

Endourology

Ureteral stent causing urinary incontinence: An unusual suspect

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ARTICLE INFO

Keywords:

Ureteral stent
Incontinence
Stent migration
Complication

Introduction

Insertion of a ureteral stent is very common practice by urologists throughout a variety of settings and patients not uncommonly experience an array of lower urinary tract symptoms even with the stent in an optimal position.¹ Whilst more senior emergency physicians are likely familiar with the commonly encountered stent related symptoms, more junior emergency doctors have less experience with them. Beyond this due to the high rate of utilisation, encountering complications is not rare in urology practice but can present in unusual ways leaving emergency doctors in unfamiliar territory. An example of such a complication is stent migration or stent dislodgement.

Case presentation

A 70 year old woman was admitted to hospital for elective operative intervention of a known 9mm left proximal ureteral stone that had previously required a ureteral stent to be placed in non-elective setting. As planned, she underwent a left flexible pyeloscopy with complete deconstruction of the stone via laser lithotripsy. Routine insertion of a 4.8f 22–30cm multi-length ureteral stent was performed with the string for extraction left in place and fixed to the inner thigh using hypafix[®] tape to facilitate stent removal on post-operative day 7. A 16f indwelling urethral catheter was placed overnight and removed at 0600 on post-operative day 1 by nursing staff on the urology short stay ward.

Late in the evening on the second day post operatively, the patient presented to the emergency department complaining of significant left flank pain and continuous urinary incontinence for 12 hours. On the first day post operatively, the patient had no pain and was passing urine well without any reported storage or voiding symptoms. The patient was unable to pass a controlled void and reported it as a continuous dribble of clear urine that had not stopped all day. She reportedly had

never experienced similar symptoms before.

The emergency doctor performed a urinalysis showing large haemolysed blood only, negative for both leukocytes and nitrites. Blood tests revealed normal renal function and a mild leucocytosis. The off-site-oncall urology registrar was contacted and recommended a plain radiograph to confirm the position of the stent. The x-ray, as seen in Fig. 1, clearly identified a dislodged ureteral stent with the proximal coil sitting in the bladder and a significant length of the stent seeming to be external to the urethra. This explained the patient's presentation with urinary incontinence, as the bladder was draining via passive means through the stent into the urethra and bypassing the normal neural control of micturition.

During her time in the emergency department and prior to the x-ray, the patient had inadvertently dislodged the stent even further and it was now visible extending beyond the urethral meatus and was removed by hand with complete resolution of both the patient's symptoms of pain and incontinence.

Discussion

Ureteral stents are an indispensable tool to the modern urologist in both elective and emergency procedures alike. They are frequently used in the emergency setting of obstructive uropathy from a renal calculi or other aetiology and acute renal colic. Despite a degree of controversy, ureteral stents are also frequently used in an elective setting after ureteroscopy or pyeloscopy for the treatment of calculi.¹ It has been well established that the placement of ureteral stents causes significant burden on the patient through inducing an array of lower urinary tract symptoms, trigonal irritation and pain, directly impacting on the quality of life experienced by patients irrespective of the presence of an extraction string or if a soft tailed stent was used.¹

As well as ureteral stents demonstrating increasing popularity in

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<https://doi.org/10.1016/j.eucr.2018.08.022>

Received 1 August 2018; Accepted 22 August 2018

Available online 04 September 2018

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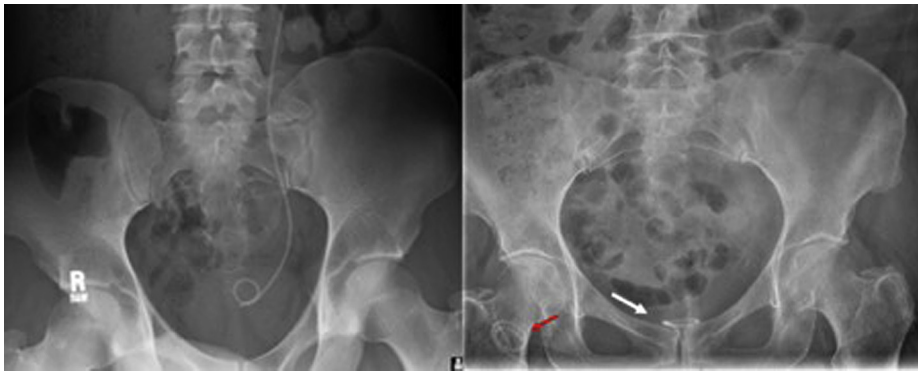


Fig. 1. Plain radiograph displaying both the expected position of a left sided ureteral stent in another patient and the image from the patient described in this case. The arrows identify the proximal coil of the ureteric stent (white) within the bladder and the distal coil (red) that migrated external to the urethra as the patient moved to the xray bed. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

recent years, the use of an extraction string has also seen an increased level of clinical utilisation, although current literature has found more than 65% of urologists regularly remove the extraction string.² The extraction string, fixed to the distal end of the ureteral stent and running through the urethra to protrude from the urethral meatus is fixed to the skin with tape and allows for cost effective simple removal with the need for a second invasive procedure. Inadvertent stent dislodgement when an extraction string is left in situ has been found to occur at a rate of almost 10% and in women occurs at a rate four times that as compared to men.²

A review of the available literature identified stent migration as a not uncommon complication inherent to the placement of a ureteral stent, although the majority of this focused solely on proximal migration toward both the ureter and kidney. Three case reports were identified in the literature describing distal stent migration and although each was different in nature, all three described patient reported urinary incontinence. Similar to this case, one stent had further migrated beyond the meatus before the urologist arrived and was removed without instrumentation³ whilst another remained within the urethra with a visible extraction string and too was removed by the urologist upon review.⁴ The other report involved a Memokath[®] ureteric stent and required cystoscopy for removal.⁵

Conclusion

Ureteral stents are used commonly in urological practice and as such emergency physicians should be aware of and educated on common symptoms they may cause in order to stratify the need to involve the urology team. This case report demonstrates a symptom usually not associated with a ureteral stent and demonstrates how lateral thinking along with basic investigations can be beneficial in scenarios where there is a lack of correlation between clinical knowledge and the clinical presentation.

Consent

The patient provided informed consent for the information presented here to be shared.

Conflicts of interest

None.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial or not-for-profit sectors.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.eucr.2018.08.022>.

References

1. Miyaoka R, Monga M. Ureteral stent discomfort: etiology and management. *Indian J Urol.* 2009;25(4):455–460. <https://doi.org/10.4103/0970-1591.57910> [published Online First: 2009/12/04].
2. Oliver R, Wells H, Traxer O, et al. Ureteric stents on extraction strings: a systematic review of literature. *Urolithiasis.* 2018;46(2):129–136. <https://doi.org/10.1007/s00240-016-0898-1> [published Online First: 2016/06/22].
3. Delasobera BE, Rogers WD. A case of sudden, painless, and persistent urinary incontinence. *J Emerg Med.* 2013;44(1):e37–e39. <https://doi.org/10.1016/j.jemermed.2011.06.123> [published Online First: 2011/11/15].
4. Nesbitt AL. Urinary incontinence: not a typical ureteric stent symptom. *Urol Case Rep.* 2018;19:4–5. <https://doi.org/10.1016/j.eucr.2018.03.020> [published Online First: 2018/06/12].
5. Tay YK, Donnellan S, Spernat D. Urinary incontinence is a rare complication of Memokath ureteric stent insertion. *Urol J.* 2014;11(1):11353–11355.