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Editor-in-Chief
Leonard G. Gomella

INTRODUCTION

WELCOME MESSAGE

Welcome to UROFAIR 2025: Harnessing Innovation and Artificial Intelligence for Improved Outcomes! It is my great honor to extend a warm greeting to each of you as we gather for this pivotal event in the field of urology.

This year, we are focusing on the transformative potential of innovation and artificial intelligence in enhancing patient outcomes. As we stand on the brink of a new era in healthcare, the intersection of technology and urology offers us unprecedented opportunities to improve diagnostics, treatment, and patient care.

Throughout the conference, you will encounter inspiring keynote speakers, engaging panel discussions, and hands-on workshops that will delve into cutting-edge research and practical applications. I encourage you to immerse yourselves in these sessions, share your insights, and collaborate with one another.

Your participation reflects a shared commitment to advancing our field and enhancing the quality of life for our patients. Together, we can leverage these innovations to pave the way for a brighter future in urology.

Thank you for being here, and let's make UROFAIR 2025 an inspiring and impactful experience!

Dr. Daniel Yong
UROFAIR 2025 Chairman

FOREWORD

For UROFAIR 2025, we received many excellent abstract submissions that contribute to our vibrant scientific content. We had 3 independent Reviewers, each from one of the 3 healthcare clusters in Singapore (National Healthcare Group, National University Health System, Singhealth), who were blinded to Authors of the Abstract.

The Oral and Poster submissions were scored based on (**a**) Level of Evidence (randomized control trials [RCTs] or meta-analysis of RCTs; prospective cohort studies or meta-analysis of prospective cohort studies; retrospective cohort studies or meta-analysis of retrospective studies; case series or case reports); (**b**) clinical relevance of the research question; (**c**) statistical methodology; (**d**) clear presentation of the study's findings using appropriate text, and an accurate figure or table; (**e**) how well the abstract aligns with UROFAIR 2025's theme of "Harnessing Innovation and Artificial Intelligence for Improved Outcomes"?; (**f**) overall abstract style and clarity in communicating research ideas and findings. This year we also prioritised projects which Similarly, video presentations were graded based on (**a**) the quality of production in terms of the video quality, animations, slides and adjuncts; (**b**) level of evidence showcased in the video presentation—as per criteria (a) for oral and poster; (**c**) effective demonstration of the surgical technique; (**d**) clinical applicability and how the surgical technique impacts current clinical practice; (**e**) innovation—how well does this abstract align with UROFAIR 2025's theme of "Harnessing Innovation and Artificial Intelligence for Improved Outcomes"?; (**f**) validity—how well the video highlights the surgical technique or the innovation's strengths and limitations; (**g**) overall engagement on the viewer in providing an enjoyable and informative video.

Based on these, we are happy to have collaborated with our partner Journal this year—*Canadian Journal of Urology*—to publish selected abstracts. The top abstracts will be presented on site at UROFAIR 2025 and prizes awarded. We thank all Authors for their hard work and contribution to the scientific rigour of what will promise to be a fruitful UROFAIR 2025.

Dr. Jeffrey J Leow and Dr. Tan Yu Guang
Abstract Committee, UROFAIR 2025

Oral

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Topics: *General Urology*

Efficacy and Safety of Mirabegron and Tamsulosin Combination Therapy Compared to Tamsulosin Monotherapy for Lower Urinary Tract Symptoms Due to Benign Prostatic Hyperplasia: Results of a Multicenter, Randomized, Double-Blind, Phase III Clinical Trial

Sung Chul Kam

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ABSTRACT: Introduction: This study aimed to evaluate the efficacy and safety of mirabegron and tamsulosin combination therapy compared to tamsulosin monotherapy in BPH patients with LUTS. **Methods:** This phase 3, randomized, double-blind, placebo-controlled clinical trial evaluated the efficacy and safety of mirabegron/tamsulosin combination therapy versus tamsulosin monotherapy in men with LUTS. The trial, conducted across 25 centers from July 2021 to October 2023. Eligible participants were randomly assigned to either the combination or monotherapy group for 12 weeks. Primary efficacy endpoints included changes in TUFS and IPSS scores, with secondary endpoints evaluating various urinary symptoms and changes in PVR, Qmax, and QoL scores. Safety assessments included adverse events, PVR, Qmax, vital signs, ECG, and laboratory tests. **Results:** 795 participants were randomized to Monotherapy (397) and Combination therapy (398) groups. After 12 weeks, 342 in the Monotherapy and 339 in the Combination therapy group completed the study, with no significant baseline differences. The Combination therapy group showed a greater improvement in TUFS (−11.28) and IPSS (−10.85) scores compared to Monotherapy (−8.30 and −9.85, respectively) with significant differences ($p < 0.0001$, $p = 0.0325$). Combination therapy showed significant improvements in storage symptoms and micturition diary variables, including daytime frequency, urgency, and incontinence, compared to Monotherapy. The incidence of TEAEs was similar between the groups (13.16% vs. 16.71%, $p = 0.1943$), with no serious drug-related adverse events, confirming an acceptable safety profile for Combination therapy. **Conclusion:** Mirabegron and tamsulosin combination therapy significantly improved TUFS and IPSS scores compared to tamsulosin monotherapy. This treatment reduced side effects of existing OAB therapies, and future fixed-dose combinations could improve adherence and quality of life.

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Topics: *Uro-oncology*

Role of Multimodal Prehabilitation Program as A Preoperative Optimization Strategy in Patients Undergoing Open Radical Cystectomy: A Prospective Randomized Study

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ABSTRACT: Introduction: Multimodal prehabilitation has emerged as a promising strategy to optimize patient outcomes after major surgeries like Radical Cystectomy. Cardio Pulmonary Exercise Testing (CPET) is a novel technique for objectively assessing physical endurance preoperatively. CPET is a reliable and safe tool to assess cardiopulmonary reserves preoperatively which are better correlating with the post-operative outcomes. This study aimed to evaluate the effectiveness of a multimodal prehabilitation program in improving functional capacity, assessed using CPET, and to analyze its impact on complications at discharge, hospital stay, and readmissions in Radical Cystectomy patients. **Methods:** A prospective, randomized controlled study was conducted in the Indian subcontinent from January 2023 to December 2024. Sixty patients undergoing open RC were randomized into study and control arms (30 in each). **Results:** Mean age is 63.5 years, baseline V02 levels by CPET is 11.7 (10.65–12.4), improved to 12.58 after at least 4 weeks of prehabilitation program, Patients in the study arm demonstrated better outcomes, including improved quality of life, mental well being 70% vs. 13.3 %, reduced major complications 3.3% vs. 23.3%, shorter hospital stays 8.2 vs. 9.5 days, and no change in re-admission rates. Notably, patients with a CPET-measured VO2 at anaerobic threshold (AT) ≥ 11.0 showed significant improvements in recovery and quality of life. **Conclusion:** Multimodal prehabilitation is a feasible and effective strategy for optimizing outcomes in high-risk MIBC patients undergoing RC. CPET, particularly with VO2 at above 11.0, serves as a valuable predictor of better postoperative recovery, reduced complications, and improved quality of life.

Oral

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Topics: *Endourology and Stone Diseases*

Propensity Score Matching of Suction vs. Non Suction Mini Percutaneous Nephrolithotomy (PCNL) 30 Day Outcomes from A Real World Multicentre Prospective Study. An European Association of Urology (EAU) Endourology and Asian Urological Society of Endoluminal Surgery and Technology (AUSET) Collaboration

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ABSTRACT: Introduction: Mini percutaneous nephrolithotomy (mPCNL) has equivalent stone free rates (SFR) compared with standard PCNL. The latest EAU guidelines suggest that there is evidence for using suction as a complementary tool. We report 30 day perioperative outcomes between suction (smPCNL) and non-suction mPCNL. **Methods:** This was a prospective, multicentre, investigator-initiated study by 20 surgeons from 14 countries who performed both smPCNL and non-suction mPCNL from January to December 2024. The primary outcome was to assess complete stone free status (Grade A) on 30-day CT scan. Optimal propensity score matching (PSM) covariate was achieved when ASMD < 0.1 at caliper width of 0.004. R-software was used for statistical analysis. **Results:** 1915 patients were included for analysis. After PSM, there were 664 in the suction group and 309 patients in the non-suction group. Baseline characteristics and stone characteristics were well matched. Regarding 30-day stone-free status, there was no statistical difference between the groups (p = 0.471), with high Grade A stone-free status in both groups (85% for smPCNL, 87% for non-suction mPCNL [OR 0.9 (CI:0.59–1.37), p = 0.637). SmPCNL had a shorter operative time (p < 0.001), better intraoperative assessment of SFR determined by visual inspection or fluoroscopy (p < 0.001), lower blood transfusion rates (p = 0.044), with no difference in infectious complications. On multivariate analysis (100% SFR), combination fluoroscopy and ultrasound-guided puncture was advantageous. Larger stone volumes and sheath sizes <20fr can increase residual fragments. **Conclusion:** Adding suction to mPCNL improves intraoperative stone clearance rates, reduces operative time. but has no effect on overall 30 day stone-free status. Mini-PCNL can safely achieve zero residual fragments with and without suction in most cases.

