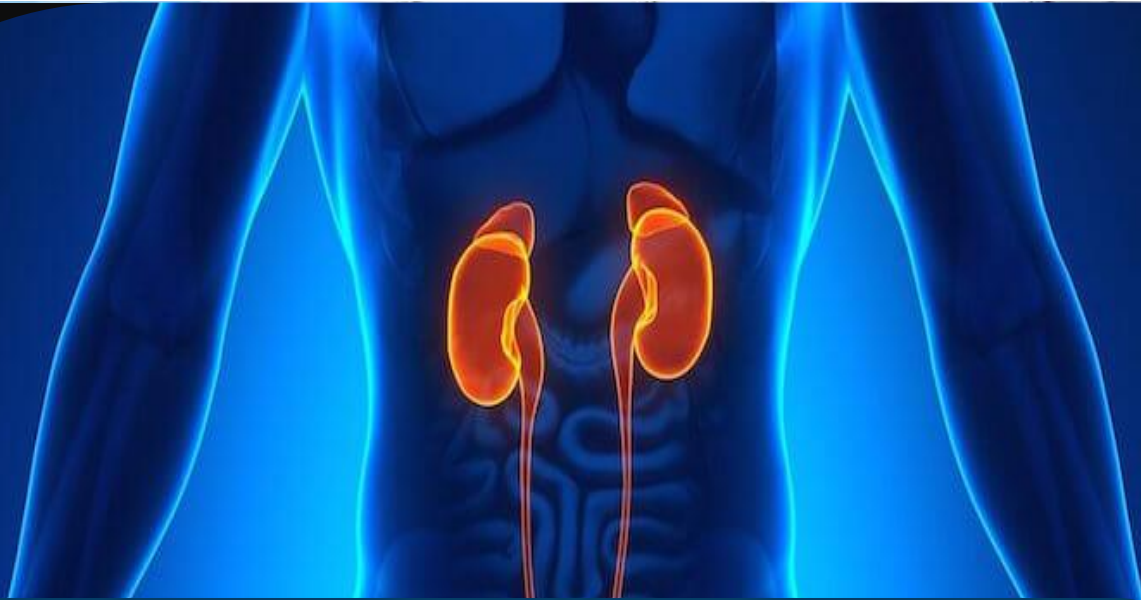




NU Rounds

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Dear Doctor,

Greetings from Micro Labs limited. We are happy to bring you **“NU Rounds”** which contains latest and interesting news in the field of Urology.

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Should you require any specific article or medical information, please feel free to contact us at medicalsolutions@microlabs.in

Looking forward to your valuable feedback

Best Regards,

Medical Team, Micro Labs Ltd



Potassium Binder May Be Useful in Emergency Hyperkalemia

According to recent study results, the potassium binder sodium zirconium cyclosilicate (SZC) can be an important alternative therapy for insulin and glucose in the emergency treatment of hyperkalemia. In addition to baseline insulin and glucose, 70 emergency department patients from 4 countries with 5.8 mmol / L or higher serum potassium were randomly randomized to SZC (10 g up to 3 times within 10 hours) or placebo in the ENERGIZE Phase 2 trial (NCT0337477).

The primary endpoint, mean serum potassium decreased slightly more in the SZC at 4 hours after the first dose than placebo community (-0.41 vs -0.27 mmol / L), W. Documented in Clinical Emergency Medicine by Frank Peacock, MD, of Baylor College of Medicine, and collaborators. At 2 hours, the SZC party also demonstrated a marginal advantage: mean -0.72 vs -0.36, respectively.

Just a minority of patients with SZC and placebo responded to initial therapy: 6.3% vs 5.6%, respectively. Less SZC patients needed 0 to 4 hours of direct potassium-lowering therapy: 15.6% vs. 30.6%. The subgroup of patients with SZC and placebo needed dialysis within 4 hours: 9.4% vs 13.9%, respectively. The team recorded that similar shares of both populations suffered negative outcomes within 24 hours: 24.1% vs. 27.3%, respectively. Some of the patients also experienced hypokalemia, possibly because insulin and glucose were already obtained.

Dr Peacock's team noted that insulin and caffeine associated with sodium zirconium cyclosilicate has been well handled. While the reduction of Serum K⁺ at 4 hours was comparable in the sodium zirconium cyclosilicate and placebo classes, there were indications that sodium zirconium cyclosilicate provided an incremental advantage when used in addition to insulin and glucose for emergency treatment of hyperkalemia.



