Diyala Journal of Medicine

ORIGINAL RESEARCH
Published: 25 December 2025
DOI: 10.26505/djm.v29i2.1413

Improving the Patient's Safety and Quality of Life with Minimizing Hospital Readmission Post Endoscopic Renal Stone Surgery RIRS

Aous Abed Al-Jaleel Khaleel [1]

[1] Department of Surgery, College of Medicine, University of Diyala, Diyala, Iraq.

OPEN ACCESS

Correspondence: Aous Abed Al-Jaleel Khaleel
Email: aousjaleel@yahoo.com

Website: https://djm.uodiyala.edu.iq/index.php/djm

Received: 18 April 2025
Accepted: 04 September 2025
Published: 25 December 2025

Abstract

Background: Technology advancement of retrograde intrarenal surgery is important in elevating its efficiency and safety for renal and upper ureter stone management.

Objectives: To evaluate the efficiency and safety of retrograde intrarenal surgery with a flexible and navigable ureteral access sheath in the management of renal and upper ureter stones.

Patients and Methods: It was a clinical prospective follow-up study carried out in Life Private Hospital in Kalar city, Kurdistan region, Iraq, over the period of one year, from 1st of January to 31st of December 2024. A sample of one hundred patients underwent retrograde intrarenal surgery with a flexible and navigable sheath. The diagnosis of stones was done by a researcher and a Radiologist or referral from other physicians from different specialties through abdominal ultrasound and computerized tomography scan.

Results: The preoperative clinical co-morbidities were present in 37% of patients, commonly diabetes mellitus (18%), hypertension (12%), and heart disease (7%). The preoperative urine culture was positive in 17% of patients. Preoperative stent was done for 31% of patients, commonly for non-compatible ureter (20%), pain (9%), and sepsis (2%). No stone fragments or sepsis were reported postoperatively among the patients studied.

Conclusion: The retrograde intrarenal surgery using flexible and navigable ureteral access sheath is an effective and safe surgical procedure in the management of kidney and upper ureter stones.

Keywords: Kidney stone, Retrograde intrarenal surgery, Flexible and navigable sheath.

Introduction

Urinary stone disease represented nowadays a common benign public health problem all over the world. The kidneys are bean-shaped organs that weigh between 150 and 200 grams in males and roughly 120 to 135 grams in females. They have medial concavity and lateral convexity. Typically, the measurements are 10-12 cm in length, 5-7 cm in breadth, and 3-5 cm in thickness. Each kidney is approximately the size of a fist. They are located between the transverse processes of T12 and L3 on the posterior abdominal wall, retroperitoneally. In relation to the lower poles, both upper poles are often orientated somewhat medially and posteriorly. It may indicate a superior pole renal mass or a horseshoe-shaped kidney if the upper renal poles are orientated laterally. Additionally, because of the liver, the right kidney typically occupies a slightly lower position than the left kidney (1). The incidence of stone