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Topics: *Uro-oncology*

A Head-to-Head Comparison of Micro-Ultrasound Guided Cognitive Prostate Biopsy and Conventional Robotic Assisted MRI-Fusion Prostate Biopsy in An Asian Setting

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ABSTRACT: Introduction: Micro-ultrasound is a novel high-resolution ultrasound technology, allowing cognitive-fusion transperineal prostate biopsy. Micro-ultrasound guided prostate biopsy (MUB) has emerged as a non-inferior alternative to magnetic resonance imaging (MRI)-targeted biopsy (MTB) for detecting clinically significant prostate cancer (csPCa; Gleason grade group ≥ 2). Lesions are scored using the Prostate Risk Identification Using Micro-ultrasound System (PRI-MUS, score 1–5), which aligns with Prostate Imaging-Reporting and Data System (PI-RADS) classification. This study aimed to evaluate the diagnostic performance of MUB versus MTB for csPCa detection. Secondary objectives included assessing MUB's ability to detect MRI-invisible lesions and evaluating concordance between MUB and MTB. **Methods:** Biopsy-naïve men with suspected prostate cancer were prospectively enrolled from January to April 2025. All underwent pre-biopsy multiparametric MRI. MUB (targeting PRI-MUS ≥ 3) was performed by a single surgeon blinded to MRI, followed by MTB and systematic biopsy using the Biobot MonaLisa system (targeting PI-RADS ≥ 3). Diagnostic outcomes of MUB vs MTB were compared using a 10% non-inferiority margin. Sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of MUB was assessed with reference to MTB. **Results:** Among 31 men, MUB detected csPCa in 51.6% vs. 48.4% by MTB (absolute difference 3.2%), meeting non-inferiority criteria. Relative to MTB, MUB showed 77.8% sensitivity, 61.5% specificity, 73.7% PPV, and 66.7% NPV. MUB identified MRI-invisible csPCa in 28.6% of patients and missed MRI-visible csPCa in 9.5%. Concordance between MUB and MTB lesions occurred in 29.5% of lesions, with 57.7% yielding csPCa. **Conclusion:** MUB is an accurate and non-inferior alternative to MTB for csPCa detection, with added value in identifying MRI-invisible lesions.

Oral

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Topics: *Uro-oncology*

Evaluating BCG Response in Primary and Metachronous Non-Muscle Invasive Bladder Cancer Following Prior Upper Tract Urothelial Cancer: A Systematic Review and Meta-Analysis

Benjamin Lim[1], Khi Yung Fong[1], Michael R Abern[2], Jeffrey J Leow[3], Tsung Wen Chong[1], Kae Jack Tay[1], Kenneth Chen[1], John SP Yuen[1], Johan Chan[4], Jason YS Chan[4], Syed A Hussain[5], Jeremy YC Teoh[6], Ashish M Kamat[7] and Yu Guang Tan[1]

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ABSTRACT: Introduction: Emerging evidence suggests that metachronous bladder recurrence after prior UTUC treatment (m-NMIBC) is distinct from primary NMIBC (p-NMIBC). They are likely to be more aggressive, showing poorer response to Bacillus Calmette-Guérin (BCG), which translate to higher recurrence rates and disease progression. **Methods:** A comprehensive literature search of PubMed, Embase, and Scopus was performed to identify relevant studies that reported outcomes for p-NMIBC and m-NIMBC. The primary endpoints analyzed were recurrence-free survival (RFS), progression-free survival (PFS), overall survival (OS), and cancer-specific survival (CSS). The systematic review and meta-analysis followed the PRISMA guidelines. **Results:** Seven cohort studies were identified. Patients with p-NMIBC consistently showed longer RFS (one-stage meta-analysis: HR 0.57, 95% CI 0.46–0.71, $p < 0.001$; two-stage meta-analysis: HR 0.44, 95% CI 0.38–0.50, $p < 0.001$, $I^2 = 0\%$). Recurrence rates were notably higher in m-NMIBC (45.2–55.9%) compared to p-NMIBC (22.8–40.0%). P-NMIBC also demonstrated better outcomes for PFS (one-stage meta-analysis: HR 0.54, 95% CI 0.35–0.83, $p = 0.005$; two-stage meta-analysis: HR 0.45, 95% CI 0.22–0.90, $p = 0.035$, $I^2 = 0\%$). For OS, initial one-stage meta-analysis findings indicated longer OS for p-NMIBC (HR 0.64, 95% CI 0.56–0.73, $p < 0.001$), but was no longer significant on two-stage meta-analysis, with moderate heterogeneity (HR 0.88, 95% CI 0.18–4.23, $p = 0.751$, $I^2 = 64\%$). Among the limited number of studies reporting this outcome, CSS showed no significant difference between p-NMIBC and m-NMIBC (one-stage meta-analysis: HR 0.53, 95% CI 0.24–1.17, $p = 0.116$; two-stage meta-analysis: HR 0.58, 95% CI 0.00–1.20, $p = 0.420$, $I^2 = 0\%$). **Conclusion:** Patients with m-NMIBC following prior treatment for UTUC exhibit a significantly poorer response to BCG compared to those with p-NMIBC, with nearly double the rates of recurrence and disease progression.

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Topics: *Endourology and Stone Diseases*

A Novel Concept of Anti-Reflux Ureteral Stent: Computational Fluidic Dynamics Simulation.

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ABSTRACT: Introduction: One of the main problems of a ureteral stent is retrograde urine reflux, which may cause flank pain during micturition as well as pyelonephritis leading to renal damage. The present study aims to introduce a novel concept of anti-reflux ureteral stent with its performance evaluated using a CFD (computational fluidic dynamics) simulation program. **Methods:** The proposed anti-reflux ureteral stent integrates a check valve system, including a duck-bill and a cantilever valve, to prevent intra- and extraluminal urine reflux. The duck-bill valve, normally closed, prevents intraluminal reflux by deforming only under anterograde urine flow pressure while maintaining structural integrity. It is also designed to resist damage from guide wire insertion. The cantilever valve, normally folded, prevents extraluminal reflux by unfolding when retrograde pressure increases. During reflux, the closed duck-bill valve raises intraluminal pressure above extraluminal pressure, allowing urine drainage through a vent hole, which unfolds the cantilever valve. The stent design was developed using computer-aided design (CAD) and simulated with computational fluid dynamics (CFD) software to model retrograde urinary flow. **Results:** Intra- and extraluminal retrograde flow rates of a conventional stent were 1.89 mL/s and 11.7 mL/s at an applied pressure of 4903 Pa (maximum bladder pressure), respectively. However, the flow rates of the anti-reflux stent were decreased to 0.024 mL/s and 6.62 mL/s, respectively, when the identical pressure was applied. In overall, the total retrograde flow rate decreased from 815.4 mL/min to 398.64 mL/min at 4903 Pa when the anti-reflux system was added to ureteral stent. **Conclusion:** The novel concept of anti-reflux ureteral stent was successfully performed on simulation

Oral

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Topics: *Uro-oncology*

Neoadjuvant ADT for Patients Undergoing Robotic Radical Prostatectomy, Is the Conversation Over?—A Propensity Matched Comparison

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ABSTRACT: Introduction: Evidence for neoadjuvant androgen deprivation therapy (ADT) before radical prostatectomy (RP) remains inconclusive, and current guidelines do not endorse its routine use. We evaluated its impact on surgical and oncologic outcomes in a Singaporean cohort. **Methods:** In this retrospective study, 1091 men underwent RP between 2013–2024; 105 received neoadjuvant ADT and 986 did not. We performed 1:1 propensity-score matching on age, prostate-specific antigen (PSA), PSA density, Gleason score, clinical T-stage, and whether they received adjuvant radiotherapy or adjuvant ADT. yielding 105 matched pairs. The primary endpoint was biochemical recurrence. Secondary surgical outcomes included operative time, estimated blood loss, length of stay, catheter duration, and postoperative complications. Secondary oncologic outcomes were locoregional spread, clinical-to-pathological T-stage downstaging, Gleason score decrease, and sustained PSA decrease at 3 months. **Results:** After matching, neoadjuvant ADT was associated with a lower rate of extracapsular extension (30.8% vs. 51.4%, $p = 0.004$), positive margins (18.4% vs. 39.4%; $p = 0.002$), lymph node involvement (1.0% vs. 13.0%, $p = 0.002$), and reduced biochemical recurrence (4.8% vs. 18.1%; $p = 0.005$). There were no significant differences in median operative time (235 vs. 240 min; $p = 0.70$), estimated blood loss (200 vs. 200 mL; $p = 0.826$), length of stay, catheter duration, or complication rates (13.6% vs. 19.4%; $p = 0.348$). Before matching, 5-year biochemical recurrence–free survival (BCR-FS) did not differ (86.4% vs. 72.7%; log-rank $p = 0.27$). After matching, BCR-FS favored ADT (86.4% vs. 32.2%; log-rank $p = 0.01$). **Conclusion:** Neoadjuvant ADT before RP significantly reduces locoregional spread and biochemical recurrence without compromising surgical outcomes. Prospective trials with standardized protocols are needed to confirm its benefit in high-risk prostate cancer.

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Topics: *Uro-oncology*

Is Focal Cryotherapy Effective for Posterior Lesions in Clinically Significant Prostate Cancer? Oncological and Functional Outcomes in a Prospective Cohort Expansion of a Phase II Trial

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ABSTRACT: Introduction: To compare anterior to posterior focal cryotherapy (FCT) for oncological and functional outcomes in a prospective cohort of men treated for clinically significant prostate cancer (csPCa). **Methods:** In a prospective observational extension of a phase II clinical trial, we recruited patients with PSA ≤ 15, grade-group (GG) 2–4, single lesions ≤ 3 mL, or 2 lesions ≤ 1.5 mL on multiparametric magnetic resonance imaging (mpMRI), MRI-targeted, and systematic saturation biopsy for FCT. Repeat mpMRI, MRI-targeted (treated area, PIFAB ≥ 2 or PIRADS ≥ 3 lesions) and systematic saturation biopsy were mandated at 12 months. Lesions were classified as anterior or posterior to the urethra. The primary outcomes were 12-month biopsy csPCa recurrence and change in EPIC (expanded prostate composite index) quality of life scores at 1, 3, 6 and 12 months post-FCT compared to baseline. **Results:** 101 lesions in 92 patients were treated; 54 (53.5%) anterior and 46 (45.5%) posterior lesions. 12-month mpMRI and biopsy compliance was 96.7% and 87.0%, respectively. The overall csPCa recurrence rate was 20.6% (19/92). Infield biopsy-recurrence was recorded in 4/46 (8.7%) anterior lesions and 4/42 (9.5%) posterior lesions ($p = 0.89$). For pre-FCT potent patients, sexual function recovered to baseline by 6-months ($p = 0.07$) with anterior ablation vs partial recovery (mean −16 points [20%], $p = 0.04$) at 12-months with posterior ablation. Regardless of lesion location, urinary function returned to baseline by 1-month and bowel function was unaffected. **Conclusion:** FCT is safe, with transient impact on urinary and sexual function. Posterior lesion location does not increase infield recurrence risk but may prolong recovery of sexual function.

