Unmoderated Posters
Stones and Endourology

UP-66
Novel Urinary Marker Expression Associated with Shock Wave Lithotripsy

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Introduction and Objectives: Shockwave lithotripsy (SWL) is a minimally invasive treatment alternative for kidney stones. Although less invasive, SWL subjects the renal parenchyma to a high level of energy potentially causing renal injury. To date, not all kidney injuries caused by SWL can be reliably detected by conventional imaging techniques. Kidney Injury Molecule-1 (KIM-1) and N-acetyl-glucosaminidase (NAG) are 2 proteins secreted by the kidney into urine and found to be sensitive markers of acute kidney injury in transplant patients. The aim of this work was to evaluate the urinary levels of KIM-1 and NAG in kidney stone patients treated by SWL.

Methods: Voided urine samples were collected before, 2 hours, 2 days and 2 weeks post-SWL treatment. Patients having ureteric or radiolucent stones, ureteric stents, elevated creatinine or UTI were excluded. KIM-1 was measured by microbead based assay on Luminex. NAG was measured by spectrophotometry based enzymatic assay. KIM-1 and NAG values are reported as a normalized ratio to urinary creatinine.

Results: 23 patients with a mean age of 55 (range 36 to 74) years were included. Stone size ranged from 5 to 16 mm (mean 7.9 mm). Mean KIM-1 and NAG levels pre-SWL were 6.8 pg/ml and 2.9 mU/ml. At 2 hours post-SWL these levels increased significantly to 11.7 pg/ml and 4.8 mU/ml. Mean NAG levels returned to baseline at 2 days post-SWL and KIM-1 at 2 weeks.

Conclusions: KIM-1 and NAG levels significantly increased post-treatment suggesting these novel markers may have a potential role in identifying tissue injury post-SWL.

2013 CUA ABSTRACTS

Unmoderated Posters
Technology and Instruments

UP-67
A Novel Technique in Placement of the Morbidly Obese in Lithotomy Position

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Introduction and Objectives: There is a rising prevalence of morbid and extremely-morbid obesity (BMI >50) in North America. Moreover, morbid obesity is associated with increased incidence of nephrolithiasis with less successful treatment options. Theoretically, retrograde reno-ureteroscopy is done more frequently in Extreme-morbidly obese (EMO) patients. Nevertheless, special instruments, stirrups and operating tables for EMO patients are expensive and may not be available in most operating rooms. We propose a fast and safe method in placing EMO patients in lithotomy position using regular operating room tables. This technique can be used for patients with extensive leg size or weight that cannot be put in stirrups for lithotomy position.

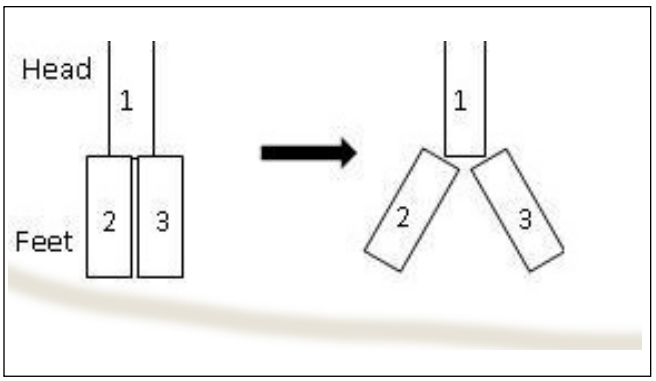

Fig. 1. UP-67.

Methods: Three operating tables are positioned as in the figure. Once the patient is sedated, the two lower extremity tables (Fig. 1) are widened in a lambda formation and then elevated to achieve a modified dorsal lithotomy position. The patient is secured into position on the tables with cloth tape around each leg. Excessive fat can be retracted by cloth tape and placing patient in mild Trendeleberg position.
Results: This positioning technique was used in two patients for 3 procedures each. The first patient is a 60-year-old male with symptomatic bilateral stones. He is 185.4 cm tall and weighs 217.7 kg with body mass index (BMI) of 63.3. The second patient is a 58-year-old female with right partial staghorn stone. She is 167.6 cm tall and weighs 225.9 kg (BMI 80.4). Mean positioning time in the 6 procedure was 9.8±3.2 minutes (6-15 minutes). Mean operative time was 167.2±63.1 minutes (84-240 minutes). No intraoperative or postoperative adverse events were reported.
Conclusion: The three table technique is a practical alternative to the use of expensive large capacity operative tables and stirrups for lithotomy position in EMO patients or other morbidities that do not allow for safe placement of legs in stirrups.