Endoscopic decompression of ureterocele by Holmium: Yttrium-aluminum-garnet laser vs Electrosurgery in the first months of life

INTRODUCTION

The standard strategy in patients infected with obstructive ureterocele (UC) is a timely, minimally intrusive procedure within the 1st months of life. According to expertise and desire, transurethral endoscopic decompression of UC can be conducted using many techniques. Although electrosurgery has historically been used, the usage of laser, namely holmium: yttrium-aluminum-garnet (Ho: YAG) laser, is a recent technical development. It was recorded to be reliable, precise, flexible, and secure, particularly in the early infancy. There are just a few case-series in the literature and two observational research.

These findings, however, are contradictory with respect to inclusion requirements and operational methods, although outcomes tend to be close to those obtained with decompression by electrocautery. It was proposed on the basis of experimental evidence and clinical knowledge that Ho: YAG laser is extremely successful for UC decompression and as the primary cure for this uropathy. The primary objective of the research to check this theory was to associate the effects of UC's Ho: YAG laser transurethral endoscopic puncture (TUP) with traditional electrocautery TUP, evaluating the occurrence of secondary operation, redo TUP, and iatrogenic vesicoureteral reflux (VUR) in the young pediatric population.



METHODS

A longitudinal analysis of UC-treated TUP patients was performed from 2008 to 2017. Those undergoing Ho: YAG laser TUP were included in Group A, those undergoing electrocautery TUP were included in Group B. Fisher's exact test was used to evaluate the results.

RESULTS

Group A contained seven people, all females and diagnosed with hydronephrosis in prenatal phase. Two of seven patients (29 per cent) had to retake TUP owing to chronic UC distention and hydronephrosis, which had been healed during the second endoscopic treatment. None of the postoperative UTIs formed.

Spontaneous resolution has existed in two patients with preoperative VUR following TUP. In the punctured moiety, two patients, both with duplex system and ectopic UC, formed iatrogenic Grade 3 VUR which resolved spontaneously. Thus, all patients had a median follow-up of 4 years (range 2–7 years) in a VUR-free environment. None of the patients needed subsequent surgery.

Group B contained nine participants, three males and six females, all infected with hydronephrosis prenatally. Owing to chronic UC distention and hydronephrosis one patient needed another TUP. Upon the second endoscopic test it was fixed. Preoperative VUR, spontaneously resolved after TUP in 2 in 4 of nine patients (four Grade 4 and two instances of Grade 5 VUR in duplex system and ectopic UC, four Grade 5 contralateral VUR). In the treated moiety three patients formed iatrogenic VUR which persisted during follow-up.

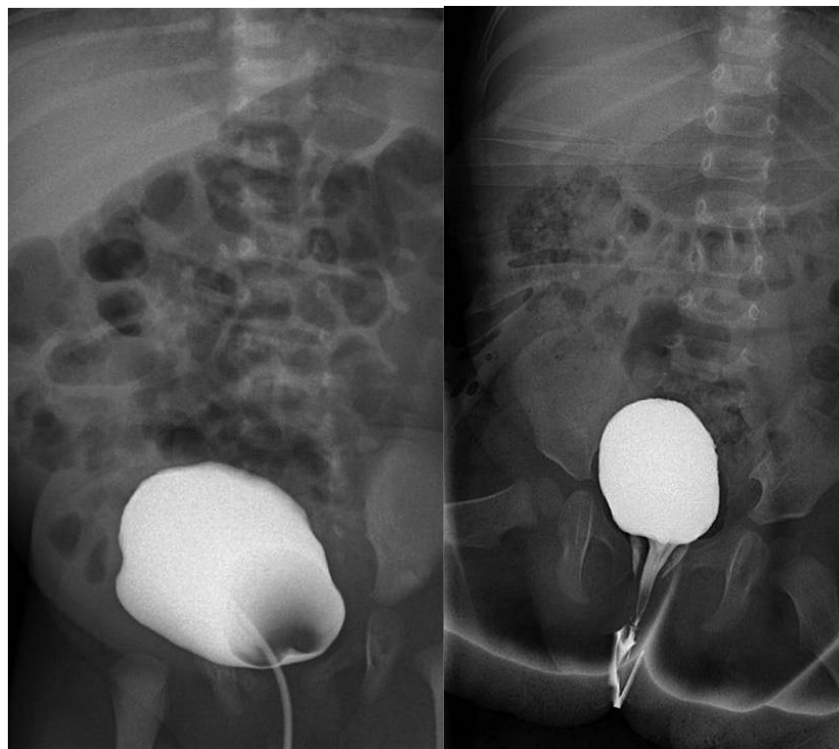
The median follow-up time was 9.5 years (range -11 years). In 4 of 9 patients (44.4 percent), TUP was the only medication. Further surgery took place on the remaining five patients (55.6 per cent). Recurrence of UTIs coupled with persistent VUR (de novo VUR in three cases, and persistent preoperative VUR in 2 were the factors that contributed to secondary surgery.