Oral

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Topics: *Endourology and Stone Diseases*

Multicentre Study of the Temporary Implantable Nitinol Device (iTIND) in Asian Men with Benign Prostatic Hyperplasia: Efficacy and Safety Results at 1-Year of Follow-Up

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ABSTRACT: Introduction: We report 1-year follow-up results from the first multicentre cohort of Asian men with BPH who underwent the Temporary Implantable Nitinol Device (iTIND) procedure. **Methods:** We evaluated the efficacy and safety of iTIND in 53 patients. iTIND was implanted using rigid or flexible cystoscopy, and explanted after 5–7 days. Perioperative results, complications and quality of life were evaluated 1-, 6- and 12-months postoperatively. **Results:** Mean (SD) age was 61.8 (9.6) years. Mean prostate volume was 27.25 mL (7.92). 51 (96.2%) patients had high bladder necks, none had enlarged median lobes. Mean baseline Qmax was 9.99 mL/s (4.65), IPSS score was 18.40 (6.60), QOL score was 3.79 (1.22). Mean implantation time was 10.36 min (4.72). 42 (79.2%) were day surgery cases. Mean Qmax improvement over baseline was 2.67 mL/s (3.83) at 1-month, 2.80 mL/s (4.42) at 6-months, and 2.24 mL/s (3.41) at 12-months. Mean percentage Qmax improvement was 37.2% (1-month), 44.3% (6-months) and 37.0% (12-months). Mean IPSS reduction from baseline was 9.00 (6.94) at 1-month, 10.59 (7.53) at 6-months, and 9.57 (8.07) at 12-months. Mean percentage IPSS improvement was 49.9% (1-month), 51.8% (6-months) and 45.2% (12-months). Mean QOL score reduction from baseline was 1.91 (1.18) at 1-month, 2.15 (1.41) at 6-months, and 2.36 (1.34) at 12-months. Mean percentage QOL improvement was 50.1% (1-month), 51.0% (6-months) and 54.2% (12-months). 49 (92.5%) cases stopped medication within 2 weeks. 3 (5.7%) patients had retention of urine. 1 patient had urosepsis. No patients reported sexual side effects. During follow-up, 2 (3.8%) patients restarted medication, while none required BPH surgery. **Conclusion:** iTIND is effective and safe with durable 1-year results. Despite modest improvements in uroflowmetry, iTIND offers fast symptom and quality of life improvement postoperatively. Moreover, iTIND preserves sexual function, and allows patients to stop medication quickly with low retreatment rates.

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Topics: *Uro-oncology, Technology and Artificial Intelligence*

Feasibility of An AI-Aided Automated Robot-Guided Transperineal MRI-US Fusion Prostate Biopsy Under Local Anaesthesia: A Prospective Pilot Study

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ABSTRACT: Introduction: Robotic-assisted transperineal (TP) MRI–ultrasound (MRI-US) fusion-guided prostate biopsy is increasingly used due to its accuracy and safety. Integrating artificial intelligence (AI) may further improve targeting and workflow standardisation. This prospective pilot study assessed the feasibility, safety, and diagnostic performance of a fully automated AI-aided robot-guided TP prostate biopsy under local anaesthesia (LA) without sedation for prostate cancer (PCa) detection. **Methods:** 59 consecutive patients underwent AI-assisted MRI-US fusion TP biopsy (December 2024–April 2025) using the Uromaster, co-developed with our institution. This utilised AI for prostate segmentation, augmentation, robot-guided 3D trans-rectal ultrasound mapping, and an adjustable needle guide. LA involved 10 mL of 1% lidocaine to the perineal skin and 20 mL into the periprostatic tissues. We recorded the number of targeted/systematic cores, complications, PCa and clinically significant PCa (csPCa) detection, stratified by PI-RADS score. **Results:** Median age was 73 years (IQR 69–76), PSA 8.32 ng/mL (IQR 6.14–13.23), and prostate volume 45.0 cc (IQR 30.8–66.5). Target-only biopsies were in 7 patients (median 4 cores), systematic-only in 3 (median 12 cores), and combined in 49. Overall, PCa detected was 57.6%, whilst csPCA was 37.2%. By PI-RADS: PCa rates were 35.3% (PI-RADS 3), 71.0% (PI-RADS 4), and 75.0% (PI-RADS 5). csPCa rates were 17.6%, 45.2%, and 62.5%, respectively. Detection rates were comparable to the control arm (MRI fusion system UroNav) and not statistically significant ($p > 0.05$). Complications included acute urinary retention (8.4%), bleeding (1.6%), and infection (1.6%). **Conclusion:** This study demonstrates that fully automated robot-performed MRI-US fusion TP biopsy under LA is well-tolerated, yields high diagnostic yield, and carries minimal risk.

Moderated Poster

1

Topics: *Technology and Artificial Intelligence*

Effects of Curcumin on Pro-Inflammatory Cytokine Suppression in A Novel Inflammation-Induced Urothelium-on-A-Chip Model

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ABSTRACT: Introduction and Objective: This study presents a urothelium-on-a-chip platform that mimics the bladder's physiological environment to evaluate curcumin's anti-inflammatory effects against LPS-induced inflammation. **Materials and Methods:** The urothelium-on-a-chip system consists of three modular inserts for culturing human urothelial (SV-HUC) and fibroblast (Hs27) cells, interconnected via microfluidic channels. Two conditions were established: a monoculture of SV-HUC cells and a co-culture with both SV-HUC and Hs27 cells. Inflammation was induced using LPS (1 μg/mL) for 24 h, followed by curcumin treatment (10 μM) for another 24 h. Supernatants were collected, and inflammatory cytokines IL-1β, IL-6, and TNF-α were measured using ELISA. **Results:** LPS exposure markedly increased cytokine levels except for TNF-α, which slightly decreased in monoculture. Curcumin suppressed IL-1β in monoculture (from 3.26 ± 0.49 pg/mL to 0.00 pg/mL) but had minimal influence on IL-6 (149.74 ± 9.63 pg/mL to 186.51 ± 6.12 pg/mL) and TNF-α (2.01 ± 0.48 pg/mL to 2.39 ± 0.32 pg/mL). In co-culture, curcumin significantly reduced all three cytokines (IL-1β: 4.14 ± 0.50 pg/mL to 2.66 ± 1.13 pg/mL; IL-6: 409.37 ± 11.54 pg/mL to 265.63 ± 16.22 pg/mL; TNF-α: 2.55 ± 0.24 pg/mL to 1.77 ± 0.24 pg/mL), demonstrating its broader anti-inflammatory potential in a multi-cellular environment. These findings suggest that fibroblasts play a crucial role in modulating bladder inflammation and that curcumin's effects are more pronounced in physiologically relevant settings. **Conclusion:** The urothelium-on-a-chip platform offers a novel preclinical model for studying bladder inflammation and therapeutic interventions, demonstrating curcumin's anti-inflammatory potential, especially in fibroblast-urothelial co-culture environments.

2

Topics: *Uro-oncology*

Ketamine as A Potential Therapeutic Agent for Castration-Resistant Prostate Cancer (CRPC): An *In-Vitro* Study on PC3 Cell Line Viability and Apoptosis

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ABSTRACT: Introduction and objectives: Ketamine, an N-methyl-D-aspartate (NMDA) receptor antagonist, shows emerging therapeutic potential beyond anesthesia based on its receptors expression in malignant adenocarcinoma cells, including prostate cancer. We aimed to evaluate the effects of ketamine on viability and apoptosis in castration-resistant prostate cancer (CRPC) cells. **Materials and methods:** PC3 cell line, derived from CRPC bone metastasis, was cultured in RPMI 1640 medium until ≥80% confluence. Cells were divided into ketamine-treated and control groups. Ketamine was titrated (0.1024–200,000 nM) to determine the IC_{50} via CCK-8 assay. Apoptosis was assessed at four dose levels using Annexin V-based flow cytometry. IC_{50} was calculated using the AAT Bioquest® software. Apoptosis data were analyzed using one-way ANOVA and Tukey's HSD post-hoc test in IBM® SPSS® software. **Results:** There is a dose-dependent reduction effect of ketamine on PC3 cell viability, with an IC_{50} of 0.185 mM ($R^2 = 0.96$). Apoptosis rates at 0.045, 0.09, 0.18, and 0.36 mM were 14.21%, 21.17%, 39.46%, and 83.53% respectively, compared to 90.5% viability in the control group. One-way ANOVA revealed significant differences ($p < 0.01$) between groups, with post-hoc analysis confirming significantly higher mean differences (MD) of the treatment groups compared to the control group at all concentrations: MD = 8.06, 12.125, 26.258, and 68.768 ($p < 0.001$) respectively. The result of the post-hoc test, using the Tukey's method, indicated a consistent dose-dependent apoptotic effect. **Conclusion:** Ketamine induces a dose-dependent decrease in viability and increase in total apoptosis in CRPC cells. Future studies, including combination with standard treatments and validation in animal models, are warranted to establish its role in CRPC management.

