

Moderated Poster Session I: Laparoscopy/Robotics/Education Thursday, October 29, 2015 10:30 a.m. - Noon

P1

Extraperitoneal Robot-Assisted Laparoscopic Radical Prostatectomy: Outcomes in very large prostates (>100 g): A Matched Pair Analysis

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Background: Radical prostatectomy can be challenging in patients with a very large prostate. The extraperitoneal (EP) approach to a robot-assisted radical prostatectomy (RARP) is often considered more difficult than the transperitoneal approach due to the limited working space. The aim of the study is to evaluate if EP-RARP overcomes the obstacles posed by very large prostates.

Methods: In this institutional review board-approved study, we queried our prospectively collected database (CAISIS) of patients who underwent EP-RARP. 1663 patients underwent EP-RARP for localized prostate cancer by a single surgeon (Jul. 2003-Dec. 2013). 55 patients with prostate pathology specimen weight >100g (group 1) were matched to an equally-sized cohort with prostate weight of <100 g (group 2). A propensity-score match using multivariate analysis was performed incorporating 10 co-variables. Data on standard pre, peri, and postoperative variables was analyzed, as well as complications classified according to the modified Clavien-Dindo classification were noted.

Results: The mean PSA (9.1 ± 5.4 vs. 6.9 ± 5 , $p=0.03$) was higher in group 1. All other patient and disease variables [Age (65.2 ± 5.6 vs. 63.3 ± 6 , $p=0.08$), BMI (28.8 ± 3.4 vs. 29.3 ± 5 , $p=0.57$), ASA 1/2/3 ($7.2/72.7/20$ vs. $10.9/69/20$, $p=0.8$), clinical T-stage 1/2 ($89/11$ vs. $89/11$, $p=0.78$), and biopsy Gleason score sum 7 ($71/29$ vs. $71/29$, $p=1$) were similar in group 1 and 2 respectively. The mean prostate weight in group 1 was 120 g, while it was 58.6 g in group 2 ($p<0.0001$). There was no difference in the ability to perform partial or full nerve-sparing (70 vs 78 %, $p=0.19$) or pelvic lymphadenectomy (34.5 vs. 38.1 %, $p=0.69$). Post-operative pathological parameters such as Gleason score sum 7 ($70.5/29.5$ vs. $56.3/43.7$, $p=0.13$), T-stage 2/3a/3b ($89/7.2/1.8$ vs. $87.2/10.9/1.8$, $p=0.86$) and positive surgical margin rates (7.2 vs. 9 %, $p=1$) were similar. Higher mean OR time (205.8 ± 48.6 vs 180.2 ± 43.4 mins, $p=0.004$) and estimated blood loss (318.4 ± 172.8 and 200.3 ± 143.5 ccs, $p=0.0002$) were noted in group 1 compared to group 2 respectively. There were no differences in transfusion rates (1 patient transfused in group 2), rates of patients discharged on day 1 (89 vs. 94%, $p=0.27$), or the complications [Clavien 1-2/3-4 (11/2 vs 8/0, $p=0.41$)] between the two groups.

Conclusions: Apart from increased operative times and blood loss, no differences in peri and postoperative parameters, and complications were found between patients with prostates > than 100 g compared to those with < 100 g undergoing EP-RARP.

P2

Outcomes of Robot-Assisted Repair of Diversion-Related Complications after Robot-Assisted Radical Cystectomy

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Background: Reoperation following robot-assisted radical cystectomy (RARC) may be necessary for diversion-related complications that fail conservative or endoscopic management. There is paucity of data about the role of robot-assisted surgery in the management of such complications. We report our 10-year experience of robot-assisted repairs of diversion-related complications

Methods: Retrospective review of 415 consecutive RARC performed between 2005-2015 who underwent robot-assisted repairs of urinary diversion-related complications. Perioperative outcomes, complications, conversion to open and follow up of these patients were obtained.

