



A rare complication of suprapubic catheterisation with obstruction and significant migration into a ureter

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ABSTRACT

Suprapubic catheter insertion is frequently indicated for patients with a neurogenic bladder. It's an effective and safe way to drain the bladder and can be managed in a community setting by a trained health professional. Here we report a rare case of a 73-year-old male presenting with a two-day history of frank haematuria secondary to a recent suprapubic catheter change. Imaging confirmed an obstruction of the right ureteric orifice due to migration of the catheter into the ureter. Once the catheter was withdrawn into the correct location his haematuria and acute renal injury resolved and was discharged the following day.

1. Introduction

A neurogenic bladder is a condition which commonly occurs secondary to spinal cord damage. Bladder function is controlled by the central and peripheral nervous system. After injury, bladder dysfunction occurs due to disruption along the micturition reflex. Neurogenic bladder drainage is managed with long term catheter insertion and regular changes to preserve renal function. This can be achieved via methods such as intermittent, urethral, or suprapubic catheterization (SPC).

The obstruction of a ureteric orifice due to catheter migration is a rare complication of SPC insertion which can lead to acute kidney injury. We reported the case of a 73-year-old male presenting with frank haematuria after a recent SPC change, misplacing the new SPC into the distal ureter.

2. Case presentation

A 73-year-old male presented to the emergency department with a two-day history of painless, frank haematuria. The patient was quadriplegic after a C6/7 fracture and had a neurogenic bladder managed with a SPC. He reported regular SPC changes and noticed haematuria started after the most recent change. Prior to admission he had mild suprapubic pain around the cystostomy site which settled spontaneously. He denied any known bleeding diathesis and systemic symptoms. He had previous admission for recurrent UTI's and had been to ICU with urosepsis, from regular SPC change.

On examination, the SPC was noted to be draining frank haematuria with no clots or clouding. The patient was otherwise hemodynamically stable and had no soft tissue changes around the cystostomy site. Blood biochemistry results were unremarkable.

A CT KUB showed the catheter tip within the distal right ureter, located approximately 6 cm from the vesicoureteric junction (Fig. 1). There was mild hydronephrosis present, with the balloon of the catheter also noted to be inflated (Fig. 2). There was minimal fat stranding around the balloon and no adjacent free fluid within the abdomen.

Urology team was urgently consulted. The balloon of the SPC was deflated completely, and the SPC was carefully withdrawn to approximately 4cm. The balloon was then inflated again and confirmed within the bladder by bedside ultrasound. The patient was admitted overnight and found to be hemodynamically stable and his haematuria resolved. The following day he was discharged with no further haematuria.

3. Discussion

A neurogenic bladder occurs in 70–84% of patients with traumatic spinal cord injuries.¹ These patients are found to be more susceptible to a reduction in kidney function and report a decreased quality of life. Patient with neurogenic bladders are managed with intermittent, urethral or suprapubic catheterisation.

Suprapubic catheterization can be used for patient who require acute or long-term bladder drainage. The indications for SPC insertion include urinary retention or incontinence, neurological disease, urethral trauma and in postoperative care.² Complications associated with a suprapubic

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Fig. 1. Suprapubic catheter tip in the distal right ureter on Computer tomography.

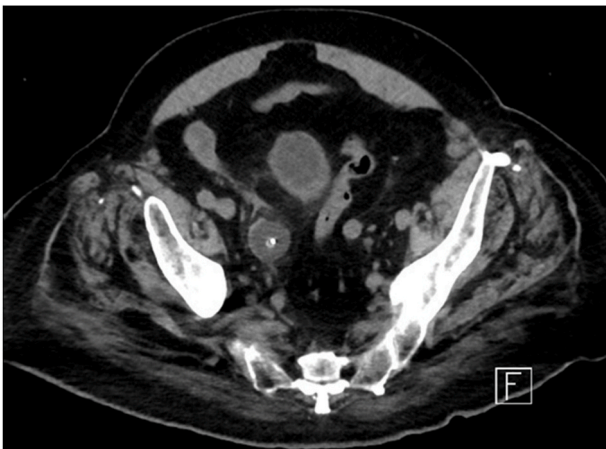


Fig. 2. Suprapubic catheter balloon inflated in the distal ureter on computer tomography.

catheterization are recurrent urinary tract infections, damage or perforation of the bladder wall and obstruction of catheter.³

Inadvertent obstruction of a ureteric orifice secondary to suprapubic catheterisation is rare with a literature search uncovering very few

documented migrations of a catheter into the ureteric orifice. Of the documented cases, this complication is characterised by long term catheterization, neurogenic bladder and are predominantly urethral catheters.⁴ These documented cases, indicate blockage by insertion of the tip of the catheter into the ureteric orifice. The British association of urological surgeons recommend for this complications to deflate the balloon, then withdrawal of the catheter into the bladder with consideration to be completed under vision.⁵

From our understanding, this case which shows significant catheterisation of the distal ureter by 6 cm has not been documented before in the literature. This highlights the rarity of this extent of distal ureteric obstruction due to suprapubic catheterization. Patients and health staff who review and are involved with manipulation of an SPC should be aware of the potential complications and when to present to an emergency department.

4. Conclusion

Patients with neurogenic bladders require ongoing genitourinary care to reduce the risk of permanent kidney injury. The use of the SPC has been used to reduce this risk however it does come with its own complications. These can be mitigated with the assistance of a trained health professional and early presentation to an emergency department when required.

CRedit authorship contribution statement

Jeremy Saad: Writing – original draft, Investigation, Validation.
Wenjie Zhong: Writing – original draft, Writing – review & editing, Project administration.

Declaration of competing interest

None

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