Moderated Posters 4: Stones, Endourology and Transplant
July 1, 2014, 0730-0915

MP-04.01
Comparing Robotic Single Incision Laparoscopic Donor Nephrectomy with Standard Laparoscopic Multi-incision Donor Nephrectomy

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Introduction: Given the number of patients with end-stage renal disease on the kidney transplant wait-list, transplant programs across Canada are developing strategies to increase the available donor pool. One potential strategy is to limit post-nephrectomy morbidity for living kidney donors through the use of robotic single incision laparoscopic surgery.

Methods: We performed a prospective single-centre study comparing robotic single incision laparoscopic nephrectomy (n=5) with standard multiple incision laparoscopic nephrectomy (n=7) in living kidney donors. We compared operating time, length of hospital stay, and self-reported pain scale.

Results: Demographics were similar between the robotic and standard laparoscopic donor groups in regards to age (mean 51 years) and body mass index (BMI). Operative time was also comparable between the two groups at 268 minutes and 255 minutes, respectively. The robotic group length of hospital stay was slightly longer at 3.4 days compared to 3.0 days for the standard group. Postoperative pain scores on day 1 and 7 were 4.8 and 2/10 in the robotic group versus 5.5 and 2.4/10 in the standard laparoscopic group. There were no significant intraoperative or postoperative complications in either group.

Conclusions: Our early experience with single incision robotic donor nephrectomy suggests that this procedure is safe and comparable to standard laparoscopic donor nephrectomy. With an increasing sample size and longer postoperative follow-up period, we hope to determine whether decreased postoperative pain scores following robotic laparoscopic surgery results in shorter length of hospital stay and faster recovery time for living kidney donors.

MP-04.02
Donation after Circulatory Death (DCD) Renal Allografts: The Impact of Donor Age on Recipient Outcome in a Contemporary Canadian Cohort

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Introduction and Objectives: Donation after Circulatory Death (DCD) renal allografts continue to be an under-utilized organ source. While DCD grafts have comparable outcomes to neurological determination of death (NDD) grafts, the impact of donor age has been addressed in only a limited number of studies. The aim of our study is to compare patient outcome in recipients of DCD allografts from donors greater than 50 years of age to those 50 years of age and younger.

Methods: Institutional review board approved our study. 118 kidney transplant recipients received DCD allografts at our institution between July 2006 and September 2013. Recipient outcome variables (creatinine clearance (CrCl), readmission rate, length of hospital stay (LOS), or delayed graft function (DGF)) were compared for donors older than age 50 and 50 years of age or less. Student t-test and Pearson chi-square test were used in analysis.

Results: Mean recipient age was 43.4 years (SD 14.5) and median follow-up was 20.5 months (range 1.1-86.6). Recipients of kidney transplants from DCD donors 51 years of age and older demonstrated lower CrCl at 1 month (50.3 mL/min vs. 72.7 mL/min, p<0.001), 3 months (62.5 mL/min vs. 87.9 ml/min, p = 0.002), and 1 year (66.2 mL/min vs. 87.8 mL/min, p=0.013). The 2 groups did not differ with regard to delayed graft function÷2=0.573, p=0.706, graft loss ÷2= 0.779, p=1.00, or hospital readmission÷2= 0.294, p=0.355. Hospital LOS was equivalent between the two groups (13.9 days vs. 13.8 days, p=0.929). Recipients of older DCD kidneys (>50 years of age) tended to be older (59.2 vs. 49.3, p<0.001).

Conclusions: Recipients of DCD kidneys had similar short-term outcomes (DGF, LOS) between the two age categories. Recipients of the allografts from donors greater than 50 years of age demonstrated lower creatinine clearance at 1 year. Longer follow-up is required to determine long-term survival of these allografts.

MP-04.03
Robotic-assisted Laparoscopic Pyeloplasty at a Canadian Institution: Perioperative Comparison of Single Incision and Multiple Incision Techniques

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Introduction and Objectives: The utility of robotic platforms in laparoscopic dismembered pyeloplasty is well established. Literature data suggests reductions in morbidity and increased satisfaction with cosmesis when single site surgeries are performed. Our study aimed to compare the perioperative feasibility of single incision pyeloplasty to multiple incision pyeloplasty with the use of a da Vinci robotic system.

Methods: Institutional review board approved our study. We reviewed all consecutive robotic pyeloplasty surgeries by a single surgeon from January 2011 to October 2013. Single incision technique was compared to multiple incision technique on the basis of operating room time and patient length of stay (LOS).

Results: 13 patients underwent multiple incision pyeloplasty and 7 patients underwent single incision pyeloplasty. Mean age of patients 34.3 years. Operating room time was similar for multiple incision and single incision surgery (3.47 hours vs. 3.99 hours, p=0.23). While patients in the single incision cohort had similar length of stay (LOS) to those in the multiple incision cohort, there was a trend to shorter LOS in the single incision group (3.21 days vs. 3.92 days, p = 0.46). One patient in each cohort demonstrated evidence of persistent obstruction on postoperative nuclear renogram.

Conclusions: Our early experience with single incision robotic pyeloplasty does not appear to compromise operating room time or hospital LOS. Verifying these trends with larger cohorts outside the initial learning curve is required prior to the wide adoption of this technique. Our ongoing objective measurement of patient quality of life, pain, cosmesis and convalescence may further elucidate the value of single site surgery.