ORIGINAL RESEARCH
Published: 25 December 2025
DOI: 10.26505/djm.v29i2.1413

diseases were approximately 10% globally (2). Prevalence of renal calculi differs across various countries and regions, with global prevalence reported to range between 1% and 20%, with higher reported rates in the United States of America (7–13%), followed by Europe (5–9%) and Asia (1–5%) (3). This prevalence discrepancy is attributed to variations in geographic factors, genetics, nutrition, environment, and race, as well as the spectrum of disorders that lead to stone formation. To mitigate these impacts, it is essential to manage stones effectively and safely to reduce morbidity rates (4). Major treatment options applied for management of upper urinary tract stones are shockwave lithotripsy (SWL), retrograde intrarenal surgery (RIRS), and percutaneous nephrolithotomy (PCNL) or even open or laparoscopic surgery (5). Recently, the RIRS is regarded as the most preferable surgery by surgeons and patients (6). The RIRS is involving use of flexible ureteroscope and effective lithotripter like holmium: yttrium aluminum garnet (holmium:YAG) laser used as a valuable, multilateral and minimally invasive procedure for urolithiasis management (7). The vacuum-aided or suction aspiration sheath had an important role in improving stone free rate (SFR) and lowering postoperative infection related to negative effect of high intrarenal pressure and temperature during laser lithotripsy (8). Use of flexible and navigable ureteral access sheath (FANS) has shown better outcomes including earlier high SFR, low intraoperative and postoperative complications and low hospital re-admission rate (9). Currently, various treatment guidelines of renal stones include the RIRS as a first or second option, even in large-sized stones (>2 cm)5, (10). Additionally, to improve safety, effectiveness, and satisfaction for both patients and surgeons, newer techniques have emerged, including high-power holmium: YAG lasers, thulium fiber lasers, and single-use digital ureteroscopes. Nevertheless, surgeons encountered numerous limitations with RIRS, including postoperative complications, cost-effectiveness, and the simultaneous use of new instruments (11). Main indications for RIRS are renal stones>1.5 cm that are not amenable to SWL, the patient's preference, and the patient's social status (12). Other indications are radiolucent stones, multiple stones unfeasible for SWL, use of anticoagulants, coexisting renal and ureteral stones, and bleeding diseases (11). The RIRS could be indicated in the treatment of >2 cm renal stones with 71-95% SFR (13). Significant and continuous technological advancements in endoluminal endourology are expanding the clinical scope of RIRS. The RIRS is a minimally invasive surgery that changed from second to first interventional option in the management of renal stones ≤2 cm in size with high SFR5, (10). Like other surgical procedures, different intraoperative complications are reported, such as discomfort from a ureteral stent, forniceal rupture, bleeding, injuries to the ureteral wall, and migration of fragments. Postoperatively, the most prevalent complications are fever, urinary tract infections (14), and sepsis (15). Rarely, the sepsis could lead to serious complications (organ failure, respiratory and cardiac complications) and death (13). The reported overall postoperative complication rate of RIRS ranges from 9% to 25%, with a predominant Clavien grade I or II (16). The current study aimed to evaluate the efficacy and safety of retrograde intrarenal surgery using a flexible, navigable ureteral access sheath for the management of renal and upper ureteral stones.

Patients and Methods

Study design: The present study was a clinical prospective follow up study carried out in Life private hospital in Kalar city, Kurdistan region-Iraq through the period of one year from 1st of January to 31st of December, 2024. The studied population was patients with kidney and upper

ORIGINAL RESEARCH
Published: 25 December 2025
DOI: 10.26505/djm.v29i2.1413

ureter stones. Adult age patients (≥18 years) with upper ureteral or renal stone ranging from 10 to 25 mm were included. Exclusion criteria were abnormal renal anatomy, pregnancy, active urinary tract infection, and renal stone larger than 25 mm, coagulopathy and patients refused to participate in the study. Ethical approval was guaranteed by the local Ethics Committee of the Life Hospital, Kalar (September 2024) and the University of Diyala/ College of Medicine. The patient's approval and informed consent form were obtained, and the management of complications was accordingly addressed. A sample of 100 patients who underwent RIRS using FANS was selected after meeting the eligibility criteria.

Data collection: Patient information was collected directly and entered into a questionnaire designed by researchers. The questionnaire included demographic characteristics of patients (age and gender), stones characteristics (location, size, laterality, number, Hounsfield unit and previous interventions), preoperative characteristics of patients (clinical co-morbidities, urine culture, preoperative stent and reasons of stent) and outcomes of patients underwent RIRS using FANS (fever, sepsis, macroscopic hematuria, pain after stent removal, forniceal rupture, ureter avulsion, blood transfusion, residual stones fragment ≥4mmand lower urinary tract symptoms). The diagnosis of stones was made by a researcher and a Radiologist, or by referral from other physicians in different specialties, using abdominal ultrasound and computed tomography. Under either spinal anesthetic or general anesthesia, all operations are performed in the lithotomy position. An 8.5/9.5 Fr semi-rigid ureteroscope (Wolf, Germany) is used to implant a 0.038 Fr guidewire into the renal pelvis under fluoroscopic supervision. The pelvicalyceal system is assessed through retrograde pyelography. To achieve the desired suction effect as determined by the vacuum's suction parameter, the suction channel is connected to a vacuum device with a pressure-regulating ventilation slit, keeping the lowest intrarenal pressure after it has been confirmed that the 10 Fr FANS (Figure 1) (Innovex®; China) tip reaches the ureteropelvic junction. The flexible URS is retracted to the FANS's end aperture following a collecting system inspection (Figure 1). FANS is advanced to the targeted renal calyx with the help of the 7.5 Fr digital flexible ureteroscope (Hug-Med Company, China) was inserted. Stones are disintegrated using a 273µ holmium laser fiber (Litho 30 W Holmium laser, Quanta System, Samarate, Italy). A fragment-collecting container attached to the suction tube is another feature of the FANS concept that we employ. The suction characteristic of this technology makes it possible to gather the pieces and send them to the patient for stone examination (Figure 2). In case of difficult ureteroscopy like tight ureter or ureteric stricture only JJ stent placed under fluoroscopic guidance and terminate the procedure.