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Topics: *General Urology, Endourology and Stone Diseases*

Efficacy of Intraprostatic Botulinum Toxin Combined with Low-Intensity Shockwave Therapy to Treat Patients with Chronic Prostatitis

Arjav Nanavati, Prashant Pattnaik, Vineet Shukla, Yashraj Sapkal and Sameer Deshmukh

Bombay Hospital Institute of Medical Sciences, India

ABSTRACT: Introduction: Chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) is a prevalent condition with limited effective treatment options. Botulinum toxin-A (BoNT-A) injection and low-intensity shockwave therapy (LiSWT) are two treatment modalities for these conditions. Intraprostatic Botox affects the sensory neurotransmitters, alleviating the pain. LiSWT has effectiveness as a non-invasive option to relieve symptoms of chronic pelvic pain and benign prostatic hyperplasia (BPH). **Aim:** To study the efficacy of combining Intraprostatic botulinum toxin-A with low-intensity shockwave therapy in treating patients of chronic prostatitis. **Methods:** All patients with chronic prostatitis who had presented at our centre were considered in this study. Symptoms and investigations (blood, urine and radiological) were collected before and after the treatment. We used electromagnetic LiSWT with a treatment protocol of 3000 shockwaves in the perineal region under USG guidance focused on the prostate once in a week for total 6 weeks. Group A received intraprostatic botulinum toxin-A after 2 sittings. Whereas Group-B did not receive this. Data was collected at baseline, week 4, week 8, and week 12 post-treatment. **Results:** We had 160 patients, 80 in each group. Group A demonstrated a significant reduction in NIH-CPSI scores ($p < 0.001$) compared to Group B. Additionally, Group A showed improved urinary symptom scores ($p < 0.001$) and QoL scores ($p < 0.001$). Inflammatory markers significantly decreased in Group A, and improvements were noted in VAS pain scores, sexual function, and prostatic volume. No significant adverse effects were reported in either group. **Conclusion:** The combination of intraprostatic BTX and LI-ESWT is a promising therapeutic approach for CP/CPPS, offering significant symptom relief and improved QoL without notable adverse effects.

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Topics: *Uro-oncology, Minimally Invasive Surgery*

Comparative Outcomes of En-Bloc Resection vs. Conventional Transurethral Resection of Bladder Tumours: A One-Year Postoperative Evaluation

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ABSTRACT: Introduction: Bladder cancer has high recurrence rates, making optimal resection techniques essential. En-bloc resection (ERBT) aims to excise tumours wholly, potentially reducing tumour seeding and improving outcomes compared to conventional transurethral resection of bladder tumours (TURBT). This study compares the one-year postoperative outcomes of ERBT and TURBT in non-muscle invasive bladder cancer (NMIBC). **Methods:** A prospective cohort of 40 NMIBC patients was enrolled from 2023 to 2025. Patients were randomized to ERBT (n = 20; mean age 73.7 ± 8.4 years, 70% male, mean BMI 23.4 ± 4.4) or TURBT (n = 20; mean age 71.2 ± 11.2 years, 80% male, mean BMI 21.7 ± 4.3). Baseline variables, including smoking history, ECOG performance status, occupational exposure, tumour size, and number, were comparable (all p >0.05). **Results:** Postoperatively, the presence of detrusor muscle in the specimen was statistically similar (60% ERBT vs. 50% TURBT, p = 0.4). Malignancy rate was 95% for ERBT and 80% for TURBT. Most tumours were stage Ta (80% ERBT, 60% TURBT) and low grade (80% ERBT, 40% TURBT). ERBT yielded significantly shorter operative times (27.5 ± 1 min) than TURBT (42.1 ± 1 min, p = 0.024), while hospital stay (1 day) and post-operative catheterization time (1 day; 85% ERBT, 80% TURBT) were comparable. Rates of relook TURBT due to malignancy were similar (ERBT 20%, TURBT 35%; p = 0.49). Among those undergoing relook, residual tumour detection (50% ERBT vs. 57.1% TURBT) and upstaging rates did not differ significantly (p > 0.05). **Conclusion:** ERBT demonstrates comparable and possibly better pathological outcomes than TURBT, with the added benefit of shorter operative time. Long-term follow-up is needed to assess recurrence rates and other oncological outcomes.

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Topics: *Uro-oncology*

Is Systematic Biopsy Necessary in Patients Undergoing Focal Therapy for Prostate Cancer?

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ABSTRACT: Introduction: In the era of image-targeted biopsy and focal therapy (FT), the perceived role of systematic biopsy has diminished. We investigate the value of systematic biopsy in identifying and defining clinically significant prostate cancer (csPCa) lesions for FT. **Methods:** All patients undergoing FT enrolled in our prospective observational study with a minimum of 1-year follow up from 2019–2024 were included. Patients received pre-treatment multiparametric magnetic resonance imaging (mpMRI), targeted biopsy, and systematic saturation biopsy, followed by protocolised mpMRI, tracking, targeted, and systematic saturation biopsy 1-year post-treatment. The value of pre-treatment systematic biopsy was categorized into: (1) Identifying lesions missed by targeted biopsy, (2) Upgrading lesional Gleason score, (3) Upstaging the lesion extent, and (4) Detecting MRI-invisible csPCa. **Results:** 92 patients underwent primary focal cryotherapy. Mean PSA was 7.41 ± 3.60 µg/L. 101 csPCa lesions were identified for treatment (74.3% Gleason 3 + 4, 19.8% 4 + 3, and 5.9% 4 + 4), with a mean lesion volume of 1.18 ± 1.22 mL. A mean of 7.81 ± 5 cores were obtained per lesion (targeted 4.61 ± 3, systematic 3.19 ± 4), with a mean of 2.89 ± 3 cores positive per lesion. The mean systematic biopsy intensity was 0.65 ± 0.31 cores/mL prostate and yielded clinically impactful findings in 23.9% of patients: 7.61% Category-1, 9.78% Category-2, 2.17% Category-3, and 5.43% Category-4. 81/92 (88%) patients complied to 1-year post-FT biopsy, with 21/92 (22.8%) csPCa recurrences recorded. The mean systematic biopsy intensity in those with 1-year csPCa recurrence was 0.62 cores/mL vs. 0.67 cores/mL in those without (p = 0.48). **Conclusion:** Pre-treatment systematic biopsy substantially informed FT planning in 23.9% of patients.

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Topics: *Technology and Artificial Intelligence*

CT Based Radiomics Diagnostic Model for Fat-Poor Small Renal Tumor Subtypes

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ABSTRACT: Introduction: This study introduces a CT-based radiomics and machine learning framework to enhance the di-agnostic precision of small, fat-poor renal tumors. Given the complexities in distinguishing various subtypes of renal cell carcinoma (RCC), especially in small and fat-poor tumors using traditional imaging methods, our approach aimed to utilize advanced computational techniques to address these challenges. **Methods:** We extracted and analyzed radiomic features from 1548 multi-phase CT scans from 499 patients, focusing on fat-poor tumors. Our methodology involved several machine learning models, including Linear SVM, Rbf SVM, Random Forest, and XGBoost. **Results:** The XGBoost model, optimized for arterial phase scans with selected principal components, demonstrated superior performance, achieved the highest performance in classifying clear cell renal cell carcinoma (AU-PRC: mean = 0.757, standard error = 0.033) and a renal angiomyolipoma (AU-ROC: mean = 0.824, standard error = 0.023). These results outperformed other single-phase CT radiomic feature-based machine learning models trained with 20% of principal components. These findings confirm the efficacy of integrating radiomics with machine learning to significantly enhance RCC subtype classification. **Conclusion:** The advanced diagnostic capabilities provided by our model support personalized treatment strategies and could lead to improved patient outcomes, showcasing the critical role of innovative com-putational methods in renal oncology

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Topics: *Uro-oncology*

Open Versus Minimally Invasive Lymph Node Dissection for Penile Cancer: A Systematic Review and Meta-Analysis

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ABSTRACT: Introduction: The single most important prognostic factor for long-term survival in penile cancer is the presence and extent of lymph node metastases. Historically, inguinal lymph node dissection (ILND) has been performed via an open approach (O-ILND), but minimally invasive surgical alternatives (MIS-ILND) such as video-endoscopic and robot-assisted ILND gained traction. We aimed to compare peri-operative outcomes, complication rates, and oncological efficacy between both approaches. **Methods:** We conducted a PRISMA-compliant meta-analysis including studies comparing O-ILND versus MIS-ILND for penile cancer. Outcomes of interest were pooled in random-effects meta-analyses. **Results:** We analyzed 15 articles (607 O-ILND, 492 MIS-ILND patients). Operative time, estimated blood loss, total lymph node yield, and positive lymph node yield did not differ between groups. MIS-ILND had a significant lower complication rate, both for minor complications (p = 0.02) and major complications (p = 0.002). There was also lower wound infection rate in MIS-ILND (p = 0.02) and shorter length of stay (p = 0.05). Skin/flap necrosis, lymphedema, lymphocele, deep vein thrombosis, and time to drain removal did not differ significantly. The follow up period varied across studies, ranging from 12 to 96 months, with most studies reporting follow up beyond 24 months. MIS-ILND had lower recurrence rate (p = 0.01), but there was no significant difference in local groin recurrence and overall survival. **Conclusion:** Our findings support the increasing adoption of MIS-ILND, particularly in high-volume centres with appropriate surgical expertise. The significant reduction in complications and hospital stay, without compromise in oncological control, suggests that MIS-ILND may improve perioperative outcomes and long-term survivorship experience for penile cancer patients.

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Topics: *Uro-oncology*

Bone Health in Advanced Prostate Cancer Patients on Long-Term Androgen Deprivation Therapy: Real-World Evidence from A Dedicated Advanced Prostate Cancer Clinic Experience in A Tertiary Hospital

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ABSTRACT: Introduction: Androgen deprivation therapy (ADT), mainstay for advanced prostate cancer (PCa), accelerates bone loss, increasing fracture risk. Despite guidelines recommending baseline dual-energy X-ray absorptiometry (DXA), real-world adherence remains unclear. We evaluated osteoporosis prevalence and bone health management in men initiating long-term ADT at Singapore General Hospital's Advanced Prostate Cancer Clinic (APCC). **Methods:** A retrospective review was conducted on 121 men with advanced PCa (median age 78) treated at APCC (January 2024-April 2025). Bone mineral density (BMD) was assessed using DXA and WHO criteria. Data on DXA timing, serum vitamin D, FRAX scores, and anti-resorptive therapy were analyzed. High FRAX score is defined as ≥20% major fracture and ≥3% hip fracture risk in 10-year. **Results:** All patients received ADT (median duration 3.2 years), with 77.7% on secondary hormonal therapy. 90.9% had metastatic disease. Although 95.9% had DXA discussed, only 35.5% underwent DXA within 6 months of ADT initiation. Among 100 patients with DXA results, 33% had osteoporosis (5% with fragility fracture), 53% osteopenia, and 14% normal BMD. Among early DXA recipients, 20.9% had osteoporosis (4.9% with fragility fracture), 51.2% osteopenia, 20.9% normal BMD, and 7% pending. Anti-resorptive therapy was initiated in 74.2% of osteoporotic/osteopenia with high FRAX score patients. Vitamin D testing were ordered (78.6% of osteoporotic, 56.6% of osteopenic cases), with deficiency/insufficiency (<30 ng/mL) reported in 23.5% cases. **Conclusion:** Osteoporosis/osteopenia were prevalent at baseline, worsened with ADT, yet early DXA screening and vitamin D testing were underutilized. A standardised bone health protocol with referral pathway to Osteoporosis Unit is essential to mitigate ADT-induced skeletal morbidity.