MP-04.04

The Impact of CT-Defined Calculus-induced Renal Obstruction on the Acute Management and Disposition of the Renal Colic Patient

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Introduction and Objectives: We set out to determine whether the CT finding of unilateral calculus-induced renal obstruction, independent of stone-size, predicted the outcome of non-surgical management and subsequent need for operative intervention.

Methods: We reviewed consecutive patients diagnosed with CT-confirmed, symptomatic, unilateral ureteric calculi in our Emergency Department (ED) over a two year period. A single radiologist categorized stones as obstructing or non-obstructing based on the degree of hydroureteronephrosis, nephromegaly, and peri-nephric stranding on CT. Primary and secondary outcomes were the 30-day ED re-presentation rate with renal colic after prior CT diagnosis and operative intervention respectively. Logistic regression explored associations between obstruction, stone characteristics, patient demographics, clinical variables on ED visits and operative intervention.

Results: Inclusion criteria was met by 202 patients: 133 (65.8%) had CT-defined obstruction, and 69 (34.2%) did not. Independent of other factors, obstruction was not predictive of 30-day re-presentation to the ED after CT diagnosis (OR=0.67, CI95% 0.34-1.31, p=0.246) or the need for operative intervention (OR 1.20, CI95% 0.67-2.18, p=0.538). Presentation to the ED 30-days before and after CT diagnosis, creatinine levels, stone size, and stone location all predicted the need for surgical intervention on univariate analysis. On multivariate analysis however, only stone size, number of renal colic ED visits before CT diagnosis, and proximal stone location predicted the need for surgical intervention.

Conclusions: Although frequently reported on CT, we demonstrate that the presence of unilateral renal obstruction does not predict the failure of medical management or the need for operative intervention. In the absence of absolute indicators for operative intervention, the CT finding of obstruction should not alter the acute management plan for the renal colic patient.

MP-04.05

Impact of Shock Wave Lithotripsy on Renal Function

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Introduction and Objectives: The safety and efficacy of Shock wave lithotripsy (SWL) is well documented, however data on the long-term impact of SWL on renal function is lacking. Our objective was to evaluate change (if any) in renal function among patients who underwent SWL treatments, and to assess any cumulative effect of repeated treatments on renal function.

Methods: We retrospectively analyzed 324 patients who had at least one SWL treatment and two or more 24h urine collections at St. Michael's Hospital from 2002-2013. The patients were divided into 3 groups based on number of SWL treatments: 1 treatment, 2-5 treatments, and >5 treatments. The estimated glomerular filtration rate (eGFR calculated using the MDRD formula) was used as a marker of overall renal function. For each patient, we determined the baseline eGFR values and compared them to values from a 24h urine collection obtained after at least 1 SWL. Linear regression analysis was used to compare the change in renal function before and after SWL in each of the 3 groups, and logistic regression analysis was used to assess if there was any change in CKD class following SWL.

Results: Patients were a mean age of 49 at first treatment; 60% were male. 90.1% of patients had normal to mild CKD at both baseline and after SWL (90.1% vs. 85.8%, respectively). In multivariate analysis, age was the only predictor of final eGFR (p=0.01); there was no difference in change in eGFR among patients treated with a single SWL versus those with multiple treatments (p=0.26). While CKD class deteriorated in 8.7% of patients, it improved in 4.3%, and number of SWL treatments did not impact change in CKD class (p=0.571).

Conclusions: While some (especially older) patients demonstrated a small deterioration in renal function over time, the number of SWL treatments did not correlate with this change. Larger scale and prospective or epidemiologic studies that better account for other confounders should be performed to confirm this finding.

MP-04.06

Percutaneous Access Made Easy: Needle Guidance with Tracked Ultrasound Snapshots

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Introduction: Urinary drainage is a common image-guided intervention, and urgent drainage via percutaneous nephrostomy (PCN) is often necessary in the context of acute renal failure or urosepsis. PCN can also be performed electively and in surgery, specifically percutaneous nephrolithotripsy (PCNL). Ultrasound (US) or fluoroscopy can be used as guidance, with urologists typically using the latter. Electromagnetic tracking with Tracked Ultrasound Snapshot (TUSS) guidance was shown to improve success rates and reduce procedure time in spinal facet joint injections, so we investigated the possible benefit of TUSS technology in PCN.

Methods: Four urology residents with minimal experience in US guided PCN participated in this study as operators. Each operator performed two TUSS-navigated procedures and two conventional US guided procedures in an alternating pattern, with the latter serving as a control. Two operators started with TUSS guidance and two started with US guidance. Data was obtained for total needle motion in tissue, needle insertion attempts, total procedure time, and needle time in tissue.

Results: TUSS guided PCN was found to have significantly decreased needle motion in tissue (mean 315 mm vs. 965 mm, p=0.04) and number of attempts (mean 1.13 vs. 2.75, p=0.02) when compared to conventional US guided PCN. TUSS guided PCN also had less needle time in tissue (mean 41 seconds vs. 77 seconds, p=0.16) and a shorter procedure time (mean 105s vs. 223s, p=0.14), though it was not statistically significant.