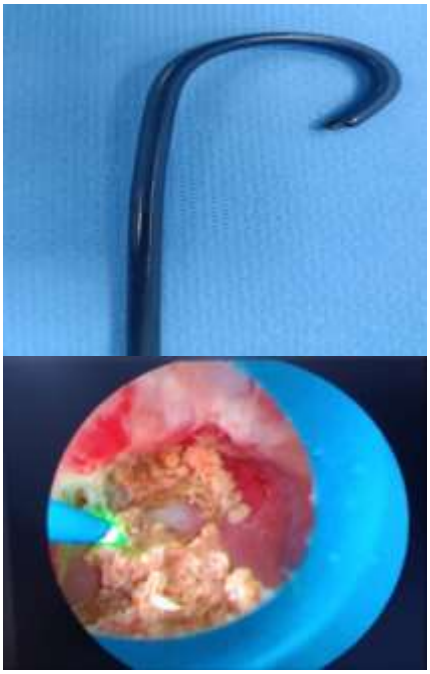

Figure 1. A: Flexible Navigable Ureteral Access Sheath bending with Flexible Ureteroscopy, limit use of the Dormia basket for stone relocation, and B: Duringstoen dusting of lower pole stone where the fragments sucked by Flexible Navigable Ureteral Access Sheath.

ORIGINAL RESEARCH
Published: 25 December 2025
DOI: 10.26505/djm.v29i2.1413

Figure 2. Suction container of fluid with bacteria and debris that could be escaped into systemic circulation leading to postoperative fever and sepsis.

The patients were followed up postoperatively for 1,2 weeks or one month if patient needed for prolong JJ placement and assessment of complications and SFR. The complications were assessed for any patient complain like fever or pain, those using ultrasound for stone free and other laboratory test if needed. All complications were managed conservatively by hydrations, analgesia and oral antibiotics. No operative procedure used except for JJ stent removal.

Statistical Analysis

The patient's information was entered and interpreted statistically by SPSS program-26 and suitable tables were implemented accordingly.

Results

Demographic characteristics: This study included one hundred patients underwent RIRS using FANS with mean age of (34.2 years) and range of 18-60 years; 18% of patients were in age group <30 years, 34% of them were in age group 30-39 years, 26% of them were in age group 40-49 years and 22% of them were in age of 50 years and more. Male patients were more than female patients (61% vs. 39%) (Table 1).

Table 1. Demographic characteristics of patients underwent RIRS using FANS.

Variable	No.	%
Age mean±SD (34.2±8.8 years)		
<30 years	18	18.0
30-39 years	34	34.0
40-49 years	26	26.0
≥50 years	22	22.0
Gender		
Male	61	61.0
Female	39	39.0
Total	**100**	**100.0**

Stones characteristics: Most of studied patients had renal stones, while 14% of them had ureter stones. Mean stones size was (16.4 mm). Unilateral stone present in 89% of patients, while bilateral stones present in 11% of them. About two thirds of patients had single stone and 31% of them had multiple stones. Hounsfield unit was ≤1000 in 36% of patients and more than 1000 in 64% of them. Previous interventions were extracorporeal shock wave lithotripsy (11%), ureterorenoscopic (9%), retrograde intrarenal surgery (4%) and percutaneous nephrolithotomy (2%). (Table 2).