Postoperative characteristics (evolution after TUP of UC)	Group A (n=7)	Group B (n=9)
Preoperative VUR	2	4
Spontaneously resolved	2	2
Persistent	0	2
De novo VUR	2	3
Spontaneously resolved	2	0
Persistent, high grade (IV-V)	0	3
Only TUP intervention (including need of second look)	7	4
Re-do TUP	2	1
Secondary surgery	0	5

Comparing classes, secondary surgery was needed in Classes A and B in 0 out of 7 (0 percent) versus 5 out of 9 (55.6 percent), respectively, which was statistically important ($P < 0.05$). The frequency of repeat TUP in Group A (2 out of seven patients, 29 percent) tended to be better relative to Group B (1 out of nine patients, 11 percent), even though it was not statistically relevant ($P = ns$).

In Groups A and B, respectively, De novo VUR occurred in 0 out of 7 (0 percent) versus 3 out of 9 (33.3 percent) cases, which was not important ($P = ns$).



Voiding cystourethrography before transurethral endoscopic puncture (Before & after).



CONCLUSIONS

Based on the study, Ho: YAG laser proves to be safe and effective for the decompression of obstructive UCs in the first months of existence. The frequency of de novo VUR is close to and temporary in those TUPs conducted with electrosurgery. After Ho: YAG laser TUP the need for secondary surgery tends to be lower than the electrosurgery TUP.

The requirement for repeat TUPs between the two procedures is comparable. Because of the limited number of patients in the sample, broader case-series of homogeneous populations and/or a randomized controlled trial are required to validate the preliminary findings.

REFERENCE

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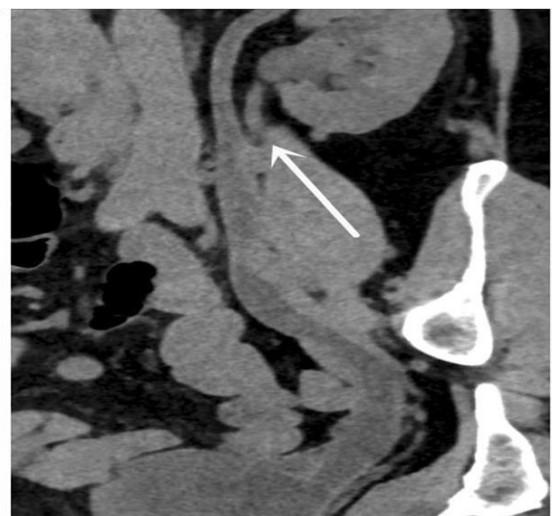
Ureterocele and stone of calyceal diverticulum in a case of bilateral incomplete duplex kidneys managed by flexible ureteroscopy: a case report

INTRODUCTION

Duplex kidneys are typical congenital urogenital system malformations with an occurrence of about 1–3%. The duplex kidneys may be graded as complete or incomplete by ureteral morphology. In the meantime, this overlap can also be bilateral or unilateral, and several reports have shown that excretory urography identifies just 0.3% in patients with bilateral duplex kidneys. Most Duplex cases show no major health signs. Nevertheless, other problems such as urolithiasis and vesicoureteral reflux (VUR) are important for duplex kidneys. It is a surgical event of the left ureterocele and calyceal diverticulum stone handled by adjustable ureteroscopy in an individual with bilateral missing duplex kidneys.

CASE PRESENTATION

For 1 month, an elderly Chinese woman was experiencing left waist pain. She was afebrile. Blood test, kidney activity, and urine routine showed no irregular tests. And it was harmful as a consequence of the urine culture. A computerized preoperative tomography scan and an intravenous pyelogram (IVP) showed missing duplex kidney and ureter in bilateral shape.



IV pyelogram and CT scan revealed bilateral incomplete duplex kidney and ureter



The calyceal diverticulum stone was found by CT scan in the upper rein of left incomplete duplex reins.



The stone of calyceal diverticulum was located in the upper kidney of left incomplete duplex kidneys by CT scan

IVP and CT scans showed that a ureterocele existed in the left ureterovesical junction. The woman had 5 years of hypertension and Type 2 diabetes mellitus. There was much stronger chance of operations and general anesthesia. The stone's diameter in the calyceal diverticulum was 12 mm by CT scan and accidental slipping out of the stone is difficult. The woman and her relatives wanted to extract the stone because they were deeply worried about the risks of stonerellate.