Conclusions: Our results show significantly decreased needle motion and number of attempts, and trends suggesting shorter procedure time and less needle time in tissue when comparing TUSS to conventional US. Residents inexperienced in US guidance used TUSS effectively, suggesting TUSS use would enable a wider range of operators to perform PCN clinically. Further studies on TUSS PCN need to be done with more operators and attempts to further assess its clinical impact.

MP-04.07

Visual Enhancement of Intraoperative Laparoscopic Surgery Using Eulerian Video Magnification

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Introduction and Objectives: Visualizing anatomy and vasculature during laparoscopic surgery can sometimes be challenging, and poor intraoperative delineation of these can result in vascular injury and operative complications. Recently, breakthroughs in video enhancement technology have provided to ability to visualize subtle motion and colour variations in videos that were otherwise not apparent to the naked eye. This concept is known as Eulerian Video Magnification (EVM) and was first published in 2012 by researchers at MIT (Wu et al, *ACM Transactions on Graphics* 2012; 4:31). Our objective is to determine if EVM can be used to improve visualization of anatomy and vasculature during laparoscopic surgery.

Methods: This retrospective study examined intraoperative video feeds that were recorded during routine laparoscopic surgeries. Intraoperative

videos were amplified using EVM and analyzed by the investigators for subjective changes in the visualization of anatomy and vasculature. The primary outcome in this study was the subjective observation of blood vessels before and after EVM processing.
Results: EVM subjectively improves visualization of anatomy and vasculature during laparoscopic surgery, and highlights blood vessels that may not initially be apparent to the naked eye. These results are demonstrated in the attached video manuscript.
Conclusions: By enhancing subtle changes in motion and flow, this proof of principle study demonstrates that EVM can improve visualization of anatomical structures during laparoscopic procedures. With further work to implement this technology, the goal is to improve intraoperative visualization in real-time in order to minimize vascular injury, decrease blood loss and reduce operative times.

MP-04.08
Dismembered Pyeloplasty in Symptomatic Patients with Equivocal Obstruction: Does It Make a Difference?
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Introduction and Objectives: Equivocal UPJO (EqUPJO) refers to patients with clinical symptoms and/or other radiologic evidence of possible UPJO, but with inconclusive results of obstruction on a diuretic renal scan. We evaluate longterm outcomes of patients with EqUPJO who have undergone dismembered pyeloplasty.
Methods: A retrospective analysis of 125 patients who underwent pyeloplasty was performed. EqUPJO was identified in 26 patients who underwent dismembered pyeloplasty from July 2005 to October 2012. Patient demographics, pre and postop renal function were recorded. Diuretic renal scan was performed preoperatively and postoperatively after stent removal. The most recent diuretic renal scan result was recorded. EqUPJO was defined as cases were there was a T1/2 < 20 mins on diuretic renal scan accompanied with pain and hydronephrosis.
Results: All patients had pain and associated hydronephrosis on imaging. Median age and BMI were 32.5 yrs old and 25.6 kg/m2 respectively. Mean operative time was 191 mins. Median LOS was 2 days. No intraoperative complications occurred and there were no conversions to open surgery. Clavien III complications developed in 4/26 patients (15%). All were urine leaks, presenting in the first week following pyeloplasty. All were managed successfully with prompt nephrostomy tube placement and required no further intervention. With a median f/u of 19 mths, 93% of patients had symptom resolution. The mean follow-up T ½ was statistically improved by 4.8 mins after pyeloplasty compared to the preoperative value (p=0.018). There was no significant change in split renal function (p=0.17). Two patients(7%) with EqUPJO of complicated iatrogenic etiology ultimately failed postop (1 required nephrectomy, 1 required endopyelotomy).
Conclusions: In patients with equivocal UPJO, the efficacy of dismembered pyeloplasty seems to be efficacious in providing symptom relief and functional improvement. The results are comparable to patients with high grade obstruction.

MP-04.09
The Impact of Patient BMI on Outcomes of Percutaneous Nephrolithotomy
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Introduction and Objectives: Obesity is a significant health concern in North America and has been associated with the increasing prevalence of nephrolithiasis. Understanding the clinical implications of BMI for patients who undergo percutaneous nephrolithotomy (PCNL) is important to improving patient care. Our objective was to evaluate the role of BMI on clinically relevant outcomes of PCNL.
Methods: We extracted data from our institutional PCNL database for 622 consecutive patients for whom BMI was available. Patient demographic, perioperative and 30 day follow-up data were included in analysis. BMI was categorized into four groups: normal weight <25, overweight 25-29.9, obese 30-39.9 and morbidly obese >40. Continuous variables were evaluated with one-way ANOVA and Dunnett's T post-hoc. Chi square was used for categorical variables. Independent predictors of residual stone and incidence of complication were identified with logistic regression. Predictors of hospital stay and operative time were evaluated with linear regression.
Results: The mean BMI of our cohort was 31 +/- 8 distributed as follows: Normal weight 23.8% (148), Overweight 32.3% (201), Obese 32.6% (203), Very Obese 11.3% (70). On univariable analysis obesity was associated with increased comorbid conditions (p<0.001), and Morbidly Obese showed longer operative time 112 +/-47 vs. 97 +/- 36 (p=0.03) and trended toward longer hospital stay (p=0.04 ANOVA, p=0.06 Dunnett). On multivariate analysis, BMI did not predict residual stone, however BMI >30 was associated with increased incidence of complication OR 1.50 (1.03, 2.20) (p=0.036). Similarly, BMI>40 predicted increased operative time 15min (5.4, 25.0) (p=0.002) and hospital stay 1.3 days (0.3, 1.9) (p=0.007).
Conclusions: Obesity was not found to have a significant impact on incidence of residual stone, but predicted increase incidence of complication, operative time and length of stay independently of patient and operative factors.

