

**C-7****C-9****Right Testicular Rupture Following a Firecracker Injury: A Case Report**Tomas Mario Yanga <sup>(1)</sup>, Neddy Lim <sup>(1)</sup><sup>(1)</sup> Jose R. Reyes Memorial Medical Center

In the Philippines, data on testicular rupture due to a firecracker-related accident is lacking, and to the best of the author's knowledge, there is only one published report in international literature on firework-related genitourinary injury. Most published data on testicular rupture are associated with blunt trauma, which are mostly sports-related. The objectives of this clinical case report are to describe a rare case of a firecracker-related injury to the groin, and to discuss the approach to its evaluation and management.

A 13 year old male presenting with scrotal avulsion following a blast injury from a firecracker to his groin is described. After confirmation of right testicular rupture by ultrasonography, the patient underwent scrotal exploration and right testicular repair. The patient had an uneventful recovery and he was discharged on the second post-operative day. This case report highlights the importance of ultrasonography and early surgical exploration for a successful testicular salvage.

**Enhancing Singapore Urology Residents' Training with Cross-cluster Videoconferencing: A Pilot Study**Raj Tiwari <sup>(1)</sup>, Alicia Goh <sup>(2)</sup><sup>(1)</sup> Sengkang General Hospital, <sup>(2)</sup> Singhealth Residency

Urology specialization training in Singapore is hosted by 3 healthcare clusters where residents spend majority of their training within one cluster. The final assessment of residency includes a timed clinical viva examination which is necessary for residents to pass to get qualified as urologists.

Our primary aim was to show how videoconferenced mock viva examination practice across all 3 clusters is feasible. Secondary aim was to assess resident satisfaction via a standardized feedback form. Each viva session between 2 clusters lasted 1 hour, covering 2 core urological topics. Each topic had 1 examiner and 1 candidate timed for 8 minutes. Questions of 6 fragments were flashed using Microsoft power point slides and shared across the cluster. After each topic a faculty feedback session was conducted lasting 15 minutes for residents to receive feedback from both clusters. Zoom<sup>®</sup> software was used via laptops and public wifi network. After all 11 sessions, an online standardized feedback form was administered to the residents comprising 20 questions in 6 categories. We conducted 11 monthly viva sessions for 6 urology final year residents covering 22 core urological topics. No sessions were cancelled due to technical factors. All 3 clusters were involved at least twice. Mean survey scores were all above 3 with with highest being educational quality and lowest being sense of realism. Videoconferencing cross-clusters is feasible over our 1 year experience and associated with high resident satisfaction. It maintains social distancing in the post COVID-19 new normal while allowing for realistic training.

**C-8****C-10****Abol-Enein Pouch Modification After Radical Cystectomy in Bladder Rhabdomyosarcoma in 5 Year Old Child During COVID-19 Pandemic: A Case Report**Thomson Ginting <sup>(1)</sup>, Syah Mirsya Warli <sup>(2)</sup><sup>(1)</sup> Universitas Indonesia, <sup>(2)</sup> Universitas Sumatera Utara

**Objective:** To discuss the consideration of performing radical cystectomy for rhabdomyosarcoma in children during the COVID-19 pandemic in urology department of Cipto Mangunkusumo Hospital Jakarta.

**Introduction:** Rhabdomyosarcoma is a rare malignancy which develop from primitive mesenchymal stem cells. The gold standard for treatment of rhabdomyosarcoma is radical cystectomy. However, during the COVID-19 pandemic, radical cystectomy become a concern due to the risk of virus transmission. This article reported a patient who underwent radical cystectomy during COVID-19 pandemic.

**Case Presentation:** A female child 5 years old admitted to the hospital with chief complaints of bloody urine since 1 month before admission. The patient had pain during urination since a month before hospital admission and was treated with radical cystectomy with Abol-Enein pouch modification.

**Results:** After the surgery, the patient was able to urinate without any disturbance. Hematuria was not found. There was no complaint related to stricture of the ureter after the surgery.

**Conclusions:** In our center, radical cystectomy could be performed in child with bladder rhabdomyosarcoma during COVID-19 pandemic. The procedure is considered a high priority therapy in most regions during COVID-19 pandemic. Abol-Enein technique after radical cystectomy resulted in improvement of symptom with no reported complication in our case.

**SingHealth Urology Residents Bootcamp (SURB), Transitioning Junior Residents (JR) Confidently into their Senior Residency (SR).**Raj Tiwari <sup>(1)</sup>, Alicia Goh <sup>(2)</sup><sup>(1)</sup> Sengkang General Hospital, <sup>(2)</sup> Singhealth Residency

Senior urology residents (SR) are entrusted with heavier responsibilities as trainee urologists in several realms. The step up from junior residents (JR) to SR is stressful. To ensure smoother transition, we have been organizing the SingHealth Urology Residents Bootcamp (SURB) annually. Our primary aim is to assess the satisfaction and confidence of our JRs in transitioning after participating in the SURB 2020.

Secondary aim is to assess the satisfaction of SR facilitators and their commitment toward future cycles.

SURB 2020 was run virtually over a 5 hour session using zoom platform. It involved 6 JR participants and 6 SR facilitators. 4 didactic lectures of 15 minute duration were delivered on topics of survival on call, resident education, clinical services and research activities. Open floor discussion was conducted after each topic. A week after the SURB an anonymized electronic satisfaction survey was administered to both JR and SR groups and feedback collated using objective and subjective response. JR participant scores were in satisfied for most questions with neutral score for recommendation of SURB to other peers and confidence on transitioning to SR. Disagreement was seen for question on extending duration beyond 4 hours.

SR facilitator scores were at agreement for most questions with neutral scores when comparing virtual platform with face to face, hands on simulator and having SURB annually.

JR have shown satisfaction with SURB however more measures is required for them to improve their confidence in transitions to SR.

SR showed satisfaction and commitment toward future editions.

## C-11

**Translating Buccal Mucosal Graft Substitution Urethroplasty Technique Through Fellowship Training: A Case Series in a Regional Urology Centre**  
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**Introduction:** Anterior urethral stricture disease is a relatively common condition affecting men. Worldwide, there is a preponderance of endoscopic treatment of urethral strictures compared to urethroplasty, despite the superior outcomes of the latter procedure. Substitution urethroplasty using buccal mucosal graft (BMG) has become standard of care in the management of a variety of anterior urethral strictures not amenable to endoscopic treatment or excision and primary anastomosis (EPA). In this case series, we report our technique and outcomes of substitution urethroplasty of the bulbar urethra following subspecialty fellowship training in reconstructive urology.

**Methods:** Four patients presented with bulbar urethral strictures and underwent substitution urethroplasty during an 8-month period from December 2019 to July 2020.

**Results:** Two cases appeared suitable for EPA, but intraoperative evaluation demonstrated a longer spongiofibrosis segment than indicated on pre-op urethrograms, hence augmented anastomotic urethroplasty was performed. There was 1 case of a long-segment bulbar stricture, and 1 case where bulbar stricture was associated with urethrocutaneous fistula. All the cases healed over 3 weeks without immediate or early complications. One patient (25%) had a residual penile urethral stricture that represented panurethral disease.

**Conclusions:** Substitution urethroplasty using BMG is a technique that should be in the armamentarium of all reconstructive urologists. This technique is transferable through appropriate fellowship training with promising patient outcomes. Reconstructive urology subspecialty training should be encouraged to increase the number of urologists who possess the expertise to offer this procedure to eligible patients.

## C-13

**Patient-reported Outcomes of a Phase II Neoadjuvant Apalutamide (ARN-509) and Radical Prostatectomy in Treatment of Intermediate to High Risk Prostate Cancer (NEAR) trial**

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**Purpose:** The NEAR trial is a single arm phase II trial investigating the efficacy of neoadjuvant apalutamide and radical prostatectomy in the treatment of D'Amico intermediate to high risk prostate cancer. This publication focuses on health-related quality of life (HRQoL) during 12 weeks of neoadjuvant apalutamide treatment.

**Materials and Methods:** From 2017 to 2019, 30 suitable patients received neoadjuvant apalutamide 240mg once daily for 12 weeks followed by radical prostatectomy. (ClinicalTrials.gov Identifier: NCT03124433). Patient-reported quality of life outcomes were analysed using European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire Core Module (EORTC QLQ-C30), EORTC Quality of Life Questionnaire Prostate Module (QLQ-PR25), and Sexual Health Inventory for Men questionnaire (SHIM) at weeks 0,4,12 and 20 of the study .

**Results:** 30 patients completed 12 weeks of apalutamide therapy and data analysed for 29 with complete datasets. Neoadjuvant apalutamide therapy was associated with no clinically significant negative impact on patients' global health and QoL scores. The deteriorations in mean scores of functional and symptom scales of QLQ-C30 questionnaire were statistically significant ( $p < 0.011$ ,  $p = 0.008$  respectively) but were not clinically meaningful. The patients were also affected by fatigue (clinically meaningful,  $p = 0.012$ ), cognitive function ( $p = 0.038$ ), reduced role functioning ( $p = 0.025$ ) and lower SHIM scores ( $p < 0.001$ ). The median daily step count reduced from 8228/day to 6001/day per day ( $p = 0.063$ ), while BMI and body weight reduction was observed (statistically but not clinically significant).

**Conclusions:** The overall patient reported-HRQoL outcomes were maintained during neoadjuvant apalutamide therapy, however, there was significant fatigue and sexual dysfunction.

## C-12

**Neoadjuvant Apalutamide and Radical Prostatectomy in the Treatment of Intermediate to High Risk Prostate Cancer (NEAR) – a Phase II Trial**

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**Background:** The NEAR study is a single arm phase II trial investigating the efficacy of neoadjuvant apalutamide monotherapy and radical surgery in the treatment of D'Amico intermediate to high risk prostate cancer.

**Patients and Methods:** From 2017 to 2019, 30 suitable patients received neoadjuvant apalutamide 240mg once daily for 12 weeks followed by radical prostatectomy. (ClinicalTrials.gov Identifier: NCT03124433).

The primary outcome measures include the proportion of patients with pathological response and biochemical response. The secondary outcomes measures include the proportion of patients with significant adverse effects from neoadjuvant apalutamide, and the incidence of surgical complications occurring within 4 weeks of radical prostatectomy. The Wilcoxon rank-sum test was used to compare outcomes between groups, and the signed-rank test was used to compare outcomes within an individual. Statistical significance was set at  $p < 0.05$ .

**Results:** A total of 30 patients were recruited, and 25 completed the trial. The pathological treatment response comprised grade A (good response) 44% and grade C 28%. The median reduction of residual cancer burden was 41.7% (IQR 26.7). Twenty-one (84%) subjects achieved biochemical response. There were no major peri-operative surgical complications. Fatigue and skin changes were the most common adverse effects, but none were high grade. Expression profile showed a predilection towards adverse outcomes in tumors of basal subtypes with poorer tissue response.

**Conclusions:** The NEAR trial showed high biochemical response rates, modest tumor downsizing with no increase in surgical complications. Basal tumor subtypes were associated with a poorer response to apalutamide.

## C-14

**Use of MeNTS Score as a Prioritization Framework of Urology-Oncology Surgery During the COVID-19 Pandemic**

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**Aim:** To investigate the difference of the mean cumulative Medically Necessary, Time-Sensitive Procedures (MeNTS) scores of patients operated on before and during the COVID-19 pandemic, and map the types of surgery and diseases most frequently indicated.

**Methods:** This cross-sectional study involved patients diagnosed or suspected of having prostate, kidney, adrenal, retroperitoneal, bladder, testicular, and/or penile cancer at our center between September 2019 and September 2020, in Cipto Mangunkusumo General Hospital. The authors excluded patients in an emergency condition, for whom surgery could not be delayed, and pediatric patients.

**Results:** No significant difference in mean cumulative MeNTS scores of surgery indication before and during the COVID-19 pandemic, with scores of  $51.28 \pm 0.98$  and  $49.38 \pm 1.84$ , respectively ( $p > 0.05$ ). However, significant differences were found in the disease factor scores ( $19.52 \pm 0.34$  versus  $17.59 \pm 0.64$ ,  $p < 0.05$ ) and patient factors ( $13.49 \pm 0.23$  versus  $12.32 \pm 0.30$ ,  $p < 0.01$ ). The most frequently performed procedures during the pandemic were open nephrectomy (18.6%) and were different compared to before the pandemic, which is the prostate biopsy (28.1%). The most common diagnoses indicated for surgery during the pandemic were bladder tumors (18.6%), different from those before the COVID-19 pandemic, which are the prostate tumor (27%).

**Conclusions:** No difference between the mean cumulative MeNTS score of the COVID-19 and pre COVID-19 group. However, the MeNTS score of the COVID-19 group was lower than the pre-COVID-19 group for patient factors and disease factors.

## C-15

### Early Buccal Mucosal Graft Urethroplasty After Drainage of Perineal Abscess

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**Introduction:** Bulbar urethral stricture is an uncommon cause of perineal abscesses. Traditionally, urethral strictures that have been complicated perineal abscesses require a delayed urethral repair 3-months post drainage surgery to allow full recovery of the surgical site. In this case report, we present the outcomes of 2 cases of bulbar urethral stricture for which early urethroplasty had been performed after recent drainage of perineal abscesses.

**Methods:** Both patients presented similarly with recurrent perineal abscesses secondary to bulbar urethral strictures. Following initial endoscopic treatment of urethral stricture and drainage of perineal abscess, both patients defaulted subsequent outpatient follow up. Thus, during their most recent admissions for perineal sepsis, we proceeded with early buccal mucosal graft (BMG) urethroplasty with secondary closure within 11 days of incision and drainage.

**Results:** Both patients recovered with good healing of the perineal wound at 3 weeks follow up. We are pleased to report that there was no recurrence of urethral stricture, fistula, or perineal infections more than 1 year after surgery. The patients also did not complain of spraying of urine, bothersome dribbling, or diminished erectile function.

**Conclusions:** In this report, we describe 2 cases of successful BMG urethroplasty after recent perineal abscess drainage. The following conditions appear to favour good outcomes following early urethral repair. These include clinically and biochemically stable patients, good early healing of abscess cavity with granulation tissue, and absence of complex anatomical abnormalities such as multiple fistulas.

## C-17

### Serum Testosterone Levels and Testosterone 'Bounce' Phenomenon Predict Response to Novel Anti-androgen Therapies in Castration-resistant Prostate Cancer

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**Objective:** To determine if testosterone (TT) levels before and during novel anti-androgen therapies (NAAT), and the TT 'bounce' phenomenon may predict treatment response in CRPC.

**Methods:** From 2014 through 2018, we prospectively identified 92 CRPC patients treated with NAAT. The TT levels measured before and during NAAT were correlated with oncological outcomes, determined by PSA response (% change), PSA progression-free survival (PFS) and overall survival (OS).

**Results:** 58 (63.0%) and 34 (37.0%) patients opted for Abiraterone and Enzalutamide respectively. Median TT levels before and during NAAT were 10.37ng/dL and 20.46ng/dL. PSA response was superior in patients with higher TT before NAAT (p:0.048, median difference: 18.22%, 95% CI 0.70 – 40.37) and longer time to CRPC (p: 0.041), with a trend towards lower TT during NAAT (p:0.062). Over a follow-up of 33.0 months, 65 patients (70.7%) developed PSA progression. PSA-PFS was longer in patients with higher TT before NAAT (16.3 vs. 10.8 months; p:0.023) and lower TT during NAAT (17.0 vs. 9.1 months; p: 0.001). Importantly, better OS was observed in lower TT during NAAT (45.0 vs 33.0 months; p:0.029) and longer time to CRPC (43.0 vs. 31.0 months; p:0.025). The TT 'bounce' phenomenon was observed in 28 patients (33.3%), and was associated with a poorer PSA response (p: 0.029), shorter PSA-PFS (8.6 vs. 15.2 months, p: 0.002) and shorter OS (29.0 vs. 45.0 months, p: 0.012).

**Conclusions:** In CRPC patients, TT behaviors before and during NAAT, and the 'bounce' phenomenon continue to predict treatment response and could guide clinical decisions.

## C-16

### PCNL Management Profile of Nephrolithiasis Patients Adult in Dr Soetomo Hospital Surabaya, Indonesia

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Percutaneous Nephrolithotomy (PCNL) is one minimally invasive procedure in the field of urology that aims to remove kidney stones by using percutaneous access to achieve the pelvicalyx system. This procedure has been widely accepted as a procedure for lifting kidney stones because they are relatively safe, effective, cheap, comfortable and have morbidity low, especially when compared to open surgery. As for goals of this research is to find out how the characteristics of the patient and success rate of PCNL therapy in urinary tract stone patients at RSUD Dr Soetomo Surabaya, Indonesia.

This study is a descriptive study with a cut research design latitude. The research data were obtained from secondary data from hospital medical records included 77 patients from 2016 to 2019 who underwent PCNL therapy according to the inclusion and exclusion criteria.

The results of this study indicated that the majority of patients had tract stones urinary patients undergoing PCNL therapy are over 40 years of age namely the 50-60 years age group of 37.6%, the majority of which are male with 71.4%, staghorn stones at 19.5%, with multiple stones at 36.4%, with that required a transfusion of 6.5%, with an average duration of 125 minutes, the stone free rate was 76.6%, and the treatment of residual stones re-nephroscopy was 33.3%, ESWL 38.9%, conservative 27.7%, stone free rate re-nephroscopy 33.3%.

Conclusion of this article is PCNL is a relatively safe and urinary tract stone therapy effective for complex stones.

## C-18

### Machine Learning Algorithms Demonstrate Comparative Advantage Over Nomograms in Predicting BCR after RP

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**Objective:** After radical prostatectomy (RP), one-third of patients will experience biochemical recurrence (BCR). We employed machine-learning (ML) algorithms to predict BCR, and compare with traditional regression models and nomograms.

**Methods:** Utilizing a prospective Uro-oncology registry, 18 clinicopathological parameters of 1130 post-RP patients were recorded, yielding > 20,000 data point. The dataset was split in a 70:30 ratio for training and validation. Three ML models: Naïve Bayes (NB), Random forest (RF) and Support Vector Machine (SVM) were studied, and compared with regression models and nomograms (Kattan, CAPSURE, John Hopkins [JHH]) to predict BCR at 1, 3 and 5 years.

**Results:** Over a follow-up of 70.0 months, 176 (15.6%) developed BCR, at median time of 16.0 months. Strongest associations include PSA (p: 0.015), margins (p < 0.001), extraprostatic extension (p: 0.002), seminal vesicle invasion (p: 0.004) and Grade Group (p < 0.001). The ML models demonstrated good prediction of BCR at 1, 3 and 5 years, with area under curves (AUC) of NB: 0.894, 0.876 and 0.894, RF: 0.846, 0.875 and 0.888 and SVM: 0.835, 0.850 and 0.855 respectively. All models demonstrated (1) robust accuracy (> 0.82), (2) good calibration, (3) longitudinal consistency and (4) inter-model validity. The ML models were comparable to traditional regression analyses [AUC: 0.797, 0.848 and 0.861] and outperformed the three nomograms: Kattan [AUC: 0.815, 0.798 and 0.799], JHH [AUC: 0.820, 0.757 and 0.750] and CAPSURE nomograms [AUC: 0.706, 0.720 and 0.749] (p < 0.001).

**Conclusions:** ML algorithms provide accurate performances in predicting BCR after RP. This may identify high-risk patients who will benefit from multimodal therapy.

## C-19

### Low Dose-rate Brachytherapy as Curative Treatment for Prostate Cancer: An Extended Analysis of Clinical Outcomes

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**Introduction:** Majority of newly diagnosed prostate cancers present as localized disease due to early detection with PSA screening. One of the popular treatment strategy for localized cancer is the use of low dose rate brachytherapy (LDR-BT). This study is aimed to determine long-term clinical outcomes of LDR-BT in terms of: overall survival (OS), disease specific survival (DSS), biochemical recurrence (BR), and complications of more than 15 years of observation period.

**Methods:** All patients who underwent brachytherapy from 2002 to 2019 were included. Age, initial PSA level, tumor stage, Gleason score, and prostate volume were noted. Patients were risk stratified according to the EAU criteria of low, intermediate, and high risk. All patients were followed up every 6 months for the first 5 years, and then annually in the subsequent years.

**Results:** The median follow-up of this study was 12.14 years. Correspondingly, the OS and DSS at the time of analysis was 86% and 95%. Only 4.5% of patients died from prostate cancer while 12% had biochemical recurrence during the entire observation period. The > 15-year OS, DSS, and biochemical no evidence of disease (BNED) rates were 83%, 94% and 84% respectively. Log rank testing showed that survival in terms of OS, DSS, and BNED did not differ significantly regardless of risk stratification into low, moderate and high risk groups. Treatment related complications in this study was 15.9%.

**Conclusions:** LDR-BT is a safe and effective alternative for localized prostate cancer yielding astonishing oncological outcomes even after > 15 yrs of follow-up period.

## C-21

### The Effect of Metabolic Syndrome on Prostate-specific Antigen Levels: A Meta-Analysis

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**Objectives:** To determine the effect of metabolic syndrome on the serum PSA level.

**Methods:** Literature search was done using MEDLINE and Cochrane databases. The primary outcome measure was serum prostate-specific antigen (PSA) levels. Secondary outcome measures include prostate volume, plasma volume, and PSA mass density. Mean differences were computed using Review Manager 5.3 software.

**Results:** There were six articles available for analysis with a total of 33,775 in metabolic syndrome group (MS) and 70,305 in non-metabolic syndrome group (NM). Overall, there was no significant difference between the PSA levels between MS and NM group. The prostate and plasma volume were significantly higher in the MS compared with NM, having mean difference of 2.95 mL (95% CI, 1.41 to 4.49) and 162.68 mL (95% CI, 120.24 to 205.11), respectively. However, there were no significant difference in the PSA mass density between metabolic and non-metabolic syndrome.

**Conclusions:** Metabolic syndrome does not affect PSA levels and PSA mass density, despite increase in hemodilution.

## C-20

### Urology Questionnaire for Patients Referred with High PSA

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**Introduction and Objectives:** In NHS, suspected prostate cancer patients are referred with 2-week wait target. A thorough clinical examination and diagnostic and treatment pathways are discussed with the patient. Use of these booklets helps patients in understanding their condition and asking for relevant questions at the time of consultation and subsequently during their care pathway.

**Methods:** The utilisation of the information booklet distributed to patients for raised PSA and prostatic enlargement.

- Every patient who is visiting the hospital with a raised PSA is given a booklet 'Understanding PSA' after a full consultation, clinical examination, and 'How prostate cancer is diagnosed' booklet is also distributed to explain the procedure with the pros and cons and different methods of prostate biopsy.
- Another booklet that is distributed is about 'Enlarged prostate' and it gives information about various drugs that are used for an enlarged prostate and surgical outcome and side-effects of prostate surgery.

The vast majority of patients read 75% or more of the booklets.

**Results:**

- 20 people took the survey, 25 questionnaires distributed. 80% response rate.
- 100% of patients found it acceptable for this material being distributed at time of initial consultation for evaluating and understanding their clinical problem.

**Conclusions:** Using the booklets gives patients helpful and meaningful information in streamlining their diagnosis and treatment.

## C-22

### A Retrospective Determination of the Average Testicular Volume of Pubertal and Post-pubertal Male Patients in a Tertiary Institution

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Testicular size is an important determinant of sexual maturity in males. We determined the average testicular volume of patients in different age groups who underwent scrotal ultrasonography in our institution.

A database search was performed using the SoliPacs system from January 2016 to October 2020. Ultrasound reports including a scrotal examination were included. Testes with abnormal findings and incomplete ultrasound data were excluded from the study.

A total of 769 patients fulfilled the search criteria. A total of 1354 testes were included in the study after excluding 184 testes with ultrasonographic testicular abnormalities. Testicular size begins increasing in size after the age of 10, starting at an average size of 1.9 ml, reaching adult size (15.1 ml) at 17 years of age. The average testicular size, around 17 ml, remains the same throughout adulthood (17 to 60 years of age) and begins to decline during senescence (> 60 years of age).

This descriptive survey aims to pilot a study that will ultimately estimate the average testicular size among Filipino men. Values determined across age groups is useful in determining the sexual maturity and fertility potential in asymptomatic patients.

## C-23

### Long Term Outcome of Patients with Penile Fracture Undergoing Delayed Repair

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**Introduction:** Fracture of the penis is a rare urological emergency which occurs as a result of abrupt trauma to an erect penis. Immediate surgical repair is the standard of care of management. A large percent of the patients present late for treatment out of fear or embarrassment. We report series of patients who presented late and underwent delayed repair. We also report the long term outcome of these patients.

**Materials and Methods:** The data was retrospectively collected from patients records, considering the following aspects: detailed history including symptoms, type of relationship, mechanism of trauma, sexual position, clinical findings, imaging results, presence of urethral injury, outcomes and long-term complications regarding sexual and voiding functions.