Results: Twenty-four robot-assisted repairs were identified. Procedures included 16 revisions for uretero-ileal strictures (13 left and 3 right strictures), 4 fistulae (3 neobladder-bowel and 1 neobladder-vaginal fistulae), 2 explorations for small bowel obstruction and 2 parastomal hernia repairs. All repairs were performed with robotic assistance and no open conversions were required. Average operative time was 202 minutes, mean estimated blood loss was 72 ml, and the mean hospital stay was 3 days. Two procedures were complicated by serosal tears that were instantly repaired. Patients who underwent revisions of uretero-ileal anastomoses and fistulae repairs showed no recurrence on follow up imaging. No recurrence of any complication was observed after a mean follow up of 231 days.

Conclusions: In our 10-year experience of RARC, robot-assisted reoperations are feasible with minimal blood loss and short hospital stay, rendering it an attractive option for management of diversion-related complications.

P3

Does Robot-Assisted Approach to Radical Cystectomy Deprive Patients of Continent Urinary Diversion?

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Background: To analyze the trends and decision making in urinary diversion in patients who underwent robot-assisted radical cystectomy (RARC).

Methods: Retrospective review of 294 patients who underwent RARC at our institution. All patients received preoperative counseling with regards the type of diversion. We evaluated the frequency of utilization of each method of urinary diversion, and assessed the reasons for receipt of incontinent urinary diversion (ICUD) (including absolute and relative contraindications as well as patient preference).

Results: Among a total of 294 patients, 245 (83%) had absolute or relative contraindications to continent urinary diversion (CUD), while 49 (17%) were potentially eligible for it. 270 patients (92%) received ICUD (ileal conduit) while only 24 (8%) of patients received CUD (20 had neobladders and 8 had Indiana pouch). Twenty-five patients (9%) had no contraindication to CUD but they received ileal conduit based on their personal preference. The main contraindication to CUD was renal impairment (52%).

Conclusions: The majority of our patients had contraindications to CUD, mainly renal impairment. Half of those who were eligible for CUD opted to ICUD (ileal conduit). Rates of continent urinary diversion remain lower in our RARC cohort despite thorough preoperative patient counseling.

P4

Development and Validation of a Surgical Safety Checklist for Robot-Assisted Radical Cystectomy: From Airline to the Operating Room

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Background: Improvement of surgical safety is one of the key goals of modern medicine. Introduction of technology require constant updates in skills and attention to key steps in order to prevent errors. This study aims to develop and validate a Surgical Safety checklist (SSCL) based on Healthcare Failure Mode and Effect Analysis (HFMEA) for training and assessing surgeons during robot-assisted radical cystectomy (RARC).

Methods: A team of robotic surgeons using the HFMEA methodology identified the high-risk steps to create the SSCL for RARC. A multi-disciplinary operating room team with key observation during surgery helped create a procedural map, which was further validated and consensus was achieved at a level of over 80%.

Results: Two surgeons were observed for 120 console hours (17 procedures) from June to September 2014 to create a step-wise representation. All key steps were evaluated using a Delphi method in collaboration with a focus group of 3 expert robotic surgeons; consensus on the definition of each procedural step was reached. HFMEA was undertaken at a further focus-group meeting. Thirty-five failure modes were identified and associated with over 23 potential causes with a "Hazard score" ≥ 8 . After extensive content validation with 4 experts, a 3-stage checklist was produced encompassing various processes: "Preparation of the Operative Field" (3 processes, 8 sub-processes), "Extirpation of the Bladder and Prostate/Uterus and Ovaries" (7 processes, 21 sub-processes) and "Lymph Node Dissection" (5 processes, 8 sub-processes).

Conclusions: Surgical Safety Checklist for Robot-assisted radical Cystectomy is an instrument that can contribute in preparation and promotion of safe robot-assisted surgery. This helps in identifying measures required to promote safe surgical process.

