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LETTER TO THE EDITOR

Ureteroscopy-assisted retrograde nephrostomy (UARN) for an incomplete double ureter

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We previously described ureteroscopy (URS)-assisted retrograde nephrostomy (UARN) [4, 5]. In UARN, it is possible to continuously visualize the dilation of the ureter from puncture to insertion of the nephroaccess sheath (NAS). We herein report the first case of UARN for percutaneous nephrolithotomy (PCNL) in a patient with an incomplete double ureter.

A 67-year-old male was referred to our department for treatment of left renal calculus with an incomplete double ureter (Fig. 1a, b). In April 2012, the patient was admitted to our department for PCNL to treat the left renal stone. We performed PCNL using the UARN technique. The technique was performed as described in our previous reports [4, 5]. In brief, under general and epidural anesthesia, the patient was placed in a modified Valdivia position (Galdakao-modified Valdivia position) [2]. After inserting a ureteral access sheath, the URS findings showed a bifurcation of his ureter (Fig. 1d). We confirmed the location of the target stone and determined the target calyx to puncture. A Lawson retrograde nephrostomy puncture wire (Cook Urological, Bloomington, IN, USA) was set in URS and approached to the target calyx, which was subsequently punctured (Fig. 1e, f). The renal stones were composed of two stones in the renal pelvis and two stones in the renal calyx next to the punctured calyx (Fig. 1g). Before dilating the nephrostomy, we first reposition the two stones in the renal calyx to avoid the target stone blocking the NAS. After repositioning the target stone, balloon dilation and insertion of the NAS were performed. PCNL was then successfully performed (Fig. 1c).

The incidence of a double renal pelvis and ureter ranges from 0.5 to 3.0 % in humans [3, 6]. The anomalous duplication of the ureter and pelvis has been classified as complete and incomplete ureters [3, 6]. An incomplete duplication is three times more common than a complete duplication. In an incomplete duplication, the pelvis and the two ureters join and enter the bladder by one common orifice, and such duplication may be unilateral or bilateral. The patients who have duplication of the ureter have an increased risk of stone formation [1].

PCNL for abnormal kidneys is sometimes difficult, particularly without hydronephrosis. UARN facilitates the continuous visualization from puncture to insertion of the NAS with URS. In this case, URS contributed to the visualization of the detailed anatomy between the punctured calyx and target stone. UARN might represent a new option to perform PCNL in subjects with ureteral duplication.

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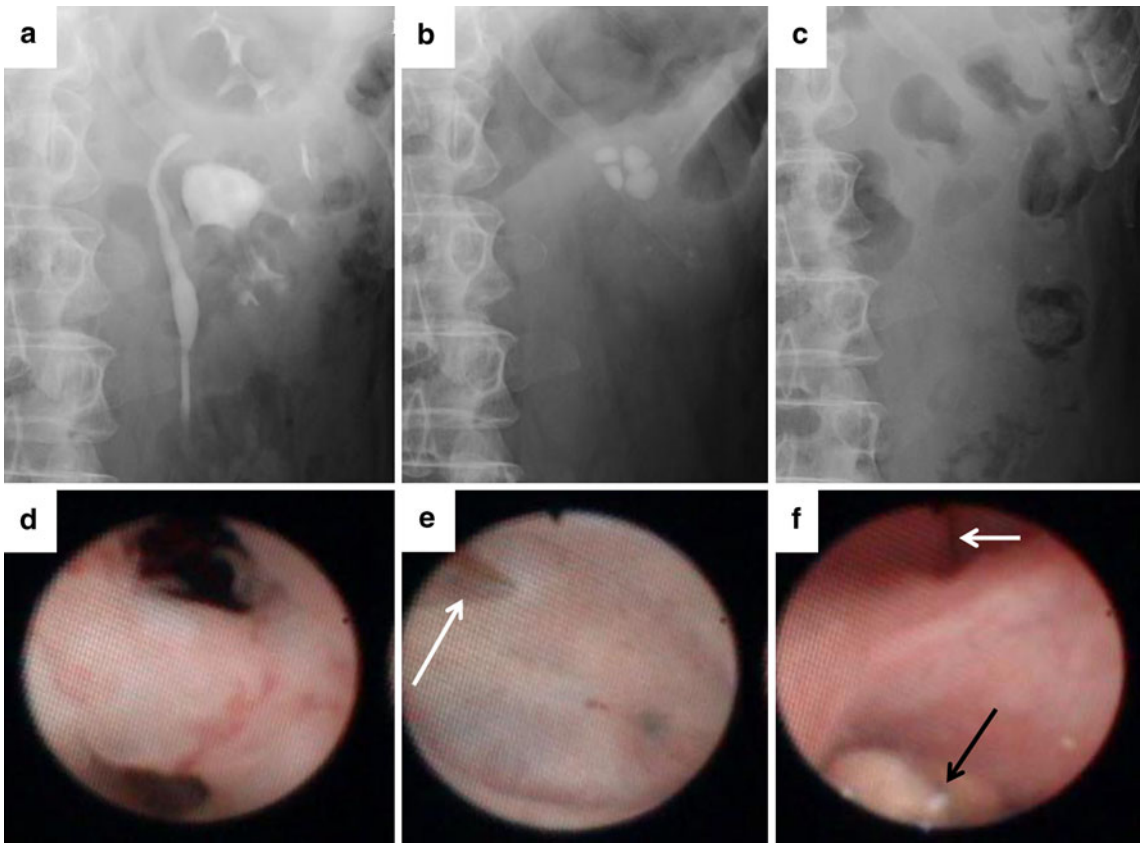

Fig. 1 Preoperative intravenous urography (**a**) and KUB film (**b**). The postoperative KUB film (**c**). The ureteroscopic findings of the incomplete double ureter (**d**). Puncturing the target calyx with a puncture wire (*white arrow*) (e). The puncture wire (*white arrow*) and target stone (*black arrow*) (**f**)

Conflict of interest None.

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