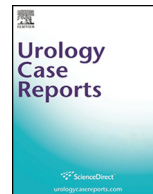




ELSEVIER

Contents lists available at ScienceDirect

Urology Case Reports

journal homepage: www.elsevier.com/locate/eucr

Endourology

Repeated spontaneous migration of ureteral stent in hemiplegia patient during ureteral stone treatment



Masayasu Sugiyama^a, Masaaki Fujimura^{a,*}, Hiroki Nakamori^a, Rika Nishikawa^a, Shinichi Sakamoto^b, Nobuyuki Sekita^c, Hiroyoshi Suzuki^d, Kazuo Mikami^a, Tomohiko Ichikawa^b

^a Department of Urology, Chibaken Saiseikai Narashino Hospital, 1-1-1, Izumi-cho, Narashino, Chiba, 275-8580, Japan

^b Department of Urology, Chiba University, 1-8-1, Inohana, Chuo-ku, Chiba, Chiba, 260-8687, Japan

^c Department of Urology, Funabashi Central Hospital, 6-13-10, Kaijin, Funabashi, Chiba, 273-8556, Japan

^d Department of Urology, Toho University Medical Center Sakura Hospital, 564-1, Shimoshizu, Sakura, Chiba, 285-8741, Japan

A B S T R A C T

A 48-year-old man with a history of cerebral infarction presented with gross hematuria. The patient's limping accompanies twisting trunk on his walking. The diagnosis was right upper ureteral stone. Prior to Extracorporeal shockwave lithotripsy (ESWL) ureteral stent was inserted. After the second ESWL ureteral stent was displaced upwardly without patient's unknown. Retrograde intrarenal surgery (RIRS) was performed for both removal of ureteral stent and fragmentation of residual stone. Spontaneously, post RIRS ureteral stent was migrated upwardly to the same position.

Ureteral stent migration is uncommon. Twisting walk may cause the position of ureteral stent upwardly.

Introduction

Ureteral stent migration has rarely been reported, with a small incidence rate of 2%–10%.¹ It is one of the complications of ureteral stent placement, which also includes stent migration, encrustation, stone formation, and fragmentation.^{1–3} Although most cases occurred as a late complication, no precise period has been mentioned. Prior to extracorporeal shockwave lithotripsy (ESWL) in larger stones, a ureteral stent is inserted to prevent the occurrence of complication after ESWL. Repeated ureteral stent migration has however never been reported.

We described a case of repeated spontaneous migration of ureteral stent during a series of lithotripsy in a patient with hemiplegia.

Case report

A 48-year-old man with a history of cerebral infarction presented with gross hematuria and pain in the right flank. The patient was consulted for a 13 × 20-mm, right upper ureteral stone. Before ESWL, a 4.7-Fr ureteral stent was inserted for the prevention of stonestreet. ESWL was performed twice, but the ureteral stone could not be completely fragmented. After 2 months, an X-ray kidney–ureter–bladder (KUB) showed proximal stent migration at the level of 3rd lumbar vertebra with patient's unknown (Fig. 1). To remove the ureteral stent and achieve stone-free status, the patient was sent to our hospital. At presentation, the patient was afebrile with stable vital signs, and his

laboratory values were consistent with his baseline values. KUB revealed a 10 × 13-mm, right upper ureteral stone. Furthermore, abdominal ultrasonography showed severe hydronephrosis.

Retrograde intrarenal surgery (RIRS) was performed a month after the initial consultation. First, the migrated stent was removed using forceps through rigid ureteroscopy. Second, laser lithotomy was performed, and whole residual stones were completely fragmented. Lastly, a new 6-Fr ureteral stent was inserted into the right ureter. KUB and cystoscopy found no evidence of extremely short length in stent during operation (Fig. 2). After 2 weeks, KUB showed proximal stent displacement again in the same position (Fig. 3). A few weeks later, the displaced stent was removed by the same 3-Fr forceps through rigid ureteroscopy. A new stent was placed in the right ureter with a string and then removed 2 days postoperatively, which prevented ureteral stent from re-displacement. After stent removal, the patient did not show any symptoms including flank pain or urinary tract infection.

Discussion

The most common complications of the ureteral stent are lower abdominal discomfort or gross hematuria.² Ureteral stent migration has rarely been reported. Migration to the extraureteral space has also been reported,⁴ wherein intravenous procedure was required to eliminate the ureteral stent, thereby forcing the patient to undergo invasive treatment. Similar to our case, in another case, invasive procedure was not

* Corresponding author.