MP-04.10
Transversus Abdominis Plane Block for Pain Management of Living Donor Kidney Transplant Recipients
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Introduction and Objectives: Transverse abdominis plane (TAP) block has been an effective method of pain control for various lower abdominal surgeries. We assessed the effectiveness of the TAP block in patients with end-stage renal disease undergoing living donor renal transplantation.
Methods: A prospective consecutive case study was done on all living donor renal transplant recipients undergoing kidney transplantation between 2011 and 2013 in a single institution by a single surgeon. The TAP block was preformed by the attending Anesthesiologist with ultrasound guidance using 5mL of 0.5% ropivacaine injected at the T7-T12 and L1 spaces. We compared the outcomes between patients receiving TAP block intervention versus patients that did not. Outcomes included morphine equivalent analgesic usage, Visual Analogue Scale (VAS), and surgical outcomes.
Results: 65 recipients were identified for this study; 28 who received the TAP block and 37 who received no TAP block. There was no statistically significant difference in the morphine equivalent analgesic use between the 2 groups, 245.1±27.5 mg in the TAP group vs. 211.0±23.7 mg in the no TAP group (p= 0.3507). Patients in the TAP group had statistically significant lower VAS pain scores compared to the no TAP group respectively at day 1; 2.50±0.33 vs. 4.46±0.38 (p<0.001), day 2; 2.01±0.33 vs. 4.05±0.31 (p<0.001), day 3; 1.84±0.29 vs. 3.58±0.29 (p<0.01), and day 4; 1.57±0.26 vs. 3.29±0.33 (p<0.05) postoperatively.
Conclusions: Renal transplant recipients that received ultrasound guided TAP block in addition to standard analgesic modalities had lower VAS pain scores but did not have reduced morphine equivalent analgesic usage.

MP-04.11

A Paracrine Mechanism Involving Renal Tubular Cells, Adipocytes, and Macrophages Promotes Kidney Stone Formation in a Simulated Metabolic Syndrome Environment

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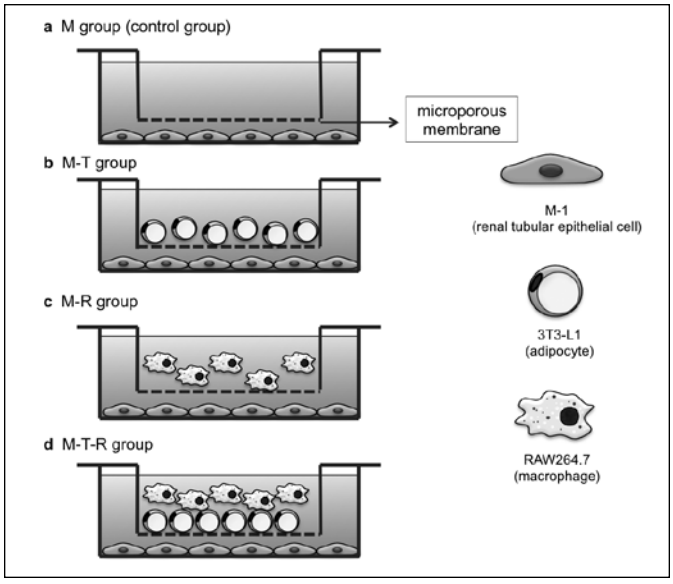
Introduction and Objectives: This study aimed to develop an in vitro system composed of renal tubular cells, adipocytes, and macrophages in order to simulate metabolic syndrome (MetS) conditions, and to investigate the molecular communication mechanism among these cells and their involvement in kidney stone formation.

Methods: Mouse renal tubular cells (M-1) were cocultured with adipocytes (3T3-L1) and/or macrophages (RAW264.7). Calcium oxalate monohydrate (COM) crystals were exposed to M-1 cells after 48 h of coculture and the number of COM crystals adherent to the M-1 cells were quantified. The expressions of inflammatory factors of cocultured medium and M-1 cells were analyzed by ELISA and quantitative PCR respectively.

Results: Inflammatory markers, monocyte chemoattractant protein-1 (MCP-1), osteopontin (OPN), and tumour necrosis factor-α (TNF-α) were markedly upregulated in the cocultured M-1 cells. OPN expression increased in M-1 cells cocultured with RAW264.7 cells whereas MCP-1 and TNF-α overexpressed in M-1 cells cocultured with 3T3-L1 cells. Coculturing M-1 cells simultaneously with 3T3-L1 and RAW264.7 cells resulted in significant increase of COM crystals adhesion to the M-1 cells. (Fig. 1, Fig. 2a-g, Fig. 3a-e, Fig. 4a-b).