UP-68

Preliminary Experience of Laparoscopic Nephrectomy in Saudi Arabia

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Background: Nephrectomy remained the same for several decades till the introduction of the laparoscopic approach.
Aim of Study: To demonstrate our preliminary experience on laparoscopic nephrectomy at the Urology Department of the Armed Forces Hospital-Southern Region (AFH-SR).
Methods: During the period from April 2011 to March 2012, a total number of 25 patients with renal pathology such as non-functioning kidney and renal tumour underwent laparoscopic trans-peritoneal nephrectomy. Laparoscopic nephrectomy was performed by a specialized in laparoscopy surgeon for the first time at our institution. Data regarding individual characteristics, associated comorbidities, duration of operation, hospitalization, intra-operative and postoperative complications were recorded.
Results: A total number of 25 patients underwent laparoscopic nephrectomy, 16 (64%) male and 9 (36%) female patients. Average age of these patients was 43 years (range 7-59). The main indications for nephrectomy were non-functioning kidney in 15 cases (60%) and renal mass in 6 cases (24%) - 4 cases of renal cell carcinoma and 2 cases of oncocytoma were indicated. End-stage renal disease was diagnosed in 16 cases (64%). Eleven patients were hypertensive (44%) while five were diabetic (20%). The duration of operation ranged from 2 to 3 hours (average 2.5 hours). Average hospital stay was 4.5 days ranging between 3 and 5 days. Intraoperative blood transfusion was performed in three patients (12%). Complications were encountered in 2 patients (6%), one suffered from retroperitoneal hematoma and incisional hernia, another developed an incisional hernia. Conversion to open surgery was never deemed necessary in any case. No oncological recurrence was noted during the follow-up period.
Conclusions: In conclusion, laparoscopic nephrectomy is a safe and minimally invasive procedure. Our initial experience is associated with promising results and comparable to high volume laparoscopic centre

UP-69

The Transurethral Suprapubic endo-Cystostomy (T-SPeC"): A Novel Suprapubic Catheter Insertion Device

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Introduction and Objectives: Current methods of suprapubic cystostomy (SPC) catheter insertion (open permanent placement and temporary percutaneous insertion) may be difficult for patients in poor health. Studies show significant morbidity (20%) and mortality (1.8%). We present the first in-human experience with the Transurethral Suprapubic endo-Cystostomy (T-SPeC™) device, a novel disposable device used for introducing a permanent suprapubic catheter via a retrourethral (inside to out) approach similar to the Lowsley technique.
Methods: Four male patients at St. Mary's General Hospital in Kitchener Ontario, Canada received the T-SPeC¨ device (model T7) under general anesthesia.
Results: Patients had no complications from catheterization using the T-SPeC T7 Surgical System. The mean surgical time of the four procedures was 9.7 minutes, with a range of 7.9-13.5 minutes, including instrument preparation and cystoscopy. All four procedures were highly accurate and rapid. There were no complications and minimal blood loss from the procedure. All patients were discharged within hours of the procedure.
Conclusions: We found that the T-SPeC device allows for efficient, safe, and precise insertion of a large bore (18F) permanent suprapubic catheter in an outpatient setting, and may be a useful addition to the urologic armamentarium.