ORIGINAL RESEARCH
Published: 25 December 2025
DOI: 10.26505/djm.v29i2.1413

Table 2. Stones characteristics.

Variable	No.	%
Location		
Kidney	86	86.0
Ureter	14	14.0
Stone size mean±SD (16.4.2±4.7 mm)		
Laterality		
Unilateral	89	89.0
Bilateral	11	11.0
Stone number		
Single	69	69.0
Multiple	31	31.0
Hounsfield unit		
≤1000	36	36.0
>1000	64	64.0
Previous interventions		
No	74	74.0
ESWL	11	11.0
URS	9	9.0
RIRS	4	4.0
PCNL	2	2.0
Total	**100**	**100.0**

Preoperative characteristics: The preoperative clinical co-morbidities were present in 37% of patients, commonly; diabetes mellitus (18%), hypertension (12%) and heart disease (7%). The preoperative urine culture was positive in 17% of patients. Preoperative stent was done for 31% of patients, commonly for; non-compatible ureter (20%), pain (9%) and sepsis (2%). (Table 3).

Table 3. Preoperative characteristics of patients underwent RIRS using FANS.

Variable	No.	%
Clinical co-morbidities		
No	63	63.0
Diabetes mellitus	18	18.0
Hypertension	12	12.0
Heart diseases	7	7.0
Urine culture		
Positive	17	17.0
Negative	83	83.0
Preoperative stent		
Yes	31	31.0
No	69	69.0
Reasons for preoperative stent		
No stent	69	69.0
Sepsis	2	2.0
Pain	9	9.0
Non-compatible	20	20.0
Total	**100**	**100.0**

Outcomes of patients who underwent RIRS using FANS: Postoperative complications following RIRS using FANS were commonly lower tract symptoms (16%), pain after stent removal (11%), and less commonly macroscopic hematuria (1%) (Table 4 and Figure 3).

ORIGINAL RESEARCH
Published: 25 December 2025
DOI: 10.26505/djm.v29i2.1413

Table 4. Outcomes of patients who underwent RIRS using FANS.

Variable	No.	%
Fever		
No	100	100.0
Sepsis		
No	100	100.0
Macroscopic hematuria		
Yes	1	1.0
No	99	99.0
Pain after stent removal		
Yes	11	11.0
No	89	89.0
Forniceal rupture		
No	100	100.0
Ureter avultion		
No	100	100.0
Blood transfusion		
No	100	100.0
Stone fragment ≥4mm		
No	100	100.0
Lower urinary tract symptoms		
Yes	16	16.0
No	84	84.0
Total	**100**	**100.0**

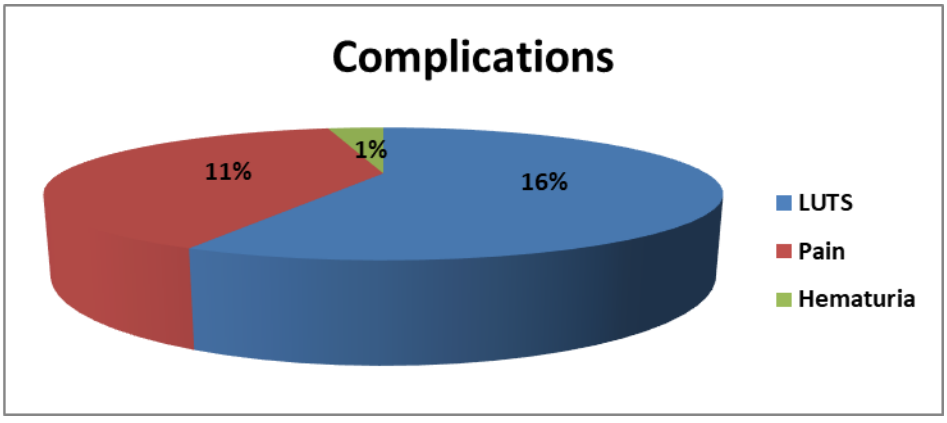

Figure 3. Postoperative complications of RIRS using FANS.