P5

Quality Performance Metrics for Robot-Assisted Radical Cystectomy: What have we Achieved in a Decade?

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Background: Quality performance metrics will determine how surgeons will be reimbursed in the future. The International Robotic Cystectomy Consortium (IRCC) attempted to identify key metrics for surgical outcomes after robot-assisted radical cystectomy (RARC)

Methods: The Prospective Quality Assurance IRCC Database was queried between 2003- 2014. We created the Cystectomy Quality Score (CQ-Score) - a composite measure of surgical performance based on three sets of quality indicators.

Quality criteria included: 1- Operative criteria - Administration of neo-adjuvant chemotherapy (15 % rate of administration), overall operative time (less than 6.5 hours), and estimated blood loss (less than 500 ml); 2-Pathological criteria- Positive soft tissue surgical margins (less than 10%), and lymph node yield of >20 ; 3- Peri-operative criteria- Clavien-Dindo grade III-IV complications $<20\%$, 30-day readmission rate $<15\%$ and mortality rate 20 cases/year for at least two years). A logistic regression model with normal random effects, intercept and slope was fitted to evaluate the probability of receiving quality care.

Results: Enough data for analysis were available for 1694 patients (25 institutions from 7 countries). More than 60% of high volume institutions met overall quality metrics. Centers started at different levels, suggesting that factors other than surgery may have contributed to outcomes. Institutions that incorporated intra-corporeal diversion earlier showed less likelihood of meeting operative criteria. Most institutions showed improved achievement of metrics as their experience increased. Some low volume centers were able to achieve quality metrics at from the beginning

Conclusions: CQ Score utilizes comprehensive measures needed for surgical performance and substantial variability in achievement was seen. More than 60% of high volume institutions met overall quality metrics, while some lower volume institutions were able to achieve quality metrics from the beginning

P6

The Loud Surgeon Behind the Console: A Methodology for Understanding Team Communication in Robot-Assisted Surgery

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Background: The operating room during robot-assisted surgical procedure is a complex environment in which communication between the console surgeon and the bedside team is critical. The introduction of robot-assisted surgery (RAS) has changed the arrangement of the surgical team in the operating theater; the surgeon no longer has physical proximity to the patient and the rest of the surgical team. This requires reliance on verbal communication critical with the team during surgery - a situation that often leads to miscommunication, frustration, possible errors leading to poor surgical outcomes, and at times a very "loud surgeon behind the console!". We report the first pilot feasibility study of verbal and non-verbal communications & team interaction during RAS

Methods: Intra-operative observation protocols and processes were developed and set in place based on predetermined criteria. Three-network cameras recorded simultaneous capture (console surgeon, operative table, anesthesia and technician). Each team member (lead surgeon, assistant surgeon, bed side assistant, and anesthesiologist and scrub nurse) was given a lapel microphone before the start of the procedure. All environment recording was synchronized with real intraoperative video feed. Questionnaires on team familiarity and cognitive load were collected at the end of each procedure. Observer studied a variety of combinations of surgical scenarios and team-compositions to develop a detailed understanding of communication patterns

Results: We recorded 26 RAS procedures, with combinations of 2 unique surgeons, 3 assistant surgeons, 2 physician assistants, and 10 scrub nurses. All people present in the OR (staff and patient) gave consent to participate in the study. One procedure could not be recorded due to equipment malfunctions. Some small portions of audio recordings were lost due to interference or participants inadvertently muting the microphones transmitters. Preliminary analysis of pilot data showed that the combination

of the 4 videos (3 cameras and intraoperative feed) and 4 audios allows for a first of its kind opportunity to uncover both verbal and nonverbal interactions during RAS.

Conclusions: While team communication issues have been studied in the OR, the study of non-verbal interactions during (RAS and non-RAS) surgeries has been neglected. Also, the literature regarding communication during RAS has been sparse. This methodology shows a feasible methodology to combine the study of verbal and non-verbal communications in RAS.