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Topics: *General Urology, Uro-oncology*

SCREENing Smarter: Outperforming IMDC in Predicting First-Year Mortality among Patients Undergoing Cytoreductive Nephrectomy

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ABSTRACT: Introduction: The Selection for Cytoreductive Nephrectomy (SCREEN) criteria was developed to predict first-year mortality following upfront cytoreductive nephrectomy (CN) in patients with metastatic renal cell carcinoma (mRCC). This study aims to validate SCREEN in an Asian cohort and compare its performance with the International Metastatic Renal Cell Carcinoma Database Consortium (IMDC) model. **Methods:** Clinical, hematological, and radiological variables of consecutive mRCC patients undergoing CN were analysed at tertiary hospitals from 1984 to 2022. SCREEN variables included: ≥3 metastatic sites, metastatic burden ≥5 cm, bone metastases, systemic symptoms, low haemoglobin, low albumin, and neutrophil-lymphocyte ratio ≥4. Kaplan Meier analyses, logistic regression, calibration, and decision curve analysis (DCA) were performed. **Results:** Among 163 patients with synchronous mRCC and upfront CN, SCREEN stratified patients into favourable (22%), intermediate (57%), and poor-risk (22%) groups. IMDC classified 18%, 61%, and 21% patients respectively. The first-year mortality rate for SCREEN risk groups are 8.57%, 19.4%, and 60.0% while IMDC risk groups are: 13.3%, 25.3%, 38.2% respectively. SCREEN poor-risk patients had significantly higher odds of first-year mortality (OR 16.0, $p < 0.001$) compared to IMDC (OR 4.02, $p < 0.001$). SCREEN demonstrated superior discriminative ability (AUC 0.727 vs. 0.603, $p < 0.05$). DCA showed that SCREEN provided greater clinical benefit across mortality risk thresholds between 15% and 60%. **Conclusion:** SCREEN is a validated, high-performing tool for predicting first-year mortality after upfront CN in mRCC. It outperforms IMDC by incorporating key radiological variables, aiding more accurate patient selection for cytoreductive nephrectomy.

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Topics: *Uro-oncology*

Evaluating the Impact of PSA Density on Clinically Significant Prostate Cancer Detection in PIRADS-3 Lesions—A Single-Centre Study

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ABSTRACT: Introduction: Prostate cancer is one of the most prevalent malignancies among men, and the clinical management of patients with suspected prostate cancer is critical. The Prostate Imaging Reporting and Data System (PIRADS) enhances the detection and characterization of prostate lesions on multiparametric MRI. This study aims to evaluate the impact of Prostate-Specific Antigen (PSA) density on the detection of clinically significant prostate cancer in men with PIRADS-3 lesions. **Methods:** A retrospective cohort study was performed on patients referred to our major cancer centre between January 2024 and June 2024. A total of 194 patients with PIRADS-3 lesions were included in the analysis. Clinical data, including PSA levels, prostate volume, and biopsy outcomes, were systematically reviewed. **Results:** Among the 194 patients, the median PSA was 5.86 ng/mL (range 0.33–34.19), with a median prostate volume of 62 cc (range 4–401). The cohort's median PSA density (PSAD) was 0.12 (range 0.01–1.14). Biopsies were performed on 101 patients, revealing malignancy in 45 patients (44.6%). Among them, 23 patients (51.1%) had clinically significant prostate cancer (csPCa, Gleason score ≥ 7). Notably, lower prostate volume and higher PSAD were significantly associated with the presence of csPCa. In patients with PSAD < 0.15, 10% harbored csPCa, whereas in the cohort with PSAD ≥ 0.15, 32% were diagnosed with cancer, with 20% diagnosed with csPCa. **Conclusion:** Elevated PSA density is a significant predictor of clinically relevant prostate cancer in patients with PIRADS-3 lesions. This study underscores the importance of integrating PSAD into clinical decision-making for prostate cancer screening and management.

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Topics: *Uro-oncology*

Streamlining Care: Reducing Post-Consult Injection Wait Times in An Advanced Prostate Cancer Clinic in A Tertiary Hospital in Singapore

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ABSTRACT: Introduction and objectives: Patients undergoing treatment for prostate cancer are commonly prescribed androgen deprivation therapy (ADT) in combination with oral hormonal agents. Under the previous workflow, patients were required to collect their medications from the pharmacy—often located far from the clinic—before returning for nurse-administered ADT injections. This resulted in prolonged waiting times and increased exposure to multiple hospital touchpoints, posing heightened risks of falls and infections, particularly in elderly patients. To address these concerns, a new streamlined workflow was introduced in the Advanced Prostate Cancer Clinic with the goal of reducing post-consultation dwell time. **Materials and Methods:** Root causes were identified using Ishikawa diagram. Solutions were developed for root causes prioritized by Pareto chart and prior to implementation, agreement was secured from key stakeholders. In the new workflow, ADT injections (Goserelin and Leuprorelin 11.25 mg/30 mg) are pre-ordered and stored in the clinic. Once prescribed, patients proceed directly to the nursing station for injection administration. Oral medications are arranged for home delivery, allowing patients to leave the clinic immediately after receiving their ADT. This streamlined process reduces unnecessary hospital navigation and minimizes time spent on-site. **Results:** The revised workflow was piloted from April to July 2024. The median time from post consult to completion of injection decreased from 69 min to 10.75 min. **Conclusion:** This new workflow significantly reduced post-consultation dwell time and enhanced the overall patient experience by creating a one-stop service within the clinic. Expansion of the model to include other injectable therapies such as Degarelix, Denosumab, and Zoledronic Acid is currently being explored.

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Topics: *Technology and Artificial Intelligence*

Adopting Machine Vision Augmentation to Detect Detrusor Overactivity in Overactive Bladder: An Expanded Prospective Validation Study of An AI-Based Diagnostic Tool

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ABSTRACT: Introduction: Our proof-of-concept study previously demonstrated that our novel machine vision augmentation model could detect keypoint deviations on the detrusor vascular network in cystoscopy videos, thereby diagnosing detrusor overactivity (DO). In this study, we aim to prospectively validate our AI-based diagnostic pipeline through classification testing on a dataset of 49 patients. **Methods:** 49 patients were recruited and underwent both Urodynamic Study (UDS) and Cystoscopy. Based on UDS, they were diagnosed as “DO” or “Normal”. Digital cystoscopy videos were processed and feature metrics including velocity, acceleration, keypoint deviation and distance error of keypoints were collected. Statistical analysis was performed to expand these into 42 features used to train our AI diagnostic model. **Results:** In this validation cohort, the algorithm correctly identified 81.6% (40/49) of cases, with a sensitivity of 93.1%, accurately detecting 27 out of 29 DO patients. The ROC curve demonstrated an AUC of 0.82, indicating strong discriminatory performance. Seven “Normal” patients were misclassified as “DO”, yielding a specificity of 65%. This was due to erroneous identification of air bubbles and light reflections as detrusor contractions. One case of sensory urgency was accurately labelled as "Normal", indicative of our algorithm’s ability to differentiate between these two groups. **Conclusion:** Our AI-based diagnostic algorithm demonstrated strong performance with a high sensitivity—it can convincingly diagnose DO in most settings, consistent with our hypothesis that it has the potential to reliably replace UDS. Future work includes refining artefact detection, as well as a second validation phase to assess reproducibility, by recording cystoscopy videos twice per patient during the same procedure for analysis.

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Topics: *Uro-oncology, Minimally Invasive Surgery*

cT1b Renal Cell Carcinomas Can be Safely Treated with Robot-Assisted Partial Nephrectomy

Dillon Christopher Yong Jie Teo[1], Jian Ning Jan Hoe[1], Ei Ei Aung Htoo[2], Kai Xin Charmaine Ng[1], Pradeep Durai[3], Jirong Lu[2], Yen Seow Benjamin Goh[2] and Ho Yee Tiong[2]

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ABSTRACT: Introduction: Robot-assisted partial nephrectomy (RAPN) treatment of renal cell carcinomas (RCCs) is limited to smaller masses, due to increase in technical difficulties with masses > 4 cm (cT1b). This study aims to assess perioperative, functional and oncological outcomes of patients with cT1b vs. cT1a RCCs. **Methods:** We retrospectively reviewed 161 consecutive patients (age 57 ± 12, n (male) = 104) who underwent RAPN between January 2021 to April 2024 at National University Hospital. 130 patients were cT1a-RCC and 31 were cT1b-RCC based on pre-operative imaging. Relevant baseline, peri and post-operative outcomes were compared. Median follow-up was 27.5 months. **Results:** There was no significant difference ($p > 0.05$) between cT1b and cT1a in terms of mean age (57.7 ± 13 vs. 56.9 ± 12), male gender (58% vs. 66%), ASA 1–2 (84% vs. 83%) and left-sided tumours (45% vs. 46%). As expected, mean tumour size was larger (4.9 ± 0.64 vs. 2.4 ± 0.83 mm, $p < 0.001$) and proportion of high tumour complexity by RENAL-nephrometry score was greater (4% vs. 13%, $p < 0.001$) in cT1b vs. cT1a. Peri-operatively, cT1b-RAPNs were associated with longer operation-time (284 vs. 244 min, $p = 0.003$), warm-ischemia-time (29 vs. 23 min, $p = 0.002$) and greater blood loss (243 vs. 133 mL, $p = 0.004$) compared to cT1a respectively. Pathologically, they were also more likely upstaged to pT3a (35% vs. 5%, $p < 0.001$) and had higher WHO/ISUP grading of 3–4 (55% vs. 43%, $p = 0.03$). Despite increased technical challenges, robot-assistance facilitated 0% complications (Clavien-Dindo ≥ 3) with comparable positive pathological surgical-margins between cT1b vs. cT1a (6% vs. 8%, $p = 1.0$). At 1-year follow-up, 100% of cT1b patients survived with no recurrence and eGFR decline was equivalent to cT1a patients. 22 of the 31 cT1b patients completed 2-year follow-up with no local recurrence but 2 (6%) developed distant metastasis. **Conclusion:** RAPN can be electively performed for cT1b-RCCs with equivalent outcomes to cT1a-RCCs, despite greater technical difficulties and risk of pathological upstaging.