**Results:** Twenty four patients presenting to our hospital emergency services at least 24 hours following sustaining injury underwent surgical repair. Heterosexual intercourse was the most common cause of fracture (18 patients, 81.81%). The mean time duration between injury and presentation was 30.50 ± 4.53 hours. The mean time duration between presentation and surgical intervention was 4.31 ± 1.37 hours. MRI was done in 6 cases with positive predictive value of 100%. Seventeen (77.27%) patients experienced erection during the post-operative period in the hospital. At the end of 1 year follow-up all the 22 patients had been having sexual intercourse.

**Conclusions:** In our cohort of penile fractures following sexual intercourse, long-term erectile potency is preserved and overall sexual function is maintained.

## C-25

### Synchronous Bilateral Tubeless Supine Mini Percutaneous Nephrolithotomy

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**Introduction:** Percutaneous nephrolithotomy (PCNL) of bilateral renal calculi is conventionally staged. However, literature has demonstrated the feasibility of bilateral PCNL in one setting without increased morbidity. The majority of bilateral PCNL described in literature were done in prone position.

**Case:** We present a 61-year-old man, with a history of hypertension, who was treated with synchronous bilateral tubeless supine mini PCNL in one session. Pre-operative CT-KUB showed a 1.7 cm right renal pelvic calculus (1200HU) and a 1.9 cm left renal pelvic calculus (1300HU). Following general anaesthesia, patient was positioned in Giusti's position. Right sided percutaneous access was obtained and tract dilated, with a 17.5Fr sheath used. After successful right renal stone clearance, patient remained clinically well and decision was made to continue with contralateral stone clearance. Patient was re-positioned for the left side, with mini-PCNL performed using the same 17.5Fr sheath. Stone fragmentation was performed using Holmium laser and clearance with Venturi effect and grasper. Bilateral ureteric stents were inserted at the end of operation. Endoscopic times were 65 and 67 minutes for right and left side respectively. Intra-operative estimated blood loss was 100ml. Intraoperatively, left pelviureteric junction (PUJ) edema was noted with gross hydronephrosis. X-ray KUB on post-operative day one showed two small left sided 3mm fragments. He recovered uneventfully and was discharged on post-operative day one with plan for further interval endoscopic re-evaluation of his left PUJ edema.

**Conclusions:** This case study highlights the safety and feasibility of synchronous bilateral tubeless supine mini PCNL in selected patients in our institution.

## C-24

### Our Experience with Dorsal Graft Urethroplasty in Female Urethral Stricture

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**Introduction:** Female urethral stricture is a relatively rare condition with no consistent definition or diagnostic criteria. Management options vary from urethral dilation, self catheterisation, urethrotomy and reconstruction. Despite the high recurrence rate, urethral dilation has always been the first line of management, as no concrete treatment algorithm exists.

**Materials and Methods:** Our study includes 5 patients with history of multiple failed cystoscopic dilatations, who presented to us with poor flow of urine accompanied with a sensation of incomplete voiding. All patients underwent pre-operative evaluation i.e. urinalysis, urine culture, uroflowmetry, residual volume and micturating cystourethrogram. 3 patients underwent dorsal vaginal graft urethroplasty and 2 patients underwent buccal mucosal graft urethroplasty, as they were cervical cancer survivors post radiation with nonviable vaginal mucosa. All patients were followed up for 6 months and outcome was documented as improved clinical symptoms, residual urine on USG and uroflowmetry.

**Results:** Site and length of stricture assessed with 6 Fr paediatric scope was mid urethral in four cases (1.1, 1.4, 1.3, 1.4 cm) and proximal urethral in third case (1.5 cm). All cases were discharged on 5th post-operative day with Foley's catheter. No significant postoperative pain or wound discharge was reported. Patients had a successful voiding trial after 2 weeks.

**Conclusions:** Dorsal vaginal and buccal mucosal graft urethroplasty are effective in treatment for FUS. Urethroplasty and can be considered as a primary treatment modality. However further studies encompassing more patients with longer follow up is due.

## C-26

### Evaluation and Treatment of Ejaculatory Duct Obstruction - UK Single Centre Experience

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**Introduction:** Ejaculatory duct obstruction (EDO) remains a rare but surgically correctable cause of haemospermia, ejaculatory disorders and male infertility occurring in 5% of men. EDO often presents with infertility, however patients may present with decreased force of ejaculate, periejaculatory pain, decreased ejaculate volume and haemospermia.

**Methods:** Retrospective analysis of 62 patients diagnosed with EDO over 16 years. Patients were evaluated by history, examination, trans-rectal ultrasonography (TRUS) and semen analysis if indicated. Patients presenting with infertility had full hormonal and genetic profile performed. All patients had transurethral resection of ejaculatory ducts (TURED) or TUR cyst deroofing for midline cysts.

**Results:** Mean patient age was 36 years. (Table 1) The cause of EDO was congenital midline cyst in 38 patients, idiopathic in 12 and associated with calculi in 12. TURED was found to resolve haemospermia in 87% of patients presenting with this symptom alone. Complication rate of 17.7% was seen including infection, retention and retrograde ejaculation. Thirty-two presented with infertility; of these sixteen underwent TURED and sixteen TUR deroofing. Semen parameters are compared in Table 2. Treatment of prostatic cysts significantly improved concentration and motility in infertile patients (p = 0.011).

**Conclusions:** In selected patients, TURED and TUR deroofing can result in marked improvements in semen parameters and symptoms. Although complication risk is high, effects are mild and transient. EDO is a common cause of obstructive azoospermia, haemospermia or ejaculatory pain. A simple semen volume may help the general urologist in diagnosing patients. Careful patient selection, adequate counselling and surgical experience are essential for optimal results.

**C-27****Varicocele Treatment - Outcomes of Ligation and Embolisation in the Treatment of 281 Men with a Clinically Palpable Varicocele**

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**Introduction:** Treatment options for varicoceles include surgical ligation (SL) and radiological embolisation (RE). RE has the advantages of being performed under LA. The EAU guidelines quote the recurrence rate with RE of 3.8-10%, hence SL is often performed despite the potential for increased morbidity.

**Methods:** This was a retrospective study investigating men who had varicocele treatment from 2017-2020. We assessed their pre-and post-treatment SA and ultrasound. The results were analysed using Wilcoxon, Mann-Whitney and t-test.

**Results:** 281 patients were treated; 168 with RE, 113 with SL. 124 had pre-and post-treatment SA (RE n = 78, SL n = 46). Both groups showed statistically significant improvement in count; RE 63% (p = < 0.001), SL 52% (p = 0.009) and Morphology; RE 45% (p = 0.003), SL 46% (p = 0.005). Neither group showed a statistically significant improvement in Motility; RE 47% (p = 0.156), SL 46% (p = 0.032). There was no statistically significant difference between the two groups.

83 patients had a pre-and post-treatment US performed (RE n = 56; SL n = 27). Vein diameter decreased in 68% following RE (3.7 ± 0.86 mm to 3.1 ± 0.80 mm, p < 0.0001), 84% following SL (3.91 ± 1.0 mm to 3.1 ± 0.72 mm, p = 0.001). Doppler US demonstrated cessation of reflux in 56% treated by RE (n = 32) and 52% following SL (n = 23). Technical failure for embolization included 11 single sided failures and 1 bilateral.

**Conclusions:** Neither RE and SL are superior for improving semen analysis parameters. Vein diameter decreases significantly after both. RE is a LA, day case procedure versus a GA and groin incision. We would favour the less invasive technique in the light of these findings.

**C-29****A Systematic Review on The Learning Curve of Retroperitoneal Laparoscopic Urologic Surgery**

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**Introduction:** Retroperitoneal laparoscopic (RPL) urologic surgery offers comparable outcomes to the traditional transperitoneal approach, with the advantage of circumventing the need to enter the intra-abdominal space. Unfortunately, the evidence on the learning curve for RPL is scarce. The aim of this systematic review is to consolidate the available literature and determine the minimum required number of cases to efficiently and safely perform RPL.

**Methods:** This is a systematic review of the literature of all studies published since 2000 to 2019. Outcomes of interest were learning curve, mean operative time, mean intra-operative blood loss and mean hospital stay.

**Results:** The learning curve for retroperitoneoscopic adrenalectomy was 40 cases and 24 to 42 cases, based from Uitert et al (2016) and Vrielink et al (2017), respectively. For retroperitoneoscopic nephrectomy, the minimum required number of cases is 30 – 70, based on the studies by Pal et al (2017), Zhu et al (2018) and Tokodai et al (2013). Ercil et al (2014) demonstrated the learning curve for retroperitoneoscopic ureterolithotomy to be at 30 cases. Review of each literature showed that completion of the learning curves translated to better peri-operative and post-operative conditions. Overall, the evidence in this review suggests that for retroperitoneal laparoscopy, a mean learning curve of 31 to 56 cases is required to efficiently perform the procedure.

**Conclusions:** Retroperitoneal laparoscopic surgery is a valid alternative to the traditional transperitoneal approach. The evidence consolidated by this review suggests a learning curve of 31 to 56 cases prior to effectively performing the procedure.

**C-28****The Hard Truths About Post-prostatectomy Erectile Dysfunction in a Conservative Asian Society**

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<sup>(1)</sup> National University Health System

**Introduction:** With earlier detection and intervention for localized prostate cancer and longer lifespans, post-robotic prostatectomy (RP) quality of life (QoL) outcomes such as erectile dysfunction (ED) have become increasingly pertinent. We aim to determine ED prevalence in our post-RP patients and assess the uptake of intervention.

**Methods:** Upon obtaining ethics approval, patients who underwent RP from 2010 to 2019 were analysed.

**Results:** 188 patients were included. Mean PSA was 10.8 ng/mL and median Gleason score was 7. While 64.4% (n = 121) underwent lymph node dissection, 37.8% (n = 71) were unilateral and 33.0% (n = 62) were bilateral neurovascular bundle-sparing procedures. 90.4% (n = 170) suffered ED within the first year, but it is unknown how many had pre-existing ED. Although patients are routinely given pre-operative and post-operative International Index of Erectile Function (IIEF) questionnaires, 84.6% (n = 159) and 89.9% (n = 169) respectively declined to fill them in. 57.4% (n = 108) were offered penile rehabilitation; of these, only 69.4% (n = 75) underwent rehabilitation. 98.7% (n = 74) opted for PDE5-inhibitors, 10.7% (n = 8) tried intracavernosal injections, 1 patient underwent penile implantation surgery, and none chose vacuum-assisted devices.

**Conclusions:** Although post-RP ED is prevalent, it is commonly overlooked during follow-up. Possible barriers include our conservative Asian culture and poor understanding of treatment options. To overcome this, we suggest better patient education regarding penile rehabilitation strategies, and encouraging patient compliance to IIEF questionnaires. This will not only initiate the topic for discussion, but also encourage intervention uptake, and allow us to better quantify the impact of post-RP ED on QoL and the effect of intervention.

**C-32****External Validation of Magnetic Resonance Imaging-based Predictive Models for Clinically Significant Prostate Cancer**

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**Introduction:** Multiparametric magnetic resonance imaging (mpMRI)-based models have been developed with improvements in diagnostic accuracy for clinically significant prostate cancer (csPca), but lack external validation. We sought to externally validate and compare all published mpMRI-based csPca risk prediction models in an independent Asian population.

**Patients and Methods:** 449 men undergoing combined transperineal fusion-targeted/systematic prostate biopsy between 2015 to 2019 were retrospectively analysed. csPca was defined as lesions with ISUP (International Society of Urological Pathology) grade group ≥ 2. The performance of 6 mpMRI-based risk models (MRI-ERSPC-3/4, Distler, Radtke, Mehralivand, van-Leeuwen, He) were evaluated in terms of discrimination, calibration and clinical utility, using area under the receiver operating characteristic curve (AUC), calibration curves and decision curve analyses (DCA).

**Results:** 202(45%) subjects were diagnosed with csPca. All models demonstrated excellent accuracy with AUCs ranging from 0.75–0.86, and most significantly outperformed mpMRI PIRADsv2.0 alone. The models by Mehralivand and He showed good calibration to our population, with respective intercepts of -0.08 and -0.84. All models were nevertheless recalibrated to the csPca prevalence in our population for analysis. DCA showed that above a threshold probability of 10%, all mpMRI-based models demonstrated superior net benefit compared to mpMRI PIRADsv2.0 or a biopsy-all-men strategy. The van-Leeuwen model had the greatest net benefit, avoiding 39% unnecessary biopsies while missing only 4% of csPca, at a threshold probability of 15%.

**Conclusions:** mpMRI-based risk models demonstrate excellent discrimination and clinical utility, and are easy to apply. Individualised risk-based approaches can therefore be considered over mpMRI alone to avoid unnecessary biopsies.

**C-33****Isolated Recurrent Metastatic Prostatic Carcinoma in Urethra**

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Isolated recurrent metastatic prostate adenocarcinoma to the urethra is a rare entity and there is currently no consensus regarding its contemporary management. We herein report, to our knowledge, the first case of complete excision and primary repair of an isolated focus of recurrent metastatic prostatic adenocarcinoma in the penile urethra in a 77-year-old man. He has a significant past medical history of pT2N0M0 Gleason 3 +4 (Grade group 2) intermediate risk prostatic adenocarcinoma treated with robotic assisted laparoscopic radical prostatectomy (RARP) 13 years ago, with negative surgical margins. Post-operative PSA nadir was < 0.03 ng/mL; He had biochemical recurrence after 3 years with a PSA rise up to 0.06 ng/mL and underwent salvage radiotherapy with good response. After 13 years on follow up, he re-presented with gross haematuria and investigations revealed an isolated recurrent focus of prostatic adenocarcinoma in the bulbar urethra, with no nodal or localized recurrence at the prostatectomy surgical bed. PSA was 4.2 ng/mL at presentation. He underwent complete excision with primary repair of the urethra. Immunohistochemistry stains confirmed the diagnosis as Gleason 4+5 (Grade group 5) prostatic adenocarcinoma, with clear surgical margins. Postoperative course was uneventful. Retrograde urethrography, performed 3 weeks after surgery showed no leak and urethral catheter was removed. PSA nadir was achieved post-operatively. In this report, we review the literature, report our experience, as well as propose a viable treatment option for the unusual occurrence of an isolated focus of metastatic prostatic adenocarcinoma in the urethra.

**C-35****An Unusual Case of Prostate Cancer with a Solitary Skin Metastasis Presenting as Extramammary Paget's Disease**

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Prostate cancer is a commonly occurring cancer in men worldwide, and common sites of distant metastases include the bone, lung and liver. Skin metastasis is extremely rare and can mimic other skin conditions resulting in poor recognition. We describe a case who presented with a cutaneous lesion of the anterior abdominal wall that was initially diagnosed as Extramammary Paget's Disease (EMPD), that was subsequently found to be metastatic from an underlying histologically confirmed carcinoma of the prostate. To our knowledge, this is a rare occurrence which has not been clearly illustrated in available literature. The morphology of skin manifestations for prostate cancer are varied and may pose a diagnostic challenge to clinicians. With a reported pagetoid pattern in a site not prone to the development of EMPD, there should be a high index of suspicion for cutaneous metastasis as a differential diagnosis, which is usually an indicator of poorer prognosis.

**C-34****An Unusual Case of Gastric Signet-Ring Cell Adenocarcinoma Metastasizing to the Urinary Bladder**

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Secondary bladder tumors are rare, accounting for only 1-2% of all bladder tumours – more commonly resulting from direct extension of an adjacent tumour rather than distant metastasis. We describe a case of a 53-year-old Chinese male who presented with respiratory symptoms and was found to have multiple bladder tumours on computed tomography scan and cystoscopy, which was eventually found to be metastatic signet ring cell adenocarcinoma from a gastric primary. Differentiating secondary bladder tumours from primary bladder signet ring cell carcinoma (SRCC) is essential as treatment and prognosis is vastly different. Immunohistochemistry has a limited role and a thorough clinical history and a high index of suspicion is key.

**C-36****The Clinical Significance of the Extent of Positive Surgical Margins in Partial Nephrectomy Performed for Renal Cell Carcinoma**

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**Purpose:** This study aims to review the occurrences of extensive positive surgical margins and focal positive surgical margins after partial nephrectomy for kidney cancer, comparing their associations and clinical outcomes with those with negative surgical margins.

**Materials and Methods:** Between 2014 to 2019, a total of 137 partial nephrectomies for cancer was performed. Pathological surgical margins were classified according to negative surgical margins (n = 156), extensive positive margins (n = 7), or focal positive surgical margins (n = 15). Peri-operative data, functional and oncological outcomes were compared among the three groups.

**Results:** Baseline clinical characteristics were comparable in all three groups except for gender, with a significantly greater proportion of male patients (p = 0.02) with extensive positive surgical margins and focal positive surgical margins than negative surgical margins. Negative surgical margins was associated with shorter operative time compared with extensive and focal positive surgical margins. Pathologically, perinephric fat invasion was significantly associated (p < 0.01) with positive surgical margins but there were no other differences in terms of cell type, grade and necrosis. There were a total of 4 local recurrences, all in the extensive positive surgical margins group with a median follow up period of 32.8 months.

**Conclusions:** Extensive positive surgical margins and focal positive surgical margins share similar peri-operative associations when compared with negative surgical margins but have different pathological and oncological implications to each other. The higher association of pathological T3a stage with extensive positive margins may account for the finding that local recurrences exclusively occur in patients with extensive positive surgical margins.

## C-37

### Are Urologists and Our Patients Ready for the Next Pandemic?

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Since detailing Urologists' efforts in Singapore during the initial pandemic, COVID-19 has continued to ravage countries worldwide despite the rollout of vaccines. New waves of infections and mutant strains continue to plague communities. Singapore has been no exception, with new clusters appearing mere days after topping Bloomberg's Covid Resilience Ranking in April 2021.

As the initial sprint to control the outbreak turns into a marathon in managing the pandemic, with no definite future in sight, what have we learnt about managing our clinical practice, our patients, our residents and our staff? Are we ready for further outbreaks and future pandemics or disasters?

We propose 4 key components to remain prepared and agile in our response to continued or future pandemics or disasters (PROS):

- 1) Patient care
- 2) Residency and educational
- 3) Organisational readiness
- 4) Surgical safety

While we continue to learn and adapt to new changes in this pandemic, in this article we aim to consolidate our experience to date with those around the world, succinctly highlighting key points to keep our practices, our patients, and our departments safe and ready.

## C-40

### Treatment and Prognostic Classification for Emphysematous Pyelonephritis: Which is the better system?

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**Introduction:** The aim of this study is to compare the outcomes of patients with emphysematous pyelonephritis (EPN) using the Huang and Tseng classification (H&T), Wan classification (W) and the Sequential Organ Failure Assessment score (SOFA), evaluating the prognostic values of each classification.

**Methods:** A retrospective review of patients with EPN between 1st January 2014 to 31st December 2021 in National University Hospital was performed. Data retrieved included clinical demographics, and outcomes.

**Results:** Eight patients were diagnosed with EPN. Mean age of the patients was 66 years old. Seven out of eight (87.5%) were females, diabetic and had positive urine cultures. Two (25%) had urinary obstruction. There was 1 death (25%).

In classes 1 and 2 of H&T, 1 required medical management and 3 patients needed urinary diversion. In classes 3A and 3B (more fulminant); 3 required urinary diversion and 1 requiring nephrectomy.

In Class 1 (more fulminant) of W, 1 required medical management, 2 needed urinary diversion and 1 needed nephrectomy. Four Class 2 patients needed urinary diversion.

Based on SOFA; 5 patients scored 7 or less. One received medical management whilst 4 others needed urinary diversion. One patient scored between 8-9 and required nephrectomy. Two patients scored 10-11 and needed urinary diversion. The single death in our data set had a H&T class of 1, W class of 1 and a SOFA 11.

**Conclusions:** This study suggests that the H&T may be better suited for consideration of appropriate treatment strategies but the SOFA may be preferred for predicting prognosis.

## C-38

### The Mythical Divine Rod: A Meta-Analysis of the Effects of Eurycoma Longifolia (Tongkat Ali) on Serum Testosterone in Men

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**Introduction and Objectives:** Eurycoma longifolia, commonly known as "Tongkat Ali", has been recognized as a sexual supplement in Southeast Asia. The synergistic effects of its bioactive compounds were thought to alleviate hypogonadism by enhancing testosterone production. However, its definite role on serum testosterone levels is ill-defined. Therefore, we aimed to determine its effects on serum testosterone levels in men.

**Methods:** A systematic search was conducted, adhering to the Preferred Reporting Items for Systematic Review and Meta-analyses (PRISMA) guideline, in Embase, Scopus, and MEDLINE databases. Eligible studies comprised multiple-armed randomized controlled trials (RCTs), comparing Eurycoma longifolia with placebo in men. Cochrane Risk of Bias (RoB) tool 2 was used to assess the risk of bias. A forest plot graph was used to visualize the interstudy mean difference (MD) using the Review Manager (RevMan) 5.3.

**Results:** Four RCTs with an overall low risk of bias were selected from 332 initially obtained studies. The combined result of the studies exhibited a significant increase of total testosterone levels in the treatment group compared to the placebo group in four to six weeks (MD: 70.80; 95% confidence interval [CI] 31.68 – 109.93, p = 0.0004). A higher increase was apparent during a 12 to 16-week follow-up (MD: 78.36; 95% CI 58.21 – 98.50, p < 0.00001).

**Conclusions:** Eurycoma longifolia supplementation demonstrates a notable increase of serum testosterone levels in men. Future RCTs should focus on the clinical benefits of the supplement to further establish its role as a potent phytotherapy in male sexual health.

## C-41

### Role for Emergency Primary Ureteroscopy for Refractory Renal Colic? A Retrospective Consecutive Analysis

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**Introduction:** Admissions for ureteric colic are a common emergency presentation. We present a retrospective analysis of consecutive patients who underwent emergency primary ureteroscopy versus emergency primary ureteric stenting.

**Methods:** We retrospectively analysed 40 patients who underwent either primary ureteric stenting or ureteroscopic stone removal in our institution. 20 patients of each group were recruited consecutively in our institution. Patients with urosepsis, renal impairment or solitary kidneys were excluded. Primary outcomes investigated were stone characteristics, number of hospital readmissions and time to stone-free status.

**Results:** Both groups of stenting and primary ureteroscopy were comparable with respect to age and sex. Primary ureteroscopic group possessed significantly more distal stones compared to the primary stenting group (17 vs. 6 p < 0.03). The primary ureteroscopic group had smaller overall size of stone < 6 mm compared to the primary stenting group (14 vs. 8 p < 0.05). Primary ureteroscopy stone free rate was 90%. Emergency department representation rate within 2 weeks was statistically higher in the primary stenting group (8 vs. 2 p < 0.04). Patients became stone free significantly faster in the ureteroscopy group compared to the primary stenting group (2.3 days vs. 45.7 days p < 0.01).

**Conclusions:** In select instances, upfront primary ureteroscopy can be considered for uncomplicated renal colic. Distal stones smaller stones in the absence of infective features are favourable for primary ureteroscopy. The improved days to becoming stone free is an optimal outcome for the patient which can translate in to more frugal healthcare savings costs.



## C-42

### Patterns of Opioid Administration Amongst Ambulance Officers in Patients with Conservatively Managed Renal Colic and Correlation with Emergency Department Stay

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**Introduction:** Acute renal colic is a frequent urological presentation to the emergency department. We hypothesise earlier appropriate analgesic requirements may alter the trajectory of these patients within the department. We present a retrospective review of analgesia provided by ambulance first responders.

**Methods:** A database of emergency department presentations was analysed over a 3-month period in 2020 from June to September. Presentations of ureteric colic were identified, and these charts were analysed electronically. Patients who had conservatively managed stones were included in the study. Queensland Ambulance Service Paramedic Triage sheets were electronically scanned into the medical record and retrospectively reviewed.

**Results:** 212 patients were included in the study. The most commonly administered analgesic was oxycodone which was administered in 86% (184/212) of cases, subcutaneous morphine which was given in (78/212) - 37% of patients. Subcutaneous fentanyl was administered in 17.9% of patients (38/212). Indomethacin or non-steroid anti-inflammatories (NSAID) were only administered in (20/212) 9.04% of patients. Intravenous morphine or fentanyl was utilised in 8.04% of patients. Patients who were administered NSAIDs had a mean overall time to discharge of 6.8 hours compared to 13.02 hours in non-NSAID administered patients.

**Conclusions:** Results of this audit indicate that patients who were administered intravenous opioids had a greater time to discharge compared to NSAID administered patients. A limiting factor of the analysis was that frequently these medications were combined and thus further detailed subgroup analysis with larger cohorts are required.