P7
Factors Predicting Prolonged Operative Time For Individual Surgical Steps Of Robot-assisted Radical Prostatectomy (RARP): A Single Surgeon's Experience

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Background: To evaluate the average time required completing individual steps of robotic-assisted radical prostatectomy (RARP) by an expert RARP surgeon. The intent would be to help establish a time-based benchmark to aim for during apprenticeship. In addition, we aimed to evaluate preoperative patient factors, which could prolong OT of those individual steps.

Methods: We retrospectively identified 247 patients who underwent RARP, performed by an experienced robotic surgeon at our institution. Duration of steps and baseline characteristics were recorded. Multivariate analysis was performed to predict factors of prolonged individual steps.

Results: In multivariable analysis, obesity was a significant predictor of prolonged operative time (OT) of: docking (Odds Ratio [OR]: 1.96), urethral division (OR: 3.13) and vesico-urethral anastomosis (VUA) (OR: 2.63). Prostate volume was also a significant predictor of longer OT in: dorsal vein complex ligation (OR: 1.02), bladder neck division (OR: 1.03), pedicle control (OR: 1.04), urethral division (OR: 1.02) and VUA (OR: 1.03). A prolonged bladder neck division was predicted by the presence of a median lobe (OR: 5.03). Only obesity (OR: 2.56) and prostate volume (OR: 1.04) were predictors of a longer overall OR time (Fig. 1).

Conclusions: Obesity and prostate volume are powerful predictors of longer overall OT. Furthermore, Both can predict prolonged time of several individual RARP steps. The presence of a median lobe is a strong predictor of a longer bladder neck division. These factors should be taken into consideration during RARP training.

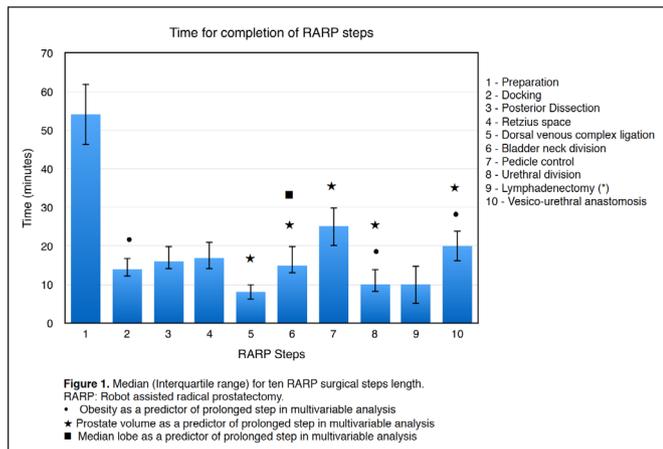


Fig. 1. P7.

P8
Early Clamp Release During Laparoscopic Partial Nephrectomy: Implications for Preservation of Renal Function

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Background: Partial nephrectomy is the gold standard for management of small renal tumors. Intra-operative warm ischemic time (WIT) is a known, reversible risk factor for short and long-term renal dysfunction. We describe a new technique for laparoscopic partial nephrectomy to reduce WIT and assess impact upon renal function and bleeding.

Methods: We retrospectively assessed patients who underwent either robot-assisted, hand-assisted, or traditional laparoscopic partial nephrectomy from May 2012 to March 2015 at our center, by a single surgeon. We compared the standard procedure to our modified early clamp release (ECR) technique. We evaluated WIT, estimated blood loss (EBL), change in estimated glomerular filtration rate (eGFR) and change in differential function as demonstrated by nuclear renograms. Follow-up lab work and renograms were done at 6-12 weeks post-operatively and compared to baseline in 56 patients (28 ECR: 28 control). Patients with solitary kidneys, missing data and those undergoing open, and clamp-free partial nephrectomy procedures were excluded from analysis. All patients had both artery and vein clamped without the use of ice slush.