External Resource:

https://drive.google.com/file/d/1ywTPmdKdwfYYhTDWtRe6lRq_TtxXiN8z/view?usp=sharing

https://drive.google.com/file/d/1nDl9IhX60iDyhwTFPD6sNJbHpLWo18nt/view?usp=sharing

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Topics: *Technology and Artificial Intelligence*

Ambient AI Scribes in Clinical Documentation: A Pilot Study in A Urology Outpatient Clinic in a Tertiary Center

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ABSTRACT: Introduction: The growing burden of clinical documentation in electronic health records has led to increased physician burnout and dissatisfaction. Time spent on documentation during patient visits detracts from meaningful communication, weakening the patient–physician relationship. Ambient artificial intelligence (AI) scribes, which leverage machine learning to capture and process conversations in real-time, present a promising solution by reducing documentation demands, improving patient engagement, and enhancing clinical efficiency. **Methods:** A large language model (LLM)-based, urological ambient AI scribe was piloted in a Urology outpatient clinic in a tertiary center. Clinical notes generated by the AI scribe were compared against notes written by clinicians during real-world patient encounters by a group of senior Urologists who were blinded to the author of the notes. 5 patient encounters were evaluated using a modified version of the Physician Documentation Quality Instrument (PDQI-9). **Results:** Clinical consultation notes written by the AI scribe had higher mean scores than human-written notes for accuracy (4.22 vs. 4.20, $p = 0.839$), thoroughness (4.22 vs. 4.00, $p = 0.137$), usefulness (4.30 vs. 4.15, $p = 0.245$), organization (4.35 vs. 4.13, $p = 0.070$), comprehensiveness (4.30 vs. 4.25, $p = 0.688$), and synthesis (4.08 vs. 3.70, $p = 0.375$), but the difference did not achieve statistical significance. Human-written notes scored higher on Succinctness (4.22 vs. 4.00, $p = 0.209$) and internal consistency (4.22 vs. 4.15, $p = 0.591$), but the differences were not statistically significant. Notes written by the AI scribe were preferred 55% of the time. **Conclusion:** LLM-based ambient AI scribes are capable of producing clinical documentation for urological cases that is non-inferior to clinicians in an outpatient clinic setting.

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Topics: *Endourology and Stone Diseases, Technology and Artificial Intelligence*

Machine Learning Models in Prediction of Incontinence after Enucleation Surgery for Benign Prostatic Hyperplasia

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ABSTRACT: Introduction: Machine learning (ML) and artificial intelligence (AI) have demonstrated powerful functionality in the healthcare setting thus far. We aimed to construct an AI model to predict postoperative incontinence after enucleation surgery for benign prostatic hyperplasia (BPH). **Methods:** Data were taken from two BPH enucleation registries and split into training and validation datasets. The following characteristics were used as predictors of incontinence: age, prostate volume, preoperative IPSS, QoL score, Qmax and post-void residual; presence of preoperative indwelling catheter, early apical release (EAR), enucleation type (2-lobe, 3-lobe, or en-bloc), and laser energy type. Six types of ML models were constructed using the training dataset and applied to the validation dataset to assess their accuracy. **Results:** 3828 patients from both databases were analyzed. Median age was 68, median prostate volume was 85.5 cc. 5.4% had a preoperative indwelling catheter. The commonest enucleation type was 2-lobe, the commonest energy type was Thulium fiber laser, and EAR was performed in 34.0%. Of the models tested, extreme gradient boosting with manual fine tuning was the best-performing with an accuracy of 86.2%, sensitivity of 96.8%, specificity of 23.7%, PPV of 88.2%, and NPV of 55.9%. This was ported onto a website for ease of use. **Conclusion:** We hereby present an ML model for incontinence prediction post-enucleation surgery for BPH. Its main strengths are high sensitivity and PPV, meaning that if a patient is predicted to be incontinent using this model, this is likely to reflect the eventual outcome. This allows clinicians to intervene early with incontinence-mitigating measures such as instituting early pelvic floor exercise training.

1

Topics: *Technology and Artificial Intelligence*

Preoperative Assessments Using CT Volumetry Matches DMSA in Predicting Early Post-Donation Renal Function

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ABSTRACT: Introduction: Evaluating split renal function is essential for donor assessment in living donor kidney transplantation (LDKT). Increased adoption of volume-based pre-operative assessments have gradually reduced the reliance on nuclear based studies. Our study hence aims to demonstrate the equivalence and non-inferiority of volume-based preoperative assessments compared to nuclear-based methods in assessing LDKT. **Methods**: We included 58 consecutive donors (mean age 49 ± 14, 47% males, BMI 24.3 ± 4.3, 84% left nephrectomy). All donors had both pre-operative CT-volumetry and Dimercaptosuccinic Acid (DMSA) done. Split renal volume, determined via CT volumetry (SRV-eGFR), was calculated as the product of the remnant kidney's volume normalized to total kidney volume (51.5 ± 2.7%) and baseline eGFR (48.7 ± 7.8 mL/min/1.73 m^2). Split renal function (SRF) by DMSA (DMSA-eGFR) was determined using the product of baseline eGFR and the percentage kidney function of the remnant kidney (50.4 ± 2.6%, 49.9 ± 8.4 mL/min/1.73 m^2). Post-donation eGFR was measured at 6 months post donation (65.5 ± 15.8 mL/min/1.73 m^2) up to 5 years (70.6 ± 16.6 mL/min/1.73 m^2). **Results**: Pre-operative CT volumetry and DMSA shows moderate correlation (r = 0.563), with SRF of the left kidney being significantly different between both modalities (51.8 ± 2.51% vs. 50.6 ± 2.56% respectively, $p < 0.05$). There is 82.8% agreement between both modalities in identifying the larger kidney. Both SRV-eGFR and DMSA-eGFR showed strong correlations with 6-month eGFR (r = 0.666 and r = 0.647), with no statistically significant difference (z = 0.208, $p > 0.05$). Adjusting for 25% hyperfiltration significantly improved concordance with 6-month eGFR for both DMSA-based assessments (0.301 to 0.580, z = 1.66, $p = 0.048$) and SRV-based assessments (0.273 to 0.559, z = 1.69, $p = 0.045$). **Conclusion**: CT-based SRV assessments are equivalent and non-different to nuclear-based methods in predicting post-donation eGFR, providing a reliable alternative for pre-operative evaluation.

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Topics: *Technology and Artificial Intelligence*

Pre-Donation DMSA-Based Differential Renal Function Alone does not Significantly Influence New Baseline Glomerular Filtration Rate: A Five-Year Retrospective Cohort Study of 124 Kidney Donors

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ABSTRACT: Introduction: Differential renal function is important in selecting the laterality for donor nephrectomy, often less functional kidney is donated after anatomical and clinical considerations. Our study aims to evaluate whether this approach leads to superior short- and long-term post-donation renal function when compared to donating the more functional kidney. **Methods**: 124 consecutive patients (mean age 49 ± 12 years, 42% male) underwent donor nephrectomy between 2015 and 2022 (88% left kidney donations) at our institution. Preoperative Dimercaptosuccinic-acid (DMSA) scans alongside pre- and post-operative renal function was collected (CKD-EPI) at pre-op, 6 months, 1-year, 3-years and 5-years post-operatively. Based on DMSA, those who donated the less functional kidney (Group 1, n = 72, 47.74 ± 2.00%) were compared against those who donated the more functional kidney (Group 2, 52.26 ± 2.00%). **Results**: Baseline characteristics were statistically similar between the two groups: age (49 ± 13 vs. 49 ± 11 years), gender (43% vs. 40% male), BMI (24.2 ± 3.8 vs. 24.4 ± 2.9), preoperative GFR (99.4 ± 18.7 vs. 98.6 ± 19.2) and laterality of kidney donated (left: 86% vs. 92%). Post-donation percentage loss of eGFR did not differ significantly between groups at 6 months (32.6 ± 12.6 vs. 31.2 ± 16.6), 1 year (31.9 ± 9.5 vs. 29.7 ± 16.9), 3 years (30.8 ± 12.5 vs. 23.7 ± 20.7) and 5 years (29.9 ± 10.0 vs. 25.3 ± 29.7) (p > 0.05). Preoperative remnant kidney function for both groups (as determined by DMSA of remnant kidney * GFR) also did not correlate with post-donation eGFR decline (r = 0.014 to 0.058). **Conclusion**: Although there was indeed numerically larger declines in eGFR post donation of the more functional kidney, this was not statistically significant. Our findings suggest that nuclear based differential renal function should not be the sole factor in guiding the choice of kidney for donation.