Conclusions: Inflammatory cytokine changes were induced by coculturing renal tubular cells with adipocytes and/or macrophages, without direct contact, indicating that cross-talks between adipocytes/macrophages and renal tubular cells were mediated by soluble factors. The susceptibility of MetS patients to urolithiasis might be due to aggravated inflammation of renal tubular cells triggered by a paracrine mechanism involving these 3 cell types.



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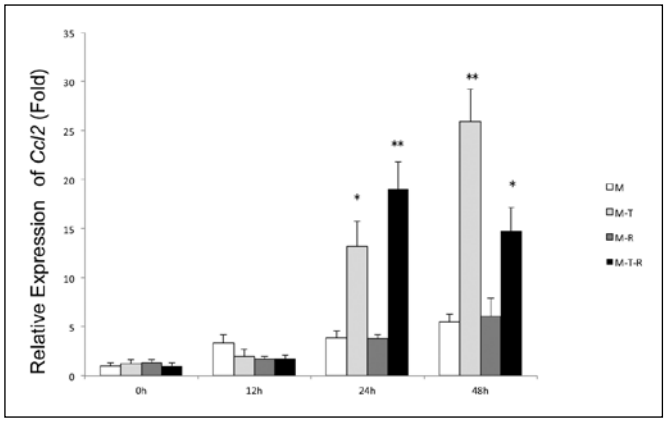

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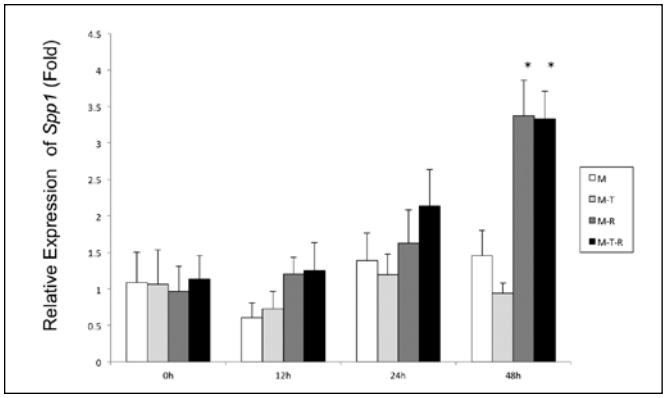

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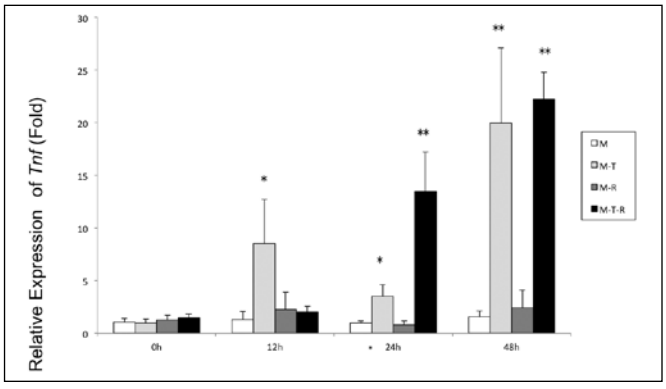

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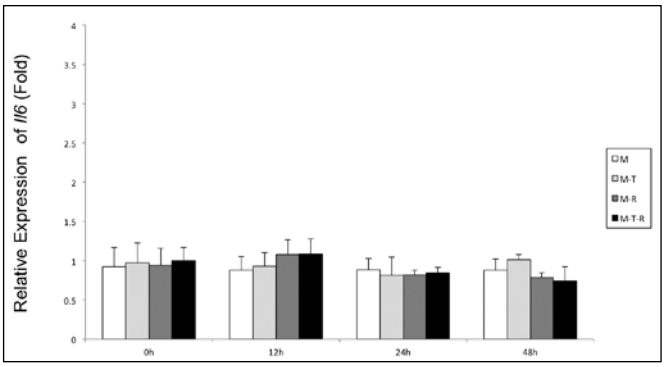

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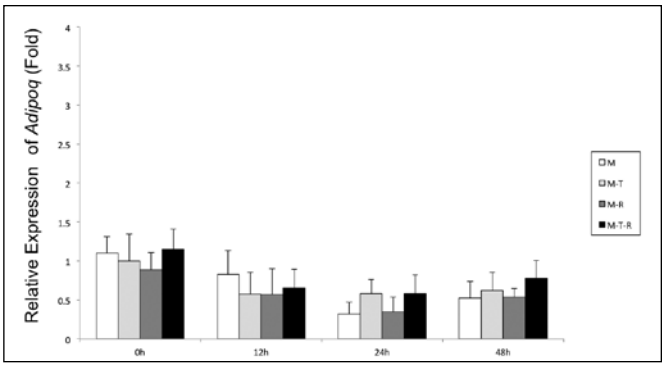

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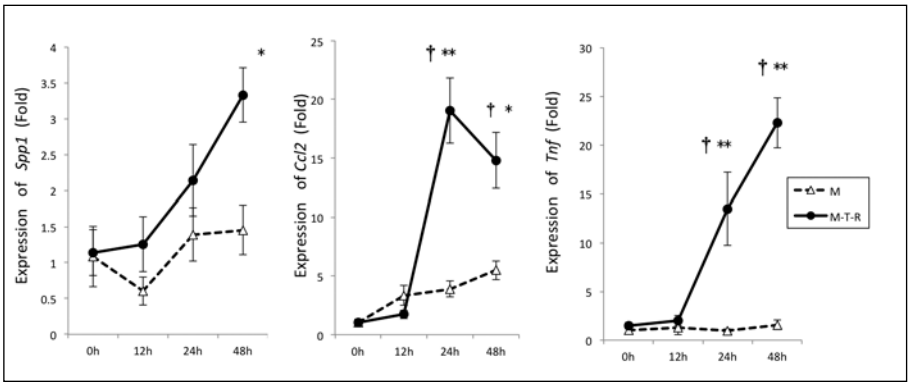