ORIGINAL RESEARCH
Published: 25 December 2025
DOI: 10.26505/djm.v29i2.1413

Discussion

The retrograde intrarenal surgery is essential surgical operation in management of renal stones and upper ureter stones. Advancement of technology including laser therapy helps to acquire better outcomes of this surgical procedure. However, remaining dusts following laser stone dusting (Figure 2) potentiates the development of new stones. For that, application of FANS is required to prevent this complication17. The current study showed that mean age of patients underwent RIRS with FANS was (34.2 years) with predominance of male gender. These findings are inconsistent with recent cross-sectional study conducted in Iraq which revealed that mean age of patients underwent RIRS was (42.5 years) with equal gender distribution 18. This inconsistency might be attributed to differences in sample size and methodology between different studies. The present study found that most of patients underwent RIRS with FANS had renal stones, while 14% of them had ureter stones with mean stones size of (16.4 mm). These findings are in agreement with results of an international, multicenter, and superiority randomized controlled trial study in China which showed the effectiveness of RIRS with FANS in renal stones ≤30 mm (19). In our study, previous interventions were extracorporeal shock wave lithotripsy (11%), ureterorenoscopic (9%), retrograde intrarenal surgery (4%) and percutaneous nephrolithotomy (2%). These findings are similar to results of previous Chinese study (20). Previous retrospective Turkish revealed that RIRS was effective and safe in patients managed by previous interventions (21). In the present study, the preoperative clinical co-morbidities were present in 37% of patients, commonly diabetes mellitus (18%), hypertension (12%), and heart disease (7%). A recent retrospective study conducted in Singapore reported higher efficacy and safety of RIRS with FANS in patients with preoperative clinical comorbidities (22). Our analysis also showed that a preoperative stent was placed for 31% of patients, commonly for a non-compatible ureter (20%), pain (9%), and sepsis (2%). This finding is consistent with results from the literature, which reported a low need for preoperative stenting in patients who underwent RIRS with FANS; however, stenting improved the success rate of access sheath placement (23, 24). In the current study, postoperative complications following RIRS using FANS were commonly lower tract symptoms (16%), pain after stent removal (11%), and, less commonly, macroscopic hematuria (1%). These findings are close to the results of a large, prospective, multicenter, real-world study by the European Association of Urology, which reported minor adverse postoperative outcomes of RIRS using FANS (25). In our study, no patients who underwent RIRS using FANS had postoperative fever or sepsis. Consistently, a recent retrospective Chinese study reported a lower postoperative complication rate for RIRS with a suctioning access sheath as compared to traditional RIRS, especially the infection (26). Our study found that all patients who underwent RIRS using FANS had no stone fragments≥4mm. This finding is parallel to results of a prospective global multicenter study by the European Association of Urology, which reported that immediate postoperative SFR following RIRS using FANS reached 100% (27). Another retrospective multi-center study conducted in China reported an SFR of 95.67% one month following RIRS using FANS in the management of upper urinary tract stones (28).

Conclusion

In conclusion, the retrograde intrarenal surgery using a flexible and navigable ureteral access sheath is an effective and safe surgical procedure in the management of kidney and upper ureter stones. The stone-free rate following retrograde intrarenal surgery using a flexible and navigable

ORIGINAL RESEARCH
Published: 25 December 2025
DOI: 10.26505/djm.v29i2.1413

sheath is high with minor postoperative complications. This study recommended the retrograde intrarenal surgery using a flexible and navigable sheath as a first option in the management of urolithiasis, especially for stone sizes of 20-25 mm. Encourage the use of FANS for large renal stones (>10 mm), particularly for multiple or lower-pole stones, as it improves irrigation and visibility, particularly during prolonged procedures. When repeated instruments are anticipated during the procedure, reducing high intrarenal pressure is important for reducing the risk of pyelovenous or pyelolymphatic backflow and infection. FANS can replace the dormia basket with a use.

Source of funding: No source of funding.

Ethical clearance: This study was approved by the committee of the University of Diyala-College of Medicine with code (2025AAK896).

