

EVALUATION OF ENDOSCOPIC COMBINED INTRARENAL SURGERY IN MANAGEMENT OF COMPLEX RENAL STONES

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Introduction

- Percutaneous nephrolithotomy PCNL has become the gold standard for the management of large or complex Renal stones. Retrograde intrarenal surgery (RIRS) has been recently introduced as highly effective technique in management of renal stones specially with anomalous kidney and in coagulopathies.
- Nowadays, achieving a high stone free rate with a lower morbidity have led RIRS to become a commonly used and important treatment modality for management of renal stones less than 2 cm.
- Supine Valdivia position has been modified multiple times till we reached more ergonomic Galdakao-modified supine Valdivia (GMSV) position.
- The GMSV position optimally supports ECIRS (Endoscopic Combined IntraRenal Surgery), a novel simultaneous combined antegrade and retrograde approach to the upper urinary tract for the treatment complex urolithiasis.
- Multiple stones in different parts of pelvicalyceal system which are supposed to need multiple punctures to clear all the stones using classical prone PCNL was always a concern for the surgeon due to morbidity and time consumption for multiple tracks.
- ECIRS in GMSV position can be introduced as a new effective, safe and time saving technique to solve this problem specially with associated ureteral stones.

Aim of the work

Aim of the study to evaluate the efficacy and safety of ECIRS in management of complex renal stones.

Subjects and Methods

- Study was prospectively conducted and included 22 cases, whom underwent ECIRS using GMSV position for management of complex renal stones in the Department of Genitourinary Surgery, Alexandria Main University Hospital.
- Demographic data, stone and kidney characters, operative time, stone free rate, intraoperative and postoperative complications were recorded.
- Simultaneous antegrade and retrograde approaches to access complex kidney stone in GMSV position and remove it in a single session with single nephrotomy track.

- The whole pelvic portion of the stone was removed and also the stones of targeted calyx using antegrade access and this created working area to facilitate integrated work between two surgeons using simultaneous retrograde and antegrade access to remove the rest of the stones.

Results

- The mean stone size was 5.54(±1.31) CM.
- The stone free rate SFR was (86.4 %) and (95.4 %) after reintervention.
- The mean operative time was 72.64 (±23.92) minutes which is relatively short.
- The average fluoroscopy time was 2.74 Minutes.
- Complication rate was 9.1 % of cases and all of these complications were of grade 2 with mild postoperative pain and minimal analgesia requirements.

Table: Distribution of the studied cases according to different parameters (n = 22)

	No. (%)
Operative time (min.)	
Mean ± SD.	72.6 ± 23.9
Median (Min. – Max.)	65 (40 – 135)
Radiation (min.)	
Mean ± SD.	2.7 ± 0.9
Median (Min. – Max.)	3 (1 – 4.4)
DJ	22 (100%)
Nephrostomy	22 (100%)
Stone free rate (%)	
Stone free	19 (86.4%)
Residual stones need more intervention	3 (13.6%)
Mode of re-intervention	
None	19 (86.4%)
PCNL	2 (9.1%)
ESWL	1 (4.5%)
Time of PCN (hrs.)	
Mean ± SD.	13.4 ± 29.6
Median (Min. – Max.)	6 (6 – 144)
Mode	6
Time of DJ (days)	
Mean ± SD.	11.8 ± 5.9
Median (Min. – Max.)	10 (10 – 30)
Mode	10
Hospital stay (day)	
Mean ± SD.	1.5 ± 1.4
Median (Min. – Max.)	1 (1 – 7)
Mode	1

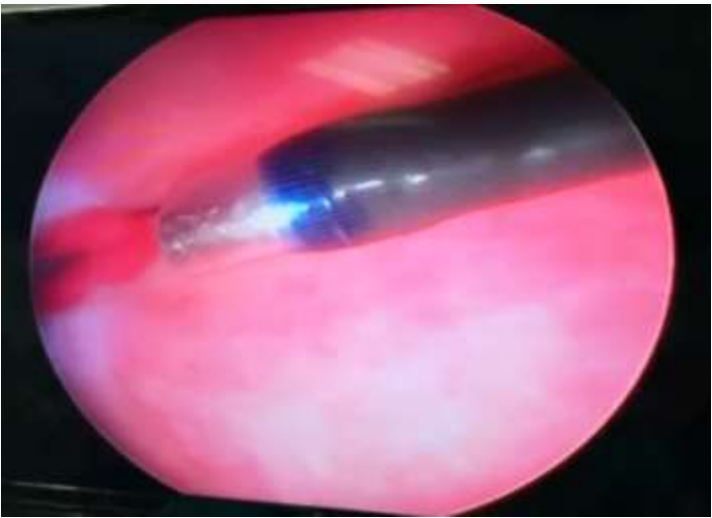


Figure 1: Antegrade renal access in ECIRS

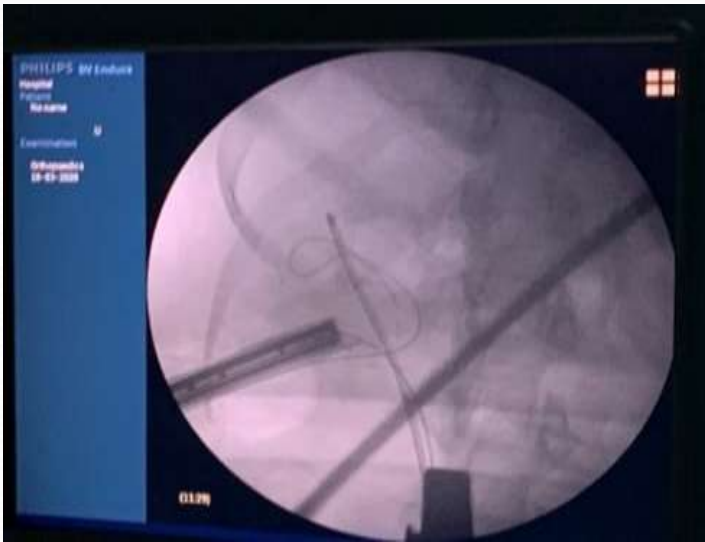


Figure 2: Fluroscopic view for ECIRS

Conclusion

- ECIRS can be introduced as a highly effective, safe and time saving technique for the management of complex renal stones.