

approach. The selection criteria for these patients consisted of lack of urinary infections, severe associated diseases (such as renal failure, diabetes, heart failure, coagulation problems, extreme obesity etc.). Patients' choice was also decisive. The surgical procedure was continued on the contra-lateral renal unit only when the first intervention took place in good conditions, without complications.

**Results:** The hospital stay was  $5 \pm 1$  days, without major complications. After suppressing the nephrostomy tubes, 1 patient developed unilateral lumbar fistula, which necessitated ureteral stenting for 14 days. One patient presented upper urinary tract infection, which required antibiotherapy.

**Conclusions:** The renal percutaneous approach continues to remain an important alternative in the treatment of renal lithiasis, with no limitations related to stone size. Single session bilateral percutaneous nephrolithotomy may be used only in rigorously selected cases, in order to limit any eventual complications.

## C72

### Ureterorenoscopy in treating ureteral calculi: experience of Croatian Reference Center for Urolithiasis

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**Introduction and Objectives:** Initial treatment options for patients with ureteral stones who require active stone removal are both extracorporeal shock-wave lithotripsy (SWL) and ureterorenoscopy (URS). SWL is usually described as less invasive and safer, but URS has lower retreatment rate. The aim of this retrospective study was to present our results of URS in treating ureteral calculi and to analyze stone-free and complication rates, along with auxiliary procedures performed.

**Material and Methods:** We present the analysis of 210 URS treatments, the first portion of a larger scale study of 587 URS procedures performed at our Department from 1987 to 2008. URS was performed with Storz semirigid ureterorenoscopy, using mostly electrokinetic and rarely ultrasonic lithotripsy. Mean age of the patients was  $54 \pm 13.4$  years (age  $\pm$  SD), range 12–82 years, with male to female ratio of 0.93. Location of the stones was proximal in 21.9%, mid-ureteric in 29.5% and distal in 48.6% of the cases. Median stone size was 10 mm (range 2–90 mm). Comorbidities were present in 58% of the patients, among which arterial hypertension was most common (74.6%). 51% of the patients had previously undergone SWL treatment of observed ureteral calculi. Stone-free rate (SFR) was determined as complete absence of stone fragments on plain abdominal film and ultrasonography after URS treatment.

**Results:** Overall SFR was 77.14%, with 58.7% for proximal, 79% for mid-ureteric and 84.3% for distal calculi. JJ stent placement during procedure was required in 41% of the patients. In 58.3% of non stone-free patients additional SWL session was sufficient for complete stone clearance, with modified overall SFR of 90.5%. The rest of the non stone-free patients had clinically insignificant residual fragments and were monitored in later follow-up, failed to show at the check-up or had undergone several SWL sessions. Complications were noted in 23 patients: 13 patients had fever, 6 required percutaneous nephrostomy and 4 open surgery.

**Conclusions:** We perform primary URS in younger patients and the high percentage of pre-URS SWL treatments of ureteral calculi is due to patients' age, comorbidities and avoidance of anesthesia. Nevertheless, URS showed to be safe and effective in removing ureteral stones, with additional SWL session when no spontaneous passage of the residual fragments occurred. We also reduced the number of stenting after uncomplicated URS and the trend is for URS to become the initial modality of ureteral stones removal because of its low retreatment and complication rate.

## C73

### Conventional fiberoptic flexible ureteroscope vs. 4th generation digital flexible ureteroscope: a critical comparison

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**Introduction and Objectives:** Development of flexible reno-ureteroscopy had a significant impact over the diagnosis and treatment of upper urinary tract pathology. During the last decades, a continuous technological improvement of flexible ureteroscopes was encountered. The aim of our study was to compare the performances of a standard fiberoptic flexible ureteroscope with those of a modern digital one.

**Material and Methods:** We compared subjectively and objectively the differences in maneuverability and visibility for a 7.2F Storz 11274AA fiberoptic flexible ureteroscope (FFU) and an 8.5F Olympus URF-Vo digital flexible ureteroscope (DFU). For that, in 44 diagnostic retrograde flexible ureteroscopic procedures (22 with the FFU and 22 with the DFU) the maneuverability and visibility were evaluated by the same urologist with a score ranging from 1 to 5. Also, the maximal deflection and the irrigation flow were measured with the working channel empty and with various accessory instruments inserted through it.