Conflict of interest: None.

Use of Artificial Intelligence (AI): The authors state they did not use any generative AI tools for creating or editing the manuscript's language.

Acknowledgments: Gratitude and thanks to the staff of Life Private Hospital.

References

1. El-Reshaid W, Abdul-Fattah H. Sonographic assessment of renal size in healthy adults. Med Princ Pract 2014; 23(5):432-6. https://doi.org/ 10.1159/000364876

2. Rukin NJ, Siddiqui ZA, Chedgy ECP, Somani BK. Trends in upper tract stone disease in England: evidence from the Hospital Episodes Statistics database. Urol Int 2017; 98:391–396. https://doi.org/ 10.1159/000449510

3. Sorokin I, Mamoulakis C, Miyazawa K, Rodgers A, Talati J, Lotan Y. Epidemiology of stone disease across the world. World J Urol 2017; 35:1301–1320. https://doi.org/ 10.1007/s00345-017-2008-6.

4. Kang J, Yoo KH, Choi T, Min GE, Lee D-G, Lee H-L, et al. Risk Factors for Sepsis after Retrograde Intrarenal Surgery: Single Center Experience. Urogenit Tract Infect 2023; 18(3):93-100. https://doi.org/10.14777/uti.2023.18.3.93

5. Türk C, Petřík A, Sarica K, Seitz C, Skolarikos A, Straub M, Knoll T. EAU Guidelines on Interventional Treatment for Urolithiasis. Eur Urol. 2016 Mar;69(3):475-82. https://doi.org/ 10.1016/j.eururo.2015.07.041

6. Raheem OA, Khandwala YS, Sur RL, Ghani KR, Denstedt JD. Burden of urolithiasis: trends in prevalence, treatments, and costs. EurUrol Focus 2017; 3:18–26. https://doi.org/10.1016/j.euf.2017.04.001

7. Inoue T, Okada S, Hamamoto S, Fujisawa M. Retrograde intrarenal surgery: Past, present, and future. Investig Clin Urol 2021; 62(2):121-135. https://doi.org/10.4111/icu.20200526

8. Pauchard F, Ventimiglia E, Corrales M, Traxer O. A practical guide for intra-renal temperature and pressure management during RIRS: what is the evidence telling us. J Clin Med 2022; 11:3429. https://doi.org/10.3390/jcm11123429

9. Gauhar V, Traxer O, Castellani D. A feasibility study on clinical utility, efficacy and limitations of two types of flexible and navigable suction ureteral access sheaths in retrograde intrarenal surgery for renal stones. Urology 2023; 78:173–179. https://doi.org/10.1016/j.urology.2023.05.032

10. Assimos D, Krambeck A, Miller NL, Monga M, Murad MH, Nelson CP, et al. Surgical management of stones: American Urological Association/Endourological Society Guideline, part I. J Urol 2016;196:1153-1160. https://doi.org/10.1016/j.juro.2016.05.090

11. Hennessey DB, Fojecki GL, Papa NP, Lawrentschuk N, Bolton D. Single-use disposable digital flexible ureteroscopes: an ex vivo assessment and cost analysis. BJU Int 2018; 121 (Suppl 3):55-61. https://doi.org/ 10.1111/bju.14235