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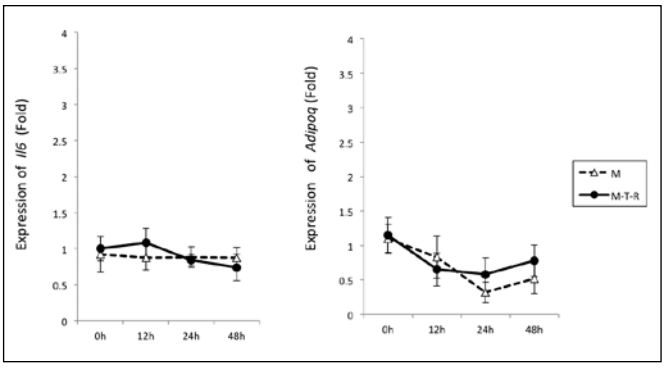

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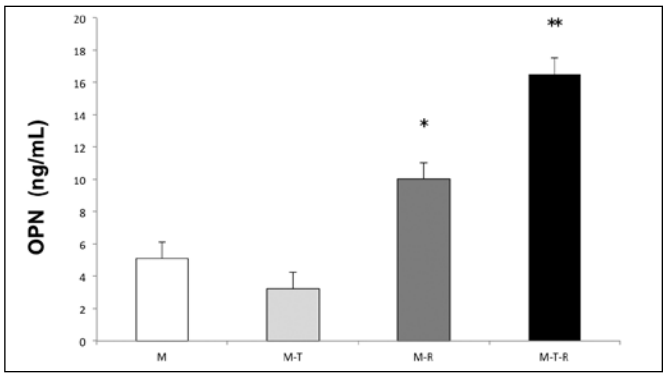

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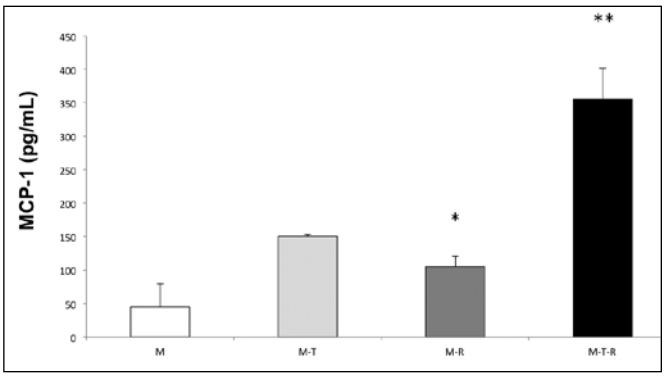

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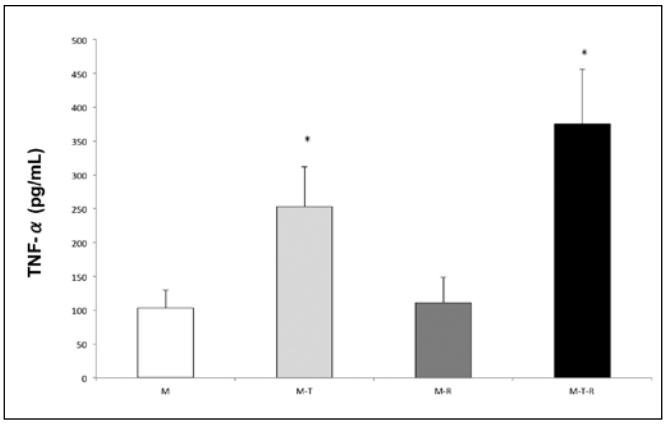

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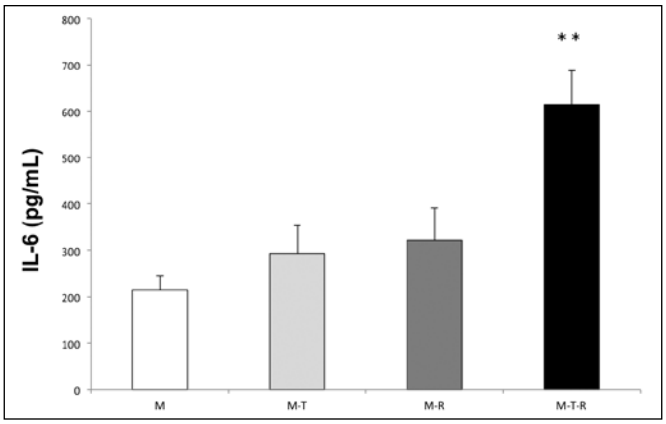