In fact, owing to comparatively higher complications they would not choose to conduct second operation and anesthesia. Hence it was decided to make an effort in one procedure to extract the ureterocele and calyceal diverticulum block.

In such cases, the contraindications for surgery mainly included untreated urinary tract infection, severe stringency of the urinary tract and anesthetic contraindications such as cardiopulmonary dysfunction. Relevant studies such as the lung-function test and the Holter electrocardiogram have been carried out.



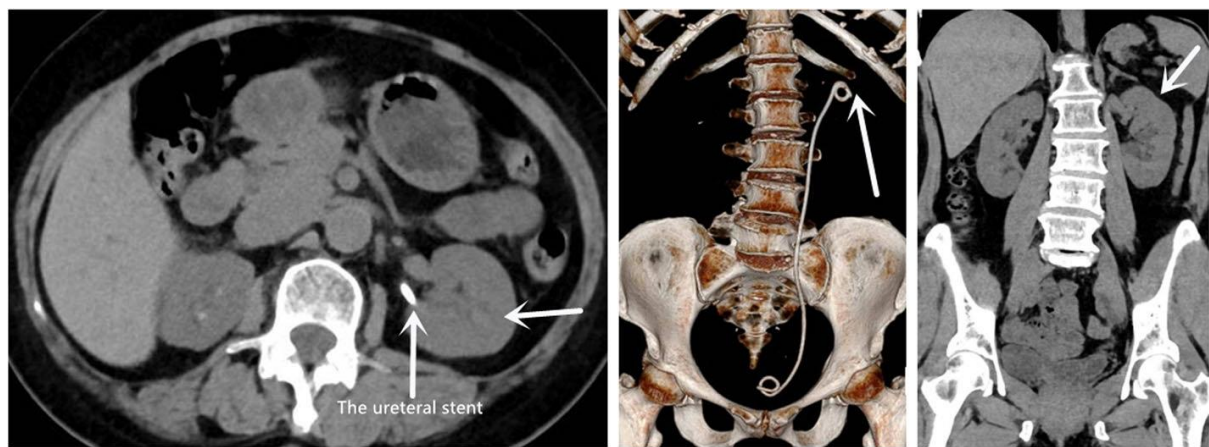
Flexible ureteroscopy was performed with holmium laser to solve the ureterocele and calyceal diverticulum block. The ureterocele was first verified with respect to ureteroscopy, and the holmium laser was used for ureterocele resection.

The ureterocele resection surgery was performed in 10 min, and no intraoperative problems such as bleeding occurred. Effort was made to remove the diverticulum obstruction from the calyceum. Throughout the surgery it was noticed that there was noticeable stenosis in the calyx neck of calyceal diverticulum, where the stone was housed. Because of calyx neck stenosis it took us a lot of time to find out about the stone. Luckily, the stone was found when a holmium laser incised the calyx neck stenosis internally.

After dilatation of the thin calyx collar, the stone was slowly and cautiously shattered with a 200- μ m holmium laser using versatile ureteroscope. The holmium laser parameter was set at a power of 0.8 J and a pulse rate of 10 Hz.

Provided that the calyceal diverticulum stone was close the edge of the kidney and the renal cortex was small by CT scan, higher intensity and frequency could cause renal damage and hemorrhage. To avoid postoperative development of ureteral steinstrasse, a nitinol stone basket was used to extract large particles of stone as easily as necessary, and the tiny powdered particles were flushed out of the diverticulum using an automatic irrigation device. Finally, the pelvicalyceal network was again inspected to insure that no big residual stones were left behind. The total surgical period for the prevention of postoperative infections was managed in 60 min. A double-J ureteral stent was implanted and stayed for 1 month.

After the surgery the sensation of left lumbar back pain vanished and no problems arose during the stent's placement. No stone residents were found by CT scan until the ureteral stent was inserted 1 month later.



There were no stone residents observed on CT scan 1 month later postoperatively

CONCLUSION

compact ureteroscopy and holmium laser tend to be a practical, efficient and minimally invasive method to treat ureterocele and calyceal diverticulum stones in patients with bilateral defective duplex reins in one surgery.

REFERENCE

Pan Y, Chen G, Chen H, et al. The left ureterocele and stone of calyceal diverticulum in the patient with bilateral incomplete duplex kidneys managed by flexible ureteroscopy: a case report and literature review. BMC Urol. 2020;20(1):35.



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