mm in axial dimensions (*figure 1*). During the episodes of flank pain, he can feel 'something' sloughing off and traversing through the ureter. Excreted material is shown in *figure 2*. The presence of keratin in the ureteroscopic specimen indicated

squamous metaplasia of the urothelial tract. We thus diagnosed him with renal keratinising desquamative squamous metaplasia (KDSM) and treated conservatively with adequate hydration and pain management.

KDSM is a condition in which the urothelium of the urinary tract is replaced with keratinised squamous epithelial cells. It can be confused with nephrolithiasis and/or neoplasia based on symptoms and appearance on imaging. Risk factors include chronic infection, stone disease or irritant exposure including smoking.¹ There is no universally accepted treatment for this condition and was traditionally managed with radical measures such as nephroureterectomy.² Current trend is towards conservative management, with endoscopic or open nephron-sparing procedures reserved for those with ureteral obstruction by desquamated keratinous material. KDSM has been associated with squamous cell carcinoma and transitional cell carcinoma without any proven causative relationship. Given the unlikely but possible transition to malignancy, it is prudent to monitor these patients with annual imaging.³

Contributors AK: Evaluated the patient in the clinic and prepared the initial draft. IQ: Procured the images and helped in the evaluation of patient as well. VB: Urology attending who first

Figure 1 Transverse (A) and coronal (B) views of the CT urogram demonstrating filling defect in the right renal collecting system.

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Figure 2 (A) Material obtained from the patient's right renal pelvis during ureteroscopy. (B,C) Debris from the patient's urine. Material in (A) was analysed by the lab and reported to be 100% mucin.

Learning points

- ▶ Renal keratinising desquamative squamous metaplasia (KDSM) is a rare condition that can mimic nephrolithiasis or malignancy.
- ▶ Patients typically present with pain, resembling renal colic, and often the differential diagnosis is kidney stone. However, the history of passing flake-like or cornified material in the urine and the presence of upper urinary tract filling defect on imaging should raise the suspicion for KDSM.
- ▶ Treatment is conservative with pain management and imaging surveillance. Extirpative surgery is reserved for severe cases or those with complications.

saw the patient and did the ureteroscopic procedures. RR: Nephrology attending

who supervised the evaluation and guided the management. She also reviewed and revised the manuscript for critically important intellectual content.

Competing interests None declared.

Patient consent Obtained.

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