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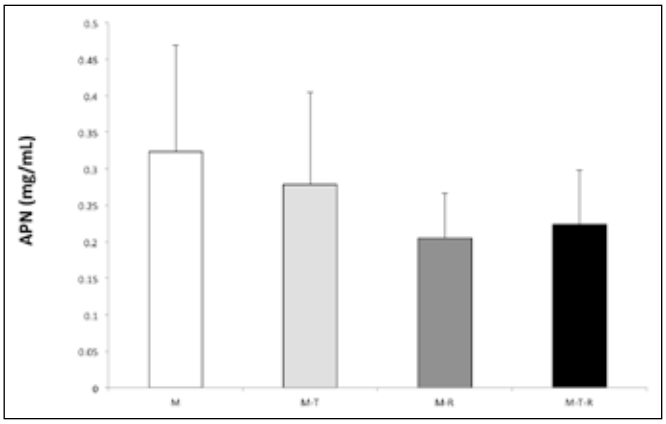

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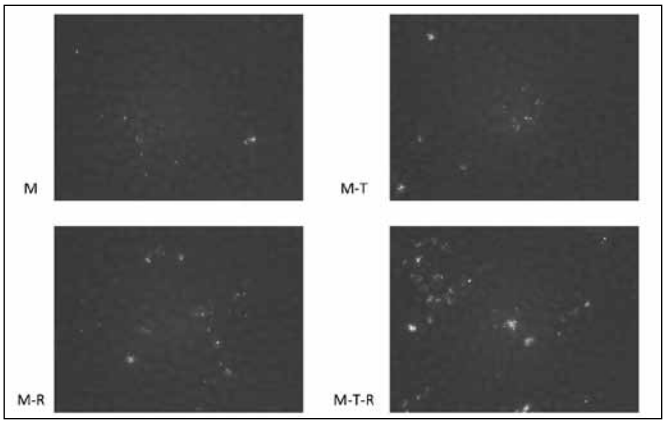

Fig. 4a. MP-04.11.

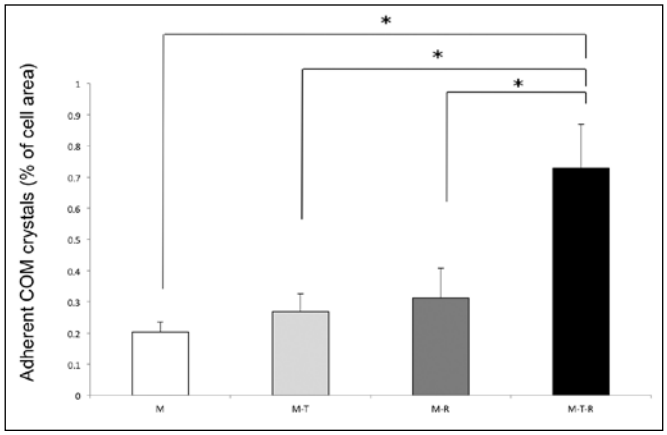

Fig. 4b. MP-04.11.

MP-04.12

A Combination of Thrombin/Gelatin Matrix and Fibrin Tissue Sealant May Safely Replace the Conventional Deep Medullary Suture During Laparoscopic Partial Nephrectomy

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Objectives: To assess whether a Tisseel® plus FloSeal® combination may safely replace the conventional deep medullary suture without compromising outcomes, and to investigate the potential benefits from these products in terms of partial devascularization incidence.

Methods: Laparoscopic mid-pole and one-third partial nephrectomy was performed on the right kidney of 12 female pigs. The only difference between the two groups was the use of a Tisseel® plus FloSeal® combination in group II (n=6) instead of a deep medullary running suture in group I (n=6). Renal scans and angiograms were performed at baseline and before sacrifice after a 5-week follow-up as well as retrograde in vivo pyelogram.

Results: No significant difference was seen concerning the operative parameters (clamping time, operative time, blood loss) and the postoperative course between both groups. Renal scans revealed a not statistically significant trend toward greater uptake loss in group I (21.6% vs. 10.2%, p=0.055). Angiograms revealed 3 major vessel occlusions in group I.

No active bleeding was detected. Only one small asymptomatic pseudoaneurysm was noted in group I. No urine leakage was noted. Ex vivo macroscopic examination of removed kidneys confirmed 3 polar renal atrophies in group I kidneys. These 3 kidneys had significantly poorer postoperative uptakes in renal scans as compared to those reported in other kidneys (18.6% vs. 39.4%, p=0.013). One case of lower calyx amputation was also reported on group I pyelogram.
Conclusions: Even after a deep one-third partial nephectomy, the use of FloSeal® and concurrent Tisseel® appears sufficient to control major medullary vascular injuries and to replace the deep medullary conventional suture without comprimising operative outcomes or increasing the risk of pseudoaneurysm in our pig model. The potential advantages seen in functional and vascular exams in terms of remaining parenchyma preservation need further clinical evaluation.