## C-46

### A Patient-Centric Educational Video Improves Patients Knowledge and Management of Benign Prostatic Hyperplasia

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**Introduction:** Public knowledge of benign prostatic hyperplasia (BPH) is lacking, despite it being a chronic disease prevalent amongst elderly men, with 16.5% of Singaporean men, above the age of 40, having moderate-severe lower urinary tract symptoms. We created a questionnaire to evaluate the public's knowledge of BPH, and determine if our education video would improve the population's understanding and how it can be managed by a general practitioner (GP).

**Materials and Methods:** 100 participants recruited from the Urology outpatient clinic, were tasked to complete a questionnaire containing 12 questions before and after watching the educational video. Gender, age, and education level were recorded. T-test, Mann-Whitney U, and Kruskal-Wallis test were used for continuous variables; McNemar and Pearson Chi-square for categorical variables.

**Results:** Median questionnaire scores before and after the educational video were 7 (IQR 6-8) and 11 (IQR 9-11) respectively, with a median improvement of 3 points (IQR 2-4) which was statistically significant. Ages 51-60, 61-70, and an ITE background demonstrated a significant improvement in scores in a linear regression model. Questions 7-12 determined the patient's understanding of the management of BPH, in which the video resulted in a significant improvement in participants understanding in this aspect for questions 7 to 11. Age resulted in a significant improvement for Questions 9-11, and education for Questions 7, 9-10.

**Conclusions:** Our education video on BPH improved the participants' general understanding of BPH and the role of the GP in its management, especially those aged 51-70, and participants with ITE qualification.

## C-44

### Exposure to Clinical Urology in Junior Medical Years – a Survey of Interns and Final Year Medical Students

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**Introduction:** Within Australia, there is a clear lack of exposure to clinical urology amongst medical students. We surveyed a group of final year medical students and corresponding intern medical doctors to assess if the lack of exposure as medical students correlates with a lack of confidence in the management of urological conditions clinically.

**Methods:** 4th year medical students across two universities in the Gold Coast were invited to participate in the survey. Intern medical officers that were undertaking a compulsory emergency department rotation were also invited to participate in the survey.

**Results:** 164 total survey responses were received. 103 survey results were received from final year medical students whereas 61 intern medical officers returned a response. 90% of responded medical students had less than 1 week of exposure to urology within their medical student rotations. In terms of the intern respondents, 20% had less than a week of exposure to urology in medical school and their intern year to date. 58% of interns surveyed felt confident in managing emergency urological presentations whereas 32% of medical students felt confident in managing urological emergencies. Areas of least confidence was in the management of difficult catheter placement and clot retention. Areas of most confidence was in the management of pyelonephritis and ureteric calculi.

**Conclusions:** Our cohort of survey respondents have demonstrated that there is a clear lack of urology exposure within the Australian medical school curriculum.

## C-47

### Secondary Abdominal Compartment Syndrome Recognised in the Operating Room Following Stent for Infected Obstructed Kidney - a Differential to Remember

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**Introduction:** Secondary abdominal compartment syndrome [ACS] is defined as presence of organ dysfunction with concurrent intra-abdominal hypertension in a context lacking a primary intra-peritoneal pathology. Secondary ACS following urosepsis is very rare. We present a case of secondary ACS in a patient post ureteric stenting for infected obstructed kidney and reviewed the literature to identify potential modifying factors.

**Methods:** Medical records were accessed and a systematic literature search using Pubmed, Embase and Cochrane was performed from inception to 2021 with no language restriction.

**Results:** A 65 year old man, presented with Escherichia Coli urosepsis, acute kidney injury and a distal ureteric stone. Following ureteric stenting, he was admitted to ICU due to failed extubation in context of persisting hypoxia and lactaemia. Sixteen hours post surgery, he was noted to have an increasingly distended abdomen, hypotension refractory to vasopressor, to be anuric and worsening lactaemia. Decision was made for an exploratory laparotomy which following a midline incision, a sudden & unexpected improvement in haemodynamics and ventilation was noted consistent with ACS. Remarkable findings were thickened oedematous small bowels and mesentery. The patient made a slow recovery over 3 months.

**Conclusions:** Secondary ACS following urosepsis is an important differential to remember for urologists. Risk factors include obese patients, those with acidosis with pH < 7.2, and patients who had aggressive crystalloid resuscitation [ > 5 litres/24 hours] with vasopressor support. Cautious fluid resuscitation is key and early recognition may lead to a trial of medical management precluding the need for surgical decompression.

## C-48

### The Utility of Serum Biomarkers for Predicting Cancer in Patients with a Previous Negative Prostate Biopsy

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**Introduction:** This paper aims to study the occurrence of prostate cancer (PCa) and clinically significant PCa in patients with a previous negative prostate biopsy (PNB), evaluating the ability of serum biomarkers such as prostate-specific antigen (PSA), PSA density (PSAD) and prostate health index (PHI).

**Methods:** In this single-centre prospective observational study conducted from September 2015 to October 2020, patients underwent a saturation biopsy via the transperineal route. Information on clinical history, lesion characteristics, Prostate Imaging Reporting and Data System (PIRADS) version 2 classification and follow up was collected. The sensitivity, specificity and area under curve (AUC) for each of the biomarkers were calculated.

**Results:** Out of 351 patients who underwent a biopsy, 103 patients had a PNB. 60 patients had histopathologically diagnosed PCa whilst 41 patients had clinically significant PCa, as defined by Gleason grade group 2 and above. In the PNB cohort, PHI had the best ability to predict for clinically significant PCa with an AUC of 0.73 (CI 0.61-0.85) compared to 0.65 (CI 0.52-0.78) for PSAD and 0.57 for PSA (CI 0.42-0.71). With a cut off value of 35, PHI was able to predict for clinically significant PCa for patients with previous PNB, with a sensitivity level of 88.5% and specificity of 51.1%.

**Conclusions:** There is a significant proportion of patients who are diagnosed with PCa after a prior negative prostate biopsy. PHI may help to predict for clinically significant PCa in patients with PNB, and aid in reducing the number of patients requiring prostate biopsies.

## C-50

### Histopathological Changes Associated with ProFocal-RxTM (Focal Laser Treatment) for Localised Adenocarcinoma of the Prostate

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**Introduction:** ProFocal-RxTM (focal laser treatment) is a novel minimally invasive therapeutic option for patients with localised adenocarcinoma of the prostate. Little is known about the histological findings in prostate biopsies upon ProFocal-RxTM treatment.

**Methods:** We examined the histological changes in prostate biopsies of prostate cancer patients who were previously treated with ProFocal-RxTM (focal laser treatment). Prostate biopsies from both treatment and non-treatment zones were obtained 3 months post therapy and analysed histologically. Immunohistochemical staining was performed to assist characterisation of changes.

**Results:** All biopsies from targeted therapy zones demonstrated signs of necrosis. Areas of infarction, inflammation, granulation, stromal fibrosis, haemorrhage, ghosting, haemosiderin deposition, and basal cell hyperplasia were noted. Benign fibroglandular prostatic tissue and adenocarcinoma were demonstrated in biopsies of targeted sites. Peripheral biopsies in non-therapy zones demonstrated benign fibroglandular prostatic tissue. Peripheral sites demonstrated adenocarcinoma, whilst two revealed evidence of necrosis. Benign tissue within biopsies demonstrated atrophy, basal cell hyperplasia and corpora amylacea, with squamous metaplasia noted in a single specimen. Adenocarcinoma demonstrated expression of AMACR on immunohistological staining, whilst regenerative benign glandular tissue expressed p63 and 34BetaE12.

**Conclusions:** ProFocal-RxTM induces a spectrum of morphological changes, demonstrable with light microscopy and common immunohistological staining techniques. Post ProFocal-RxTM prostate biopsies completed at 3 months post therapy demonstrate ability to histologically differentiate therapeutic stromal changes, benign and malignant prostate tissue.

## C-49

### Pharmacological Landscape of the Management of Prostate Cancer in Australia Over the Past 11 Years

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**Introduction:** Prostate cancer is the second most common cancer in men worldwide and the most common cancer diagnosed in men in Australia. Yet, prostate cancer mortality-to-incidence ratio in Australia is amongst the lowest in the developed world. We aimed to describe the national trends in the prescription of systemic treatment in Australia.

**Methods:** The Pharmaceutical Benefits Scheme [PBS] database was queried from January 2009 to December 2020.

**Results:** Zoladex appears to be the LHRH agonist of choice given its disproportionately higher frequency of dispensing. The uptake of longer formulation of Lucrein and Eligard remains low but consistent. There was no change in uptake despite the COVID-19 crisis in 2020 which would have restricted access to health care. Next, the most two common anti-androgens used by far were Cyproterone acetate and Bicalutamide with the data reflecting a mirror-image transition in prescribing pattern in favour of Bicalutamide. Enzalutamide prescriptions steadily rose since its introduction on the PBS and has now surpassed Abiraterone acetate. Darolutamide and apalutamide is only available via private script. Further, the data showed that docetaxel remains the preferred agent in men with metastatic prostate cancer. Last, Olaparib, Pembrolizumab, and Ipatasertib are available as part of trials in Australia whereas Spileucel-T & protein kinase B inhibitors are not available.

**Conclusions:** The majority of the treatments for prostate cancer as described through the literature are available in Australia. As expected, doctors and patients's preferences likely play a role in influencing the use of particular drugs.

## C-51

### The Association of Obstructive Sleep Apnea with Urological Cancer Incidence: a Systematic Review and Meta-analysis

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Obstructive sleep apnea (OSA) is a prevalent and underdiagnosed form of sleep-disordered breathing. Although in-vivo studies suggest that intermittent hypoxia from OSA implicates carcinogenic hypoxia-inducible factor 1 $\alpha$  (HIF-1 $\alpha$ ) and VEGF pathways, epidemiological studies have reported conflicting findings on the association between OSA and urological (kidney, prostate, bladder) cancer.

Four electronic databases (PubMed, Embase, Cochrane Library, and Scopus) were searched from inception till 15th November 2020 for studies which reported the association of sleep apnea with incidence of urological cancer. Two reviewers independently assessed quality of evidence using the GRADE framework and Newcastle-Ottawa Scale (NOS). Maximally covariate-adjusted hazard ratios (HR) were extracted and pooled using random effects inverse variance weighted models. Pre-specified subgroup analyses were performed.

We included six studies from 1,707 records comprising a combined cohort of 3,395,448 patients. Compared to controls, clinically diagnosed OSA patients had significantly increased risk of kidney cancer (HR 1.90, 95%CI 1.17-3.10, I<sup>2</sup> = 98%, P < 0.00001), borderline significant increase in risk of bladder cancer (HR 1.77, 95%CI 0.99-3.18, I<sup>2</sup> = 99%, P < 0.00001) and a non-significant increase in risk of prostate cancer (HR 1.57, 95%CI 0.83-2.95, I<sup>2</sup> = 100%, P < 0.00001). Notably, subgroup analysis of studies with median follow-up duration of  $\geq$  5 years resulted in decreased heterogeneity and a greater significant association for kidney cancer (HR 2.44, 95%CI 2.10-2.83, I<sup>2</sup> = 31%, P = 0.23) and bladder cancer (HR 2.16, 95%CI 2.02-2.31, I<sup>2</sup> = 0%, P = 0.71).

This meta-analysis suggests that OSA increases kidney cancer incidence. Further studies should include longer follow-up periods and assess whether timely treatment may mitigate cancer risk and progression.

**C-52****Prostate Cancer Survivorship in Australia - Exploring Existing Support System**

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**Introduction:** Although that the prostate cancer is the second leading cause of cancer-related death in Australia, cancer-specific survival is excellent for the majority of patients. The number of survivors is projected to increase over the years, highlighting the importance of improving prostate cancer survivorship.

**Methods:** The authors reviewed and contacted all pharmaceutical companies in Australia that are directly involved in prostate cancer management. Patient support programs were defined as any form of support or intervention aiming to improve and address adverse effects related to androgen deprivation therapy [ADT].

**Results:** The majority of companies have a patient support program which is delivered either as a web application, face to face or have a mixed delivery. All the programs offer physical exercise with a therapist and tailored information as core components. Next, since COVID-19, most companies incorporated a nurse injection and delivery service for ADT. The most comprehensive program is funded by Mundipharma which also provide access to sexual counsellors. Patients are linked in to the program free of charge by the treating practitioner and clinicians receive regular updates of their patients progress. Last, companies also offer subsidised access to treatment or scans.

**Conclusions:** As advances in prostate cancer treatment enable men to live longer, there is a need to explore the efficacy of the existing programs at addressing patients' unique needs efficiently and/or develop better support system to add quality to the prostate survivors' life.

**C-55****ProFocal-Rx™ Focal Laser Therapy for Localised Prostate Cancer: Initial Clinical Experience**

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**Introduction:** Focal prostate cancer therapy is an evolving treatment targeting a predefined index region of the prostate gland harbouring clinically significant disease. Although long-term oncologic control has yet to be demonstrated, reduced treatment-related morbidity is evident. We describe our initial experience with ProFocal-Rx™ with regards to safety along with impact to overall health and genitourinary function.

**Methods:** This prospective non-randomised trial evaluated focal laser ablation in men with stage >T2c, Gleason 7 <, prostate specific antigen (PSA) < 15 ng/ml and magnetic resonance imaging with 1 or 2 lesions concordant with biopsy detected cancer. I-PSS (International Prostate Symptom Score), SHIM (Sexual Health Inventory for Men) and validated Short Form Health Survey (SF-12) scores were collected before focal laser ablation, and at 3 months post. Primary end points were Clavien Dindo 30-day re-presentations and self-reported overall physical, mental, urinary and sexual function.

**Results:** 24 men, median age of 69 years with a mean PSA of 6.0 ng/ml were recruited. Biopsy Gleason score was 7 in all men with 21 having primary grade 3 pattern and three men having low volume primary grade 4 disease (less than 5% of cores). No significant I-PSS changes were observed (p = 0.60). Similarly SHIM (p = 0.12), overall physical (p = 0.19) and mental health scores (0.91) were statistically unchanged at 3 months. Only three minor Clavien Dindo grade I complications were observed.

**Conclusions:** In select men with localized prostate cancer and visible magnetic resonance imaging lesions, focal laser ablation with ProFocal-Rx™ is safe with minimal morbidity.

**C-54****Delaying Medical Therapy in Benign Prostatic Hyperplasia During the COVID-19 Pandemic**

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**Background and Objective:** BPH patients are relatively elderly and considered high risk for COVID 19 infection. This study aimed to find out how the pandemic is affecting the care of our urologic BPH medication patients receiving their therapy.

**Methods:** BPH patient's data were collected between January and December 2020, who received or planned for medical therapy. The hospital visit from March to July is traced; treatment plans is obtained from medical records, and patient with delayed treatment were identified. Phone calls were made for patients with delayed treatment to find out what caused the delay.

**Results:** Most of samples were old case (71.7%). Most of them were treated with medical therapy (94.3%). We found 19 (35.8%) patients delayed therapy. The reason for the delay is due to patient's preference, in this term, they may call it as afraid of getting out, worries about the outbreak and social distancing. The duration of delay is varied, but mostly more than 4 months. Furthermore, more than half of the patients did not continue the therapy.

**Conclusions:** The COVID- 19 pandemic affected BPH treatment. LUTS due to BPH were considered as a non-urgent condition. Most of patient clinical visit were canceled or postponed, so the bothersome lower urinary tract symptoms had a bad impact on quality of life and imposed by the lockdown.

**C-56****A Cost-effectiveness Analysis of Pharmacotherapy Versus Prostatic Urethral Lift as Initial Therapy for Patients with Moderate Benign Prostatic Hyperplasia**

Joshua Yi Min Tung <sup>(1)</sup>, Edwin Jonathan Aslim <sup>(2)</sup>, Henry Sun Sien Ho <sup>(2)</sup>  
<sup>(1)</sup> Singhealth, <sup>(2)</sup> Singapore General Hospital

**Background and Objective:** Benign Prostatic Hyperplasia (BPH) is a common condition in elderly males. The symptoms of BPH can be severe and greatly affect quality of life by causing lower urinary tract symptoms and urinary retention, with resultant psychological distress. Given its prevalence and chronicity, healthcare expenditure of this condition can be assumed to be significant. This study aims to evaluate the cost-effectiveness of the use of a prostatic urethral lift system ("Urolift") as an initial therapy for patients with moderate benign prostatic hyperplasia (BPH) symptoms, against pharmacotherapy with combination medical therapy.

**Methods:** A micro-simulation model was developed using TreeAge Pro to compare the two treatment strategies – the first with initial therapy with combination medical therapy (alpha-blocker + 5-ARI), and the second with upfront Urolift procedure – and their impact on BPH progression, costs, and QALYs. In both arms, patients with persistent symptoms or failure of treatment could eventually progress to undergo a TURP. The time horizon was 5 years and a cycle length of 3 months was used. Costs and effectiveness were discounted at 3% per annum.

**Results:** PUL as an initial treatment was more expensive but also more effective than pharmacotherapy, with an incremental cost per QALY gained of approximately SGD\$40,000. It is a cost-effective treatment option at the willingness-to-pay threshold of SGD\$50,000.

**Conclusions:** PUL is a cost-effective initial treatment option for men with moderate symptoms of benign prostatic hyperplasia.

## C-57

### Anterior Urethral Valves as an Unusual Cause of Urethral Obstruction

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**Introduction and Objective:** Anterior urethral valves (AUV) are a rare cause of congenital urethral obstruction and are 15-30 times less common than their posterior counterpart. We report 2 cases in 6-month and 3-year-old boys, both of whom underwent successful AUV fulguration.

**Materials and Methods:** An electronic search of MEDLINE was conducted with key terms "anterior urethral valves" and "paediatric urethral obstruction" and relevant information was selected for review.

**Results:** Diagnosing AUV is challenging due to its variable presentation, ranging from high grade urinary obstruction in utero, to lower urinary tract symptoms in childhood. The mainstay of management is with transurethral valve fulguration. Patient A presented at 6 months with a febrile urinary tract infection. Examination was unremarkable except for physiological phimosis. An ultrasound of the kidneys, ureters and bladder (USKUB) showed bilateral pelvicalyceal dilatation. Micturating cystourethrogram (MCU) demonstrated bilateral grade 4 vesicoureteric reflux (VUR) with narrowing at the anterior urethra. An uneventful circumcision and transurethral AUV fulguration was performed. Patient B presented at 3 years with a poor urinary stream. Clinical examination, US-KUB and MCU were otherwise unremarkable. Uroflowmetry demonstrated a plateau waveform with a post-void residual of 12 mls. Cystoscopic assessment was wave in view of the incongruous imaging which revealed AUV which was successfully fulgurated. Both patients recovered well post-operatively and are on long-term follow-up.

**Conclusions:** Anterior urethral valves are an important differential to consider in the evaluation of paediatric infravesical obstruction and require a high degree of clinical suspicion to avoid future morbidity.

## C-60

### Is 3 months Following Focal Laser Therapy for Localised Adenocarcinoma of the Prostate with ProFocal-RxTM Adequate to Assess Histopathological Changes

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<sup>(1)</sup> Nepean Urology Research Group

**Introduction:** Focal therapy is currently considered a novel treatment option for patients with localised prostate cancer. Post treatment biopsy is recommended to assess outcome, but no optimal time for this has been identified. ProFocal-RxTM (focal laser therapy) is a novel minimally invasive therapeutic option for patients with localised adenocarcinoma of the prostate. Little is known about histological findings in prostate biopsies withing 3 months of ProFocal-RxTM treatment.

**Methods:** We examined histological changes in prostate biopsies of prostate cancer patients who were previously treated with ProFocal-RxTM (focal laser therapy). Biopsies from treatment and non-treatment zones were obtained within 3 months following therapy and analysed histologically. Immunohistochemical staining was performed to characterise therapeutic changes.

**Results:** Biopsies from targeted therapy zones demonstrated signs of necrosis. Infarction, inflammation, granulation, fibrosis, haemorrhage, haemosiderin deposition, and basal cell hyperplasia were commonly noted, consistent with prior laser therapy. Benign fibroglandular prostatic tissue and adenocarcinoma could be clearly demonstrated in biopsies of targeted sites, allowing differentiation. Peripheral biopsies in non-therapy zones demonstrated benign fibroglandular prostatic tissue. Adenocarcinoma demonstrated expression of AMACR on immunohistological staining, whilst regenerative benign glandular tissue expressed p63 and 34BetaE12.

**Conclusions:** ProFocal-RxTM induces a spectrum of morphological changes, demonstratable with light microscopy and immunohistological staining. Prostate biopsies performed within 3 months following ProFocal-RxTM therapy enabled differentiation of therapeutic stromal changes, benign and malignant prostate tissue. We recommend patients who have undergone ProFocal-RxTM to have confirmatory post treatment biopsy within 3 months to assess treatment success and prevent delay in any triaging for future management.

## C-59

### A Systemic Review and Meta-analysis of Intravesical Prostatic Protrusion in Determining BOO and Unsuccessful TWOC

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Yipatsorn Shutchaidat <sup>(1)</sup>, Keong Tatt Foo <sup>(1)</sup>

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**Objective:** There is a lack of pooled evidence of other surrogate clinical parameters that can define BOO in benign prostatic hyperplasia (BPH). We aimed to update the current evidence on the predictive role of intravesical prostatic protrusion (IPP) in determining BOO and unsuccessful trial without catheter (TWOC).

**Methods:** A comprehensive literature was performed to identify all studies that evaluated IPP in BOO and TWOC. The search included the MedLine, EMBASE and Cochrane library up to 2019. A systemic review and meta-analysis was performed.

**Results:** A total of 18 studies with 4128 patients were examined. Eleven studies with 1478 patients examined the role of IPP in UDS determined BOO. The pooled ROC was 0.83 (95%CI: 0.79-0.86) and at a cut-off of > 10 mm, the Sensitivity (Sn) and Specificity (Sp) was 0.71 (95% CI: 0.61-0.78) and 0.77 (95% CI: 0.68-0.84) respectively. The probability modifying plot for revealed a positive and negative likelihood ratio (LR) of 3.34 (95% CI: 2.56-4.36) and 0.35 (95% CI: 0.26-0.45). Seven studies with 2650 patients examined IPP in predicting unsuccessful TWOC, with a pooled ROC of 0.74 (95% CI: 0.70-0.84), with Sn of 0.51 (95% CI: 0.43 - 0.60) and Sp of 0.79 (95% CI: 0.73 - 0.84). Five studies compared prostate volume (PV) and IPP, and revealed a lower AUC of PV at 0.71 (95%CI: 0.67-0.75), which was significantly an inferior predictor of BOO (p < 0.001).

**Conclusions:** This systemic review provides evidence that IPP is a reliable clinical parameter that strongly correlates with underlying BOO and unsuccessful TWOC.

## C-61

### Strategic Management of Bilateral Testicular Masses: A Case of Bilateral Testicular Tuberculosis

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Bilateral testicular masses are rarely encountered. This poses a great challenge to urologists due to the fact that malignancy is always the primary consideration. The management with bilateral radical orchiectomy can lead to development of androgen deficiency, infertility, erectile dysfunction, cosmetic unacceptability, and the accompanying psychological distress to the patient. In addition, there are limited cases documented in the literature and current guidelines for the management of testicular mass contain little information regarding bilateral disease which makes it difficult to draw conclusions about therapeutic strategies in the management. Due to the catastrophic sequelae of bilateral radical orchiectomy, testis-sparing surgery with the aid of intraoperative frozen section, under appropriate conditions, can be an excellent treatment modality in management of bilateral testicular masses.

Therefore, we present a case of bilateral metachronous testicular mass which was managed with bilateral partial orchiectomy with frozen section examination. Diagnosis revealed testicular tuberculosis.

## C-62

### Reducing the Number of Cores on Systematic Biopsy in the Era of MRI-US Targeted Biopsy and its Relevance on Focal Therapy Template Planning

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**Introduction and Objectives:** We investigate the impact of reducing the number of systematic cores on prostate cancer detection in the era of MRI-US fusion targeted biopsy and as well as its relevance in template planning for focal therapy.

**Materials and Methods:** We retrospectively analysed 398 consecutive men who underwent both systematic and MRI-US fusion targeted biopsy. We modelled four reduced-core strategies (two-thirds, half, one-third and one-quarter systematic cores) and compared the mean detection rate of clinically-significant prostate cancer (csPCa defined as grade group  $\geq 2$ ) to that of a full systematic biopsy using McNemar's test. Focal therapy templates were planned out based on positive cores on combined (targeted and systematic) biopsy and the various reduced-cores strategies. The proportion of those who had a change in treatment plan were compared.