UP-70

Robotic-assisted Surgical Management of Retrocaval Ureter and Renal Stone

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Introduction and Objectives: A retrocaval ureter (RCU) is a rare entity that results from the abnormal persistence of the subcardinal vein. It usually presents in the 3rd or 4th decade, is more common in males, and can present with obstruction-related problems. We present a video-enhanced description of the robotic-assisted surgical management of a 25-year-old male with a symptomatic RCU and ipsilateral renal stone.
Methods: All preoperative imaging tests confirmed the diagnosis of right RCU with an 8-mm renal stone. A nephrostomy tube (NT) was placed for refractory pain, as a ureteric stent was not tolerated. The da Vinci© robot was docked after placement of a 10-mm camera, two 8-mm robotic, and two assistant (10-mm, 5-mm) ports. After exposure of the inferior vena cava (IVC) and interaortocaval space, the abnormally located ureter was mobilized lateral and medial to the IVC. Sufficient periureteric tissue was maintained and limited cautery was used to avoid ureteric devascularization. The ureter was transected at its most posterior, retrocaval point. The retrocaval segment was not excised, as the calibers of the spatulated ureteric segments were adequate. A flexible cystoscope was inserted through an assistant port, and the renal stone was removed with a nitinol basket. Over an antegradely-placed ureteric stent, a water-tight, tension-free ureteroureterostomy was performed in a running fashion using 4-0 monocryl. Lastly, a Jackson-Pratt drain was placed and the NT was left to straight drainage.
Results: Surgical time was 135 minutes and there were no complications. The patient was discharged from hospital on postoperative day #4. The NT was removed 5-weeks postoperative and the stent one week later. Renal scintigraphy 4-weeks later demonstrated a differential renal function of 51% and T1/2 of 8 minutes. The patient continues to be pain-free 11 months postoperatively.
Conclusions: Robotic-assisted surgical management of a RCU and renal stone is a safe and feasible option.

UP-71

Intraurethral Ultrasound Thermal Ablation Device with Real-time MRI Guidance "PAD-105" Pre-clinical Canine Study

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Introduction and Objectives: Minimally invasive prostate cancer therapies are gaining attention. Conventional thermal therapies for prostate cancer (PCa) do not provide a real-time monitoring of thermal effects of treatment on tissues, which can impact on therapeutic as well as and side adverse effects. Aim of this study is to assess a transurethral prostate thermal therapy device coupled with real-time monitoring, in an animal a canine model.
Methods: MRI-guided transurethral ultrasound therapy (Prostate Ablation Device -- PAD105) was used to ablate prostate in 8 dogs. PAD-105 probe

provides ultrasound applicators that generate a temperature of 50-90°C in the tissues. We used Dice Similarity Coefficient (DSC) to evaluate the ability of PAD105 to generate targeted regions of thermal damage in the prostate under active MRI temperature control. All animals received perineal urethrostomy prior to treatment and were clinically followed for 4 weeks. In order to assess accuracy of the device we correlated histology features with real-time measurements. Endpoints of the study were: feasibility of the therapy, safety and effect on bowel and urinary function.
Results: No significant side effects or anatomical damage was observed. Mean over-targeted and under-targeted volume was 1% (CI=0-2%) and 10% (CI=3-17), respectively. Mean DSC was 0.87 (CI=0.82-0.93) for the entire population. In one case we observed a major technical failure that resulted in under-targeting of 34.7%. Histology analysis confirmed, in all cases, presence of necrosis limited to the prostate and matched MRI thermometry measurement (Fig. 1).
Conclusions: MRI-guided transurethral ultrasound prostate ablation using PAD-105 is a feasible and safe treatment. PAD-105 is able to produce reliable and accurate tissue damage, based on temperature feedback control and final histology specimens. PAD 105 is a promising minimally invasive modality for prostate cancer in a canine model. Clinical evaluation is underway.

UP-72
Predictors of Prolonged OR Time During Robotic-assisted Radical Prostatectomy

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Introduction and Objectives: Time efficiency during robotic radical prostatectomy is of critical importance to improving resource utilization in the operating room. However, little is known about the determinants of robotic OR time after the initial learning curve period1-5. Therefore our objective is to determine predictors of prolonged OR time during robotic radical prostatectomy.
Methods: We prospectively collected data from 440 consecutive patients who underwent robotic radical prostatectomy performed by a single surgeon at an academic institution from 2006 to 2012. The first 40 cases from the early learning curve were excluded, as previously defined[6]. Our primary outcome, prolonged OR, was defined as greater than one standard deviation above the mean OR time. The Student-t test was used to compare continuous data, and Chi-square for categorical data. A multivariate logistic regression was conducted to identify predictors of prolonged OR time, and a multivariate linear regression was used to further characterize their impact.
Results: Our cohort was made up of men aged 60 ± 7 years, with low or intermediate risk prostate cancer (PSA 7±3, 60% Gleason 6, 40% Gleason 7, and 71 % stage 1 disease). These men had a mean BMI and IIEF scores of 28±3 and 17±8, the majority of which underwent bilateral (62%) or unilateral (21%) nerve sparring prostatectomy with pelvic lymph node dissection (49%). The mean OR time was 185±33 min. Logistic regression revealed 5 independent predictors of prolonged OR time (Table 1). According to the multivariate linear model, OR time was most clearly affected by the presence of a robotic malfunction 30 min, blood loss 6 minutes/100cc, PSA 1 min/unit and gland volume 3 min/10cc, when controlling for all other variables.
Conclusions: Robotic malfunction was the strongest predictor of prolonged OR time. Blood loss, PSA, node dissection and gland volume were also associated with prolonged OR time.