MP-04.13
Robotic LESS (Laparo-Endoscopic Single-site Surgery) in Urology: The First Canadian Experience
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Introduction: Robotic Laparoendoscopic Single-site Surgery (R-LESS) has facilitated a truncated learning curve compared to standard LESS. To our knowledge, we are the first group to develop a R-LESS program in Canada & report our initial experience at our institution.
Methods: In 2013, 23 R-LESS procedures were performed. Access was achieved with Gelport (21) or Single Site Port (2). A 3-4 cm incision (umbilical or paramedian) was used. We developed R-LESS approaches for partial nephrectomy (PN; 9), living donor nephrectomy (LD; 5), dismembered pyeloplasty (P; 7), radical nephrectomy (1) and adrenalectomy (1).
Results: PN: 9 patients underwent PN with a mean tumour dimension of 3.8±1.3cm. Mean patient age is 60±11 years and BMI of 27.5±5kg/m^2. Operative times (OT) were 308±44 minutes with a mean clamp time of 34±8 min. Mean estimated blood loss (EBL) was 240±130ml and average length of stay (LOS) was 5.1±1 day. Technical factors warranted an additional port in 2 patients. There were no conversions or intraoperative complications. One wound infection occurred following paramedian R-LESS incision. P: 7 patients total with a mean age of 37±19 years. Mean OT were 240±29 minutes and EBL was 150±170 ml. Mean LOS was 3.2±1.3 days. One patient required an additional retraction port and no intraoperative complications occurred. LD: 5 donors have undergone R-LESS nephrectomy. The mean age was 51±7 years & BMI was 23.3±3kg/m^2. Operative time was 268±39 minutes and EBL was 140±80 mL. LOS was 3.7±0.5 days. An additional port was used in 1 patient and all transplanted kidneys had immediate function.
Conclusions: Apart from excellent cosmetic results, R-LESS surgical results have been excellent with low complication rates. There were no conversions to open incisions and 4/23 required an additional port for retraction. Although operative times are long, we anticipate shorter times as we gain experience with this new technology. We are investigating the impact of R-LESS on quality of life, cosmesis, pain, and convalescence.

MP-04.14
Ureteral Stenting after Uncomplicated Ureteroscopic Laser Lithotripsy for Urolithiasis: Is It Really Necessary? Results of a Cost-effective Analysis
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Introduction and Objectives: Routine ureteral stenting after uncomplicated ureteroscopy and laser lithotripsy (ULL) is debatable. Purported advantages include preventing ureteral obstruction and facilitating stone passage; disadvantages include stent colic, potential stent migration and subsequent cystoscopic stent removal. The purpose of our study is to determine whether stenting after uncomplicated ULL is safe and cost-effective.
Methods: A decision tree was developed to estimate the costs of ULL with and without stenting in achieving a complication free outcome (CFO). Complications were defined as any unplanned hospital visits within the first 6 postoperative weeks including emergency room visits, admissions to hospital or surgeries. They were graded according to the validated Revised Clavien classification. Complication rates were derived from recent literature. Costs of surgical procedures were obtained from the Ontario Case Costing Initiative. Sensitivity analyses were performed to determine which parameters affected the outcome of our model. A willingness-to-pay (WTP) threshold of $3000 was implemented and adopted from drug-eluting stent literature for cardiovascular disease.
Results: ULL without stenting was more cost-effective than ULL with stenting in achieving a CFO. ULL with and without stenting cost $3828 and $3248 respectively to achieve an overall complication grade of 0.03 and 0.1 ($p<0.01$) respectively. Overall postoperative complication rates in the stented versus non-stented groups were 2.6% and 6.5% respectively. Sensitivity analysis demonstrated that ULL without stenting remained the most cost-effective if the overall complication rate without stenting remained below 11%, or if the cost of ULL without stenting did not exceed $2275.
Conclusions: After uncomplicated ULL, not stenting was more cost-effective than stenting at a WTP of $3000. Our study demonstrated that despite the increased postoperative complication rates associated with non-stented ULL, it was still more cost-effective due to the lower upfront costs of the initial primary procedure.

MP-04.15
Identification and Preservation of Accessory Pudendal Arteries in Robotic-assisted Laparoscopic Radical Prostatectomy (RARP)
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Introduction and Objectives: There is a growing body of evidence to suggest that preservation of accessory pudendal arteries (APAs) at the time of radical prostatectomy will impart a positive impact on recovery of sexual function. Specifically, time to achieving erections and probability of maintaining potency may be improved. Studies have demonstrated corresponding hemodynamic changes in the APAs and cavernous arteries in pharmacologically induced erections, supporting the role of APAs in penile tumescence. We present our surgical technique in the preservation of APAs during RARP.
Methods: In the 2 surgical videos, we present the technique for preservation of lateral APAs. Both patients underwent bilateral inter-fascial nerve sparing RARP for clinically organ-confined prostate cancer at low risk for extraprostatic extension.
Results: Several key steps are outlined: 1) APA identification; 2) APA dissection; and 3) dorsal venous complex (DVC) ligation. Identification of the APAs is primarily by visual inspection and is facilitated by having a dry surgical field and a high index of suspicion. APA dissection is achieved by developing a clear plane between the surface of the APA and endopelvic fascia using a combination of sharp and blunt dissection. Lateral APAs are commonly associated with small apical branches that should either be spared or controlled by fine bipolar cautery. Surgical margins should not be compromised if preservation of apical branches is not easily achieved. The main trunk of the APA should be released from the periurethral tissues such that ligation and division of DVC does not result in inadvertent injury to the APA.
Conclusions: Identification and preservation of APAs is feasible and can be performed with precision using RARP. Attention to the apical dissection of the APA is key in order to minimize risk of distal vessel injury. Further study is needed to elucidate the impact of APA sparing surgery in functional outcomes.