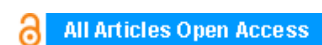


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Mari Ohtaka, Takashi Kawahara, Hiroki Ito, Hideyuki Terao, Shinnosuke Kuroda, Kengo Yasuda, Hiroji Uemura, Masahiro Yao, Junichi Matsuzaki

ABSTRACT

Abstract is not required for Letter to Editors



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Ureteroscopy-assisted retrograde nephrostomy (UARN) for staghorn calculi in the horseshoe kidney

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To the Editors,

Ureteroscopy-assisted retrograde nephrostomy (UARN) makes it possible to continuously visualize the dilation of the ureter from the site of puncture to insertion of the nephro access sheath with minimal complications, and it is effective for percutaneous nephrolithotripsy (PCNL). We herein report the case of staghorn calculi in a horseshoe kidney successfully treated by PCNL in combination with UARN.

Horseshoe kidney is the most common of all renal fusion anomalies, with a prevalence of 0.25% in the general population [1]. However, performing nephrostomy on the target calyx is difficult without dilating the renal collecting system, even if an occlusion balloon catheter is used to create hydronephrosis.

We firstly reported ureteroscopy assisted retrograde nephrostomy (UARN) using with percutaneous nephrolithotripsy (PCNL) [2]. This procedure contributes surgeon to see intrarenal situation during from puncture to dilation. PCNL using with UARN contributes to higher stone free rates and less operation time. In this report, we performed PCNL with UARN technique for staghorn stone in a horseshoe kidney.

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A 37-year-old female was referred to our department for further treatment. She had no remarkable symptoms. Two months from the initial visit, the patient was admitted to our department for PCNL to treat a right renal staghorn calculus (Figure 1). We performed PCNL in combination with UARN as described previously and successfully removed the target stone (Figure 2). The patient was discharged from the hospital 4 days after surgery.

Horseshoe kidney is a fused formation between both sides of kidneys in the lower poles. For renal stone in horseshoe kidney, shock wave lithotripsy (SWL), ureteroscopy, PCNL, and open surgery are candidate treatments [3–5]. Previous reports showed that PCNL in horseshoe kidney is effective and appropriate to puncture in the upper calyx by Al-Otobi et al. [6, 7]. Nephrostomy in the upper calyx contributed to access wide area in the renal pelvis and also in ureter [8].

Setting nephrostomy in the upper calyx has a disadvantage of longer distance from skin to the lower calyx. So nephroscope sometimes cannot reach to the target stone. UARN helps to control the target spot for puncture under the ureteroscopic approach [9]. Thus, the puncture spot is always ideal for performing PCNL with minimum complications. We previously reported two initial horseshoe kidney cases of PCNL using UARN [10]. The present case of staghorn calculi in the horseshoe kidney supports our results.



Figure 1: Preoperative images (a) KUB, (b) 3D-CT scan, (c) Coronal CT scan, and (d) Axial CT scan. The stone was occupied the whole left renal pelvis.



Figure 2: Postoperative KUB.

UARN is, therefore, considered to be an effective treatment modality for staghorn calculi in the horseshoe kidney.

Keywords: Horseshoe kidney, Percutaneous nephrolithotripsy (PCNL), Shock wave lithotripsy, Staghorn, Ureteroscopy-assisted retrograde nephrostomy (UARN)

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Mari Ohtaka – Substantial contributions to conception and design, Acquisition of data, Drafting the article, Revising it critically for important intellectual content; Final approval of the version to be published

Takashi Kawahara – Substantial contributions to conception and design, analysis and interpretation of data; Drafting the article, Revising it critically for important intellectual content; Final approval of the version to be published

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Junichi Matsuzaki – Substantial contributions to conception and design, Analysis and interpretation of data; Drafting the article, Revising it critically for important intellectual content; Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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