**Results:** FFU and DFU received mean scores of 3.64 vs. 4.27 for maneuverability and 3.27 vs. 4.68 for visibility. In 3 cases, approach of the narrow infundibulum was impossible using DFU with a larger diameter at the tip, imposing the use of the FFU. The irrigation flow through FFU and DFU (normal/pressure irrigation) was 54/144 ml/min vs. 60/150 ml/min with an empty working channel, 14/54 ml/min vs. 48/84 ml/min with the 1.6F EHL probe and almost 0 ml/min with 3F instruments inserted. The maximal deflection for FFU and DFU was  $162^\circ$  vs.  $275^\circ$  with the working channel empty,  $143^\circ$  vs.  $275^\circ$  with 1.6 EHL probe,  $109^\circ$  vs.  $255^\circ$  with the 3F triradiate grasper,  $80^\circ$  vs.  $217^\circ$  with the 3F extraction grasper and  $149^\circ$  vs.  $257^\circ$  with the ZeroTip basket.

**Conclusions:** The new DFU proved superior maneuverability and visibility, which may translate into improved performances. Larger tip of the DFU may decrease its accessibility, especially in narrow segments of the upper urinary tract. The modern DFU are very useful instruments, with a great potential for future development.

## C74

### Flexible ureterorenoscopy for kidney stones, our experience with 46 patients

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**Introduction and Objectives:** Flexible ureterorenoscopy (URS) with the use of holmium YAG laser fibres and nitinol tiplless baskets has made it possible to treat stones in all parts of collecting system of the kidney. The object of this poster is to present the efficacy and safety of flexible ureterorenoscopy in treating small and intermediate-size calculi in calices and pelvis. We report the results of 46 consecutive patients treated at our department.

**Material and Methods:** From march 2008 to may 2009 a total of 46 patients (27 males, 19 females; aged 22–82) underwent flexible URS for kidney stones, 6 of whom underwent second procedure for larger residual fragments. Calculi ranged from 5 to 35 mm, with 25 localized in lower calix, 5 in the middle, 3 in upper calix, 9 in the pelvis and in 9 patients the stones were in multiple calices. In 35 cases the holmium YAG laser was used, in 11 cases the stones could be extracted by the nitinol tiplless basket solely. 16 of the patients have undergone at least 1 session of unsuccessful extracorporeal shock-wave lithotripsy (ESWL) and in 3 patients flexible URS was used to treat intact

residual calculi after percutaneous nephrolithotomy (PCNL). In 40 cases the ureteral access sheath (UAS) was used. All patients were given stent after the procedure.

**Results:** Success was defined as complete stone clearance or good fragmentation to 4 mm or less with plain film of kidneys used in follow-up. Operative time was 17–121 min with median of 58 min. The patients were divided in 3 groups by stone size (<10 mm, 11–20 mm and >21 mm). After one procedure of flexible URS 33 of 46 patients (71.7%) were stone-free (82.6%, 80%, 25% respectively in each group), after second procedure the stone-free rate rose to 84.8% (87%, 93.3% and 62.5% respectively). Operative time differs in groups with the median of 50, 66 and 97 min in each group. The surgeries had none to mild complications, including stent displacement in one patient and febrile reaction lasting for maximum 2 days in 4 patients (8.7%). There were no major complications.

**Conclusions:** Flexible URS is a safe procedure with high success rate in treatment of small to mid-size kidney stones of all locations and can be regarded as an alternative to ESWL, which has lower morbidity but lower success rate, and to PCNL, which morbidity and complication rate is higher, but is more successful especially in the treatment of larger stones.

### C75

#### PNL in the treatment of staghorn calculi – a 15 years experience

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**Introduction and Objectives:** Although in the last 20 years the incidence of staghorn lithiasis in Romania decreased, especially because of a higher addressability of the patients, which allowed their cure in early stages, its treatment still represents a provocation for urologists. PNL, as unique method or in association with ESWL represents the most efficient treatment for the staghorn calculi.