Results: The ECR group and control groups were similar in age, sex, and tumor size. There was no difference in ratio of robotic: pure laparoscopic: hand assisted cases in between groups. Although patient weight was higher in the ECR group (96.7 vs. 80.8 kg; p<0.05), WIT was significantly lower in ECR group compared to control (18.4min vs. 30.5min; P<0.05). There was no significant difference in EBL in the two groups (310ml vs. 292ml; p=NS). Although there was no significant difference in change from baseline eGFR in the early post-operative period (day 3) or in follow-up (6-12 weeks), the control group had a significantly greater loss of differential renal function from baseline compared to the ECR group (8% versus 3% change; P<0.05).

Conclusions: The ECR technique offers a safe, reproducible alternative that reduces WIT during laparoscopic partial nephrectomy. This is accompanied by reduction in overall ipsilateral renal dysfunction, without increasing bleeding risk. Lack of eGFR change at 6-12 weeks may imply lack of sensitivity of the assay, small patient numbers in the study, or limited clinical impact of the technique.

P9
Teaching Robotic Partial Nephrectomy Does Not Affect Renal Function

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Background: Partial nephrectomy (PN) represents the treatment of choice for localized renal tumor less than 7 cm. Teaching robotic PN (RPN) remains challenging with regards to maintaining acceptable operative time and most importantly acceptable warm ischemic time (WIT) which, if increased, could negatively impact short-, mid- and long-term renal function. The goal of the present study was to assess the impact of teaching on WIT and renal function in patients undergoing RPN.

Methods: Consecutive patients undergoing standardized RPN for T1-T2 renal tumors in two institutions were included. RENAL nephrometry score was used to assess the tumor complexity. Serum creatinine and glomerular filtration rate (GFR) were determined preoperatively, at day 2 and after 3-6 months of follow-up. Patients in whom the attending surgeon (staff) performed the mass resection and renorrhaphy were compared to those in whom the fellow performed these steps under supervision. Primary outcomes were WIT and GFR decrease at follow-up visit (3-6 months). Complication rate (Clavien classification) and surgical margin positivity were considered as secondary outcomes.

Results: Sixty-nine patients (25 women, mean age 61 ± 13 yr) were included in the final analysis. Of those, 46 were operated on by the staff urologist and 23 by the fellow. Patients characteristics did not differ significantly between the two groups, except for a higher proportion of ASA 2 patients in the "fellow group" (15/23 versus 19/46, $p=0.05$). Of note, the degree of tumor complexity, as assessed by the RENAL nephrometry score, as well as preoperative CKI-EPI GFR were similar between both groups. Mean WIT was 22 ± 9 in the "staff" group and 24 ± 7 in the "fellow" group ($p=0.09$). There was no statistical difference as far as operating room time, console time, blood loss and length of stay were concerned. Preoperative serum creatinine levels were similar in both groups (75 ± 14 vs 81 ± 30 $\mu\text{mol/l}$, respectively; $p=0.89$). The corresponding mean CKI-EPI GFR were 88 ± 14 and 85 ± 22 ml/min/1.73m^2 , respectively ($P=0.83$). At the time of follow-up, a reduction of 8 ± 9 ml/min/1.73m^2 in GFR was observed in the "staff" group (-9%), while a GFR reduction of 11 ± 12 ml/min/1.73m^2 (-13%) was observed in the "fellow" group ($p=0.38$). Complication rate (13% versus 17%, $p=0.63$) and positive margin rate (8% versus 4%, $p=0.47$) did not differ significantly between staff and fellow, respectively. **Conclusions:** Complex robotic procedures such as RPN can be safely taught, provided a strict staff supervision and stepwise standardized procedure. Teaching does not negatively affect GFR after a follow up of 3-6 months.