ORIGINAL RESEARCH
Published: 25 December 2025
DOI: 10.26505/djm.v29i2.1413

12. Inoue T, Okada S, Hamamoto S, Yoshida T, Matsuda T. Current trends and pitfalls in endoscopic treatment of urolithiasis. Int J Urol 2018; 25:121-133. https://doi.org/ 10.1111/iju.13491
13. Kang SK, Cho KS, Kang DH, Jung HD, Kwon JK, Lee JY. Systematic review and meta-analysis to compare success rates of retrograde intrarenal surgery versus percutaneous nephrolithotomy for renal stones >2cm: an update. Medicine (Baltimore) 2017; 96:e9119. https://doi.org/10.1097/MD.0000000000009119
14. De Coninck V, Keller EX, Somani B, Giusti G, Proietti S, Rodriguez-Socarras M, et al. Complications of ureteroscopy: a complete overview. World J Urol 2020; 38:2147-2166. https://doi.org/10.1007/s00345-019-03012-1
15. Corrales M, Sierra A, Doizi S, Traxer O. Risk of Sepsis in Retrograde Intrarenal Surgery: A Systematic Review of the Literature. EurUrol Open Sci. 2022; 44:84-91. https://doi.org/10.1016/j.euros.2022.08.008
16. Baboudjian M, Gondran-Tellier B, Abdallah R. Predictive risk factors of urinary tract infection following flexible ureteroscopy despite preoperative precautions to avoid infectious complications. World J Urol 2020; 38:1253–1259. https://doi.org/10.1007/s00345-019-02891-8
17. Gauhar V, Ong CS-H,Traxer O, ChewBH,Gadzhiev N, Teoh JY-C, et al. Step-by-step guide to flexible and navigable suction ureteric access sheath (FANS). Urology Video Journal 2023; 20: 100250. https://doi.org/10.1016/j.urolvj.2023.100250
18. Kadhim KG, Salih NT, Saeed GA. A Cross-Sectional Study of Patients in Iraq with Stones in Renal Calculi Underwent Treated According to Use of Retrograde Surgery. Sarcouncil Journal of Biomedical Sciences 2023; 2 (3): 28-33. https://doi.org/10.5281/zenodo.8014999
19. Zhu W, Liu S, Cao J, Wang H, Liang H, Jiang K, et al. Tip bendable suction ureteral access sheath versus traditional sheath in retrograde intrarenal stone surgery: an international multicentre, randomized, parallel group, superiority study. E Clinical Medicine 2024; 74:102724. https://doi.org/ 10.1016/j.eclinm.2024.102724
20. Lai D, He Y, Li X, Chen M, Zeng X. RIRS with Vacuum-Assisted Ureteral Access Sheath versus MPCNL for the Treatment of 2-4 cm Renal Stone. Biomed Res Int 2020; 2020:8052013. https://doi.org/ 10.1155/2020/8052013
21. Baylan B, Sari S, Cakici MC, Selmi V, Özdemir H, Ozok HU, et al. Is RIRS Safe and Efficient In Patients With Kidney Stones Who Had Previous Open, Endoscopic, or Percutaneous Kidney Stone Surgery? One Center Retrospective Study. Urol J 2020; 17(3):228-231. https://doi.org/ 10.22037/uj.v0i0.4950
22. Gauhar V, Traxer O, Castellani D, Ragoori D, Heng CT, Chew BH, et al. A Feasibility Study on Clinical Utility, Efficacy and Limitations of 2 Types of Flexible and Navigable Suction Ureteral Access Sheaths in Retrograde Intrarenal Surgery for Renal Stones. Urology 2023; 178:173-179. https://doi.org/10.1016/j.urology.2023.05.032
23. Mahajan PM, Padhye AS, Bhave AA, Sovani YB, Kshirsagar YB, Bapat SS. Is stenting required before retrograde intrarenal surgery with access sheath. Indian J Urol 2009; 25(3):326-328. https://doi.org/10.4103/0970-1591.56185
24. Yuk HD, Park J, Cho SY, Sung LH, Jeong CW. The effect of preoperative ureteral stenting in retrograde Intrarenal surgery: a multicenter, propensity score-matched study. BMC Urology 2020; 20:147.
25. Gauhar V, Traxer O, Castellani D, Sietz C, Chew BH, Fong KY, et al. Could Use of a Flexible and Navigable Suction Ureteral Access Sheath Be a Potential Game-changer in Retrograde Intrarenal Surgery? Outcomes at 30 Days from a Large, Prospective, Multicenter, Real-world Study by the European Association of Urology Urolithiasis Section. EurUrol Focus

ORIGINAL RESEARCH
Published: 25 December 2025
DOI: 10.26505/djm.v29i2.1413

2024:S2405-4569(24)00073-7. https://doi.org/10.1186/s12894-020-00715-1

26. Wang L, Zhou Z, Gao P, Yang Y, Ding Q, Wu Z. Comparison of traditional and suctioning ureteral access sheath during retrograde intrarenal surgery in the treatment of renal calculi. Langenbecks Arch Surg 2024; 409(1):81. https://doi.org/10.1007/s00423-024-03275-2

