

PP-57

Laser lithotripsy versus ESWL for lower calyceal renal stones

A. Salem, I. Saad, M. Abdelhakim, A. Emran, O. Abdel-Razzak, M. Abdelkader
Cairo University, Cairo, Egypt

Introduction & Objectives: Urolithiasis, especially lower calyceal (LC) stones, is a common medical problem.

Its prevalence is around 2% to 3 % in general population. With advances of endourologic and laser technology, flexible ureterorenoscopy (FURS) and laser lithotripsy (LL) are considered the second line therapy in ESWL-resistant LC stones. This study aimed to assess safety, efficacy and outcome of FURS and holmium:YAG LL comparing its results to ESWL in LC stones.

Methods: A prospective randomized study was done from May 2010 to May 2012. It included patients with radiopaque unilateral, single or multiple, LC \leq 20mm. Patients were divided into 2 groups. In Group I, patients underwent FURS and LL using 365 μ m laser fiber. In Group II, patients underwent ESWL. Patients were followed for 3 months by KUB to assess stone-free status defined as no fragments or fragment \leq 3mm. In each group, multiple parameters (age, sex, stone size and number, and LC anatomy) were examined to assess impact on stone-free status. Additionally stone-free status and complications were compared in both groups.

Results: 60 patients were included in the study. In Group I (N=30), mean age was 44.2 years and mean stone size was 11.5mm. 26 patients (86.7%) had single stone and 4 patients (13.3%) had multiple stones. Stone free status was achieved in 29 patients (96.7%). Complication rate was 16.7%. Age, sex, stone size and number, and LC anatomy did not correlate with stonefree status in Group I. In Group II (N=30), mean age was 35.5 years and mean stone size was 11.3mm. 28 patients (93.3%) had single stone and 2 patients (6.7%) had multiple stones. Stone-free status was achieved in 17 patients (56.7%). Complication rate was 23.3%. Stone size (<10mm) only correlated with stone-free status in Group II. FURS and LL achieved significantly better stone-free rates compared to ESWL (96.7% vs 56.7%, $p= 0.001$), with no difference in complication rate between both groups (16.7% vs 23.3%, $p= 0.5$).

Conclusions: Both FURS with LL and ESWL are considered safe in treating LC stones less than 20mm with minimal complication rates. However, FURS with LL achieved significantly better stone-free rates. Stone size could predict stone-free status in ESWL.

PP-58

Urology residency applicants: Knowledge of endoscopic instruments

K.A. Healy¹, S.S. Kasturi¹, J.A. Sendecki², D.H. Bagley¹

¹ *Department of Urology, Thomas Jefferson University, Philadelphia, PA, USA*

² *Division of Biostatistics, Department of Pharmacology and Experimental Therapeutics, Thomas Jefferson University, Philadelphia, PA, USA*

Background & Purpose: Given the recent trend in declining medical school exposure to urology, our study examined medical student knowledge of endourology. We sought to evaluate the ability of fourth year medical students applying to our residency program to both recognize and apply endoscopic instruments.

Materials & Methods: A 36-item endourology questionnaire was offered to fourth year medical student applying for urology residency in our program. The endoscopic questions included 26 matching questions, which evaluated the ability to identify endoscopic instruments and accessory devices, and 10 multiple choice questions, which assessed clinical application of the equipment. Associations between number of away rotations and matching, multiple choice, and total scores were explored in two ways, first through non-parametric Spearman correlations, then through pairwise comparisons using a general linear model with Tukey-Kramer adjustment. General linear modeling was used to test for significance of any association between the number of cases seen and the test score.

Results: A total of 29 out of 44 (66%) students completed the survey. The median number of away rotations was 2. The median number of observed cases included: 30-40 for cystoscopy, 20-30 for ureteroscopy, and 10-20 for percutaneous nephrolithotomy. The overall test score for the group was 71% correct, with a matching section score of 78% and a multiple choice section score of 54%. The correlation between matching and multiple choice scores was 0.3688 ($p = 0.0490$). Test score did not differ by number of away rotations or observed endoscopic case volume.

Conclusions: The majority of respondents attended medical institutions that offered but did not require urology rotations. Away rotations continue to be an important aspect of fourth year rotations. Respondents were better at identifying endoscopic instruments than knowing their clinical application. Test score performance did not differ by number of away rotations or observed case volume. Future studies are needed to understand student motivations and the benefits of multiple away rotations.