P10 Introducing the Twitter Impact Factor: An Objective Measure of Urology's Academic Impact on Twitter

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Background: Social media (SoMe) is a growing vehicle for communication of thoughts, ideas and most recently- academic material. Urology has been rapidly adapting to SoMe with increasing participation by urologists, urological societies and academic journals. Twitter, a SoMe network in which subscribers can share ideas in 140 characters or less, has been one of the rapidly growing avenues for discussion. We present and evaluate the Twitter impact factor (TIF), a novel means of measuring a journal's academic influence in the realm of social media (SoMe). **Methods:** The Journal Citation Reports (JCR) for 2014 was queried for urologic academic journals. Twitter.com was queried for urologic journals listed in the JCR with a Twitter handle. English language journals with an active Twitter account since 2013 were included and the total number of followers, tweets, and re-tweets (RTs) over a two year period were collected. Tweets were evaluated for academic relevance and only original tweets were included. The journal's TIF was calculated based on the number of RTs per original relevant tweet similar to the calculation of the journal impact factor (JIF) in standard publications. Journals that did not have Twitter accounts for at least 2 years were excluded from the TIF analysis. Comparisons for TIF were also made to the Klout score which uses SoMe analytics to calculate an online influence.

Results: A total of 33 urologic journals were identified in the JCR for 2014. Of these, 7 journals (21%) had a Twitter presence as of 2013. The number of JCR listed journals with a Twitter handle increased to 9 in 2014, a 28% increase. The mean number of relevant tweets per journal increased during the study period with 223 in 2013 and 303 in 2014. Larger increases were found in the number of RTs with a 130% increase between 2013 and 2014.

European Urology (1.80) and BJU International (1.46) were found to have the highest TIF. There was a positive, but statistically insignificant, correlation between the TIF and JIF ($r=0.64$, $p=0.12$). There was a strongly positive linear correlation between the TIF and the Klout score ($r=0.84$, $p=0.0086$).

Conclusions: Use of SoMe by academic journals is becoming increasingly prevalent. With increasing use of SoMe by individuals and academic journals, measuring the impact will be useful tool to evaluate online presence. TIF can be used as a tool to measure the academic reach of a journal on Twitter.

P11 Surgical Mentorship During Robot-assisted Surgery: Is the Surgeon Really with the Program?

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Background: To elucidate the cognitive performance metrics of robot-assisted surgical mentor during robot-assisted surgery, and to identify if viewing operative performance of surgical trainees is similar to performing robot-assisted surgery for a surgical mentor

Methods: An IRB approved study enrolled 51 robot-assisted surgical procedures performed by single surgeon between 2013 and 2014. A 20-channel wireless electroencephalography (EEG) recording device was used to monitor brain activity using an ABM X 24 neuro-headset during all surgical procedures. During each task, participant's cognitive engagement, mental workload and mental state were evaluated via wireless EEG recordings. Two key portions of interaction between trainee and robotic surgeon mentor while performing prostatectomy & cystectomy were included in the analysis: extended lymph node dissection (eLND) ($n=21$) and urethro-vesical anastomosis (UVA) ($n=19$). Live, intraoperative exchange between robotic surgeon mentor and trainee in field notes, NASA -TLX based subjective evaluations were also measured.

Results: Lymph Node Dissection: As the trainee surgeon felt that the procedure was more challenging (high mental and/or physical demands), he was more frustrated and had to put more effort and his perception of his performance was worse. Meanwhile the mentor surgeon's workload was increased (continuous concern and more attention) towards the trainee's performance.

Urethro-vesical Anastomosis: Whenever the trainee felt the procedure was challenging (high mental, physical or temporal demands), the expert was paying more attention (higher mental state and lower distraction). As the trainee felt more operative challenges, the expert also felt it was both mentally and physically demanding. However, it did not affect the perception of expert on trainee frustration, effort and performance level

Conclusions: Utilization of cognitive performance metrics during live intra-operative mentorship can provide insight into studying team behavior and interaction during complex demanding surgical performance. Further research is required into use of cognitive performance metrics to assess the relationship between performance, mentorship, and its educational impact.