**Results:** csPCa was detected in 42% (168/398). Non-targeted systematic biopsy had a 21% (83/398) csPCa detection rate. Our 4 strategies reduced the mean number of non-targeted systematic cores from 21.8 to 14.5, 10.9, 7.3 and 5.4 cores and their csPCa detection rates were significantly decreased to 16%, 13%, 9% and 8% respectively (all  $p < 0.05$ ). As compared to a full combined biopsy, the reduced-cores strategies resulted in change in treatment plan in 12%, 19%, 24% and 29% of the cases as the number of cores were reduced ( $p = 0.0434$ )

**Conclusions:** Reducing the number of systematic biopsies when performing an MRI-targeted biopsy leads to reduced detection of csPCa and alter the treatment plans for focal therapy, possibly limiting its oncological efficacy.

## C-64

### Evolving Trends in the Clinicopathological Features of Testicular Cancer Over Two Decades: A Contemporary Picture from a Large Prospectively Maintained Uro-oncology Database

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**Objective:** To report on the evolving trend of clinicopathological features of testicular tumours based on a large prospective tertiary urological-oncological database

**Methods:** Analysis of all consecutive patients with testicular tumour who underwent orchidectomy from 2000-2019 was performed. To evaluate there was any clinicopathological and treatment trend over time, this cohort of patients were divided into 2 chronological halves: group A (2000-2009) and B (2010-2019). Univariate and multivariate analysis were used to identify risk factors for overall survival and cancer-specific survival.

**Results:** There were a total of 222 consecutive patients with complete data included in this study. The proportion of non-seminomatous germ-cell tumours (NSGCTs) cases were higher in group B as compared to group A (35.4% to 59.3% respectively,  $p < 0.001$ ). Age at diagnosis, histology and staging was associated with overall survival. There is a mean improvement in the overall survival of non-seminoma cases in group B compared to group A (68.9% and 54.0% respectively,  $p = 0.7$ ). There was also an increasing shift towards earlier diagnosis of testicular cancer in the earlier stages across the two decades.

**Conclusions:** Based on this single tertiary institution study, the study showed that there has been a shift towards earlier diagnosis of testicular cancer over the last two decades. There seemed to be more prevalent of NSGCTs in the latter half of the study period. Current data suggests an improved overall survival for NSGCTs in the recent years.

## C-63

### An Exophytic Growth at the Genitalia - A Rare Case Report of Primary Cutaneous Apocrine Adenocarcinoma

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A 77yo male presented with a fungating mass over suprapubic, penoscrotal region. Mass originated on the proximal penile shaft, enlarged over 2yrs. There was tenderness and contact bleeding with serous discharge. He had significant weight loss of 5 kg/2m. On examination, a large fungating, exophytic, verruciform growth was noted on the suprapubic and mid-distal penile shaft, with multiple fleshy, satellite lesions around the suprapubic and scrotum. Testes were normal. Cystoscopy was unremarkable. CTTAP revealed suspicious pulmonary and liver metastasis. Histology of punch biopsy demonstrated densely packed nests of malignant cells centered within the dermis. No definite evidence of squamous or basaloid differentiation. Diffuse expression of CK7 noted.

The patient was diagnosed with primary cutaneous apocrine gland adenocarcinoma (PAA) of the genital area. PAA is a carcinoma with potential destructive local growth and regional/distant metastasis. It primarily affects patients in their late seventies, without racial/gender predilection. It frequently involves apocrine gland abundant areas such as the axilla (50%) followed by the head and neck (35%). PAA are frequently indolent and slowly progressive. It is important to rule out cutaneous metastasis of adenocarcinomatous origin. CK5/6 positivity has been reported in 80% of PAA but only in 6.66% of metastasis.

As PAA are rare, available treatments are based on sporadic case reports. Options include excision, chemotherapy, and radiotherapy. Surgical excision with wide excision is the treatment of choice. Chemotherapy include cisplatin, adriamycin, cyclophosphamide. Immunomodulation is still an experimental method. Radiotherapy could be considered if declined surgery, or as adjuvant.

## C-65

### Predicting Adverse Early Peri-operative Outcomes: Insights from the Asian Robot-Assisted Radical Cystectomy Consortium

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**Introduction:** Predictor factors of perioperative outcomes in robot-assisted radical cystectomy (RARC) from multicentre cohorts are lacking.

**Methods:** The Asian Robot-assisted Radical Cystectomy Consortium registry was interrogated to analyse early peri-operative outcomes. Multivariate logistic regression analyses were performed to identify predictive factors.

**Results:** Across 9 centres comprising 569 patients between 2007 to 2020, most patients had pT2 (or earlier) bladder cancer (72%). There were 30.6% who received neoadjuvant chemotherapy (NAC) and 46.1% underwent intracorporeal urinary reconstruction (iRARC). iRARC was associated with lower estimated blood loss (OR0.38, 95% CI 0.24-0.60,  $p < 0.001$ ) and shorter hospitalisation stay ( $< 14$  days) (OR0.60, 95% CI 0.42-0.87,  $p = 0.0067$ ). A history of smoking (OR5.79, 95% CI 3.44-9.75,  $p < 0.001$ ) and pre-operative positive nodal status (OR 3.9, 95% CI 1.20-12.92,  $p = 0.0242$ ) were predictive factors for prolonged time to solid food intake ( $\geq 7$  days). Diabetes mellitus (OR1.62, 95% CI 1.06-2.48,  $p = 0.0264$ ) was independently associated with prolonged hospitalisation stay  $\geq 14$  days. Diabetes mellitus (OR1.82, 95% CI 1.08-3.06,  $p = 0.0253$ ) and pre-operative hydronephrosis (OR1.77, 95% CI 1.04-3.03,  $p = 0.0365$ ) were predictive for the occurrence of major complications (Clavien-Dindo  $\geq 3$ ). NAC was protective for major complications (OR0.35, 95% CI 0.19-0.67,  $p = 0.0016$ ) and readmissions within 30-days (OR0.38, 95% CI 0.23-0.64,  $p = 0.0003$ ). A history of previous abdominal surgery (OR2.27, 95% CI 1.32-3.89,  $p = 0.0031$ ) and pre-operative hydronephrosis (OR2.55, 95% CI 1.60-4.06  $p < 0.001$ ) were predictive for risk of 30-day readmission.

**Conclusions:** Optimising relevant pre-operative factors can help improve RARC outcomes. NAC was associated with lower major complication rates.

## C-66

### Comparison Between Laparoscopic vs. Robotic Partial Nephrectomy

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Nephron-sparing surgery (NSS) is the gold standard for treatment of the small renal mass. Robotic-assisted partial nephrectomy (RPN) has been reported superior to laparoscopic partial nephrectomy (LPN). We aim to compare the two modalities based on single institution experience.

Data of patients who underwent RPN and LPN between Jan 2013 to Mar 2019 were retrospectively collected and reviewed. Total 206 patients were included, 82 for LPN and 124 for RPN.

Mean age was 60.8 for LPN and 55.4 for RPN. Median BMI was of 25.1 and 24.1 for LPN and RPN respectively. Median tumour size measured 2.9 cm and 2.7 cm for LPN and RPN.

Median length of stay was of 4.2 days and 3.8 days for LPN and RPN respectively with significant difference. There was no significance difference in operative time comparing LPN and RPN. WIT for both arms were of 13.3 min for LPN and 23.3 min for RPN. Median estimated blood loss insignificant between groups. Postoperative complication was assessed via Clavien Dindo score, for LPN patients, 6.1% (n = 5) had Grade III complication, while 3.7% (n = 3) experienced Grade IV complication; RPN group complication for Grade III and IV were of 0 and 1.6% (n = 2) respectively. Margin positive rate were of 17.1% (n = 14) and 10.5% (n = 13) for LPN and RPN respectively.

Although from our institution experience, it is hard to justify the advantage of RPN in view of WIT, yet RPN still shows superiority over LPN in terms of decreased LOS, less high-grade postoperative complication, as well as more optimal margin positive rate.

## C-70

### 5ARI and its Impact on Prostate Biopsy

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**Introduction:** 5 alpha reductase inhibitors (5-ARI) are a commonly prescribed medication to treat benign prostate hyperplasia (BPH). Multiple studies have shown that 5-ARI use is associated with reduced incidence of prostate cancer, but conversely associated with higher grade prostate cancers. These study aims to investigate the use of 5ARI and its impact on MRI guided fusion biopsies in relation to prostate cancer detection rate and cancer grade at diagnosis in an Asian cohort

**Methods:** A retrospective 5-year single centre study in Singaporean men aged 32-82 who underwent MRI guided robotic assisted prostate biopsy from 2015-2020. Chi-square analysis was used to compare between 5ARI users (n = 54) and non-users (n = 297).

**Results:** Patients taking 5ARI are more likely to have a negative biopsy (n = 29, 53.7% vs. n = 93, 31.3%) but higher rates of clinically significant prostate cancer (Gleason grade 7 or higher) (n = 18, 66% vs. n = 135, 72%) p < 0.05. Both cohorts had similar mean age (65 vs. 67, p = 0.05) and mean pre-biopsy PSA (9.41 vs. 11, p = 0.2). The 5ARI cohort had larger calculated prostate volume (62.5g vs. 47.5g, p < 0.05) and lower mean PHI (35.2 vs. 47.8, p < 0.05).

**Conclusions:** This study demonstrates that the use of 5-ARI is associated with lower rates of prostate cancer detected but is associated with higher rates of clinically significant prostate cancer. These results mirror those of previous studies which further supports the role of 5-ARI in the use of prostate cancer chemoprevention.

## C-69

### To Stent or Not to Stent, that is a Question - Comparison Between Prestented and Non-prestented RIRS in Single Institution

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<sup>(1)</sup> Ng Teng Fong General Hospital

**Introduction:** There's difference in opinion in EAU and AUA regarding Pre-stenting for Retrograde Intra renal Surgery (RIRS) and its outcome. Several studies from CROES1, UROICE2 and more recently, BUSTER3 have supported pre-stenting.

**Objective:** To assess outcomes of RIRS by MEL technique between pre-stented (PS) and non pre stented (NPS) in terms of stone free rate (SFR), complication rate, ease of placement of ureteric access sheath (UAS), ureteric injury rate, and necessity for ancillary procedures in renal, ureteric, renal and ureteric combined stones.

**Methods:** Prospective, single center, single surgeon study.

**Inclusion criteria:** All patients with proximal ureteric/renal or combined stones were counseled and enlisted between June 2018 to Jan 2020.

**Exclusion criteria:** bilateral RIRS, relook RIRS.

Total 124 patients recruited in the prospective study of which 25 were excluded. Standard template for intraop findings was used. All Patients underwent postop CT scan.

Significance of stone clearance rate was analyzed with t-test, rest of the results analyzed with Chi-square test.

**Results:** No significant difference in SFR /UAS insertion /Ureteric injury or need for ancillary procedures between PS and NPS arms irrespective of stone location.

2 PS patients required hospitalization and intravenous antibiotic. No other complication noted in either groups

**Conclusions:** Our Study, shows that there is no difference in PS and NPS patients given insignificant impact on stone clearance, ease of UAS insertion, ureter injury, necessity of ancillary procedure, and postoperative complications. Like AUA recommendation, we hypothesise that - choosing the right equipment, surgeon skill and meticulous technique are the key factors for good outcomes.

## C-73

### Combined Liver-kidney Transplantation - Clinical Outcomes

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**Background and Aims:** The purpose of this study was to review the clinical course of patients who underwent combined kidney and liver transplantation at a major Australian transplant centre.

**Methods:** Retrospective analysis of all patients who underwent combined liver-kidney transplant at Princess Alexandra Hospital, Queensland, Australia.

**Results:** Between 2002-2020 eleven patients underwent combined liver-kidney transplantation at the Princess Alexandra Hospital. The indications for the dual transplant included: autosomal polycystic kidney disease with liver transplantation indicated for relief of significant mass effect from polycystic livers (n = 5), advanced cirrhosis with hepatorenal syndrome (n = 3), advanced rejection of a previous liver transplant with end stage renal failure due to calcineurin inhibitor toxicity (n = 1), advanced cirrhosis secondary to hepatitis C with end stage renal failure due to a combination of hepatorenal syndrome and IgA nephropathy (n = 1). Three patients with advanced liver disease had not yet commenced dialysis but were listed for combined transplantation due to imminent requirement and the likelihood of further deterioration with immunosuppressive medication. The average length of stay was 34 days. Five required return to theatre in the early post-operative period for bleeding. Four patients had delayed graft function and required dialysis within 72 hours of transplant. The average creatinine at 3 months and 12 months was 107 and 106 respectively.

**Conclusions:** Combined liver-kidney dual transplantation is challenging surgically and perioperatively, although it offers good long term clinical outcomes when undertaken in selected patients.

## C-75

### Metastatic Prostate Cancer Deposit into a Synchronous Solitary Fibrous Tumour

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**Introduction and Objectives:** Prostate cancer (PCa) with metastasis into a retroperitoneal solitary fibrous tumour (SFT) is an undescribed phenomenon.

**Results:** A 70-year-old man presented with a 2-month history of scrotal swelling, lower urinary tract symptoms, back pain with anorexia and fatigue. Digital rectal examination was consistent with a locally advanced PCa. Prostate Specific Antigen (PSA) was elevated at 210 ng/ml. Routine blood screen demonstrated a normocytic anaemia (Hb 132 g/l) and eGFR of 83 ml/min/1.73 m<sup>2</sup>.

CT imaging showed multiple sclerotic bony lesions, enlarged pelvic and mediastinal lymph nodes and a 14 cm vascular para-aortic mass suggesting massive lymph node involvement from PCa or soft tissue tumour eg. sarcoma. Bone scan showed widespread bony metastases in vertebrae, frontal bone, femur, ribs, pelvis and both humerus.

Biopsy of the retroperitoneal mass showed a SFT with two foci of metastatic PCa (Figure 1).

Treatment was commenced with androgen deprivation and systemic docetaxel chemotherapy. A PSA nadir of 27 ng/ml at 6 months progressed to 1100 ng/ml at 18 months despite second line chemotherapy. Repeat staging revealed no change in the SFT, with progression of bony and new bilateral adrenal metastases.

**Discussion:** Any vascular tissue can provide a bed for tumour seeding. We report an SFT as a site of PCa spread. The poor outcome observed here suggests a similar natural history to PCa with visceral metastases and may reflect analogous tumour biology. When observed lesions are outside the typical pattern of spread, clinicians should consider biopsy to look for alternative primary pathologies.

## C-77

### Do Finger Guided Transrectal Biopsies Add Additional Diagnostic Information to Guide Prostate Cancer Treatment?

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**Introduction and Objectives:** Finger guided transrectal biopsies (FGTB) of the prostate can be used to target palpable lesions. The procedure carries a risk of needle stick injury to the clinician. We reviewed the practice of FGTB at the time of standard Transrectal Ultrasound (TRUS) biopsies to determine whether this practice adds additional diagnostic information to guide prostate cancer treatment.

**Methods:** A data base of all prostate biopsies between 2019 to February 2021 was used to retrospectively identify patients who had simultaneous TRUS biopsy with FGTB. Details of clinical staging at the time of TRUS biopsy and histopathological results were correlated.

**Results:** Between January 2019 to February 2021, 786 TRUS biopsies were performed of which 93 patients (11.8 %) underwent simultaneous FGTB for a palpable lesion. All procedures were carried out by 3 consultant urologists. Histopathological analysis of FGTBs demonstrated no prostate tissue in 4 (4.3 %); benign prostate in 44 (47.3 %). Where the standard TRUS biopsy pathology showed prostate cancer, the FGTB showed benign prostate in 27 (29%). Only 2.1 % of FGTB revealed a higher Gleason score than TRUS, while 49.4 % of TRUS biopsies revealed a higher grade than FGTB. There were no instances where the FGTB changed the clinical management of the patient. No adverse events were reported from FGTB.

**Discussion:** In this series, simultaneous FGTB at the time of TRUS biopsies did not change the grading of prostate cancer or guide management decisions.

## C-76

### Spontaneous Regression of Testicular Germ Cell Tumour in a Testicular Mass Present for 2 Years

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**Introduction and Objectives:** Spontaneous regression of testicular germ cell tumour (GCT), generally a metastatic phenomenon, is rarely observed. We present a case of spontaneous regression of pure seminoma, diagnosed on histopathological examination of a radical orchidectomy specimen.

**Results:** A 44-year-old man presented with a two-year history of a painless firm right testicular mass, which was reducing in size. His background medical history was significant for obesity, and hypertension. He was a lifelong non-smoker with regular marijuana use.

Scrotal ultrasound revealed a right 13 x 10 x 10 mm ovoid, hypochoic mass. Tumour markers were within normal limits. A staging CT chest/abdomen/pelvis reported no retroperitoneal lymphadenopathy or other sites of metastasis. He underwent a right radical inguinal orchidectomy. Histology revealed a 15 x 12 x 9 mm seminoma with necrosis, and a well-demarcated, vascularised surrounding scar containing lymphoplasmacytic infiltrate, in keeping with an area of tumour regression. An FDG-PET revealed a single FDG-avid 9 x 15 mm aortocaval lymph node.

**Discussion:** Spontaneous regression of testicular GCT, also referred to as a burned-out testicular tumour, is a rare phenomenon. Regression may result from apoptosis, immune processes or conditions within the tumour microenvironment. Reported cases of retroperitoneal GCT without a testis primary is likely to represent spontaneous regression. The authors highlight an interesting case with histological findings diagnostic of spontaneous regression of testicular GCT prior to complete burn-out. Metastatic disease was not seen on initial computed tomography staging. In this case, high clinical suspicion lead to FDG-PET/CT imaging revealing FDG-avid nodal disease, and therefore aided in appropriate adjuvant treatment.

## C-82

### Ex Vivo Evaluation of a Novel Design of Anti-reflux Ureteral Stent

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**Introduction:** We designed a novel anti-reflux ureteral stent based on modification of the widely used double-J (DJ) stent to reduce reflux in patients with high intravesical pressure. Our design comprised a polymeric membrane (skirting) with reinforcing ridges at the bladder end, which can be fitted onto any types of ureteral stents. The optimal skirting angle and length that prevent reflux from the bladder to the ureter were investigated.

**Methods:** We 3D printed a 1:1 human urinary tract model, with two pressure sensors placed in the ureter and bladder. Hand-applied bladder pressure was generated to simulate the reflux pressure. The differential pressure between the bladder and ureter was measured with a combination of different angles (60°, 80°, 100°, 110°, 120° and 130°) and lengths of skirting (0.5, 1, 1.5 and 2 cm) to evaluate the optimal combination.

**Results:** A minimal bladder pressure of 40 cm H<sub>2</sub>O was generated. Baseline average differential pressure for bare stent was 4 cm H<sub>2</sub>O. Highest differential pressure was 25 cm H<sub>2</sub>O with a skirting angle of 80° and length of 2 cm. Significant difference in differential pressure was observed with a skirting length of 2 cm or above. At skirting length of 0.5 cm, 1 cm and 1.5 cm, increasing skirting angle did not result in significant differential pressure difference.

**Conclusions:** Our skirting design can effectively reduce pressure transmission from bladder to ureter in an ex vivo model. The optimal skirting angle and length are 80° and 2 cm. A deployment of a stent skirting to prevent reflux may help decrease incidence of upper tract infections.

**C-84****Case Report: Granulomatous inflammation of Terminal Ileum After Intravesical BCG Therapy for Bladder Carcinoma**

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<sup>(1)</sup> Khoo Teck Puat Hospital

**Introduction:** Intravesical Bacillus Calmette-Guérin (BCG) is an established adjuvant immunotherapy in the management of non-muscle invasive bladder carcinoma. Local and systemic complications of BCG therapy are well-described in the literature. But there is a paucity of information on intestinal complications; only isolated cases of Crohn's like ulcerations in the gastrointestinal tract have been reported.

**Case summary:** In this article, we report a 63-year-old man who was found to have thickening of the terminal ileum on routine cancer surveillance imaging after completing induction intravesical BCG therapy for non-muscle invasive bladder carcinoma. Colonoscopic evaluation and biopsies confirmed the presence of granulomatous inflammation of the terminal ileum.

**Methods:** Colonoscopic evaluation, histology and microbiology tests were used to exclude other infectious, inflammatory and neoplastic causes of terminal ileum thickening.

**Conclusions:** A high index of suspicion for the possibility of granulomatous inflammation of the terminal ileum should be kept for patients who develop new findings of terminal ileum thickening on imaging after intravesical BCG immunotherapy.

**C-86****Major Adverse Cardiac Events (MACE) Do Not Occur More Frequently in Patients Undergoing Cystectomy and Urinary Diversion with Perioperative Continuation of Blood Thinners**

Christopher Soliman <sup>(1)</sup>, Marc Furrer <sup>(1)</sup>  
<sup>(1)</sup> The Royal Melbourne Hospital

**Introduction/Objectives:** Despite ongoing improvements in surgical technique and perioperative care, open radical cystectomy (ORC) with urinary diversion (UD) is still associated with high early postoperative morbidity, substantial intraoperative blood loss and transfusion of packed red blood cells (PRBC) and/or fresh frozen plasma (FFP) in up to 60%. Aim of this study is to assess if uninterrupted blood thinners administration affects rates of major adverse cardiac events (MACE).

**Materials/Methods:** ORC was performed in 1431 patients, predominantly bladder-cancer-related, with uninterrupted low-dose aspirin (ASS), oral anticoagulants (OAC) with international-normalized-ratio (INR) target of 2-2.5, or bridging with low weight molecular heparin (LWMH). We examined the occurrence of the first major adverse cardiac events (MACE), a composite of cardiovascular death, myocardial infarction, coronary revascularization, stroke, heart failure and pulmonary embolism, within the context of a time-to-event analysis (90d). We used propensity score matching analysis to adjust for imbalances between groups with or without blood thinners.

**Results:** Rate of 90d postoperative MACE was similar between patients with vs, without blood thinners. In the propensity-score matched analysis, the MACE rate was 8.7% in the group with blood thinners compared to 9.1% in those without blood thinners; P = 0.99. After propensity-score-matching, no statistically relevance has been detected between the treatment groups (log rank P = 0.758).

**Conclusions:** Perioperative continuation of blood thinners during ORC did not increase the occurrence of MACE at 90d postoperatively. As a result, there is no need for discontinuation of chronic low dose aspirin, LWMH-bridging or uninterrupted oral anticoagulant treatment aiming a target INR of 2-2.5.

**C-85****Diagnostic Value of Urine Cytology in Pharmacologically Forced Diuresis for Diagnosis and Follow-Up of Upper Tract Urothelial Carcinoma: An Observational Cohort Study**

Christopher Soliman <sup>(1)</sup>, Marc Furrer <sup>(1)</sup>  
<sup>(1)</sup> The Royal Melbourne Hospital

**Introduction/Objectives:** Diagnosis of upper-tract urothelial-cancer (UTUC) is challenging and based on mainly invasive-procedures. We performed urine-cytology analysis of a pharmacologically forced-diuresis (UCFD) for the evaluation of UTUC as a diagnostic-tool and follow-up method. This study aims to evaluate the value of UCFD for both purposes.

**Materials/Methods:** To evaluate the diagnostic-value of UCFD, a first consecutive-cohort of 72 patients with primary-UTUC treated with radical cystectomy (RC) was enrolled. To evaluate UCFD as a follow-up procedure, a second cohort (n = 1250) of patients that underwent RC in a curative intent due to UC was selected. High-grade UC-cells in UCFD were considered positive.

**Results:** First cohort, 25/72 (35%) patients had UCFD preoperatively performed. Sensitivity of UCFD in patients with invasive, high-grade, low-grade and concomitant carcinoma-in-situ was 8%, 9%, 0% and 14%, respectively. Second cohort, UCFD was performed as follow-up for UUT in 689/1250 patients (55%). UCFD was positive in 30/689 (4.3%) of patients. UUT recurrence was present in 21/30 (70%) cases and urethral recurrence in 8/30 (27%). A false-positive UCFD was observed in 1/30 patients (3.3%). In this cohort, as a follow-up tool, UCFD showed a sensitivity, specificity and positive predictive value of 60%, 99% and 70%, respectively.

**Conclusions:** As a diagnostic tool, sensitivity is slightly better in patients with invasive-UTUC and concomitant carcinoma-in-situ. For follow-up, positive UCFD was diagnostic and could reveal cancer-recurrence in the urethra in cases with orthotopic bladder-substitute. Although UCFD may add some diagnostic value, the need for more reliable biomarkers for follow-up and diagnosis of UTUC remains.

**C-87****Seminal Vesicle Sparing Cystectomy in Highly Selective Bladder Cancer Patients is Oncologically Safe: Results from a High-Volume Tertiary Centre**

Christopher Soliman <sup>(1)</sup>, Marc Furrer <sup>(1)</sup>  
<sup>(1)</sup> The Royal Melbourne Hospital

**Introduction/Objectives:** Seminal-vesicle-sparing radical-cystectomy (SVS-RC) has been reported not to impact short- to mid-term oncological outcomes. However, there is still a lack of data on long-term outcomes after SVS-RC. The aim of this study was to compare oncological outcomes in patients after SVS vs. standard RC.