E-mail address: bat1bat2@yahoo.co.jp (M. Fujimura).

<https://doi.org/10.1016/j.eucr.2019.100854>

Received 30 November 2018; Received in revised form 12 February 2019; Accepted 19 February 2019

Available online 21 February 2019

2214-4420/© 2019 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).



Fig. 1. KUB showing upward ureteral stent migration after 2 months of the second ESWL.



Fig. 3. KUB showing repeated ureteral stent migration to the same position 2 weeks after RIRS.

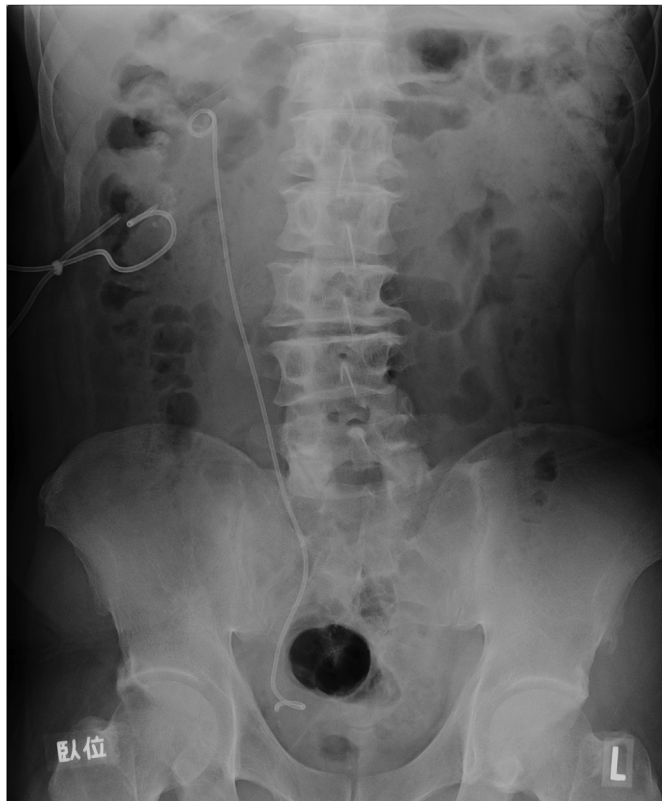


Fig. 2. KUB showing correct ureteral stent insertion immediately after RIRS.

needed because of intraureteral malposition; however, once a proximal ureteral malposition was detected, a longer stent was selected for the next placement as no repeated displacement occurred with a longer stent.²

The possible mechanism in our case is considerable as follows: the patient developed hemiplegia on the left side after cerebral infarction. Limping accompanies twisting trunk on his walking. Twisting may cause excessive movement of the ureteral stent toward the proximal urinary system. Repeating such a strange movement may lead to upward disposition of the ureteral stent. Deep massage has also been associated with ureteral stent displacement.⁵ Outer force may change the position of the ureteral stent. This report may support the phenomenon of our case. Although there was no outer force in this case, inner twisting abdominal movement possibly resulted in enough pressure to cause movement of the ureteral stent.

Conclusion

To the best of our knowledge, this is the first report of repeated spontaneous migration of ureteral catheter during a short period in a patient with hemiplegia. To avoid migration, quick removal of the ureteral stent should be considered (unless long-term placement is required); also, outer pressure to the body such as body massage should be avoided.

Conflicts of interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

Ethical statements

This retrospective study was approved by the institutional review

board of our institution. Informed consent to perform operation was obtained from all patients, but informed consent to be included in this study was waived because of the retrospective nature of this study.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.eucr.2019.100854>.

References

1. Hao P, Li W, Song C, Yan J, Song B, Li L. Clinical evaluation of double-pigtail stent in patients with upper urinary tract diseases: report of 2685 cases. *J Endourol.* 2008;22(1):65–70.
2. Breau RH, Norman RW. Optimal prevention and management of proximal ureteral stent migration and remigration. *J Urol.* 2001;166:890–893.
3. Ringel A, Richter S, Shalev M, Nissenkom I. Late complication of ureteral stents. *Eur Urol.* 2000;38(1):41–44.
4. Falahatkar S, Hemmati H, Gholamjani Moghaddam K. Intracaval migration: an uncommon complication of ureteral Double-J stent placement. *J Endourol.* 2012;26(2):119–121.
5. Kerr HD. Ureteral stent displacement associated with deep massage. *Wis Med J.* 1997;96(12):57–58.
1. Hao P, Li W, Song C, Yan J, Song B, Li L. Clinical evaluation of double-pigtail stent in