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LAPAROSCOPY ASSISTED RETROPERITONEAL URETEROLITHOTOMY

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INTRODUCTION & OBJECTIVES: The efficacy of laparoscopic ureterolithotomy is confirmed, but sometimes water tight suturing and catheter insertion is very troublesome, especially for the beginner. We conceived simple and easy hybridization form surgical technique, conversion from laparoscopy to minilaparotomy through camera port incision or other skin site just near ureter stone. If stone removal through camera port is by no means easy, additional incision can be made to the camera port or other skin site, or the procedure also can be completed by conventional laparoscopy.

MATERIAL & METHODS: 1) Camera port incision at the post axillary line, nearest site to the stone. 2) Retroperitneoscopic ureter dissection. 3) Placing the vessel loop around the ureter. 4) Draw the ureter to the camera port. 5) If there is any tension, additional incision to the camera port or to the nearest skin is made. 6) After turning gas off, the ureter becomes much nearer to the skin side. 7). Stone removal and water tight suturing by open surgical technique. 8) If it should fail, conventional laparoscopy might be continued.

RESULTS: Clinical trials of 31 patients have been performed since Jan 1999. Two 5 mm and one 11 mm trocars were used. Results are 100% stone free rate, no transfusion, 70 (±21) minutes operation time, no use of ureter catheter in 7 cases, normal diet on post op 1.4 (±0.4) days, no narcotics use after post op 2 days except 2 case, mean drain removal on post op 2.1 days, and discharge on post op 3.8 (0-12) days. Mean catheter indwelling time is 2.7 (±0.67) weeks in catheter used patients. There is one case of complication, prolonged urine leakage, after catheter removal at post op 2 weeks, and corrected by open surgery.

CONCLUSIONS: We think this method shows comparative results to conventional laparoscopy with some additional advantages. And it is very easy and simple. The technique may be very useful when precise suturing or stenting is wanted, or for the novice of laparoscopic surgery.

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FACTORS THAT EFFECTS THE SUCCESS RATE OF URETEROSCOPIC STONE TREATMENT

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INTRODUCTION & OBJECTIVES: However ureteroscopy is highly effective in ureteral calculi treatment, it is not successful every time. In this study we analyzed the risk factors of failure in ureteroscopic procedures.

MATERIAL & METHODS: We retrospectively reviewed 208 ureteroscopic procedures performed for ureteral stone between January 2002 and June 2004. One hundred and thirty patients (62.5%) were male and 78 (37.5%) were female and mean age was 46 years (12-83 years). Mean stone size was 12.1 mm (3-45 mm.). The number of stones at distal, mid and upper ureteral locations was 159 (76.4%), 22 (10.6 %) and 27 (13%) respectively. Residual fragments larger than 4 mm. in kidney, ureter and bladder film at postoperative first day were accepted as unsuccessful. The relation between failure and risk factors (age, gender, preoperative ESWL, operation story, preoperative infection, stone size, multiple stone, stone localization, impacted stone, operation time, using of basket forceps and balloon dilation) were analyzed by bivariate analysis.

RESULTS: In 51 patients (24.5%) ureteroscopic procedures were detected as unsuccessful. Bivariate analysis demonstrated a significant association of ureteroscopic failure with upper ureteral stone (p=0.017), stone greater than 10 mm in diameter (p=0.000), existence of multiple stone (p=0.016), preoperative ESWL story (p=0.011) and non-use of basket forceps (p=0.000).

CONCLUSIONS: Upper ureteral stone, multiple stone, stones larger than 10 mm and preoperative ESWL can decrease the success rates of the ureteroscopic treatment. We think, the success rate can increase if ESWL is preferred in large upper ureteral stone and if stone fragments extracted by forceps.

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ONE DAY OPEN TIP URETERAL CATHETER AS AN ALTERNATIVE TO STENTING AFTER URETEROSCOPY

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INTRODUCTION & OBJECTIVES: The choice in favour or against stenting after operative ureteroscopy is uneasy due to the lack of objective criteria. The advantages of temporary stenting are often outweighed by disadvantages in the long term due to the associated risk of stenosis. Conversely, not every ureteroscopy is uneventful; therefore, leaving the ureter stentless might seem inappropriate. We tested the benefits, and reliability, of leaving an open tip ureteral catheter for 24 hours after standard operative ureteroscopy.