**Materials/Methods:** Oncological outcomes of 470 consecutive patients after RC and orthotopic ileal reservoir formation, from 2000 to 2017, which were stratified into 6 groups according to nerve-sparing and seminal-vesicle-sparing status as attempted during surgery were evaluated. Local recurrence was defined as any urothelial cancer recurrence below the iliac bifurcation within the pelvic soft tissue. We conducted propensity analyses and investigated the treatment impact on oncological endpoints.

**Results:** The median age was 68 years and median follow-up was 5.3 (IQR 1.9-10.0) years. A positive surgical margin was seen in six patients of the study cohort (1.3%). There was no significant difference in positive surgical margin of bladder cancer among the six groups (p = 0.71). Among the seminal-vesicle and non-seminal-vesicle-sparing groups, our analysis showed no difference in local recurrence-free survival (p = 0.173). Upper tract recurrence was observed in 4% (18/470) patients, after a median time of 2.1 years (1.0-7.4). Twenty-six percent of patients (122/470) had distant metastasis after a median time of 0.95 (0.5-2) years. Progression free, cancer-specific and overall survival were more favourable in patients with seminal-vesicle-sparing radical-cystectomy (p < 0.001, p = 0.006 and p < 0.001, respectively).

**Conclusions:** In a highly selected group of patients, SVS-RC is oncologically safe. Importantly, mid- and long-term oncological outcomes were non-inferior compared to non-SVS-RC.



**C-88****Nerve Sparing Radical Prostatectomy in High-Risk Prostate Cancer Patients is Feasible with Good Functional Results without Impairing Oncological Outcomes: A Longitudinal Long-Term Single Centre Study**Christopher Soliman <sup>(1)</sup>, Marc Furrer <sup>(1)</sup><sup>(1)</sup> The Royal Melbourne Hospital

**Introduction/Objectives:** High-risk prostate cancer is associated with higher incidence of extraprostatic disease. This has led to an aversion of nerve-sparing to prevent positive surgical margins as they may increase risk of cancer recurrence. Due to concerns of anticipated inferior oncological and functional outcomes radical prostatectomy (RP) has not commonly been offered to men with high-risk prostate cancer. Whether nerve-sparing RP should be attempted in these patients remains debatable. Aim of this study was to assess oncological and functional outcomes in high-risk prostate cancer patients following RP.

**Materials/Methods:** In a prospective single-centre cohort study, urinary continence, erectile function recovery and oncological outcomes of 554 consecutive patients undergoing open RP for high-risk prostate cancer from 1996 to 2017 were evaluated. High-risk was defined as preoperative PSA > 20 ng/ml and/or Gleason score  $\geq 8$  and/or  $\geq pT3$  and/or pN1. Multivariable logistic-regression analyses were performed to evaluate whether grade of nerve-sparing was a predictor of urinary continence, erectile function recovery and oncological outcomes after RP.

**Results:** Median follow-up of patients was > 8 years. In multivariable analysis adjusted for potential confounders attempted nerve-sparing was predictive of higher urinary continence and erectile function recovery compared to patients without nerve-sparing at all time points. Furthermore, patients with attempted nerve-sparing were less in need of erectile aid compared without nerve-sparing. Overall- and cancer-specific-survival and local recurrence-free-survival were not inferior in patients with attempted nerve-sparing.

**Conclusions:** Attempted nerve-sparing in patients with high-risk prostate cancer is associated with favourable urinary continence and erectile function recovery rates after RP without impairing oncological outcomes.

**C-90****Routine Preoperative Bone Scintigraphy has a Limited Impact on the Management of Patients with Invasive Bladder Cancer: A Retrospective Single-Centre Study**Christopher Soliman <sup>(1)</sup>, Marc Furrer <sup>(1)</sup><sup>(1)</sup> The Royal Melbourne Hospital

**Introduction/Objectives:** According to current guidelines, bone scintigraphy is not routinely indicated in patients with invasive-bladder-cancer (IBC) prior to radical-cystectomy (RC) unless specific symptoms are present. These guidelines, however, are currently based on sparse, low-quality data. Aim of this study is to assess clinical impact of routine staging bone scintigraphy on further patient management.

**Materials/Methods:** We conducted a retrospective, single-centre study of 1287 consecutive patients scheduled to undergo RC due to IBC between 01/2000 and 12/2017. All patients were prospectively followed-up according to institutional protocol. We assessed bone scintigraphy as staging imaging prior to RC. Primary endpoint was change in intended patient management. Secondary endpoints were the need for additional imaging, diagnostic performance of baseline bone scintigraphy, and association between clinical- and radiological-findings on bone-metastases and survival. Logistic and Cox-regression models were used for univariate- and multivariate-analyses.

**Results:** 1148 of 1287 (89%) patients scheduled for RC underwent bone scintigraphy as staging imaging. Overall, baseline bone scintigraphy led to change in intended management in 19/1148 (1.7%) patients. Additional imaging was performed in 44/1148 (4%) patients. Although positive bone scintigraphy findings were associated with occurrence/development of bone metastases, diagnostic performance of baseline bone scintigraphy was poor (positive- and negative-predictive-value, sensitivity and specificity were 56%, 89%, 27% and 96%, respectively). Higher clinical tumor-stage and non-performance of cystectomy had negative impacts on CSS and OS, while positive bone scintigraphy was associated with worse CSS.

**Conclusions:** These results demonstrate the limited value of bone scintigraphy in staging IBC and do not support its routine use.

**C-89****Routine Preoperative Bone Scintigraphy has a Limited Impact on the Management of Patients with Invasive Bladder Cancer: A Retrospective Single-Centre Study**Christopher Soliman <sup>(1)</sup>, Marc Furrer <sup>(1)</sup><sup>(1)</sup> The Royal Melbourne Hospital

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**Conclusions:** These results demonstrate the limited value of bone scintigraphy in staging IBC and do not support its routine use.

**C-91****Seminal Vesicle Sparing Cystectomy in Bladder Cancer Patients is Feasible With Good Functional Results: A Longitudinal Long-Term Propensity-Matched Single Centre Study**Christopher Soliman <sup>(1)</sup>, Marc Furrer <sup>(1)</sup><sup>(1)</sup> The Royal Melbourne Hospital

**Introduction/Objectives:** Seminal-vesicle-sparing radical-cystectomy (SVS-RC) has been reported to improve short-term functional results. However, data on long-term outcomes after SVS-RC remains scarce. The aim of this study was to assess erectile function recovery (EFR) and urinary continence (UC) in patients after SVS vs non-SVS-RC and orthotopic-bladder-substitute (OBS).

**Materials/Methods:** In total, 470 consecutive patients after RC and OBS-formation, from 2000 to 2017, were evaluated. They were stratified into 6 groups according to nerve-sparing (NS) and SVS status as attempted during surgery: no sparing at all (n = 55), unilateral-NS (n = 159), bilateral-NS (n = 132), unilateral-SVS and unilateral-NS (n = 30), unilateral-SVS, and bilateral-NS (n = 45), and bilateral-SVS (n = 49), and used propensity-modelling to adjust for preoperative differences. Patients were classified as continent if they required  $\leq 1$  pad for safety-reasons during day or night. Intact erectile function preoperatively and EFR was defined as the ability to achieve an erection sufficient for penetration and maintenance of intercourse with or without medical aids.

**Results:** Among the 6 groups, proportions of patients with erectile function recovery were higher in the SVS-groups at all time points in all analyses, respectively, with pronounced earlier recovery in patients with bilateral-SVS. Importantly, patients with SVS were significantly less in need of erectile aids to achieve erection and intercourse. Over the whole period, daytime urinary continence was significantly better in the SVS-groups (OR 2.64 to 5.21).

**Conclusions:** SVS-RC is oncologically safe and results in excellent short- to mid-term functional outcomes that are reached at an earlier postoperative timepoint and remain superior over a longer period of time.

## C-92

### The Value of Restaging by Computed-Tomography (CT) in Monitoring Response Rates to Neoadjuvant Chemotherapy in Muscle Invasive Bladder Cancer: A Longitudinal Long-Term Single Centre Study

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**Introduction/Objectives:** There is currently no consensus on restaging during and after administration of neoadjuvant chemotherapy (NAC) in patients with muscle-invasive bladder cancer (MIBC) prior to radical-cystectomy (RC). Aim of this study was to evaluate accuracy of radiological restaging after 2 and 4 cycles of NAC, correlation between clinical and final tumour stage at RC, and restaging impact on further management.

**Materials/Methods:** We conducted a longitudinal, single-centre, prospective cohort study of 180 consecutive patients who underwent NAC for urothelial MIBC. All patients had repeated CT-scans for restaging after 2 cycles of NAC and after completion of the NAC before RC.

**Results:** Of all 180 patients, we identified 120 patients who had 4 cycles of NAC and complete imaging available. Correlations between clinical stage and pathological stage was relatively strongest after 4 cycles of NAC compared to the findings after 2 cycles and prior to NAC ( $\tau$ -b = 0.32, 0.28, 0.16 respectively).

Overall, further patient management was only changed in 2/180 (1%) patients after 2 cycles of NAC based on radiological findings. Patients clinically downstaged after 4 cycles of NAC had a statistically significant lower risk of cancer specific death (HR = 0.46, 95%CI: 0.22-0.96, log-rank p = 0.034) compared to those without downstaging after completion of NAC.

**Conclusions:** Restaging of MIBC after completion of NAC by CT is a strong predictor of CSS, however; re-staging after 2 cycles of NAC offers no additional information and does not change patient management in the vast majority of (98%). Therefore, it may be omitted.

## C-95

### Deep Learning-based Evaluation of Urinary Voiding Acoustics to Discriminate Between Normal and Abnormal Urinary Flows

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**Purpose:** Urinary voiding acoustics (Audioflow) have demonstrated good correlation with conventional uroflowmetry traces in healthy men. We sought to train and validate a deep learning-based algorithm to predict conventional uroflowmetry traces based on Audioflow, and distinguish between normal and abnormal urinary flow patterns.

**Patients and Methods:** 354 men between the ages of 21-80 with or without lower urinary tract symptoms (LUTS) were recruited between 1 December 2017 and 1 December 2019. All participants voided into a gravimetric uroflowmetry machine with a minimum volume of 150 ml, and urinary flow acoustics were simultaneously recorded using a smartphone. All audio recordings were digitally processed, then divided into 240 training and 114 test cases for training and validation of a bi-directional long/short-term memory (bi-LSTM) neural network. Each patient's uroflowmetry trace was graded as normal/abnormal by two urologists, and served as the reference standard for the algorithm. Performance in differentiating between a normal/abnormal Audioflow was evaluated using area under the receiver operating characteristic curve (AUC).

**Results:** The training set of 240 Audioflow readings paired with their corresponding uroflowmetry traces consisted of 88 normal and 152 abnormal flow patterns. The deep learning model exhibited great performance in the classification of urinary flow patterns in the test set, with 82.5% (33/40) normal flows and 85.1% (63/74) abnormal flows accurately classified, resulting in an overall AUC of 0.83.

**Conclusions:** A deep learning model can discriminate between normal/abnormal urinary flow patterns based on urinary voiding acoustics, potentially providing a convenient means for the screening and follow-up of patients with LUTS.

## C-94

### Bladder Angiomyolipoma in Tuberous Sclerosis: A Clinical Case Presentation and Literature review

Dhanika Samaranyake<sup>(1)</sup>, Trent Pattenden<sup>(1)</sup>

<sup>(1)</sup> Ipswich Hospital

Angiomyolipoma (AML) are seen in 70-90% of the patients affected by tuberous sclerosis (TSC). These commonly occur in the kidney and liver. AML in parts of the body other than kidneys are rarely described in patients with TSC.

Literature review using EMBASE and PUBMED only found a limited number of case reports describing AML in the urinary bladder. There are several reports of isolated bladder wall AML including one in a bladder diverticulum. There was only one reported case of urinary bladder AML in a patient with TSC.

This case study describes another incidental finding of a urinary bladder AML during a cystoscopy in a 31 year old female with a background of TSC. She was found to have an obstructed kidney with a small ureteric stone which was managed endoscopically. During the cystoscopy, a small papillary lesion was found at the posterior bladder wall. Macroscopically, this lesion appeared to have its own vascular supply with several superficial blood vessels entering into the lesion. It measured approximately 1cm and the lesion was endoscopically resected. The histology reported a nodule of cells which have the appearance of smooth muscle with enlarged hyperchromatic nuclei. The nodule was positive for SMA and HMB45, and negative for desmin and S100 stains. The appearance of the nodule and immunoperoxidase profile was consistent with a variation on angiomyolipoma.

## C-96

### Methods for Measuring Frailty in Clinical Trials Involving Patients With Advanced Prostate Cancer on Androgen Deprivation Therapy

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**Introduction:** Androgen deprivation therapy (ADT) for men with advanced prostate cancer (PCa) is an identified source of frailty. The Society for Geriatric Oncology (SIOG) recommend the G8 screening tool to identify those at risk and mandated comprehensive geriatric assessment (CGA) yet these are not often incorporated into clinical trials. Here we present a review of the literature identifying patterns of frailty assessment amongst men with PCa treated with ADT.

**Methods:** This systemic review was performed and reported in accordance with preferred reporting items for systemic reviews and meta-analyses (PRISMA) guidelines. MEDLINE, PubMed, SOCPUS, Cochrane Reviews, PsycINFO and CINAHL were searched yielding 454 results. Articles were screened by two independent reviewers. A total of 207 articles were included.

**Results:** Performance status was measured in 42% of trials and HRQOL 178 times (> 50%). A specific frailty assessment tool was used in just 3 articles. CGA was identified in only 6 clinical trials G8 in 1. Pain scores were measured 36 times (17%) whilst fatigue assessment tools were identified on 32 occasions (15%). Domains of physical function were frequently tested (n = 192) as were phenotypical assessments (n = 97). Cognitive and psychological assessments was also relatively assessed (n = 67).

**Conclusions:** Men treated with ADT and associated interventions are at high risk of frailty. Clinical trials have reported on the efficacies and safeties of interventions, although frailty has not been assessed uniformly or comprehensively. This study demonstrates the need for more comprehensive screening and assessment tools for men with advanced PCa treated with ADT enrolled in clinical trials.

**C-97****Adrenal Lipomatous Ganglioneuroma: A Clinic Case Report and Review of Literature.**

Dhanika Samaranyake <sup>(1)</sup>, Andrew Morton <sup>(1)</sup>  
<sup>(1)</sup> Ipswich Hospital

Lipomatous ganglioneuroma (GN) is a rare variant of GN that has limited reports in the literature. We describe a case of asymptomatic lipomatous GN that was discovered incidentally and managed operatively.

A 61-year-old man underwent routine staging computed tomography (CT) in the work-up of localized prostate cancer which revealed an incidental right adrenal mass. Patient was asymptomatic and displayed no clinical signs. The lesion was biochemically non-functional. A dedicated CT demonstrated a 40 x 40 x 45 mm right adrenal mass showing mildly increased enhancement with no washout therefore was deemed indeterminate.

Following a multidisciplinary team discussion, laparoscopic right adrenalectomy was performed. Macroscopic histopathological examination showed a 45 mm firm nodule within the mid portion of the right adrenal gland. A well-circumscribed, encapsulated homogeneously yellow cream lesion with trabeculated cut surface was identified and appeared to arise from the adrenal cortex. Microscopic histopathological examination demonstrated mature ganglion cells distributed in a Schwannian-rich stroma. The stroma included an admixed mature adipocytic component compatible with a lipomatous ganglioneuroma.

Lipomatous GN is extremely rare, limited to only nine previous case reports in English literature. The location of lipomatous GN in previous reports most commonly included the posterior mediastinum and retroperitoneum with only one other previous case occurring within the adrenal gland. This previous case of adrenal lipomatous GN was found to be catecholamine-secreting, resulting in hypertension. Majority of the cases were asymptomatic, with lipomatous GN an incidental radiological finding.

**C-99****Challenging Evacuation Procedure of Giant Bladder Stone: A Rare Case Report**

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**Introduction:** Bladder stones are the most common form of lower urinary tract stone and account 5% of all urinary tract stones. However, giant bladder stones weighing more than 100 g are rare. In this article we reported a patient with a diagnosis of giant bladder stone that size more than 12 cm in diameter and 905 g of weight.

**Materials and Methods:** A 63-year-old male with no significant past medical history presented with complaints of dysuria and lower abdominal pain since 7 days before admission. The diagnosis, workup, and treatment are outlined.

**Results:** Ct Scan shows bladder stone measuring 9.4 x 10.8 x 11.8 cm in size and moderate bilateral hydronephrosis. We performed open cystolithotomy but due to the size of the stone we decided to fragmenting the stone using an orthopaedic chisel and hammer and stone weighing 908.5 grams was successfully removed.

**Conclusions:** A bladder stone can grow so large that it can obstruct both ureters causing bilateral hydronephrosis. Early diagnostic and well planned treatment may minimize patient morbidity.

**C-98****How Do We Improve Urology Medical Education in Australian Medical Students?**

Dhanika Samaranyake <sup>(1)</sup>  
<sup>(1)</sup> Ipswich Hospital

**Introduction:** Clinical urology rotation is not mandatory for medical students in Australia. Therefore, graduating medical students may be inadequately prepared for assessment and management of common urological conditions. This can lead to provision of poor-quality care for patients and an inappropriate use of resources. This review aims to collate the various realistic options for imparting the necessary information to medical students.

**Methods:** Literature search was conducted using Embase and Medline with the search strategy including the terms urology, medical education, past 10 years.

**Results:** There has been a steady increase over the last 10 years in literature published on medical student education in Urology. Several studies have described as little as one week rotation in has noted to improve urology skills, knowledge and confidence. There is also value in online learning modules as shown in other areas of medical education. Studies describe the use of interactive lectures, case-based learning and videos as common methods of providing information.

**Conclusions:** Previous literature has shown that there is a gap in the education of Australian medical students in the assessment and management of common urological presentations. Implementing a mandatory rotation in urology and making available a standard e-learning module could help in improving pre-intern confidence. Practical experience with appropriate support and mentoring should aid medical students in gaining the skills they require for common urological procedures.

**C-100****Phenazopyridine Test: A Simple Office Based and Easily Performed Test to Differentiate Between Vaginal Discharge and Urinary Incontinence**

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**Introduction:** Phenazopyridine hydrochloride is an azo dye oral analgesic excreted in urine that turns the urine into orange colour. It is sometimes used to determine whether vaginal fluid loss is urinary incontinence or otherwise. Our study aims to assess the reliability of the Pyridium pad test as a useful tool in the assessment of patients with inclusive history of vaginal discharge.

**Methods:** We audited 25 patients who presented with excessive vaginal discharge from 2008 to 2018. Each patient was prescribed Phenazopyridine 200 mg TDS for two days and was asked to keep a chart of the colour of fluid loss on their panty liner prior to voiding. A bright orange colour on the panty liner indicated urinary loss. Further management was based on the test results. The management outcome was assessed on the basis of symptom resolution or symptom acceptance.

**Results:** 76% of patients were subsequently "satisfied" with their treatment outcome. 12 (48%) were diagnosed with excessive vaginal discharge, and 9 (36%) with urinary incontinence. 2 were inconclusive and 2 lost to follow up. Ten patients got further intervention on basis of Phenazopyridine test out of which 8 had complete symptomatic resolution. 11 were managed by reassurance, of whom 9 reached symptom resolution and discharged.

**Conclusions:** Phenazopyridine test is a useful and reliable tool in establishing urinary incontinence. It is underutilized due to the lack of strong evidence in literature discussing its diagnostic accuracy. Our findings support the need for further research and subsequent standardization of this potentially invaluable diagnostic tool.

## C-101

### Microdissection OncoTESE (Micro-oncoTESE) in Azoospermic Men - is there a Difference in Surgical Sperm Retrieval (SSR) Rates for Benign and Malignant Testicular Lesions? An eUROGEN Centre Study

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**Introduction:** Azoospermic-men with testicular lesions can be offered a micro-oncoTESE concurrently with orchidectomy, from the ipsilateral or contralateral side. We present the outcomes of micro-oncoTESE in a cohort of azoospermic-men undergoing orchidectomy for testicular lesions and compare the SSRR (surgical sperm retrieval rates) for benign vs. malignant pathology.

**Methods:** A retrospective-cohort study was conducted for azoospermic-men undergoing orchidectomy or excision of indeterminate lesions with concurrent micro-oncoTESE. Intraoperative dissection of the testicular parenchyma was performed using 18-24 magnification. Dilated tubules were retrieved and placed in sperm buffer. The primary outcome was successful SSRR. Histology, maximum tumour length and testis length were analysed.

**Results:** 32 patients with median age of 33 years (24-36) underwent micro-oncoTESE. 25 patients had TC and 7 patients had benign pathology. The overall SSRR was 37.5%. Patients with TC had SSRR of 44%, compared to 14% with benign histology ( $p = 0.21$ ). 6 of 7 benign lesions were excised with preservation of the testis. There was no significant difference in maximum tumour length between successful and unsuccessful SSR groups 33.9 mm +/- 23 (SD) vs. 30.1 mm +/- 16.8 (SD)  $p = 0.49$ . There was no significant difference in maximum tumour length to testis length ratio between successful and unsuccessful groups 0.62 +/- 0.26 (SD) vs. 0.57 +/- 0.21 (SD)  $p = 0.45$ .

**Conclusions:** This is one of the largest cohorts of micro-oncoTESE. Micro-oncoTESE should be offered to all azoospermic-men undergoing orchidectomy as is successful in 37.5%. Testis preserving surgery should be offered where possible. The difference between SSRR in TC and benign groups was not statistically significant. Tumour size does not impact SSRR.

## C-103

### Endourological Treatment for Matrix Stones Occupying a Congenital Single Left Kidney

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<sup>(1)</sup> National Healthcare Group

We present an elderly Chinese female with a congenital single kidney and ischemic heart disease with drug-eluting stent on aspirin. She presented with urinary tract infection (UTI) secondary to staghorn calculus and had underwent four retrograde-intrarenal surgeries (RIRS) with laser lithotripsy and ureteric stent insertion over a period of a year. Each time, stones were fragmented successfully with laser lithotripsy. However, on her fourth RIRS, the entire pelvi-ureteric junction up to the left upper pole was found to coated with soft, whitish tissue. Attempts to clear this extensive whitish coating with laser was difficult given its gelatinous consistency. Postoperative computed-tomography (CT) of the kidneys demonstrated matrix stones in the upper and mid poles. We managed her residual stones with an endoscopic combined intrarenal surgery (ECIRS). Mini-percutaneous nephrolithotomy (PCNL) was performed and matrix stones were removed piecemeal via "grasp and twist" technique with forceps. Lithotripsy was performed to lower-pole stones and a double J stent was exchanged. Postoperative recovery was uneventful. Unlike majority of calcigerous stones, matrix stones tend to form in females, stone formers, with previous surgeries and recurrent UTI. The diagnosis is usually made at surgery, but preoperative radiographic findings might be suggestive. With advent of minimally-invasive surgery and endourological techniques, PCNL and RIRS are now recommended treatment for matrix stones. The antegrade-retrograde technique provided advantages of single access, capability to resolve urolithiasis along entire urinary tract and improved stone free rates. Furthermore, mini-PCNL has shown to reduce blood loss and length of stay as compared to conventional-access PCNL.

## C-102

### Renal Cell Carcinoma and Angiomyolipoma in a 75-year-old Female: Case Report

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This case report provides details about a rare incidence of renal cell carcinoma and angiomyolipoma on a 75-year-old female. ZD came in at East Avenue Medical Center with an eight-month history of a left palpable flank mass. Diagnostics were done which revealed a left renal mass and also an incidental finding of a right renal mass with different characteristics. She underwent open surgical management for both renal masses in two different operating room schedules with an interval of 2 weeks.

## C-105

### Clinicopathological Features of Atypical Renal Cell Carcinoma Histological Subtypes: A Study of 1,686 Cases Spanning Over Three Decades

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**Objective:** To evaluate and report clinicopathological features and survival outcomes of atypical renal cell carcinoma (RCC) based on a large tertiary-level prospectively maintained uro-oncology database.

**Methods:** All patients with renal masses who underwent radical and partial nephrectomy from 1990-2019 were analyzed. Data was dichotomized into conventional (clear-cell, papillary) and atypical RCCs (chromophobe, multiloculated cystic, sarcomatoid, translocation, tubulocystic and NOS). Kaplan-Meier survival analysis was performed and Cox proportional-hazards models were used to evaluate the impact of patient factors on overall survival.

