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Outcome of Flexible Ureretrenoscope With Compare to Without Use of Ureteral Access Sheath in Iraqi Patients, Retrospective Study

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Abstract

Background: The technology and uses of urology's minimally invasive procedures have undergone considerable developments in the previous 40 years. One of the most widely used diagnostic and therapeutic methods for addressing a range of upper urinary tract problems, includes stone, tumours, coagulation, biopsies, etc. is the flexible ureteroscopy (FURS) technique. The most common use of FURS is to treat upper urinary tract stone disease with laser lithotripsy. Because of advances in endoscopic surgery methods, FURS is now frequently utilized in the treatment of stones larger than 2 cm. FURS has shown to be a straightforward, effective, and secure strategy. The therapeutic utility of FURS as a first-line treatment for urolithiasis may be expanded with further development. Patients and methods: Over a ten-month period, the flexible URS of pusen was used to treat over 35 patients with F-URS (15-10-2020 to 1-12-2022). Four patients received access sheath treatment, but not the remaining patients. Results: All of the UAS patients had kidneys that were in excellent condition and free of gravel, despite the fact that three of them had minor injuries and two had access problems. As there is never a trauma that makes access smooth and uncomplicated, only two patients need preliminary double JJ insertion for a month in those without UAS.

Keywords
access sheath, laser, flexible URS, and kidney stone

A peak age for urinary stone illness is between 40 and 50 years, and it affects 3 men for every 1 woman. As urethroscopy can access urinary stones in both the upper ureter and the PCS, it is a true alternative to percutaneous nephrolithotomy. [1]. Proximal ureteral stones (PUS) and renal stones of PCS, which range in size from 1 to 2 cm, a number of methods, such as “extracorporeal shock wave lithotripsy” (SWL), “retrograde ureteroscopy” (URS), “percutaneous nephrolithotomy”

(PCNL), "laparoscopy" (LAP), and open surgery, can be used to treat it. [2]. The morbidity rate for endoscopic treatment of stones is minimal, ranging from 5 to 10% [3]. Flexible URS is recommended for managing renal kidney stones under 2 cm, in people who use anticoagulants or antiplatelet drugs, have urinary stone density greater than "1000 UH", have cystine stones, are in the inferior location of the calyx, or have a particular kidney anatomy, like a horseshoe kidney. [4]. This sharp rise in the use of fURS is in large part a result of the increasing incidence of kidney stone disease as a global ailment that places a clinical and financial burden on the populace's health [5-7]. Because of advancements in active and passive deflection that reach 270 degrees, scope reduction, high-definition picture processing, and an abundant supply of high-quality attachments, no part of the upper urinary tract is currently inaccessible with a flexible URS. [8]. Over the past 30 years, flexible URSs have undergone a substantial amount of engineering. The urge to minimize scope width and tip size and the requirement to maximize durability and lower maintenance costs as a result of improved awareness of scope damage are the two main causes of this development [9]. The ureteral access sheath is one of the often employed RIRS support devices (UAS). It is a crucial component of RIRS because it allows for repeated access to the kidney and irrigation output, both of which aid in controlling intrapelvic pressure. [10]. Problems with the use of FURS must still be considered even though there is a clear and linear association between the number of cases and decreases in surgery time, complication rate, and success rate. Reported complications include ureteral avulsion, which has a 0.5% ureteral intussusception, which is the enfolding of a ureter segment inside the same organ as a result of circumferential lesions in the ureter wall, also has decreased in incidence but risen with the development of fURS. [11].

Patients and Methods

35 patients with F-URS underwent surgery at the Alnaaman Teaching Center in Baghdad over period as part of the study (15-10-2020 to 1-12-2022). We stated that "informed consent" was given by the participants in the study article. The study was done with approval from the college of medicine at Al-Iraqia University and in accordance with the "Helsinki Declaration Principles."

The first four cases were handled utilizing UAS and F-URS; the other cases were handled without UAS. Our analyses of the cases indicating simple access to the kidney and consequences were scant or nonexistent.

Aim of study: The first four cases involved the use of UAS and F-URS; the remaining ones did not. Our examinations of the cases demonstrating straightforward access to the kidney and its effects revealed few or no findings.

Flexible URS unite (pusen) length 65 cm and (9.2) french with working channel (3.6) french with deflection (270) degree.

1. A laser unite (hypho) with a 200-micrometer laser fiber and a maximum power of 35 J.
2. Guid wire (0.8) French, identical to that used for JJ stents
3. 12 to 14 frenh UAS
4. The C arm Xrays combine.

1. Dormie baskets.

The flexible union is simply made to run on a ureteric guide wire while being viewed through a screen. The procedure mimics a JJ stent when run over the guide wire during stenting, the statics use SPSS 21, p-value < 0.05 is significant.

Results

According to my study, four people with UAS had mild injuries, the bulk of which were brought on by the distal ureteral mucosa's slough.

Table 1:" comparison of FURS with and without access sheath".

Complications and difficulties	"Trauma"	"Simple renal access (33 individuals with a preliminary JJ stent; 2 without)".	Stone-free rate stones vary from (1cm - 2.5cm).	Post-operative fever
With UAS (4 patients)	three mild ureteral injuries (sluff mucosa, minor tear in orifice and clots in ureter with hematuria)	In 2 patients' difficult entrance and recurrent slipping UAS, necessitate more patience.	Good. Few gravels noted by follow up US 4 weeks later.	Never
Without UAS (31 patients)	No.	"All easy and rapid entrance. 2 without preliminary JJ stent"	"Accepted. 2 patients with stone more than 2.5 cm"	Never.

The stone-free rate in patients utilizing UAS shows 100% free after four months of follow-up, whereas the rate in patients not using UAS is good despite the fact that two of the patients have stones larger than 30 mm in size. table 1

Three out of four patients who receive UAS have mild trauma as a result of mucosal sloughing (p value > 0.05).

Those who used preliminary JJ stents demonstrated straightforward URS insertion, moreover, those who did not utilize preliminary JJ scents experienced some difficulty.

In a four month US fellow up, the gravels are reduced in patients using UAS, but significantly more in those not using UAS.

None of the patients have a fever.

Discussion

a study conducted by Bogdan Geavlete et al. compared [12]

A total of 288 patients (diameter range: 1–2.9 cm) underwent URS; 144 (group 1) used the UAS, and 144 (group 2) did not (group 2). The four types of FURS we utilized were "Olympus (8.5 Fr)" - 33 cases, "Storz (8.4 Fr)" - 60 cases, "single-use PUSEN (9.5 Fr)" - 37 cases, and "single-use PUSEN (7.5 Fr)" - 14 cases. We employed the Olympus ureteroscope in 44 instances, the Storz in 58 instances, and the single-use in 42 instances for group 1. We contrasted the lengths of the operations, the hospital stays, and the complications. 83.3% of group 1 cases had successful access sheath insertion, and 90.9% of group 2 cases had successful ureteroscope insertion. Average operation time in "group 1" was little pit longer than in "group 2" (47 against 39 min). At one month, group 2's "stone-free rates (SFRs)" were generally lower (76.3% against 86.8%). We did not discover a significant difference between these two groups at 3 months. 38.8% of patients in group 1 and 4.1% of patients in group 2 had superficial mucosal ureteral wall lesions. Group 1's hospital stays were longer than those of Group 2's (21 against 29 hours, accordingly).

The variation between studies was related to the quantity of patients as well as to cutting-edge facilities at the centers that used this study.

Conclusion

FURS are one of the best minimal invasive treatment methods for renal stones; without UAS, a novel technique gives a quicker recovery and less invasive procedure but need additional research and evaluation.

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