**Material and Methods:** Between January 1994 – December 2008, 673 patients (411 men and 262 women), diagnosed with staghorn lithiasis were treated using PNL (in total 1055 procedures). The mean age was 43.4 (age between 24–67 years). 107 of the patients had bilateral staghorn lithiasis. In all the cases, the puncture was made under X-ray control. For dilatation we used Alken dilators and the Amplatz sheath was used in most of the cases (95%). For fragmentation we used ballistic and ultrasonic lithotripsy.

**Results:** The total success rate was 93.46%. In 391 cases the stone free status was achieved after a single procedure, 203 after 2 procedures, 58 after 3 procedures and 21 respectively 4 procedures. The complications rate was 11.58%. The most frequent were the infectious complications, followed by hemorrhagic complications (in 26 cases surgical treatment having been needed – 18 nephrectomies and 8 selective angiography with embolization). The urinary fistulae were present in 24 cases, being solved by JJ catheterization. The death rate was 1.04%. The death causes were: 3 – coronarian ischemia, 2 – stroke, 2 – sepsis.

**Conclusions:** We consider that PNL is the gold standard treatment method for staghorn lithiasis, by achieving the stone free status very quickly. Even if the complications rate is higher, their correct management assures the complete recovery of the patients.

### C76

#### Forgotten double j catheters – a rare but challenging-to-treat pathology

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**Introduction and Objectives:** We want to report our experience in that domain, as a retrospective study of the last 15 years.

**Material and Methods:** After reviewing our surgical records for the above mentioned period, we have recorded 14 cases of forgotten catheters. Unintentionally indwelling period >12 month, that have induced the catheter retention. The section criteria were the retained stent a term that defines the catheters that are impossible to be removed using the usual cystoscopic method. The catheter incrustation was the responsible phenomena of the whole induced pathology: obstruction, infection and finally urosepsis. The main goal of the treatment was to achieve the stent and stone free status. From the cases mentioned above a number of 2 was represented by solitary kidney – the most challenging to treat cases.

**Results:** All the patients have been treated exclusively using endourological procedures and for some cases, ESWL was used in addition. From all the stents that we have to remove, 9 have been initially inserted in our department, the rest of 5 cases represent patients that have been admitted for the first time in our department with that particular pathology. For the inferior loop incrustation we have used the Punch lithotripsy, for the superior curl – PNL/ESWL and for the ureteral stoner rigid ureteroscopy with pneumatic-ballistic lithotripsy/ESWL.

**Conclusions:** Despite the well known major advantages of the autostatic stents, the ease of use and the increasing number of endourological procedures, there is a specific pathology that is developed due to that potentially situation. Patients have various levels of comprehension and education, but the ultimate responsibility lies on the urologist in charge. The most challenging cases to treat are represented by the patients with advanced renal failure with / without sepsis due a stent impaction on a single functional kidney. Those cases are the most challenging to treat and require a multidisciplinary approach: nephrologist, intensive care, radiologist and urologist.

### C77

#### Percutaneous nephrolithotomy (PNL) in the treatment of lithiasis developed on congenital renoureteral abnormalities – The 12 year experience of the Clinic of Urology, “Prof. Dr. Th. Burghel” Clinical Hospital, Bucharest, Romania

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**Introduction and Objectives:** The lithiasis developed on congenital malformed kidney represents a special pathology because of the increased difficulty of the treatment and the postoperative evolution. The percutaneous nephrolithotomy represents the most efficient treatment method of this disease, having also the best report costs-benefits. The paper is based on a large data base covering 12 years.

**Material and Methods:** We included 97 patients in our study (43 women and 54 men) (mean age of 46.8 years) with urolithiasis on kidney with congenital abnormalities, which we treated using percutaneous nephrolithotomy between January 1997–December 2008. The evaluation of the method was performed by taking into account the following facts: the congenital malformation of the kidney (pyelocaliceal duplicity 35, malrotated kidney 21, horseshoe kidney 23, primary ureteropelvic junction obstruction 18) the type of stone (single 61, multiple lithiasis 22, staghorn 14) and the effects of