**Results:** Of 1,686 histologically analyzed RCC, there were 213 atypical (aRCC), 1,281 clear-cell (ccRCC) and 192 papillary RCCs (pRCC). The proportion of aRCC in 1990-1999, 2000-2009 and 2010-2019 was 22%, 7.5% and 13%. Commonest aRCC subtypes were chromophobe (23%), mixed clear-cell/papillary (22%) and multilocular cystic (22%). Stage I, II, III and IV tumors comprised 63%, 9.4%, 15% and 10% of cases respectively. ccRCC had higher survival (0.76, 95%-CI: 0.73-0.80) than non-clear cell subtypes (0.58, 95%-CI: 0.51-0.67); conventional RCC had higher survival (0.75, 95%-CI: 0.70-0.77) than aRCC (0.58, 95%-CI: 0.47-0.72). Kaplan-Meier estimates of 5-year survival were highest in the chromophobe RCC subtype (0.90, 95%-CI: 0.79-1.0). Univariate Cox proportional-hazards models identified symptomatic presentation, higher pathological stage, and nephrectomy operation time as associations with aRCC mortality.

**Conclusions:** This study, based on one of the largest published RCC databases, showed that 13% of RCCs in the nephrectomy cohort were atypical RCC variants, and provides a contemporary picture on their clinicopathological features and survival outcomes, which will further guide counselling, prognostication and treatment.

## C-106

### Long Term Urinary Morbidity and Continence Outcomes for Men Undergoing a Bladder Neck Incision Prior to Low Dose Rate Brachytherapy Treatment for Prostate Cancer

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**Introduction:** Many men with prostate cancer have co-existing symptoms of bladder outflow obstruction (BOO). A transurethral resection of the prostate is associated with an increased risk of incontinence after low dose rate brachytherapy (LDRBT). Our aim was to examine the long term urinary morbidity of a bladder neck incision (BNI) prior to LDRBT monotherapy for treatment of men with low and intermediate risk prostate cancer.

**Methods:** A prospective database of 400 consecutive patients who underwent LDRBT between July 2003 and June 2015 for treatment of low or intermediate risk prostate cancer was retrospectively reviewed to assess urinary morbidity associated with a BNI prior to LDRBT.

**Results:** 400 patients underwent LDRBT, with a median follow up of 11.8 years. There were 46 men who underwent a pre-implant BNI for management of underlying BOO. In the BNI cohort, the mean age was 66.4 years and PSA was 6.9. There were 27 patients with Gleason score 3+3 (58.7%), 15 patients with 3+4 (32.6%) and 4 patients with 4+3 (8.7%). The average prostate volume was 36.9 ml (SD 9.1). The median urinary flow rate Qmax prior to BNI was 8.8 ml/s (SD 3.9) and one-year post BNI was 12.5 ml/s (SD 4.9,  $p < 0.001$ ). Three patients (6.5%) developed a urethral stricture. Urinary incontinence developed in one patient (2.2%), compared to 7.4% of the entire cohort

**Conclusions:** A pre-implant BNI for management of BOO does not increase the risk of urinary incontinence after treatment for prostate cancer with LDRBT, and long term urinary morbidity remains low.

## C-108

### Robotic-assisted Nephroureterectomy and Bladder Cuff Excision Without Patient Repositioning and Robot Redocking

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**Objective:** Robotic-assisted nephroureterectomy has recently become a minimal invasive treatment option for upper urinary tract transitional cell carcinoma. We report our own technique for a robotic nephroureterectomy and bladder cuff excision that does not require patient repositioning, port reassignment or redocking of robotic arms.

**Methods:** Two patients with upper urinary tract transitional cell carcinoma underwent nephroureterectomy and bladder cuff excision with da Vinci Si robotic surgical platform: 01 case with left side tumor and 01 case with right side tumor. Patients were placed in a 70 degree, flank position without table flexion and with a 150 Tredelenburg tilt. Camera port was placed at lateral edge of rectus muscle, two finger breadth upper umbilicus. Two 8 mm robotic port was placed at the same lateral rectus margin, third 8 mm robotic port and two assistant port is introduced at the midline between xiphoid and symphysis pubis . The robot was docked at a 90 degree angle, perpendicular to the patient. Our port placement strategy allowed adequately approach to both the kidney, ureter and bladder without patient position changing or patient cart movement.

**Results:** The mean operative time was 120 minutes (100-130 minutes), mean estimated blood loss was 75 mL (50-100 mL), mean hospital stay was 5 days. No case was needed blood transfusion or open conversion, no complication was observed. Short-term oncological outcomes have revealed no recurrences.

**Conclusions:** Our initial results show that this technique has ability to reduce operative time with promising outcomes for patients with upper urinary tract transitional cell carcinoma.

## C-107

### Oncological Outcomes of Men With Low and Intermediate Risk Prostate Cancer Following Treatment With Low Dose Rate Prostate Brachytherapy Monotherapy Using Live Intraoperative Dosimetry Planning and an Automated Needle Navigation Delivery System, With a Median Follow Up of 11.8 Years

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**Introduction:** Our aim was to examine the long-term oncological outcomes of low dose rate prostate brachytherapy (LDRBT) monotherapy using live intraoperative dosimetry planning and an automated needle navigation delivery system for treatment of men with low and intermediate risk prostate cancer. Data on long term oncological outcomes following LDRBT is limited in medical literature.

**Methods:** A prospective database of 400 consecutive patients who underwent LDRBT between July 2003 and June 2015 was retrospectively reviewed to assess oncological outcomes including biochemical progression based on the Phoenix definition, and also a definition of PSA > 0.2.

**Results:** Minimum patient follow-up was 5.5 years. Median follow-up of the entire cohort was 11.8 years. Gleason score 4+3 (56/400) was identified in 14%, Gleason 3+4 in 44.25% (177/400) and Gleason 3+3 in 41.75% (167/400). The median PSA was 6.1 (0.9-17) and the median Gleason score was 3+4. The bNED based on the Phoenix definition is 85.8% (343/400). The bNED using a 'surgical' definition of PSA < 0.2 is 71% (284/400). Of the 297 men followed for > 10 years, prostate cancer specific survival was 98% (291/297).

**Conclusions:** LDRBT using live intraoperative dosimetry techniques and a robot automated system for delivery of the brachytherapy seeds is associated with excellent prostate cancer specific survival with a median follow up of 11.8 years. There is also pleasing bNED using both the Phoenix definition and the 'surgical' definition of PSA < 0.2.

## C-109

### Is the Preservation of Sexual Function an Important Factor in the Treatment Decision for Prostate Cancer in Singaporean Males?

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**Background:** Radical treatment of prostate cancer is associated with increased risk of erectile dysfunction (ED). The recent advent of focal therapy (FT) has provided a viable alternative to reduce the risk of sexual dysfunction, albeit with a higher risk of recurrence. We aim to evaluate the importance of sexual preservation in Singaporean men, and determine the factors that may influence their choice of therapy.

**Methods:** We recruited 272 Singaporeans/PR males, aged 40 to 75, from an outpatient urology clinic in a tertiary hospital to participate in an IRB-approved questionnaire to collect demographical data, assess baseline level of sexual activity, erectile function (IIEF score), time trade-off (TTO) for ED and preferred prostate cancer treatment modality.

**Results:** When given a choice of treatment for stage 1 prostate cancer, a majority of men (48.5%) would choose FT, 39.0% radical prostatectomy and 12.5% watchful waiting. The mean ED TTO was 0.66 (SE 0.26). Patients who reported lower ED TTO were more likely to consider sexual preservation over oncological outcomes ( $p < 0.01$ ). Participants who were sexually active ( $p = 0.03$ ), were younger ( $p = 0.02$ ), had higher IIEF scores ( $p < 0.01$ ), higher sexual interest ( $p < 0.01$ ) and satisfaction scores ( $p < 0.01$ ) reported lower ED TTOs. Age, race, marital status, education and housing played no impact on ED TTOs or choice of prostate cancer treatment.

**Conclusions:** The preservation of sexual function is an important factor that may influence treatment decision for prostate cancer. The introduction of focal therapy may provide a suitable alternative for patients who desire to maintain their sexual function.

## C-110

### Outcomes of Renal Tumour Ablation for T1 Renal Tumours: A Single Centre Experience

Benjamin Tze Ying Lim<sup>(1)</sup>, Lim Sey Kiat<sup>(1)</sup>, Koh Li-Tsa<sup>(1)</sup>  
<sup>(1)</sup> Changi General Hospital

Partial nephrectomy is the treatment of choice for T1 renal cell carcinoma. Tumour ablation remains an alternative to surgery with substantial comorbidities and solitary kidney. We report the oncologic outcomes of T1 renal tumours treated with thermal ablation technique in a single institution.

## C-112

### Are There Any Predictors of Pyonephrosis in Patients With Obstructive Uropathy?

Allagadda basavaraju Vishnu<sup>(1)</sup>, Palaniappan Sundara<sup>(1)</sup>, Lim Yong Wei<sup>(1)</sup>  
<sup>(1)</sup> Sengkang General Hospital

**Introduction:** Pyonephrosis secondary to obstructive uropathy is managed by either percutaneous nephrostomy (PCN) or retrograde ureteric stenting. Our preference has been the percutaneous approach as it ensures better drainage of urine when there is pyonephrosis. The aim was to identify factors that predict pyonephrosis in those undergoing PCN.

**Methods:** We retrospectively reviewed the records of all the patients who underwent PCN later antegrade stenting at our institution from 2018 to 2020. Pyonephrosis was defined as the presence of bacteria or fungal pathogen in the pelvicalyceal system. Data on the demographics, comorbidities, clinical presentation, urine and blood results on admission, length of hospital stay and presence of purulent urine on puncture of kidney were collected.

**Results:** Total of 100 patients were included in study. Pyonephrosis was diagnosed in 31 patients. The remaining 69 patients were found to have no growth in PCN urine. We found that white blood cell count (WBC) of greater than  $15 \times 10^6/L$ , C reactive protein (CRP) greater than 40 mg/L and a positive bladder urine culture were likely to predict for pyonephrosis. Presence of diabetes, fever on admission, positive blood culture and purulent urine on puncture were not significant factors. We also found that median length of stay from PCN insertion to antegrade stenting was 7 days (3-27).

**Conclusions:** Our study suggests that elevated WBC, CRP and a positive urine culture are most likely to predict for pyonephrosis. A single staged antegrade or retrograde stenting would reduce hospitalisation stay in those without pyonephrosis.

## C-111

### Is Sex Important to Singaporean Men? – Understanding the Sexual Needs of Urology Patients

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**Introduction:** Sexual health of patients and the impact of urological treatment on sex are sometimes overlooked in an Asian setting. We aim to study the factors that could affect sexual function among male urology patients in Singapore.

**Methods:** 272 Singaporean/PR males, aged 40-75, participated in an IRB-approved outpatient-based questionnaire study in a Singapore tertiary hospital. We collected demographical data and assessed erectile function [IIEF-5 score], sexual activity within 30 days (SA), sexual interest (SI) & sexual satisfaction (SS) [PRÓMIS® SexFS questionnaire]. Chi-square test and Pearson's correlation test were used to evaluate factors that could affect sexual function.

**Results:** 51.5% of respondents had SA in the past 30-days. 70% of men with no erectile dysfunction (ED) had SA, in contrast to only 52.5% in those with mild-moderate ED and 22.7% in those with severe ED ( $p < 0.01$ ). Low education levels ( $p < 0.01$ ) and public housing class ( $p = 0.02$ ) were associated with lower SA. Increasing IIEF scores and younger age (both  $p < 0.01$ ) are factors that correlated with improved SI and SS. Marital status, ethnicity and most co-morbidities have no bearing on sexual health, except in diabetics, who reported lower SS scores ( $p = 0.03$ ).

**Conclusions:** Older age and ED are significant factors that impair SI and SS. It is alarming to note that more than half (54.8%) of all patients had moderate to severe ED, yet only 10% of participants were actually being treated for this. Urologists should take an active role in championing sexual health issues, and provide holistic treatment for the men under their care.

## C-113

### Regional Urethroplasty: The viability of decentralisation

Nathan Shugg<sup>(1)</sup>, Hannah Flynn<sup>(1)</sup>, Emma Stehr<sup>(1)</sup>, Devang Desai<sup>(1)</sup>  
<sup>(1)</sup> Toowoomba Hospital

**Background:** There has been a shift towards management of urethral stricture via urethroplasty rather than repeated endoscopy, though the latter remains more prevalent. Reconstruction is offered predominately in metropolitan areas, with few surgeons offering services in regional areas.

**Methods:** We analysed prospective data from 190 genitourinary reconstructive procedures in a regional centre with GURS Fellow, recruiting 117 urethroplasties since establishment in 2017. 71 patients had reached 1y follow-up, representing 81 procedures from 2017-2020. Primary endpoint was stricture-free survival at 1y, with stricture recurrence defined as post-operative requirement for endoscopic management, re-do urethroplasty, or confirmed recurrence on urethrogram. Secondary endpoint was patient satisfaction as rated on validated patient reported outcome measure (PROM) survey.

**Results:** Of 68 anterior urethroplasties, 53 were stricture free at 1y. Of 15 recurrences, 6 proceeded to re-do urethroplasty, with 93% subsequently stricture free at 1y. In total, 58 patients became stricture free, an overall success rate of 85%. Of 3 posterior repairs, 2 patients became stricture-free by end of management. PROM data indicated 82% satisfaction with outcome following treatment, with dissatisfaction primarily due to unmasked detrusor failure.

**Conclusions:** It is commonly accepted that anterior urethroplasty has an 85% success rate, though a recent 2021 meta-analysis of Australian data found only 45-63% of anterior repairs were stricture-free at 15y. Posterior urethroplasty has a higher success rate, often found to be  $> 90\%$ . Competitive success rates can be achieved in adequately resourced regional areas, with decentralisation of reconstructive urology a feasible avenue in reducing geographical barriers to necessary surgical intervention.

## C-114

### Female Urethroplasty: A Rare but Rewarding Challenge of Reconstructive Urology

Hannah Flynn<sup>(1)</sup>, Nathan Shugg<sup>(1)</sup>, Emma Stehr<sup>(1)</sup>, Devang Desai<sup>(1)</sup>  
<sup>(1)</sup> Toowoomba Hospital

**Introduction & Objectives:** Female urethral stricture is a rare, debilitating disease. Traditional treatment is dilation, but this is temporising with high recurrence rates. Urologists may be reluctant to embark on a female urethroplasty due to limited exposure to female urethral reconstructive surgery.

Careful consideration must be given to each patient's symptoms, the stricture's aetiology, surrounding vaginal tissue health and stricture location. In this case series, we endeavour to highlight the different techniques of female urethroplasty as well as explore their advantages and disadvantages.

**Methods:** A case series of 4 unique female urethroplasty cases performed in a regional centre in south-western Queensland, Australia by a Urologist trained in reconstructive urology.

**Results:** The cases encompassed a variety of urethral stricture disease in 4 different females, including one transgender male-to-female patient. The specific urethroplasty techniques used were:

- Double face for a near-obliterative distal urethral stricture due to lichen sclerosis.
- Ventral inlay for an obliterative distal urethral stricture secondary to lichen sclerosis.
- Ventral inlay for a near-obliterative distal urethral stricture that was iatrogenic due to a previous caruncle excision.
- Ventral inlay for a near-obliterative mid-distal bulbar urethral stricture in a transgender (male-to-female) patient with a history of gender reconstructive surgery.

**Conclusions:** Female urethroplasty is a reconstructive challenge. The choice of technique depends on aetiological factors, stricture length and location, as well as quality of urethral and vulval tissues. Each approach has pros and cons, however urethroplasty is a durable treatment for women suffering from urethral stricture disease.

## C-116

### Not Just a Tube: Raising Awareness of Urethral Injuries from Long Term Indwelling Urethral Catheters

Hannah Flynn<sup>(1)</sup>, Nathan Shugg<sup>(1)</sup>, Emma Stehr<sup>(1)</sup>, Devang Desai<sup>(1)</sup>  
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**Introduction and Objectives:** Indwelling urethral catheters (IDCs) are the bread and butter of Urology. It is tempting to dismiss IDCs as benign drainage tubes; however, IDCs cause complications including urethral injuries.

The spectrum of urethral injuries ranges from partial erosion of urethral mucosa to complete cleavage of the underlying tissues, i.e. glans penis, penile shaft, vulva. IDCs that are too large place excessive pressure on the meatus thereby triggering erosion. An IDC that is secured under tension can act as a bowstring that cleaves through soft tissues.

In this cross-sectional study, we investigated the prevalence of urethral injuries in adults with a long-term IDC who reside in a regional and rural catchment of Queensland, Australia. The influence of variables including IDC duration, site of IDC management (i.e. hospital, nursing home, community outreach service), mobility and medical co-morbidities was also explored.

**Methods:** We performed a cross-sectional analysis of 150 adults who had an IDC for > 4 weeks between 2019-2021. The prevalence of injuries was determined from surveys and medical records.

**Results:** The overall prevalence of urethral injuries was 7.3% (11/150). The majority of participants were men (88.7%, 133/150) compared to women (11.3%, 17/150). The prevalence of CAMPI among men was 7.5% (10/133) compared to 5.8% (1/17) in women.

**Conclusions:** This cross-sectional study indicates that urethral injuries are a reasonably prevalent complication of long-term IDCs. Urologists need to be mindful of the potential harm that IDCs can inflict upon patients.

## C-115

### The Art of Urethrograms: A Role for Urologists

Hannah Flynn<sup>(1)</sup>, Nathan Shugg<sup>(1)</sup>, Emma Stehr<sup>(1)</sup>, Devang Desai<sup>(1)</sup>  
<sup>(1)</sup> Toowoomba Hospital

**Introduction and Objectives:** Urethrography is used in reconstructive urology to elucidate urethral stricture disease. Urethrograms help the Urologist to ascertain the location and length of a urethral stricture.

Whilst Urology registrars are familiar with the concept of urethrography, few trainees are taught the art of "how to perform" a urethrogram. There are nuances in the procedural technique that significantly affect the quality and accuracy of a urethrogram.

Urologists have an intimate understanding of urethral anatomy which can be harnessed in urethrography. By analysing a wide range of urethrograms obtained for our large urethroplasty cohort, we will highlight:

- Pitfalls in technique that compromise accuracy in a urethrogram
- Key steps to obtain safe and high-quality urethrography
- Subtleties in a urethrogram that influence surgical planning and choice of urethroplasty technique

**Methods:** We analysed a case series of urethrograms obtained from a cohort of 139 patients who had a urethroplasty in Toowoomba, Queensland over the past 4 years. This cohort encompasses a broad spectrum of urethral stricture disease in men and women.

**Results:** Comparison of urethrograms obtained in a Radiology department to those performed by a Urologist with fellowship-training in reconstructive Urology revealed:

- Poor patient positioning impedes visualisation of the urethra
- Whilst a Foley catheter is traditionally used, contrast injection can be optimised with alternative delivery methods
- Excessive force leads to contrast extravasation that obscures subtleties of urethral anatomy

**Conclusions:** Our case series illustrates the role for Urologists in the acquisition, not just interpretation, of urethrograms.

## C-117

### It's Not Just a Little Bite – Exploring the Prevalence of Complications at Oral Graft Donor Sites in a Large Urethroplasty Cohort

Hannah Flynn<sup>(1)</sup>, Nathan Shugg<sup>(1)</sup>, Emma Stehr<sup>(1)</sup>, Devang Desai<sup>(1)</sup>  
<sup>(1)</sup> Toowoomba Hospital

**Introduction and Objectives:** Substitution urethroplasty using a buccal mucosal graft is gold standard treatment for penile or bulbar urethral strictures > 2 cm. Lingual mucosa can be used if buccal mucosa is diseased and unfavourable. Whilst urethral outcomes of substitution urethroplasty are well-documented, there is little research into post-operative complications at oral graft donor site.

Our cross-sectional study explored the prevalence of complications at oral graft donor site in substitution urethroplasty cases undertaken in a regional Australian centre over 4 years. This cohort contained men and women with a broad spectrum of urethral stricture disease requiring a variety of reconstructive approaches, including primary, staged, re-do, and even transgender urethroplasty.

**Methods:** We performed a cross-sectional analysis of 102 urethroplasty cases using an oral mucosa graft that were done in Toowoomba, Queensland between 2017 and 2021.

**Results:** A buccal graft was used in 101 (99%) of the cases, whilst a lingual graft was used 1 case (1%). Only 6 of the buccal mucosa graft cases (6%) had a post-operative complication at the donor site. The breakdown of complications was:

- bleeding (2/101, 2%)
- infection (1/101, 1%)
- hypergranulation tissue (2/101, 2%)
- long-term difficulty with mouth opening (1/101, 1%)

The single case using a lingual graft was complicated by formation of an oral pyogenic granuloma.

**Conclusions:** Post-operative complications at the oral graft donor site are a relatively low, but clinically significant risk of substitution urethroplasty cases performed in a regional Australian centre.

## C-118

### The Effect of Body Mass Index on Urethral Stricture Recurrence Post-urethroplasty: A Regional Perspective

Nathan Shugg<sup>(1)</sup>, Hannah Flynn<sup>(1)</sup>, Emma Stehr<sup>(1)</sup>, Devang Desai<sup>(1)</sup>  
<sup>(1)</sup> Toowoomba Hospital

**Background:** Limited data exists regarding the effect of obesity on urethroplasty outcomes. However, BMI is often discussed by clinicians as a predictor of success when offering urethroplasty.

**Methods:** We analysed retrospective patient data from 176 genitourinary reconstructive patients in a regional centre with GRUS Fellow, with 190 procedures from establishment in 2017. After excluding non-urethroplasty procedures, 71 patients were found who had reached 1y follow-up, with 48 of these having readily available BMI data. We divided these into three groups: BMI < 30, BMI 30-35, BMI > 35.

Primary endpoint was stricture-free survival at 1y, with stricture recurrence defined as requirement for endoscopic management of stricture, re-do urethroplasty, or confirmed recurrence on urethrogram.

**Results:** Of 21 patients with BMI < 30, 13 were stricture-free at 1y, a success rate of 62%. In patients with BMI 30-35, 12 out of 14 were stricture free at 1y, with 11 of 13 patients with severely elevated BMI > 35 becoming stricture free, both showing a success rate of 85%.

**Conclusions:** The decreased overall success rate in the lower BMI cohort is likely secondary to selection bias, as BMI is more likely to be recorded if significantly elevated, or in normal-BMI but high-risk patients who have more comprehensive workup.

Regardless, overall success rate of high-BMI patients is consistent with national standard of 85%, indicating that BMI has little independent bearing on Urethroplasty outcome. Elevated BMI should not have significant impact on whether Urethroplasty is offered, as risk of failure is not severely affected by this sole factor.

## C-120

### Comparison of Stricture-free Survival Following Primary vs. Re-do Urethroplasty in Regional Centre

Nathan Shugg<sup>(1)</sup>, Hannah Flynn<sup>(1)</sup>, Emma Stehr<sup>(1)</sup>, Devang Desai<sup>(1)</sup>  
<sup>(1)</sup> Toowoomba Hospital

**Background:** Urethroplasty offers substantially higher long-term success rates for urethral stricture disease than repeat endoscopic management. In those whom it is unsuccessful, re-do Urethroplasty can be offered.

**Methods:** Prospective data from a GURS Fellowship accredited regional centre analysed 190 genitourinary reconstructive procedures, with 117 urethroplasties performed. Of 71 patients who reached 1y follow-up, 7 patients underwent re-do urethroplasty for recurrence from 2017-2020. Primary endpoint was stricture-free survival at 1y, with stricture recurrence defined as requirement for post-operative surgical management of stricture or confirmed recurrence on urethrogram.

**Results:** 53 out of 68 anterior urethroplasty patients were stricture free at 1y, a success rate of 78%. 6 recurrences proceeded to re-do Urethroplasty, with 93% stricture free at 1y following. Of 3 posterior repairs, 1 patient had recurrence requiring re-do urethroplasty, though required catheterisation within 1y for second recurrence.

When combined, management with re-do urethroplasty if required increased overall stricture-free survival to 85% at 1y.

**Conclusions:** The success rate of re-do urethroplasty is likely comparable to that of the primary procedure. In particular, repeat intervention for anterior strictures yields high success rates at 1y, though this is likely confounded by selection bias regarding who is offered a re-do procedure.

## C-119

### Comparison of Uncomplicated vs. Complicated Urethroplasty in Single Regional Centre

Nathan Shugg<sup>(1)</sup>, Hannah Flynn<sup>(1)</sup>, Emma Stehr<sup>(1)</sup>, Devang Desai<sup>(1)</sup>  
<sup>(1)</sup> Toowoomba Hospital

**Background:** Management of urethral stricture via urethroplasty is steadily becoming standard over repeated endoscopy. Reconstruction offers greater long-term benefit and can often address highly complex disease when endoscopy is insufficient.

**Methods:** Prospective data from a regional Australian centre with GURS Fellow recorded 190 genitourinary reconstructive procedures since initiation in 2017. Of 117 Urethroplasties, analysis of 68 anterior-repair patients with completed 1y follow-up was performed, with separation into simple vs complex stricture disease. Complex strictures were defined as multifocal or panurethral, fistulating, obstructing with urinary retention, or with aetiology of radiotherapy or previous hypospadias repair.