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Topics: *Uro-oncology*

Transrectal Prostate Biopsy after Prophylatic Fosfomicin, Intrarectal Povidone-Iodine Instillation and Formalin Needle Disinfection: A Single Center Prospective Non-Randomized Trial

Mariana Dias Capinha[1], Nídia Rolim[2], Frederico Furriel[2], Pedro Eufrásio[2], Pedro Moreira[2], Sílvio Bollini[2] and Ricardo Borges[2]

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ABSTRACT: Introduction: Prostate biopsies are generally safe, but complications can occur. There is a lack of standardized protocols for rectal cleansing with povidone-iodine before transrectal prostate biopsy, also there are conflicting results regarding needle disinfection with formaldehyde. Our primary endpoint is to assess the safety of performing a transrectal prostate biopsy with intrarectal povidone-iodine instillation, formalin needle disinfection, and the use of fosfomycin as the prophylactic antibiotic. **Methods**: Between February 2024 and June 2024 were prospectively assessed 129 patients submitted to transrectal prostate biopsy. Relating to prophylaxis, the protocol consisted of taking 2 g of phosphomycin. Some patients received cefixime or quinolones as prophylaxis, they were used as a comparator group. All patients had rectal cleansing (10 cc of povidone-iodine solution and 11 cc of Instilagell®). In addition, between the collection of each fragment, the needle was disinfected with formaldehyde. A statistical analysis was conducted with SPSS 27 using one-way ANOVA, the Chi-square test. **Results**: Patients' ages ranged from 52 to 93 years. PSA levels varied from 1.31 to 1279, and prostate volumes from 15 to 138. Most patients (73.6%) were not on anticoagulants. Fosfomycin was the predominant antibiotic prophylaxis (76.7%), followed by cefixime (14.0%), and quinolones (9.3%). The majority (96.1%) experienced no complications. There was no significant association between the type of prophylactic antibiotic, anticoagulation status, prostate volume, rectal examination, number of cores, and complications ($p > 0.05$). PSA levels were significantly associated with complications ($p < 0.05$). **Conclusion**: We conclude that elevated PSA levels are statistically significant concerning the rate of complications.

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Topics: *Endourology and Stone Diseases*

Comparison of Intrarenal Retrograde Surgery with and without Fluoroscopy and Ureteral Access Sheath: A Retrospective Two-Center Study

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ABSTRACT: **Introduction**: The effectiveness of ureteral access sheath (UAS) in increasing stone-free rates (SFRs) and complication rates have been mixed. Additionally, some studies report that flexible ureteroscopy without fluoroscopy can be performed safely with high success rates. This study aims to compare RIRS between two centers one using fluoroscopy and UAS while the other not using either. **Methods**: We conducted a retrospective observational study across two centers, with a total of 258 patients who underwent RIRS for renal stones between January 2022 and January 2024. The data were stratified into two groups (Groups 1 and 2) based on the surgical center. The Stata 13.0 was used for analysis. **Results**: A total of 258 patients, 129 in each group, were included. Group 1 had a smaller stone size (12.02 mm) than Group 2 (14.36 mm) (p = 0.004), a shorter procedural time (29.7 min vs. 47.2 min) (p = 0), and a reduced duration of postoperative catheterization (28.047 days vs. 94.047) (p = 0). A greater proportion of patients in Group 2 (70.53%) had a previous catheter compared to those in Group 1 (29.47%) (p = 0). Imaging techniques varied significantly, with CT scans in Group 1 (66%) and X-rays in Group 2 (96.67%) (p = 0). Additionally, larger stone sizes (p = 0.049), longer procedural times (p = 0.005), and re-interventions (p = 0.005) were linked to a higher likelihood of complications. **Conclusion**: In conclusion, performing RIRS without a ureteral sheath and fluoroscopy demonstrates a complication rate comparable to RIRS conducted with both. Additionally, larger stone sizes, extended procedural times, and re-interventions were associated with an increased likelihood of complications.

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Topics: *Uro-oncology*

A Testicular Cancer Unusual Relapse

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ABSTRACT: Introduction: Testicular germ cell tumours (GCT) may be cured by orchidectomy, but adjuvant treatment may be used to decrease the risk of relapse, which occurs mainly in the 1st years. Once very late relapses are rare, follow-up (FU) after 5 year is individualized. We aim to report an unusual case, highlighting some relevant factors in GCT management. **Methods**: In 2013, a 22-year male, presented with left scrotal enlargement within weeks. Physical examination revealed a hard-stone mass, and ultrasound confirmed the suspicion of testicular cancer. The CT was normal. Serum tumour markers (STM) were slightly elevated. A left radical orchiectomy diagnosed a non-seminoma pT3cN0cM0 S1, clinical stage IB/S, 2× BEP (bleomycin, etoposide, cisplatin) were given. After 3 year, he lost FU. **Results**: In 2022, due to abdominal pain, a CT revealed a 80 × 60 × 90 mm retroperitoneal mass. The biopsy confirmed a GCT teratoma. He completed 4xTIP (Paclitaxel, Ifosfamide, Cisplatin). Re-evaluation CT-scan showed mass reduction to 74 × 45 mm. Salvage surgery was performed: retroperitoneal lymph node dissection through a modified Makuuchi incision, plus left radical nephrectomy, adrenalectomy, and resection of adherent 3 cm segment of jejunum. Teratoma with somatic malignancy, with intestinal adenocarcinoma phenotype, invading the left renal peri-pelvic fatty tissue and fatty sub-serous layer of jejunum was diagnosed. After 1 year there is no evidence of disease. **Conclusion**: FU is crucial to detect relapse. Relapses after adjuvant treatments are rare, and very late relapses even rarer. Teratoma with somatic malignancy is unusual, and it can be problematic due to local aggressiveness and absence of response to chemo-radiotherapy, being complete surgical excision essential.

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Topics: *General Urology*

Candida Related Bladder Fungal Bezoar Causing Bladder Outlet Obstruction: A Rare Mimicker of Mucinous Bladder Tumour

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Changi General Hospital Singapore

ABSTRACT: Introduction: Fungal bezoars in the urinary tract are rare and typically present in immunocompromised individuals; those with diabetes mellitus (DM), prolonged catheterization, or prolonged antibiotic use. While fungal bezoars can result in obstructive uropathy and even bladder perforation, they may be clinically indistinguishable from bladder malignancies, such as mucinous adenocarcinoma. This case report highlights a 66-year-old bedbound diabetic female who presented with bladder outlet obstruction secondary to a large fungal bezoar resembling a mucinous bladder tumour. We aim to raise awareness of this rare presentation and highlight the importance of considering differential diagnoses in patients presenting with bladder masses. **Methods**: The patient, with a history of poorly controlled DM was admitted for sepsis with intra-abdominal collections secondary to a possible bladder perforation (Fig. 1A). She was treated with several rounds of percutaneous drainage and antibiotics and the bladder perforation resolved. However, she failed multiple attempts to trial off catheter with recurrent urinary catheter blockages. **Results**: Cystoscopy identified a dense bezoar and a mucinous lesion adhering to the posterior wall of the bladder, suspected to be malignancy (Fig. 1B). Biopsy and histopathology confirmed the lesion as a Candida fungal bezoar with no viable tumour. She was treated with antifungal therapy and successfully off the urinary catheter. **Conclusion**: This case underscores the need for heightened clinical suspicion of fungal bezoars, especially in patients with underlying risk factors like DM, the incidence of which is on the rise. Fungal bezoars can closely mimic bladder tumours, posing diagnostic challenges. Early recognition through imaging and histopathology is crucial to prevent misdiagnosis and ensure appropriate treatment.

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Topics: *Andrology and Subfertility*

Priapism Associated with Trazodone and Paroxetine Intake

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ABSTRACT: Introduction: Priapism is a rare condition and an Urologic emergency that demands immediate detumescence of the cavernous bodies to prevent erectile dysfunction (ED). Trazodone is the most common oral medication associated with priapism. We present a case of priapism after a combination of trazodone and paroxetine in a patient with a history of trazodone intake as monotherapy in the past who didn't report any signs of priapism. **Methods**: The following case was elaborated from the information collected through the patient's history and consequent follow-up in the medical appointments. **Results**: This case concerns a 51-year-old male referred to the emergency department for a painful erection with 24 h of evolution without a history of trauma. The patient had initiated the intake of trazodone associated with paroxetine one week earlier. He had taken trazodone as monotherapy and didn't report any signs of priapism in the past. During observation, the patient had a fully rigid erection. The aspiration of the blood of the cavernous bodies was ineffective, and the irrigation of a saline solution was quite difficult due to the tension. The patient was taken to the operating room and was submitted to three distal shunts due to relapsing episodes of priapism. Before discharge, the psychiatrist prescribed diazepam 10 mg/day. Two months later the patient remains without erections taking tadalafil 5 mg/day. **Conclusion**: Priapism is an urologic emergency. Delay of treatment may cause irreversible damage and poor erectile function. To prevent delay in seeking medical observation, the prescribing physicians should inform patients of such side effects before initiating treatment.

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Topics: *General Urology, Others*

From Passion to Exhaustion: Exploring Burnout Among Urology Residents in Different Training Institutions in the Philippines

Wedcell Joseph Ople Hernandez, Rajiv Ho Kalbit, Criscely Lanzuela Go and Enrique Ian Saavedra Lorenzo

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ABSTRACT: Introduction: Burnout, characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment, has become a growing concern in residency programs worldwide. This study aimed to assess the prevalence of burnout among urology residents in the Philippines and to identify the key factors that contribute to it. The goal was to propose solutions that can enhance both the quality of patient care and the well-being of the residents. **Methods**: A total of 130 urology residents from accredited training programs across the Philippines participated in this cross-sectional study. Burnout was measured using the Maslach Burnout Inventory (MBI), which evaluates emotional exhaustion, depersonalization, and personal accomplishment. Data were collected via an online survey and analyzed to examine the relationship between burnout levels and various personal, institutional, and demographic factors. **Results**: Most residents reported low levels of emotional exhaustion (64.6%) and depersonalization (63.1%), with 51.5% indicating high levels of personal accomplishment. Higher burnout rates were observed in single residents, those with limited access to mental health support, and those dissatisfied with their work-life balance. Third-year residents showed slightly higher levels of emotional exhaustion, likely due to their transition from general surgery to urology. Physical activity and participation in structured mentorship programs were associated with lower burnout levels. **Conclusion**: While the overall burnout rates among urology residents in the Philippines are lower compared to other medical specialties, improvements are still needed. Increasing access to mental health services, promoting a better work-life balance, and implementing structured mentorship programs could help further reduce burnout and improve the residency experience, ultimately benefiting patient care.