27. Gauhar V, Traxer O, Castellani D, Fong KY, Bin Hamri S, Gökce MI, et al. Operative outcomes 24 hours after retrograde intrarenal surgery for solitary renal calculi using a flexible and navigable suction ureteral access sheath. A prospective global multicenter study by the European Association of Urology Section on Urolithiasis. Minerva Urol Nephrol 2024; 76(5):625-634. https://doi.org/ 10.23736/S2724-6051.24.05961-5

28. Bai J, Shangguan T, Zou G, Liu L, Xue X, Lin J, et al. Efficacy and intrarenal pressure analysis of flexible and navigable suction ureteral access sheaths with flexible ureteroscopy in modified surgical positions for 2–6 cm upper urinary tract stones: a multicenter retrospective study. Front Med 2024; 11:1501464. https://doi.org/ 10.3389/fmed.2024.1501464

Diyala Journal of Medicine

ORIGINAL RESEARCH
Published: 25 December 2025
DOI: 10.26505/djm.v29i2.1413

تحسين سلامة المريض ونوعية حياته مع تقليل إعادة دخول المستشفى بعد جراحة حصى الكلى بالمنظار (RIRS)

[1] أوس عبد الجليل خليل

الملخص

الخلفية: يُعد التقدم التكنولوجي في جراحة الكلى الرجعية داخل الكلى مهمًا في رفع كفاءتها وسلامتها في علاج حصوات الكلى والحالب العلوي.

الأهداف: تقييم كفاءة وسلامة جراحة الكلى الرجعية باستخدام غمد مرن وقابل للمرونه في علاج حصوات الكلى والحالب العلوي.

المرضى والطرق: أجريت دراسة متابعة سريرية مستقبلية في مستشفى لايف الخاص في مدينة كلار؛ إقليم كردستان العراق خلال فترة عام واحد من ١ يناير إلى ٣١ ديسمبر ٢٠٢٤ على عينة من مائة مريض خضعوا لجراحة الكلى الرجعية داخل الكلى باستخدام غمد مرن وقابل للطي. تم تشخيص الحصوات من قبل الباحث وأخصائي الأشعة أو الإحالة من أطباء آخرين من تخصصات شخصت من خلال الموجات فوق الصوتية على البطن والتصوير المقطعي المحوسب.

النتائج: كانت الأمراض المصاحبة السريرية قبل الجراحة موجودة لدى ٣٧٪ من المرضى، وأكثرها شيوعًا؛ داء السكري (١٨٪) وارتفاع ضغط الدم (١٢٪) وأمراض القلب (٧٪). كانت نتائج زارعة البول قبل الجراحة إيجابية لدى ١٧٪ من المرضى. أُجريت قسطره الحالب قبل الجراحة لـ ٣١٪ من المرضى، وكانت النتائج شائعةً لـ: عدم توافق الحالب (٢٠٪)، والألم (٩٪)، وتسمم الدم (٢٪). لم يُبلّغ عن أي بقايا حصوات أو تسمم دم بعد الجراحة لجميع المرضى الذين خضعوا للدراسة.

الاستنتاج: تُعد الجراحة الكلوية الرجعية باستخدام غمد حالبي مرن سهل الملاحة إجراءً جراحيًا فعالًا وآمنًا في علاج حصوات الكلى والحالب العلوي.

الكلمات المفتاحية: حصاة كلوية، الجراحة الراجعة داخل الكلية، غمد مرن وقابل للتوجيه

المؤلف المراسل: أوس عبد الجليل خليل

الايميل: aousjaleel@yahoo.com

تاريخ الاستلام: ١٨ **نيسان** ٢٠٢٥

تاريخ القبول: ٤ **ايلول** ٢٠٢٥

تاريخ النشر: ٢٥ **كانون الأول** ٢٠٢٥

[1] **فرع الجراحة، كلية الطب، جامعة ديالى، ديالى، العراق.**