Primary endpoint was stricture-free survival at 1y, with stricture recurrence defined as post-operative requirement for re-do urethroplasty, endoscopic management, or confirmed recurrence on urethrogram.

**Results:** Of 42 simple strictures, 34 were stricture free at 1y, with success rate 81%. In contrast, 19 of 26 complex strictures were successful at 1y, representing a 73% success.

Breakdown revealed multifocal and panurethral stricture disease to have high success rate of 90%, with previous hypospadias repair a predictor of failure at 57% success. The greatest predictor of recurrence was previous Radiotherapy, with successful 1y stricture-free survival in only 40% of repairs.

**Conclusions:** As expected, complex disease decreases the overall efficacy of Urethroplasty, however, panurethral or multifocal disease does not necessarily reduce success. Radiotherapy or previous complex reconstruction were high predictors of failure, with greater counselling needed regarding risk of recurrence in these groups.

## C-122

### It Goes Where? Two Presentations of Ureteral Herniation – a Case Series

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**Introduction and Objectives:** Ureteral herniation is a rare and often misdiagnosed phenomenon. Presenting symptoms are dependent on the anatomical location of the herniation and the severity of obstruction, with recognition important for diagnosis and operative planning

**Methods:** This is a case series of two rare ureteric herniation presentations in a regional setting.

**Results:** Patient 1, a 74-year-old male, was referred to clinic with lower urinary tract symptoms and a single episode of macroscopic haematuria. Initial examination noted no significant findings. Baseline bloods, including renal function, were unremarkable. An ultrasound of the renal tract noted a dilated left renal pelvis. On further investigation a CT intravenous pyelogram noted a large left sliding indirect hernia involving the left ureter, with no hydronephrosis. The patient proceeded to operative management which utilised a retrograde pyelogram (RGP) and stent for safe reduction to manage the inguinal hernia.

Patient 2, a 78-year-old female, presented with left lower quadrant abdominal and flank pain, with associated nausea and vomiting and a recent history of trimethoprim treated Klebsiella urinary tract infection. Abdominal examination revealed a soft tender left-sided abdomen and left renal angle. A contrast CT abdomen and pelvis revealed high-grade left ureteric obstruction suggesting ureteric herniation into the sciatic foramen. Her renal function had a corresponding decrease. Given the degree of obstruction, the patient underwent an emergency ureteric stent insertion.

**Conclusions:** Both cases highlighted the importance of a thorough history, examination and clinical suspicion in the case of lower urinary tract symptoms, renal dysfunction or incidental hydronephrosis.



**C-124**

**Xanthogranulomatous Orchitis, a Rare Masquerade for Testicular Neoplasm**  
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**Introduction and Objective:** Xanthogranulomatous changes are rare, benign, inflammatory changes characterised by infiltration of lipid laden foamy macrophages. It commonly involving the kidneys or gallbladder, while involvement of the testis is far rarer. Reports of xanthogranulomatous orchitis (XGO) are reported in individual cases and small series, and the aetiology is unclear. We report on the findings of a literature review on XGO and describe one case that was associated with a large overlying scrotal wall abscess.

**Methods:** The summary of the 30 cases identified in a literature search of EMBASE and MEDLINE databases for XGO are presented. They are contextualised by the case of a 77-year-old male who presented with a tense swollen, indurated, erythematous right hemi-scrotum with a one-day history of ipsilateral groin pain, subsequently diagnosed with XGO.

**Results:** An ultrasound of the right scrotum showing a heterogenous lesion measuring 3.9 x 2.4 x 3.2 cm replacing most normal testicular tissue concerning for abscess or tumour associated with an overlying loculated collection in the right scrotal wall. A trans-scrotal right orchidectomy along abscess drainage was performed and made an uneventful recovery. Histopathological review revealed extensive destruction of the testicular parenchyma replaced by an inflammatory mass, consisting of sheets of histiocytes with moderate foamy cytoplasm, without evidence of microorganisms, neoplasia, or vasculitis. This was consistent with XGO.

**Conclusions:** XGO is a rare condition that may present with suppuration and simulate a testicular cancer. Given this presentation the diagnosis should remain one confirmed on histological examination to exclude underlying malignancy.

**C-128**

**Salvage Whole-gland Cryoablation for Local Recurrence of Prostate Cancer After Radiation Therapy: The Initial Singaporean Experience**  
Rene Gatsinga <sup>(1)</sup>, Alvin Wei Xiang Low <sup>(1)</sup>, Kae Jack Tay <sup>(1)</sup>  
<sup>(1)</sup> *Singapore General Hospital*

**Background:** Cryoablation is increasingly used to treat local prostate cancer recurrence after radiotherapy. We report the initial functional, safety, and oncological outcomes of the first Singaporean experience.

**Material and Methods:** Carefully selected patients underwent salvage cryoablation of prostate between August 2017 and February 2021 at the Singapore General Hospital. They had biochemical recurrence after radiation therapy, fulfilling the Phoenix definition. All recurrences were histologically confirmed with MRI-TRUS Fusion biopsy. Metastatic cancer was excluded using PSMA/CT imaging. Whole-gland cryoablation was administered using the Galil Medical system and standard measures to preserve urethral and periprostatic structures integrity. Post-procedure, patients were evaluated for peri-operative complications, short term functional and oncological outcome.

**Results:** Seven patients aged between 66 and 79 years were included in the study. Pre-treatment local recurrence was confirmed with biopsy and PSMA scan. All had organ-confined recurrence. Median follow up was 18 months, ranging from 2 to 32. All post-operative complications were of Clavien-Dindo Grade I or lower. Noted complications included short-term perineal pain (28%); hematuria (42%); dysuria (29%); and scrotal ecchymosis (14%). One patient reported new erectile dysfunction (14%). The continence rate ( $\leq$  1 pad/day) was 57% immediately post-procedure, and 71% 3 months later. Median pre-treatment PSA was 5. Median post-treatment PSA at 3 months was 0.14. Five patients (71%) remained in remission at latest follow-up.

**Conclusions:** Cryoablation is a safe treatment option for local radiorecurrent prostate cancer. As with all salvage treatments, functional outcomes are less ideal than after primary treatment for prostate cancer.

**C-126**

**Barriers in the Refugee Population in Regional Australia in Management of Renal Stones**  
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<sup>(1)</sup> *Toowoomba Hospital*

**Introduction and Objectives:** Urolithiasis is a common presenting urological complaint to the emergency department. Development of renal stones are influenced by a range of risk factors including dietary content, dehydration, anatomical, infection and genetics. These factors may be increased in certain cultural groups.

In the setting of migration, especially secondary to refugee settlement, stone management and prevention can be impacted by several burdens and barriers. Toowoomba, a regional city, is the third largest refugee settlement in Queensland - with 7.5% of its' overseas born population not proficient in English. With this, comes unique challenges in delivering care.

**Methods:** A retrospective audit of 725 stone related procedures at the Toowoomba Hospital from January 2019 to December 2020. The audit focused on identifying the cases of refugees with a particular focus on the barriers to management.

**Results:** This audit identifies significant factors that impeded definitive management and prevention of urolithiasis. These can be broadly separated into individual and systemic factors. Systemic factors identified include hospital communication practices (i.e. letters with key appointments) and lack accessible of interpreters. Diet and hydration are examples of individual factors. These factors compound, leading to distrust of the system and failure to engage in medical care.

**Conclusions:** This is the first study to explore the barriers to urolithiasis management in a refugee population. Recognition of systemic and individual factors is crucial to improving compliance in this vulnerable group.

**C-129**

**Efficacy of Topical Triamcinolone for Catheterization Following Internal Urethrotomy: A Systematic Review and Meta-analysis**  
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**Introduction:** Urethral stricture is one of the most common causes of lower urinary tract symptoms (LUTS) among males. Underlying causes of urethral stricture could be infection, inflammation, trauma, iatrogenic, or unknown cause. Although surgical intervention usually performed, recurrences still often happened. Therefore, treatment following internal urethrotomy procedure, such as the application of topical triamcinolone, was performed to reduce the rate of recurrences. This study was conducted find out the efficacy of topical triamcinolone for catheterization in patient with urethral stricture after internal urethrotomy procedure.

**Methods:** We searched PubMed and ScienceDirect Controlled Trials (RCTs) of the use of topical triamcinolone following internal urethrotomy procedure. RCTs were screened with our eligibility criteria, while the study quality was evaluated using Cochrane Risk of Bias Tools. Primary outcome analyzed in this study was efficacy of topical triamcinolone in preventing recurrences of urethral strictures measured as odds ratios (ORs) with 95% confidence intervals (CIs). Heterogeneity was assessed using the I<sup>2</sup> test, and publication bias was evaluated using a funnel plot and Egger's test. Software analysis were performed using STATA 16.0.

**Results:** Four RCTs involving 254 patients met the inclusion criteria. Our analysis showed that topical triamcinolone had no significant effect in preventing recurrences following internal urethrotomy (OR 0.60, 95% CI 0.32, 1.12, p = 0.11, I<sup>2</sup> = 40%).

**Conclusions:** Our study showed that topical triamcinolone for catheterization had no significant effect in preventing recurrences of urethral stricture after internal urethrotomy procedure.

## C-130

### Systematic Review and Meta-Analysis of Intravesical Glycosaminoglycan Layer Replenishment for Bladder Pain Syndrome: Hyaluronic Acid/Chondroitin Sulphate Relative to Dimethyl Sulfoxide and Vehicle Control

Muhammad Rifki Setiawan<sup>(1)</sup>

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**Introduction:** Defect in the glycosaminoglycan layer of urothelium is thought to be a keyrole in the biomechanism of Bladder Pain Syndrome (BPS). GAG layer replenishment, performed with instillation of either hyaluronic acid or chondroitin sulphate has showed significant values in recent trials. Further analysis is needed to address uncontrolled intervention and scarcity of enrolled patients. This study evaluates the comparative efficacy of intravesical HA and CS respectively, with subsequent addition of dimethyl sulfoxide and neutral solution as control arms.

**Methods:** Studies were obtained from PubMed and ScienceDirect using Boolean operators. Similar phrases regarding BPS and GAG layer replenishment were collected. The review generates 10 matched the inclusion and exclusion criteria. Primary study endpoint includes O'Leary Sant symptoms and problem scores and visual analogue scale (VAS). Voiding diary were recorded as the secondary measures. Analyses were performed using RevMan version 5.4.1.

**Results:** There is a greater change of ICSI scores in favour of intravesical HA/CS compared to DMSO (MD: 0.50; 95% CI: -1.18-2.19; P = 0,56), and daily frequency of voiding compared to vehicle control (MD: -2.85; 95% CI: -7.32-1.62; P = 0,21). Most parameters including ICSI/ICPI scores and voiding diary were significantly greater with the combination of HA/CS compared to mono-agents, especially CS group.

**Conclusions:** This study indicates that Intravesical approach of GAG layer replenishment could be equally valuable compared to other available agents. Hyaluronic acid without the addition of chondroitin sulphate are more similar in its efficacy with combination of both agents.

## C-133

### Rezum Water Vapor Thermal Therapy for Male Patient with Benign Prostatic Hyperplasia: Outcome From a Local Single Institution

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**Introduction:** Benign prostatic hyperplasia (BPH) is characterized by progressive increase in size of prostate gland. TURP is the common surgical treatment of choice but is not without limitations. Minimally invasive surgical therapies (MIST) provide improvement in urinary symptoms whilst reduce the risks of adverse effects associated with TURP. REZUM is a MIST procedure that ablates obstructive prostate tissue by transurethral injection of water vapor.

**Objective:** To report short-term outcomes of male patients with BPH following REZUM treatment at a single institution.

**Methods:** Data was prospectively collected on patients that received REZUM treatment at National University Hospital between August 2020 to January 2021. Patients were assessed with IPSS and IIEF questionnaires and uroflowmetry.

**Results:** 14 patients underwent REZUM therapy under GA. Mean age of patients was 58 years. Mean prostate size was 39.5 cc and mean IPP was 1.6. Significant improvement in maximum urine flow was noted at 3 months (20.4 mL/s) post-treatment compared to baseline (10.1 mL/s). IPSS improvement was noted at 3 months post-op (8.6) compared to baseline (19.4). Pre-operative IIEF score was 13.3 and post-operative score was 12.9. The first group of 5 patients had trial without catheter (TWOC) at post-op day 4 but 3 patients re-presented with urinary retention. The second group of 3 patients had trial without catheter at post-op day 7 and all had successful TWOC.

**Conclusions:** REZUM therapy improves urinary symptoms in man with BPH with significant improvement seen at 3 months post-operative, while preserving sexual function. Patients should be counselled on the need for IDC following REZUM.

## C-132

### Differentiating Urachal Abscess versus Urachal Malignancy – A Case Report and Literature Review

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**Background:** Failure of luminal obliteration of urachus and the subsequent formation of the median umbilical ligament results in an epithelialized urachal canal with a potential for various urachal anomalies including cysts, sinus tracts, diverticula and malignancies. Urachal malignancies pose a diagnostic challenge as clinical presentations vary. Urachal adenocarcinoma is a rare condition comprising 0.1-0.3% of all bladder malignancies and has a poor prognosis due to its aggressive nature. While a possible pathogenesis of urachal malignancy includes benign urachal lesions acting as nidus of infection leading to metaplasia, dysplasia and subsequently malignancy, it is paramount to differentiate benign and malignant conditions so that appropriate care is rendered. We present a case of an urachal abscess masquerading as a carcinoma.

**Case Discussion:** A 59-year-old gentleman presented with suprapubic discomfort of three days' duration. He was afebrile and urinalysis was unremarkable. Initial contrasted Computed Tomography imaging noted a 4.6cm suprapubic mass, and cystoscopic findings confirmed the presence of a mass at the bladder dome. The patient subsequently underwent an open umbilectomy, excision of urachal mass and partial cystectomy and subsequent histological studies revealed the lesion was in keeping with an abscess.

**Conclusion:** A urachal abscess can be difficult to distinguish from a urachal carcinoma on clinical presentation and imaging features. Some have recommended a biopsy or fluid aspiration for diagnosis. Surgical excision would still be recommended due to the risks of reinfection and malignant degeneration.

## C-135

### Success Rate of Ureteral Access Sheath Insertion During Primary Retrograde Intrarenal Surgery - A Retrospective Cohort Analysis

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**Objective:** Ureteral access sheath (UAS) has definite advantage during Retrograde Intrarenal Surgery (RIRS) but cannot be deployed in all cases at first instance. We retrospectively analysed the success rate of UAS insertion during primary RIRS.

**Methods:** All procedures with RIRS code performed in Singapore General Hospital in 2016 were screened. Only primary RIRS performed for renal/PUJ stones (with no prior instrumentation) were included in the final analysis. All secondary procedure and treatment/surveillance for upper tract tumors were excluded. Insertion rate and factors affecting UAS insertion were studied using Chi square and binary logistic regression analysis.

**Results:** 138 cases were screened and 73 met inclusion criteria. Mean age was 54.5 ± 13.1 years. Mean operative time was 81.4 ± 34.1 min. The success rate of UAS insertion during primary RIRS was 63% (46/73), of which 93.5% (43/46) used 11/13F UAS, 4.3% (2/46) used 10/12F and 2.2% (1/46) used 9/11F. Those who failed UAS insertion, 77.8% (21/27) were stented with 6F double-J. 22.2% (6/27) were stented with 7F double-J. Stone free rate in primary successful insertion group were 52% (24/46) while it was 44% (12/27) in the stented group with subsequent RIRS. No preoperative factors (age, gender, race, BMI, stone location, and stone number) were associated with increased rate of successful insertion of UAS in logistic regression analysis.

**Conclusions:** The success rate of UAS insertion during primary RIRS was 63% in this cohort. Our efforts to increase this rate (e.g. preoperative tamsulosin) in randomized controlled trials are awaited.

**Notes:** SingHealth IRB (Ref: 2019/2156) approved this study.

**T-43****Novel Tipless Urinary Catheter Reduces the Rates of Catheter Tip Bacterial Colonization**

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**Introduction:** Prolonged use of an indwelling urinary catheter may result in catheter-related urinary tract infections (CAUTI), bleeding, catheter cystitis, and pain. Our Tipless Urinary Catheter (TUC) with a flushing port may reduce these complications by reducing catheter blockages with an end-on drainage hole. In vitro experiments were conducted to demonstrate that TUC incorporating daily flushing, does not result in increased rates of bacteria colonization.

**Materials and Methods:** In a 37°C incubator, a bottle containing Artificial Urine Medium (AUM) was used as a reservoir at the top of a rack. TUC and Foley catheter (FC) was secured at the bottom of the rack with the balloons inflated. AUM was added to the reservoir and drained by individual catheters into respective urine bag. Uropathogenic *Escherichia coli* was inoculated into the urine bag on day 0 to simulate exposure to environmental bacteria contamination. TUC was flushed using 10ml 0.9% saline daily to simulate its use. Data from 5 biological replicates were analysed. Biofilm from the catheter tip was retrieved via vortex and sonication; bacterial cells were then collected and subjected to flow cytometry to determine bacterial colonization on day 7.

**Results:** Bench study demonstrated the upward movement of *Escherichia coli* from the urine bag into the reservoir. On day 7, TUC showed 40% lower bacterial colonization at the catheter tips compared to FC ( $p < 0.05$ ).

**Conclusions:** Our study established that TUC with daily flushing is safe with a lower rate of colonization compared to FC, possibly due to its reduced intravesical surface area

**T-67****A Preliminary Study to Predict Tumor Burden in Metastatic Prostate Cancer in Indonesia: Pre-Treatment PSA to Testosterone Ratio**

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This preliminary study aimed to assess the sensitivity and specificity of pre-treatment PSA to testosterone ratio for predicting tumor burden in metastatic prostate cancer.

The design of this study was a cross-sectional study. The data was collected in a period from 2015 to 2020. We categorized the M-category into metastatic and non-metastatic, Tumor Burden into high volume and low volume according to CHARTED study, while the cut-off value of pre-treatment PSA to testosterone ratio was determined after analyzing the data using ROC curve. The formula of pre-treatment PSA to testosterone ratio = pre-treatment serum total PSA (ng/mL) divided by pre-treatment serum total testosterone (ng/mL)

From a total of 52 patients, the ROC curve showed that pre-treatment PSA to testosterone ratio had the most superior AUC value for both M-category (0.897) and the tumor burden (0.866) with  $P < 0.001$ . We found that the cut-off value of pre-treatment PSA to testosterone ratio was  $> 20$  and  $\leq 20$ , which was significantly different with  $P < 0.001$  for both. Pre-treatment PSA to testosterone ratio value above 20 was significantly correlated with M-category ( $r = 0.595$ ) and tumor burden ( $r = 0.556$ ) with  $P < 0.001$  for both. The sensitivity and specificity were 83.8% and 81.8% for m-category and 85.3% and 71.4% for tumor burden, respectively.

Pre-treatment PSA to testosterone ratio is a promising diagnostic modality for predicting tumor burden in metastatic prostate cancer with high sensitivity and specificity.

**T-53****Hyperglycemia and NRF-2 Expression: Novel Approach of Antioxidant Therapy on Subfertile Population?**

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**Introduction:** Reactive Oxygen Species (ROS) play pivotal role in male infertility. On normal level, glucose support spermatogenesis but on high and extremely low value, it works as scavenger. Nuclear factor erythroid 2-Related factor -2 (NRF-2) is one mechanism that response on oxidant injury.

**Objective:** This study aimed to evaluate the mRNA expression of NRF-2 in hyperglycemia

**Materials and Methods:** We investigated NRF-2 expression on induced hyperglycemia whistar mice. The sample is divided into 3 groups, 2 intervention groups with Streptozotin (STZ) 40mg and 1 control group. The NRF-2 expression was examined by quantitative Real Time-Polymerase Chain Reaction. All data were collected and analyzed with spss 20.00.

**Results:** The mean NRF-2 expression is higher in hyperglycemia groups, the mean values of hyperglycemia groups 4 weeks and 8 weeks were 19,7 and 34,0. The mean NRF-2 expression in hyperglycemia group were significantly higher than control with P- value 0.008 and 0.015.

**Conclusions:** The mRNA expression of NRF-2 increases in hyperglycemia groups compared to control. This study shown mRNA expression of NRF-2 is important to spermatogenesis and may serve as a biomarker in predicting male infertility.

**T-80****Cadaver Urethroplasty – An Ideal Training Tool?**

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**Introduction and Objective:** The human cadaver will possibly remain the “gold standard” simulation tool available to teach surgical skills to trainee urologists. In this prospectively designed observational study we evaluated face, content and construct validity of cadavers as a simulation tool for buccal mucosa urethroplasty (BMGU).

**Materials and Methods:** 18 trainees and 7 experts who performed BMGU on cadavers reported their observations on a special form, rating their overall experience (face validity). The participants then rated sub-parameters in comparison to live patients to validate content of the study. Construct validity was assessed and the mean scores of trainees and experts were compared. Pearson correlation coefficient and Cronbach alpha were used to check inter-parametric correlations and every variable's reliability.

**Results:** The mean overall rating (Likert scale) for BMGU on cadavers for trainees and experts was 4.11 +/- 0.47 and 4.14 +/- 0.69 ( $p = 0.49$ ) respectively affirming face validity. The content validity was rated by trainees as 3.75 +/- 0.46 and by experts as 3.87 +/- 0.40 ( $p = 0.46$ ). The construct validity was rated by trainees as 3.95 +/- 0.48 and by experts as 3.88 +/- 0.25 ( $p = 0.9$ ). Co-relation existed between BMGU steps with graft quality ( $r = 0.576$ ) and cadaveric skin/penis/perineum parameters ( $r = 0.482$ ) ( $p = 0.015$ , 0.003 respectively). The questionnaire reliability for trainees was 0.819 and for experts was 0.845 with significant intra-class correlation of 0.815 ( $p < .0001$ ).

**Conclusions:** With the proven validity, trainee urologists could refine and establish their technique practicing buccal mucosa graft urethroplasty on cadavers.

## T-104

### Comparing Rule-based and Machine Learning Methods to Automate Urology Cancer Registry Data Collection from Unstructured Data

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**Introduction:** In 2017, the Singapore General Hospital Urology Cancer Registry (UroCaRe) transitioned to a semi-automated system to retrieve data from Electronic Health Intelligence System resulting in improved efficiency, data security and quality (Huang et al, 2018). Building on this, UroCaRe team aimed to further automate the process from unstructured data in reports by applying rule-based and machine learning (ML) methods.

**Methods:** Rule-based and ML approaches (Support Vector Machine and Bert/BioBert) were applied to 250 histopathology reports with 17 annotated variables. Data were distributed based on past trend of renal cell, prostate, urothelial, penile and testicular cancer cases. Rule-based were compared against ML for accuracy using K-fold cross-validation with minimum accuracy of 95% in line with UroCaRe manual data collection standards.

**Results:** Accuracy rate of 73-99% were achieved, 6 variables such as Primary site and margin status achieved > 95% accuracy. In this group, rule-based outperforms ML in five variables. Eleven variables did not reach minimum accuracy of 95%, pathological T being the lowest.

**Discussion:** Applying both methods to automate data collection results in manpower savings of estimated 6 min/report with overall accuracy of 88%. Results show rule-based consistently outperforms ML, while ML performs better in variables with higher variabilities. Algorithm modification could optimize variables with lower accuracy. Larger annotated dataset could improve accuracy, while recognizing there is variability among different cancer types. Our algorithm shows potential in other application, such as radiological and operating theatre reports.

**Conclusions:** Both approaches show preliminary success in automated data collection, with rule-based being the promising approach.

## T-127

### Are We Closer to De-mystifying the Mechanism of Ureteral Dilatation With Pre-stenting?

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**Introduction:** Ureteral stents are an integrate part of any Urological practice. Pre-stenting of the ureter causes passive ureteric dilatation and better access to the urinary system during subsequent procedures. The placement of a stent disrupts the physiological ureteral peristalsis which in turns leads to ureteral dilatation. However, the pathophysiology of ureteral stenting disrupting peristalsis is not known. In this study, we aim to investigate the possible molecular pathway involved in the process.

**Methods:** Tissue samples were obtained from 4 porcine models; 2 were stented unilaterally for 3 days and 2 were stented unilaterally for 5 days. The ureters were harvested, RNA extracted and subjected to RNA sequencing analysis. The differential gene expression was then correlated to the stented/non-stented ureters macroscopically and radiologically.

**Results:** Radiological results demonstrated that dilatation occurred in all stented ureter ( $p = 0.016$ ). RNA sequencing analysis showed that there are significant differential gene expression between stented and non-stented ureters. Pathways with molecules associated with survival and proliferation appear be the top canonical pathways responsible for ureteral dilatation

**Conclusions:** Ureteral stenting invariably leads to ureteral dilation. This appears to be a result of an increase in gene expression of molecules associated with cell survival and proliferation.