MATERIAL & METHODS: Of 140 ureteroscopic procedures for urolithiasis performed at our institution from June 2002 through September 2004 a ureteral stent was placed in 79 cases (56.4%); was not placed in 13 cases (9,2 %), and a open-tip was left in situ for 24 hours in 48 (34.2%). The ureteroscopies were performed using a rigid instrument, with a balistic lithotripter. Stones 3 -5 mm in diameter were extracted using a Dormia basket or a grasp forceps. Stents were removed within 15 days after placement with cystoscopy. The patients were evaluated for symptoms and plain KUB 30 days later.

RESULTS: In the table are summarized the characteristics of the three groups.

	Num (%)	Mean age + SD Min / Max	Sex M/ F	Operating time min	Meanstones dimension	Position: Lumbar/ Pelvic / Distal
Stent	79 (56,4)	51.4+15.7 - 22 /87	65M 14F	60.43	9.54mm	33L 34P 10D
No stent	13 (9,2)	46.7+17.8 - 16 /72	6M 7F	29.30	6.75mm	3L 4P 6D
Open tip	48 (34,2)	48.1+15.6 - 26 /84	31M 17F	41.20	5mm	8L 23P 11D
total	140	49.7+15.7 - 16 /87	102M 38F	51	8.7mm	

The reasons for stenting were as follows: the finding of ureteral stenosis that required dilatation in 15 cases; stone size with consequent long duration of lithotripsy in the remaining 64. In 13 cases the procedure was uneventful; therefore, no stent was left. In 48 cases, the procedure was considered as "standard", that is, only minimal edema was left on the mucosa at the end of the procedure, and therefore, only an open tip was left for 24 hours with no sequelae after removal.

CONCLUSIONS: Objective parameters to guide the choice between stenting or not a ureter after an endoscopic operative procedure are difficult to define because of the numerous variables involved, i.e. size and level of the stone, compliance of the ureter, duration of the procedure, amount of mucosal trauma, among others. Furthermore we will never overcome the inherent subjectivity of interpretation. Nevertheless, the present experience with an open tip left for 24 hours, was feasible, safe, and effective. At the present time the number of ureteral stents that we are inserting is in constant decrease in favour of open tips. Lastly, the cost balance if clearly in favour of open tip ureteral catheters.

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OPERATIVE URETEROSCOPY IN THE TREATMENT OF UROLITHIASIS IN CHILDREN

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INTRODUCTION & OBJECTIVES: The use of ureteroscopy in children represents today a resolving and codified method, especially due to the availability of instruments with diameters still more congruous and of effective and versatile energisources for lithotripsy. We present in this study our casuistic and results in children treated for urolithiasis with ureteroscopy.

MATERIAL & METHODS: From January 1999 to October 2003 we performed 21 operative ureteroscopies in 19 pt. (8 males, 11 females; 1 case of bilateral urolithiasis; 1 case with 2 treatments). The mean age was 7.8 years (range 2-14). The stones diameter range varied from 4 to 15 mm. In 18 cases (84%) calculi were localized in the pelvic ureter; in the remaining 3 cases (16%) calculi in the lumbar tract of the ureter; the lithiasis was obstructive in 7 cases (33%). The procedure was performed with a Miniscope 7.5 Ch. In all the patients it has been possible to achieve the stones In 4 cases (19%) it was necessary to perform an ureteral dilatation with a progressive Teflon catheter. In 7 pt. (33%) the calculus has been removed intact with a Nitinolo basket. The ballistic lithotripsy has been used in 5 cases (24%), while a holmium laser was used in 5 cases (24%). We performed a pielic "push up" of the calculus, or fragments, in 3 cases (14%). In one patient ureteral lithotripsy fragments were not identified. In 14 patients (67%) a ureteral JJ stent was positioned. All the treatments have been conducted with general anaesthesia.

RESULTS: 14 Patients (67%) resulted stone free at the end of the first procedure. In the cases in which push up of the calculus has been performed, 2 to 4 (mean value 2.6) ESWL treatments have been conducted with Dornier HM3 lithotripter. We have not encountered any complications intraoperative or postoperative. The ureteral stent has, in average, been removed after 10 days (range 7-13). 30 days after the last procedure all the patients were free of calculi or clinically significant fragments at the imaging follow-up.

CONCLUSIONS: Ureteroscopy is a safe, feasible and effective procedure, though a dedicated practice is required. All the associated manoeuvres normally performed in adults (ureteral stenting, laser and ballistics lithotripsy, ureteral dilatation) can also be conducted with success in children affected by urolithiasis, without specific complications relating to the procedure.