Table 1. UP-72. Multivariate logistic regression

Variable	Multivariate logistic analysis	
	Odds ratio (95% CI)	*p* value
Blood loss (per 100 ml)	1.50 (1.26, 1.80)	<0.001
Preoperative PSA	1.09 (1.02, 3.79)	0.037
Robot malfunction	8.35 (2.60, 26.8)	<0.001
Gland volume (per 10 cc)	1.19 (1.02, 1.39)	0.025
Pelvic node dissection	1.01 (0.89, 3.26)	0.10

CI: confidence interval; PSA: prostate-specific antigen.

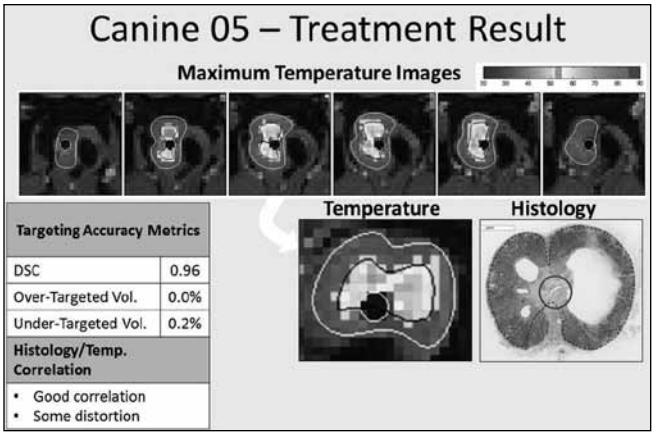

Fig. 1. UP-71.

UP-73
Attitudes Toward and Use of Social Media Among Urologists

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Introduction and Objectives: Social media (SoMe) services have become ubiquitous, but their role in the context of medical practice is underappreciated. We sought to understand the attitudes and practices of urologists regarding SoMe use.
Methods: A survey was sent to all active members of the Canadian Urological Association by email and surface mail. Likert scales were used to assess engagement in SoMe, as well as attitudes toward physician responsibilities, privacy concerns and patient interaction online.
Results: Of 504 surveys delivered, 229 were completed (45.4%). Urologists reported frequent or daily personal and professional SoMe use in 26% and 8% of cases. Personal, but not professional, use was higher in those in practice <10 years compared to >20 years (p=0.006); there were no differences between paper (n=103) or online (n=126; p>0.05) submissions. Among frequent SoMe users, YouTube (86%), Facebook (76%), and Twitter (41%) were most commonly used; 12% post content or links frequently to these sites. The most common perceived roles of SoMe in health care were for inter-professional communication (67%) or as a simple information repository (59%); online patient interaction was endorsed by 14% of urologists. Fewer than 19% had read published guidelines for online patient interaction, and ≤64% were unaware of their existence. 94.6% agreed that physicians need to exercise caution personal SoMe posting, although 57% felt that medical regulatory bodies should "stay out of [their] personal SoMe activities", especially those in practice <10 years (p=0.001). 56% agreed that SoMe integration in medical practice will be "impossible" due to privacy and boundary issues; 73% felt that online interaction with patients would become unavoidable in the future, especially those in practice >20 years (p=0.02).
Conclusions: Practicing urologists engage infrequently in social media activities at present, and are almost universal in avoiding them for professional use. Most feel that social media is best kept to exchanges between colleagues. Younger urologists are more commonly involved in personal social media activity and seem more likely to envision its future impact. Social media's ubiquity may pose future challenges to these perceptions.