## T-123

### Basal Tumour Subtype was Associated with Poor Clinical Responses to Neoadjuvant Apalutamide Prior to Prostatectomy in Intermediate- to High-risk Localised Prostate Cancer

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Our Phase II clinical trial (NCT03124433) using neoadjuvant apalutamide 3 months prior to radical prostatectomy in patients with intermediate- to high-risk localised prostate cancer demonstrated a favourable clinical outcome. Twenty-one patients (84%) achieved a pathological response rate by means of tumour volume reduction. In addition, 21 patients (84%) achieved a biochemical response with nadir PSA at the end of the study. Here, we are reporting the results of the androgen receptor (AR) signalling and molecular landscape in these patients.

Tumours were retrieved from prostatectomy specimens using laser capture microdissection (LCM) technology. RNA expression in tumours prior to apalutamide treatment (prostate core needle biopsy specimens) and post-apalutamide treatment (LCM tumours from prostatectomy specimens) were analysed using reverse-transcription polymerase chain reaction (RT-PCR). Sequencing and data analysis were conducted using a conventional sequencer and RNA module.

There were no significant mutational differences in the gene expression between responders ( $n = 15$ ) and non-responders ( $n = 6$ ). However, a significant correlation between downregulation of TP53 and AR signalling pathways was observed. Amongst other AR-related genes in responders and non-responders, we observed an overexpression of FKBP5 in non-responders, which may corresponds to early resistance to apalutamide. Furthermore, we identified the PAM50 signatures into different subtypes in which luminal B subtypes were associated with a more favourable response, whereas basal tumours were linked to adverse tissue outcomes and poorer biochemical response rates.

In conclusion, our data suggest that the molecular landscape in localised prostate cancer may help us to develop diagnostic tools to predict clinical response in personalised medicine.

## V-6

### A Safe Haven: Bipolar En Bloc Resection of Bladder Tumor

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**Introduction:** Transurethral resection of bladder tumor is the standard approach to the diagnosis and treatment of bladder tumors. Adequacy of tissue specimen is important to eliminate error in staging and therefore establishing accurate depth and grade. Throughout the years, alternative resection techniques have been introduced in order to provide quality histopathologic specimen and better safety profile for patients especially those with associated comorbidities. The advantage of bipolar en bloc resection consist of an accurate resection, intact specimen with defined and preserved base favorable to the pathologist for examination and less bleeding. In this video, we demonstrate the step-by-step detail of bipolar en bloc resection of a non-muscle invasive bladder tumor.

**Methods:** A 74-year-old female consulted with history of gross hematuria with clot formation. Contrast enhanced CT scan of the abdomen showed a 2.4 cm mass at left posterior bladder wall. Bilateral kidneys were normal with no enlarged pelvic lymph nodes. She was then advised surgery and underwent bipolar en bloc resection of bladder tumor. We used an Olympus bipolar electrocautery with settings as follows: cutting - 100W and coagulation - 80W.

**Results:** The total operative time was 25 minutes with minimal blood loss. No intraoperative nor postoperative complications were noted. The patient was discharged on the second post-operative day. Upon follow-up, histopathology revealed low grade urothelial carcinoma with no muscle invasion.

**Conclusions:** Bipolar en bloc resection of bladder tumor (ERBT) remains a promising approach with a number of features that addressed the inherent limitations of transurethral resection of bladder tumor.

## V-30

### Modified Supine Hand Assisted Laparoscopic (HAL) Bilateral Nephrectomy for Autosomal Dominant Polycystic Kidney Disease (ADPKD): A Step by Step Technique

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Autosomal Dominant Polycystic Kidney Disease (ADPKD) is a genetic disorder characterized by development of multiple renal cysts. Significantly enlarged cysts can encroach on anatomical space required for future renal transplantation and frequently cause recurrent infective and haematuria episodes throughout the patient's lifetime. We aim to describe our surgical technique of supine hand assisted laparoscopic (HAL) bilateral nephrectomy for autosomal dominant polycystic kidney disease (ADPKD). Advantages of this approach include shorter operative times and a small midline wound (in comparison to large ADPKD kidneys) which enables quick recovery with minimal post-operative pain and excellent cosmesis. We performed a retrospective review of 11 patients who underwent HAL bilateral nephrectomy for ADPKD by a single surgeon at our centre between May 2016 and October 2020. Clinical data was collected from our clinical records database. Intraoperative variables, postoperative complications and outcomes were assessed. Descriptive statistical analysis was performed. Mean operative time was 260 mins (s = 71 mins). Mean length of stay was 4.5 days (s = 1.65 days) with a mean blood loss of 135 millilitres (s = 94 mls). Mean VAS analogue score on post-operative day 1 (POD) was 2.9 (s = 1.5). Mean length of stay was 4.4 days (s = 1.6 days). The mean combined weight on histology was 3104 g (s = 995 g). There were no open conversions, no vascular or bowel injuries, with no grade 3 and above modified Clavien-Dindo classification complications. In conclusion, HAL bilateral nephrectomy for ADPKD is a safe and feasible technique which provides good postoperative outcomes with limited risk of complications while ensuring cosmetic satisfaction.

## V-39

### Key Steps in Evaluation and Treatment Planning for Successful Prostate Focal Cryotherapy

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**Objective:** To highlight the key steps in the evaluation and treatment planning for successful Prostate Focal Cryotherapy (FCT).

**Materials and Methods:** We described a case of intermediate-risk prostate cancer (PCa) from a Phase II trial that evaluated FCT in 30 patients with localised PCa. The key steps are as followed: (i) Comprehensive targeted and systematic saturation biopsy to accurately identify all tumour foci. (ii) Precise insertion of Cryo probes with real-time correlation with MRI-TRUS biopsy maps. (iii) Protective measures with (a) placement of temperature probes (b) cystoscopy to ensure no urethral injury and (c) insertion of urethral warming catheter. (iv) Ensure adequate cryoablation with 2 freeze-thaw cycles. The study evaluated the functional outcomes, determined by validated EPIC questionnaires, and oncological outcomes, determined by mandatory repeat MRI prostate with biopsy at 12 months post-treatment.

**Results:** The trial recruited predominantly intermediate (83.3%) and high-risk (10.0%) PCa. Complementary targeted and saturation biopsy altered the cryotherapy treatment plans in 18 (60%) patients, with upstage of index lesion in 2 patients (6.7%) and identification of additional tumour foci in 14 (46.7%) patients. Free-hand technique allows better ablation in anatomically challenging areas. No major complication was reported. All patients maintained satisfactory functional outcomes post-treatment. The median PSA decreased from 7.1ng/ml preoperatively to 1.7 ng/ml at 6 months post-treatment. 10 patients had undergone the mandatory repeat MRI prostate and biopsy, with only one patient (10%) demonstrating clinically significant infield recurrence.

**Conclusions:** By conforming to the abovementioned steps, FCT can achieve good oncological and functional outcomes in well-selected patients.

## V-31

### Augmented Anastomotic Bulbar Urethroplasty

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**Introduction:** Urethral stricture disease is the narrowing of urethra from scar tissue which can be multifactorial and difficult to manage. Treatment options includes endoscopic or open surgical techniques. In cases of complete obliteration of the bulbar urethra, excision of the disease segment is necessary. Primary anastomosis can sometimes be difficult due to extension of spongiofibrosis proximal and distal to the site of obliteration. In this video, we present a case of a 27 years old male who underwent augmented anastomotic urethroplasty for an obliterative bulbar urethral stricture.

**Materials and Methods:** The patient presented acutely to Urology for acute urinary retention requiring suprapubic catheter insertion. Flexible cystoscopy and combined ascending and descending urethrogram demonstrated a 0.7 cm short segment obliterative proximal bulbar urethral stricture. Intraoperatively, a more extensive stricture which included a 1.5 cm completely obliterated bulbar urethra with a further 1 cm spongiofibrotic segment extending proximally up to the bulbomembranous junction was identified. Hence an augmented anastomotic urethroplasty was performed using buccal mucosal graft.

**Results:** A urethrogram performed 3 weeks post operatively demonstrated no anastomotic leak. Patient has been able to void smoothly, with his uroflowmetry at 3 months post operation demonstrating good flow (Qmax 26.6 mls/s, Voided volume 276 mls, Residual volume 0 mls). Spraying of urine was present but not bothersome, and he did not experience terminal dribbling, diminished ejaculation, or erectile dysfunction.

**Conclusions:** Augmented anastomotic urethroplasty using buccal mucosal graft should be in the armamentarium of the reconstructive urologist who may encounter obliterative bulbar urethral segments that are longer than expected.

## V-45

### Bipolar Enbloc Resection of Bladder Tumour, Challenges With this Surgical Technique

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**Introduction:** Transurethral resection of bladder tumour (TURBT) is important for treatment, staging and prognostication of bladder cancer. Conventional TURBT comprises piecemeal resection of the lesion, followed by separate resection of tumour base. Enbloc TURBT is a technique where the tumour is resected as a whole. It is associated with better pathological assessment of tumour stage and grade 1, and has reasonable perioperative and short term oncological outcomes 2. This video demonstrates the challenges of enbloc resection of bladder tumours.

**Methods:** Between July 2019 to March 2021, 18 patients with 27 bladder tumours, underwent enbloc resection of bladder tumour by 2 surgeons. Clinical variables of demographics, tumour size and grade, pathological stage, and perioperative outcomes were analysed.

**Results:** Median age was 74 years (range 50-87), and comprised 10 male patients (56%). Median size of bladder tumours was 2 cm (range 0.5-5 cm), and mostly located at the lateral wall (n = 18). Most tumours were pTa (82%). Four tumours were T1 high grade (15%) and 1 was T2 high grade (3%). Three patients with prior TURBT underwent enbloc resection. Detrusor muscle was consistently present in the resected specimens after a learning curve of 4 patients. No intraoperative bladder perforations occurred. 15 (83%) patients received intravesical mitomycin C within 24hrs of surgery, and all had their urinary catheters removed by postoperative day 1.

**Conclusions:** Enbloc TURBT is safe, reproducible and enhances accurate histological staging. It is applicable in both primary and repeated resections. In larger tumours, it facilitates early identification of feeding blood vessels and enhances surgical haemostasis.

**V-58****En Bloc Resection of Bladder Tumour Using Plasma Vaporisation Electrodes**

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Majority of bladder cancers are non-muscle invasive bladder cancer (NMIBC) with the disease limited to the mucosa or submucosa. Transurethral resection of bladder tumour (TURBT) is widely used for the treatment of NMIBC. However, this technique has disadvantages such as thermal damage to surrounding tissues and fragmentary resection of tumour, risks of recurrence and difficulties in attaining accurate pathological evaluation of the tumour stage. To mitigate these disadvantages, several en bloc resection techniques have been developed.

En bloc resection enables intact tissue samples to be sent for accurate pathological assessment, reduces the risk of scattering malignant cells and bleeding. The usage of plasma vaporisation electrode for bladder tumour resection (PVE-BT) has been introduced in the literature as a viable alternative to TURBT. A study by Zhang et al. suggested that PVE-BT has several advantages compared to standard TURBT, such as reduced risk of obturator nerve reflex, bladder wall perforation and bleeding. Herein, we describe a case of PVE-BT. The bladder tumour was first identified and circumferential scoring was performed around the edges of the tumour. The resection progressed towards the deep muscle layer, using a combination of coagulation current with the blunt dissection of the plasma vaporisation electrode. The target tumour tissue was resected en bloc with minimal bleeding. Re-look cystoscopy showed good healing with no obvious bladder tumour recurrence. This case serves to highlight PVE-BT as a viable alternative technique to the standard TURBT with good efficacy and haemostasis, with the potential of reduced morbidity and faster postoperative recovery.

**V-74****Retroperitoneoscopic Adrenalectomy for a Right Adrenal Mass**

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We herein present a 23-year-old male who presented with hypertension, elevated metanephrines, and elevated plasma renin activity. Contrast CT showed a 5.9 cm right adrenal mass. After alpha and beta blockade, we performed retroperitoneoscopic adrenalectomy. Open Hasson technique and balloon dilatation was done for access. We placed three ports. We placed one 10-millimeter port 2 centimeters above the iliac crest at the midaxillary line. Another 5-millimeter port was placed at the tip of the 12th rib. These two ports were for the hand instruments. A third 10-millimeter port was placed 5 centimeters inferior to the costovertebral angle, for the laparoscope. We then proceeded to incise and dissect the Gerota's fascia to mobilize the upper pole of the kidney from the adrenal gland. We continued the dissection until the right adrenal vein and artery are seen. We used Hemo-lok clips to control these vessels and other smaller arteries and veins entering the adrenal gland. After ensuring vascular control we dissected the adrenal gland circumferentially to free its remaining attachments. Once we freed the specimen of its attachments, we carried out the extraction using a makeshift bag similar to an Endo-catch, introduced through the primary port. We entrapped and extracted the specimen intact. After ensuring hemostasis, we removed the ports under laparoscopic monitoring and closed the port sites primarily. Retroperitoneoscopic adrenalectomy is an excellent tool in a urologist's arsenal in the management of adrenal tumors, and can be performed in a country with limited resources.

**V-68****Robotic Magnetic Resonance Imaging-ultrasound Fusion Transperineal Targeted Biopsy**

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**Background:** To date, only one robotic stereotactic transperineal prostate biopsy platform has been described.

**Objective:** To demonstrate how we perform robot-assisted magnetic resonance imaging-ultrasound fusion transperineal targeted prostate biopsy.

**Methods:** Men with suspicion of prostate cancer underwent 3-Tesla multi-parametric MRI and were assigned a Prostate Imaging Reporting and Data System v2 score (PI-RADS). The prostate outline and suspicious lesions were marked by our radiologist using our software to produce a 3-dimensional prostate MRI model. All biopsies were performed under general anaesthesia and the real-time transrectal ultrasound model is fused with the MRI model. Transperineal targeted and systematic biopsies were then performed under stereotactic guidance using our robot-assisted prostate biopsy platform. Our clinically significant prostate cancer (Grade group  $\geq 2$ ) detection rates were previously described [2].

**Results:** Out of the 433 patients who underwent targeted and systematic biopsy, clinically-significant cancer detection rate was 46% (85% for PI-RADS 5 vs. 38% for PI-RADS 4 vs. 16% for PI-RADS 3;  $p < 0.001$ ). Our overall complication rate was 13%. Acute urinary retention (10%) and significant gross haematuria requiring bladder irrigation (2%) were the two most common complications. A higher prostate volume was associated with greater odds of urinary retention (OR 1.4, 95% CI: 1.21-1.65,  $p < 0.001$  for every 10 ml increase in prostate volume). There was only 1 reported case of mild urinary tract infection.

**Conclusions:** Robot-assisted transperineal prostate biopsy has established itself as a reliable method of prostate cancer detection with minimal morbidity.

**V-78****Buccal Mucosal Graft Urethroplasty for Treatment of Urethral Fistula Associated With Bulbar Urethral Stricture**

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**Introduction:** Urethral strictures can be difficult to manage, and endoscopic treatment are associated with high recurrence rates. Substitution urethroplasty using buccal mucosa graft (BMG) has become the standard of care in the management of a variety of urethral strictures not amenable to endoscopic treatment. In this video, we discuss a 53 year old male who presents with periurethral abscess secondary to a bulbar urethral fistula and stricture.

**Methods:** The above patient has been followed up with the KTPH Urology department since 2013 for recurrent perineal abscesses, requiring multiple incision and drainages. He underwent successive cystoscopies with dilatation, with the latest cystoscopy showing a distal bulbar urethral stricture with a fistulous tract proximal to it, confirmed on ascending urethrogram. He subsequently defaulted follow ups, later presenting with another perineal abscess after 3 month. During this admission, he underwent a drainage of the abscess. His wound cavity demonstrated good healing with granulation tissue, and underwent an excision of urethrocutaneous fistula and dorsal only BMG substitution urethroplasty 5 days after.

**Results:** Post operatively, he remained disease-free with no recurrence of abscess or stricture. Urethrogram performed 3 weeks post operatively demonstrated no anastomotic leak. Follow up uroflow demonstrated good flow (QMax 14.7 mls/s, Voided volume 228.3 mls, RV 34 mls) and denies any significant post-urethroplasty complications such as spraying, terminal dribbling, or erectile dysfunction 1 year after.

**Conclusions:** BMG urethroplasty may be considered in the acute phase post infection for a select group of patients that demonstrates good wound healing with adequate granulation tissue

**V-79****Retrocaval Ureter: A Case Report**Jonathan Kit <sup>(1)</sup>, Jeffrey Leow <sup>(1)</sup>, Daniel Yong <sup>(1)</sup>, Yew Lam Chong <sup>(1)</sup>  
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Retrocaval ureter is an uncommon congenital abnormality where the ureter passes posterior to the inferior vena cava. This is due to abnormal embryologic development of the right supracardinal system where there is abnormal persistence of the right subcardinal vein which passes anterior to the ureter, often resulting in ureteric compression. Patients are often asymptomatic but can present with flank discomfort, hematuria, renal stones, renal impairment and/or recurrent urinary tract infections. We present a case of retrocaval ureter and review the relevant literature. Our patient is a 34 year old lady whose right retrocaval ureter was first picked up as an incidental finding on a contrasted Computed Tomography (CT) scan, which was performed as part of an evaluation for abdominal pain. This was followed up with a right retrograde pyelogram with CT fluoroscopic reconstruction, confirming the presence of a right retrocaval ureter at the level of the fourth lumbar vertebra with right hydronephrosis. With the intention of preserving long term renal function, our patient underwent a robotic assisted transposition of the right ureter, excision of the retrocaval segment and construction of a ureteroureterostomy over a ureteric stent which was later removed. We conclude that retrocaval ureter is a rare congenital disorder which is likely under-reported due to patients usually being asymptomatic. Surgical intervention serves to alleviate symptoms and to preserve existing renal function by correcting the source of obstruction.

**V-93****Renal Endometriosis: A Rare Disease Treatable by Laser Ablation.**Vipatsorn Shutchaidat <sup>(1)</sup>, Jin Yong <sup>(1)</sup>, Kae Jack Tay <sup>(1)</sup>, Henry SS Ho <sup>(1)</sup>  
<sup>(1)</sup> Singapore General Hospital

**Background:** Endometriosis is a common benign gynaecological disorder characterized by the abnormal presence of endometrial tissue outside of the uterus. Although uncommon, endometriosis may involve the urinary tract and kidneys. Renal endometriosis (RE) is an extremely rare entity and only 16 cases have been reported in the literature. Patients often present incidentally but can also present with cyclical haematuria. To our knowledge, this is the first video-case report of a case of RE and its treatment by a minimally invasive surgical technique. We also aim to discuss the pathophysiology, and treatment options for RE.

**Case Presentation:** A 37-year-old woman with background history of chronic glomerulonephritis presented to us with microscopic haematuria. Initial ultrasound revealed an echogenic focus with enhancement in the renal pelvis, suggestive of a urothelial lesion. CT Urography showed a well-defined 1.9 cm mass arising from the upper pole calyx. The patient underwent ureteroscopy and biopsy of the lesion. Histology revealed a müllerian lesion, in keeping with RE. She subsequently underwent Homium high-powered laser ablation with a flexible ureteroscope. The total ablation time was 11 minutes. There were no postoperative complications and the patient was discharged on same day. The lesion did not recur on follow-up imaging 6 months later.

**Conclusions:** This case highlights how RE could mimic a malignant urothelial lesion and highlights the importance of histological examination prior to extirpative surgery. Minimally invasive ablation is a safe and viable option for benign renal masses, and may avoid the need for surgical resection.

**V-83****Laparoscopic Insertion and Adjustment of Peritoneal Dialysis Catheter - Review of a Single Institution Experience and Outcomes**Edward Pang <sup>(1)</sup>, Jeffrey Leow <sup>(1)</sup>, Mun Yee Lee <sup>(1)</sup>  
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**Objective:** There has been an increasing use of peritoneal dialysis (PD) as the primary mode of renal replacement therapy. With it, it has become more common to encounter malfunctioning PD catheter. This video aims to review our institution techniques and outcomes.

**Methods:** Our PD adjustment technique aims to address a patient's malfunctioning PD catheter and prevent subsequent malfunction. Diagnostic laparoscopy is performed. Using 2 working 5-mm ports, we (a) remove any omental wrapping around the PD catheter, (b) clear any intraluminal blockages to ensure patency, (c) perform omentopexy with hemo-loc clips to avoid future omental wrapping, and (d) suture fixation of the PD catheter to prevent catheter migration.

We performed a retrospective review of all laparoscopic adjustment and insertion of PD catheters between 2008 and 2019. Peri-operative outcomes (operative time and length of stay) and PD catheter survival were evaluated.

**Results:** A total of 76 laparoscopic cases were identified: 26 (34.2%) were insertions, and 50 (65.8%) were adjustments. Mean length of stays was 1.57 days ( $\pm$  1.27). Median operative time was 96.5 minutes (inter-quartile range [IQR] 76-113.5). With a median follow-up period of 464 days, (IQR 235-763), the 1-month and 3-month PD catheter survival rates were 97.4% (n = 74) and 84.2% (n = 64) respectively. Overall, the median PD catheter survival duration was 344.5 days (IQR 160.5 to 671.5).

**Conclusions:** Laparoscopic adjustment and insertion of peritoneal dialysis catheters had good short- and long-term functional outcomes with low peri-operative morbidity. It is an excellent option to improve patients' quality of life by delaying or avoiding the use of haemodialysis.

**V-121****Robotic-assisted Laparoscopic Non-dismembered Side-to-side Tapered Neoureterocystostomy – a Novel Technique for Maximal Ureteric Vascular Preservation**KitMun Chow <sup>(1)</sup>, Kenneth Chen <sup>(1)</sup>, John Yuen <sup>(1)</sup>  
<sup>(1)</sup> Singapore General Hospital

**Introduction:** Reconstructive techniques for ureteric diseases can compromise vasculature in an already altered anatomy. We present a novel technique of managing an obstructed megaureter that preserves ureteric vasculature maximally while also achieving adequate drainage.

**Materials and Methods:** Our 57 year-old patient has a history of untreated congenital left megaureter and presented with progressive left flank pain. Pre-operatively, Mag3 renogram revealed obstruction in the dilated left upper tract but preservation of left kidney function (49%). Pre-op retrograde pyelogram showed a short segment VUJ stricture. A five-port configuration triangulating to the left pelvis was used. The dilated ureter was first identified over the iliac vessels and traced distally to the stricture which was left intact. Dissection was limited to the anterior aspect of the ureter, preserving the posterior adventitia and the blood supply within. A side-to-side anastomosis between the anterior ureteric wall proximal to the strictured segment and the left lateral bladder wall was performed over a stent. Tapering of the dilated ureter is achieved via excision of the redundant anterior wall, leaving the posterior-lateral half intact.

**Results:** Operative time was 3 hours with minimal blood loss. The patient was discharged uneventful on day 2 and urinary catheter was removed on day 7. Retrograde pyelogram and ureteroscopy at 6 weeks confirmed patency of the neoureterocystostomy and tapered ureter, with marked improvement of pelvicalyceal dilatation.

**Conclusions:** Robotic-assisted laparoscopic non-dismembered side-to-side tapered neoureterocystostomy for megaureter is a feasible and safe option and adheres to the principle of maximal vascular preservation of the ureter.

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## V-134

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### **Video Urology: Bipolar Enucleation of the Prostate (BipoleP) Without the Use of a Morcellator**

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Transurethral resection of the prostate has been the incumbent standard for the management of obstructed voiding due to benign prostate enlargement. New techniques have surfaced serving as alternatives to TURP such as bipolar enucleation of the prostate which permits enucleation of the hyperplastic adenoma, achieving superior surgical control and less risk of perioperative bleeding. However, the approach's steep learning curve and technical difficulties have limited its practice. This video describes in detail the technique used to perform the procedure in the absence of a morcellator - where enucleated lobes were resected in situ and evacuated.

An 82-year-old male, diagnosed with benign prostatic enlargement sought consult due to failed medical management of his lower urinary tract symptoms. Patient had urinary retention and failed trial of voiding without catheter twice. He had a PSA value of 2.4 ng/mL with prostate size of 50 grams on digital rectal exam and 65 grams on ultrasound.

Total operative time was 42 minutes with minimal blood loss. Weight of resected prostate tissue was 52 grams. No intraoperative or postoperative complications were reported. Continuous bladder irrigation was done until the second postoperative day and foley catheter was removed 72 hours post procedure with no episodes of incontinence reported. Length of hospital stay was 5 days with noted improvement of symptoms.

Bipolar enucleation of the prostate is a safe and feasible substitute for the surgical treatment of benign prostatic hyperplasia. Obstructive symptoms are relieved almost immediately with superior perioperative hemostasis, less bleeding complications postoperatively and minimal hospital stay.