

Endoscopic combined intrarenal surgery for the management of ureteral and multiple renal stones

Ahmed Albakr, Hamzah Shehadeh, Ammar Al Ani, Khalid Al Jalham

Item type

Journal Contribution

Terms of use

This work is licensed under a [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/) license

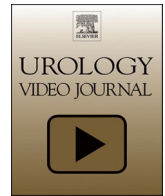
This version is available at

https://manara.qnl.qa/articles/journal_contribution/Endoscopic_combined_intrarenal_surgery_for_the_management_of_ureteral_a

Access the item on Manara for more information about usage details and recommended citation.

Posted on Manara – Qatar Research Repository on

2023-06-01



Endoscopic combined intrarenal surgery for the management of ureteral and multiple renal stones

Ahmed Albakr^{*}, Hamzah Shehadeh, Ammar Al Ani, Khalid Al Jalham

Hamad Medical Corporation, Department of Urology, Doha, Qatar

ARTICLE INFO

Keywords:

Urolithiasis
Endourology
Intrarenal surgery
Flexible ureteroscopy
ECIRS

ABSTRACT

Introduction: Since its introduction in 2008, endoscopic combined intrarenal surgery (ECIRS) has shown multiple advantages for complex renal stones management. ECIRS provided a higher stone-free rate with lower incidence of severe complications, including blood transfusion, than conventional percutaneous nephrolithotomy (PCNL) [1]. The simultaneous utilization of flexible ureteroscopy with PCNL is of diagnostic and therapeutic value. Ureteroscopy evaluates the upper urinary tract for abnormalities, including strictures or stones, allowing cautious planning before tackling the renal stones. Furthermore, flexible ureteroscopy evaluates the calyceal anatomy and visually supervises the calyceal puncture and dilatation of the tract, which helps minimize radiation use. In addition, flexible ureteroscopy gives access to unreachable calyces to ensure better stone clearance and minimize the number of percutaneous accesses needed [2].

Case presentation: A 42-year-old gentleman with a history of recurrent stone formation and previous left open pyelolithotomy presented to our clinic with left dull aching flank pain for one week.

Results: Computed tomography scan showed a 5 mm stone in the left proximal ureter with severe back pressure changes in addition to multiple non-obstructing renal stones, with the largest group in the lower calyx measuring collectively 2.5 × 2 cm associated with a distorted renal calyceal system as a result of previous open renal surgery. Given the large renal stone burden with ureteric obstruction, ECIRS was planned.

The technique of procedure: The patient was placed in Giusti's position. Examination of the left ureter using a 6.5 F semi-rigid ureteroscope showed a small stone in the left upper ureter, a guide wire was passed to the left kidney under the endoscopic vision, and the stone was grasped using a nitinol basket. A ureteric access sheath was advanced to the left pelvi-ureteric junction under fluoroscopy, followed by backloading the 8.6 WiScope® Single-Use Digital Flexible Ureteroscope. The entire pelvicalyceal system was examined, showing multiple lower calyceal and renal pelvic stones. Under fluoroscopic and endoscopic guidance, lower calyx puncture was done using the triangulation technique. The lower calyceal access was dilated using a balloon catheter up to 30 F, followed by the introduction of the 30 F Amplatz sheath. The 26 F nephroscope showed multiple stones in the lower calyx that were removed with forceps and fragmented using ultrasonic lithotripsy. Multiple stones were seen in a parallel calyx to the puncture and were grasped using a nitinol basket through the flexible ureteroscope and passed to the nephroscope. A final inspection of the renal calyces using the flexible ureteroscope showed no residual stones. A retrograde JJ stent was placed in the renal pelvis. An Argyle tube was placed as a drain before removing the Amplatz sheath. The percutaneous track was inspected using a flexible ureteroscope through the transparent tube showing no bleeding or organ injury, and fluoroscopy showed no contrast extravasation. The nephrostomy tube was removed 48 hours after the operation, and the patient was discharged home with no perioperative complications. Stone analysis showed calcium oxalate dihydrate.

Conclusion

ECIRS is a significant addition to PCNL, especially for managing cases with ureteric and complex renal stones.

Ethical approval

Approved by Surgical Research Center, Hamad Medical Corporation.

^{*} Corresponding author.

E-mail address: ahmedalbakr@gmail.com (A. Albakr).

<https://doi.org/10.1016/j.urolvj.2023.100217>

Received 16 December 2022; Received in revised form 4 February 2023; Accepted 1 April 2023

Available online 6 April 2023

2590-0897/© 2023 The Author(s). Published by Elsevier Inc. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

Consent

Written consent for the publication of the clinical details of this case report is present upon request.

The video related to this article can be found online at: [doi:10.1016/j.urolvj.2023.100217](https://doi.org/10.1016/j.urolvj.2023.100217).

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence

the work reported in this paper.

References

- [1] Y.H. Liu, H.J. Jhou, M.H. Chou, S.T. Wu, T.L. Cha, D.S. Yu, G.H. Sun, P.H. Chen, E. Meng, Endoscopic combined intrarenal surgery versus percutaneous nephrolithotomy for complex renal stones: a systematic review and meta-analysis, *J. Personal. Med.* 12 (4) (2022) 532, <https://doi.org/10.3390/jpm12040532>.
- [2] C.M. Scoffone, C.M. Cracco, Invited review: the tale of ECIRS (Endoscopic Combined IntraRenal Surgery) in the Galdakao-modified supine Valdivia position, *Urolithiasis* 46 (1) (2018) 115–123, <https://doi.org/10.1007/s00240-017-1015-9>.