P12 Is There a Place for Virtual Reality Simulators in Assessment of Competency in Percutaneous Renal Access?

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Background: To assess competency of urology Post-Graduate Trainees (PGTs) in percutaneous renal access (PCA).

Methods: Upon obtaining ethics approval and informed consents, PGTs between Post-Graduate Years (PGY-3 to PGY-5) from all four urology programs in Quebec were recruited. PCA competency of each participant was assessed objectively by performing task 4 on the PERC Mentor™ simulator, where they had to correctly access and pop 7 balloons in 7 different renal calyces (Fig. 1), and subjectively by the validated percutaneous nephrolithotomy global rating scale (PCNL-GRS).

Results: A total of 26 PGTs with a mean age of 29.2 ± 0.7 years participated in this study. When compared with the 21 PGTs without practice, all 5 PGTs who had practiced on the simulator were competent ($p=0.03$), and performed the task with significantly shorter operative time (13.9 ± 0.7 vs. 4.4 ± 0.4 minutes; $p<0.001$) and fluoroscopy time (9.3 ± 0.6 vs. 3.4 ± 0.4 minutes; $p<0.001$), and had significantly higher successful attempts to pop the balloons (23 ± 5 vs. 68.7 ± 11 ; $p=0.001$) and PCNL-GRS scores (13 ± 0.6 vs. 20.6 ± 1 ; $p<0.001$). According to a pass score of 13/25, thirteen PGTs were competent. Competent PGTs performed the task with significantly shorter fluoroscopy time (9.8 vs 6.5 minutes; $p=0.01$) and higher



Fig. 1. P12. Task 4: Use the puncture needle to correctly access the tip of the calyces and advance the needle to pop the 7 balloons

percentage of successful attempts to pop the balloons ($p < 0.001$), higher PCNL-GRS score ($p < 0.001$) and lower complications ($p = 0.01$) (Table 1).

Conclusions: The PCNL-Global Rating Scale in combination with the PERC Mentor™ simulator was able to differentiate competent and non-competent PGTs.

Table 1. P12. Baseline demographic characteristics of competent PGTs compared with non-competent PGTs

Variables	Non-competent PGTs (n = 13)	Competent PGTs (n = 13)	p value
Operative time (min)	14.6 ± 0.6	9.6 ± 1.5	0.06
Fluoroscopy time (min)	9.8 ± 0.7	6.5 ± 1.1	0.01
Time to puncturing the PCS (min)	0.4 ± 0.1	0.5 ± 0.1	0.8
No. attempts to puncture the PCS	14.3 ± 2.2	8.9 ± 0.6	0.02
Infundibular injury	2.5 ± 1.3	0.3 ± 0.2	0.1
PCS perforations	5.8 ± 1.3	3.7 ± 0.6	0.1
Splenic injury	0.9 ± 0.7	0.1 ± 0.1	0.3
Rib injury	13.3 ± 2.5	3.6 ± 0.8	0.01
Blood vessel injury	9.8 ± 1	7.5 ± 1.5	0.2
% of successful attempts to pop a balloon	11.2 ± 1.1	52.6 ± 8.3	<0.001
Contrast used for retrograde pyelography (mL)	163.5 ± 15	101.5 ± 21.5	0.02
Anatomy identification	2.2 ± 0.1	3.5 ± 0.1	<0.001
Plan needle puncture	2.4 ± 0.1	3.5 ± 0.2	<0.001
Use of instruments	2.2 ± 0.1	3.8 ± 0.2	<0.001
Ability to perform tasks	2.2 ± 0.1	3.8 ± 0.2	<0.001
Overall performance	2 ± 0.1	3.4 ± 0.2	<0.001
PCNL-GRS score (out of 25)	10.8 ± 0.3	18.1 ± 0.8	<0.001