PP-59

Utilization of learning resources among urology residency applicants

K.A. Healy, S.S. Kasturi, D.H. Bagley

Department of Urology, Thomas Jefferson University, Philadelphia, PA, USA

Background & Purpose: Urology continues to be an attractive field for medical student applicants. However, information about the resources utilized by medical students to prepare for urology rotations is limited. As technology continues to evolve, smartphones, tablets, and other electronic platforms are playing an increasing role in medical training and patient care. This study sought to evaluate which printed and digital media are employed by medical students applying for urology residency. We hypothesized that applicants tended to use more electronic and web-based resources than printed material.

Materials & Methods: A 41-item questionnaire was developed to assess which textbooks, surgical atlases, pocket guides, question books, journals, websites, mobile applications, and American Urologic Association (AUA) resources were commonly used by applicants. In addition, we also inquired about what electronic hardware devices were used including smart phones, tablets, laptops, and desktop computers. A total of 44 urology residency candidates interviewing at our institution were invited to participate. Summary data were then tabulated to evaluate trends in resource utilization.

Results: Twenty-nine (66%) applicants completed the survey. The most popular textbooks included Campbell's Urology (n=22), Smith's Urology (21), Netter's Atlas (18), and Hinman's Atlas (8). Weider's Pocket Guide of Urology (27) was the most utilized handbook. Only the minority of applicants used a question bank or question book (21). Applicants mainly used review articles in the Journal of Urology (21), Urology (17), BJU International (15), and European Urology (14). AUA resources utilized included Update Series (13) and Clinical Guidelines (13). The majority of applicants preferred these resources in their electronic format when available (25). The most common websites were the AUA (22), Up to Date (21), and Urology Match (19). Surgical videos were primarily viewed on You Tube (25). Most applicants visited the AUA website, but less than half used the available AUA resources. Smartphones (28) were the most popular hardware device. Of all hardware formats, smartphones were the most commonly used to prepare for ward rounds, clinic hours, and operative cases.

Conclusions: Urology residency applicants prefer to use electronic and web-based applications in medical training. Future studies are needed to evaluate how such digital media affects learning among trainees as well as clinical outcomes.

PP-60

Non-standarized endourological techniques in patients with urinary diversions

A. Antoniewicz, Ł. Zapała, G. Grotthuss

Department of Urology, Multidisciplinary Hospital Warsaw-Miedzylesie, Warsaw, Poland

Introduction: Most common distant complications of radical cystectomy (CR) and urinary diversions are as follows: strictures of urinary anastomoses, curvatures of ureters/ileal conduits, urine leakages, urolithiasis, cancer recurrence. Approximately 25% of patients that underwent CR will need reintervention within 3 years. The aim of the management in such cases is to retain kidney function.

Aim: The aim of the study was to analyze the results and determinants of the treatment of complications in patients after CR with different urinary diversions that needed reintervention with endourological techniques.

Material & Methods: A retrospective analysis comprised 48 men aged 59-76 (mean 68) treated in years 2004-2013 within mean 16 months since CR (1-36). Urinary diversions in the group: Bricker – 26, TUUCST – 15, neobladder – 7. There were 160 endourological procedures performed (mean 3.7/patient). Stricture of the urinary anastomosis (20 patients) or curvatures of ureters/conduits (3 patients) were treated respectively with: balloon inflation, cutting with a knife, electrocoagulation, balloon catheter with a loop; insertion of a DJ stent. In 4 pts (17%) ureter was reimplanted. Urine leakage was noted in 9 pts, in whom following procedures were introduced: drainage above the leakage, nephrostomy and DJ stent, only DJ stent, drainage of the ileal conduit, cystostomy, catheter into the neobladder. Urolithiasis was found in 11 pts, in whom PCNL (flex), ESWL, URSL (flex) were performed. Using endourological procedures the cancer recurrence in the upper urinary tract was diagnosed, and nephroureterectomy, ureteroscopic laser vaporization, BCG-therapy, or partial resection of the ureter were performed.

Results: As for strictures and curvatures efficacy reached 83%. In urine leakage there was 100% efficacy with the treatment period up to 3 months. In urolithiasis the efficacy reached 91%. No progression was noted after the treatment of cancer of upper urinary tracts. The perioperative mortality was 0%. None of the pts needed dialysis. The creatinine and urea serum concentration, as well as GFR, did not change in 80% of pts. Economical analysis revealed that the costs of treatment are far above the income from the national health provider.

Conclusions: Endourological methods guarantee the effective management of the majority of the problems in patients with urinary diversions, enabling the patient safety and comfort together with kidney function preservation.- The methods are non-standarized and adapt ammamentarium to the individual needs of the patients and preferences of the surgeon; the combinations of the tools and methods are the key issue in the success of the non-stardarized procedures.