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Topics: *Others*

Simultaneous Pancreas-Kidney Transplantation (SPKT) under the National Pancreas Transplant Programme in Singapore: A Twelve-Year Retrospective Case Series

Dillon Christopher Yong Jie Teo[1], Jian Ning Jan Hoe[1], Wei Zheng So[2], Krishnakumar Madhavan[3], Glenn Kunnath Bonney[3], Hersharan Kaur Sran[4], Anantharaman Vathsala[4], Victor Tswen Wen Lee[5], Valerie Huei Li Gan[6], Sobhana Thangaraju[7], Jirong Lu[2] and Ho Yee Tiong[2]

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ABSTRACT: Introduction: Simultaneous pancreas-kidney transplant (SPKT) has been established as a treatment option internationally for patients with diabetes mellitus (DM) experiencing end-stage renal failure (ESRF) from diabetic nephropathy, improving both insulin production and renal function within a same-setting surgery. However, there is still a paucity of clinical findings following SPKT both locally and regionally. This is because our National Pancreas Transplant Programme (NPTP) is Southeast Asia's leading and only programme to perform SPKTs. It began in 2012 and to date 7 SPKTs have been performed. Thus the objective of this case series is to present the outcomes of these SPKTs done under the NPTP, jointly led by NUH and SGH. **Methods**: We retrospectively studied these 7 patients who underwent SPKT between September 2012 to May 2024. This consisted of 4 patients with T1DM and 3 patients with T2DM. Relevant baseline and post-transplant outcomes were collected. **Results**: The baseline demographics and intra-operative parameters are detailed in Table 1, while post-transplant outcomes at annual follow-up for up to 5 years are shown in Table 2. No patients experienced any major complications such as haemorrhage, infection or graft thrombosis. Overall, patients had optimal post-transplant glycaemic control. Regarding rejection, 2 patients experienced chronic allograft nephropathy, but thereafter renal function stabilised. Our 5-year unadjusted pancreatic and kidney graft survival rates were satisfactory at 100%. No reversion to dialysis was required and renal function remained optimal on follow-up. 5-year overall patient survival was also 100%. **Conclusion**: Our study reports favourable outcomes for SPKT within our local context, demonstrating safety and feasibility in insulin-requiring diabetic patients with ESRF.

External Resource:

https://drive.google.com/file/d/1Fg5SiOgLf3hKTyY-2Y5CYNPls-Gmfq8r/view?usp=sharing

https://drive.google.com/file/d/1EMknAqgT9e1cZGQ4ZmHkqtagGHdsvyeC/view?usp=sharing

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Topics: *Endourology and Stone Diseases*

Comparison of Postoperative Quality of Life between Patients with Symptomatic and Asymptomatic Non-Obstructing Kidney Stones

Jun-Koo Kang, Sang Hee Lee, Jae-Wook Chung, Yun-Sok Ha, Seock Hwan Choi, Bum Soo Kim, Hyun Tae Kim, Tae-Hwan Kim, Eun Sang Yoo and Tae Gyun Kwon

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ABSTRACT: Introduction: Although stone-related symptoms usually occur due to obstruction, non-obstructing kidney stones can also cause symptoms in patients. We aimed to analyze the characteristics of non-obstructing kidney stones that cause preoperative symptoms and whether the presence or absence of symptoms affects postoperative outcomes, including patients' quality of life. **Methods**: We retrospectively analyzed the medical records of patients with non-obstructing kidney stones who underwent RIRS and completed the preoperative and postoperative WISQoL from January 2021 to September 2023. Patients were divided into preoperative asymptomatic and symptomatic group according to the preoperative stone-related symptoms, such as flank pain, hematuria and fever. Patients' baseline characteristics, surgical outcomes and WISQoL scores were compared between the two groups. **Results**: A total of 62 patients with non-obstructing kidney stones were included. The mean D1 (Energy and Fatigue) and D5 (Physical Symptoms) scores were significantly lower in the preoperative symptomatic group compared to the asymptomatic group. However, there were no significant differences between the two groups in other domain scores and patients' baseline characteristics. Additionally, there were no significant differences in postoperative improvement of WisQoL scores, length of hospital stay, operation time, complication rate, and residual stones between both groups. Interestingly, postoperative D1, D4 (Nutrition and pharmacological therapies), and D5 scores significantly decreased compared to preoperative scores in asymptomatic group, while D2 (Sleep) and D4 scores significantly decreased compared to preoperative scores in symptomatic group. **Conclusion**: This study demonstrated that patients with non-obstructing kidney stones may experience worse quality of life after surgery regardless of preoperative symptoms. Therefore, discussing about this possibility with patients is deemed necessary.

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Topics: *Uro-oncology, Others*

PDK4 is Related to Tumorigenesis and Aggressive Features of Prostate Cancer and can be Therapeutic Target in Preventing Metastasis in Hormone-Sensitive Tumor State

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ABSTRACT: Introduction: Prostate cancer ranks as the second most common cancer in men globally and represents a significant cause of cancer-related mortality. Metastasis, the spread of cancer cells from the primary site to distant organs, remains a major challenge in managing prostate cancer progression. Pyruvate dehydrogenase kinase 4 (PDK4) is implicated in regulating aerobic glycolysis and has emerged as a potential player in various cancer types, yet its role in prostate cancer remains poorly understood. **Methods**: PDK4 expressions were detected by western blotting analysis and real time PCR from cell lines and human tissues samples. Migration ability was analyzed by matrigel coated invasion chambers. Human sampled were collected from Chilgok Kyungpook National University Hospital. **Results**: We found elevated expression of PDK4 in prostate cancer cell lines compared to normal prostate cells, with particularly high levels observed in DU145 and LnCap cell lines. Knockdown of PDK4 in these cell lines resulted in suppressed invasion ability, indicating a potential role for PDK4 in prostate cancer metastasis. Furthermore, our results revealed alterations in epithelial-mesenchymal transition (EMT) markers and downstream signaling molecules following PDK4 suppression, suggesting its involvement in modulating invasion-related pathways. Analysis of patient tissue samples confirmed elevated PDK4 expression in prostate cancer tissues compared to normal prostate tissues, and PSA and PDK4 expression showed significantly positive correlation. **Conclusion**: Overall, our findings suggest that PDK4 may contribute to prostate cancer tumorigenesis and progression, highlighting its potential as a therapeutic target for combating this disease.

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Topics: *Uro-oncology*

Establishing the Role of MRI-only Screening for Prostate Cancer: A Systematic Review and Meta-Analysis

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ABSTRACT: Introduction: While serum PSA levels followed by prostate MRI is widely performed for diagnosis of prostate cancer, in the screening setting this may cause under-detection of clinically significant prostate cancer (csPCa). We compare cancer detection rates (CDR) in prostate cancer screening with MRI prostate only ('primary' MRI) compared to serum PSA levels followed by MRI prostate ('sequential' MRI). **Methods**: Pubmed, Embase, Web of Science, CENTRAL, Scopus and Google Scholar were searched using key terms of "MRI", "prostate cancer", and "screening" from 01 January 2000–20 April 2024. We included studies investigating the general adult male population not otherwise risk stratified, and extracted outcomes of CDR for clinically significant (ISUP Grade Group ≥ 2) and clinically insignificant (ISUP Grade Group 1, ciPCa) prostate cancer, and biopsy rate. **Results**: 17 studies were included for final analysis. When including all studies, primary MRI had higher CDR compared to sequential MRI for any prostate cancer (8.49% vs. 1.88%, $p = 0.0223$) and csPCa (5.93% vs. 1.15%, $p = 0.0180$). There was no significant difference in CDR for ciPCa between both groups. In studies directly comparing primary and sequential MRI, primary MRI showed higher odds of detection for any prostate cancer (OR 2.77, 95%CI: 1.71–4.49), csPCa (OR 2.32, 95%CI: 1.37–3.96) and ciPCa (OR 3.11, 95%CI: 1.08–8.97). **Conclusion**: Primary MRI screening showed higher CDR for csPCa than sequential MRI screening triggered with PSA threshold of 3–4 ng/mL, but has higher CDR of ciPCa and higher rates of needle biopsies. For widespread implementation, more granular cost-effectiveness outcomes of primary MRI screening is desired.

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Topics: *General Urology*

Poly(I:C)-Induced Mesenchymal Stem Cells Protect the Kidney against Ischemia/Reperfusion Injury via the TLR3/PI3K Pathway

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ABSTRACT: Introduction: To investigate the effect and protective mechanism of mesenchymal stem cell subpopulations on acute kidney injury by establishing a mouse model of renal ischemia-reperfusion injury. **Methods**: Male C57BL/6 mice were randomly divided into five groups, namely, sham-operation group and those treated with normal saline, untreated mesenchymal stem cells, mesenchymal stem cells treated with lipopolysaccharide (LPS, pro-inflammatory phenotype) and mesenchymal stem cells treated with poly-inosinic-polycytidylic acid (poly(I:C), anti-inflammatory phenotype) respectively. The renal function, histopathological damage, circulating inflammation levels and antioxidant capacity of mice were evaluated. The PI3 kinase p85 (PI3K) inhibitor was added into the conventional mesenchymal stem cell cultures *in vitro* to observe its effects on the secretion of anti-inflammatory cytokines. **Results**: Mesenchymal stem cells treated with poly(I:C) (anti-inflammatory phenotype) could effectively reduce serum creatinine and blood urea nitrogen, attenuate histopathological damage and apoptosis level, decrease the level of circulating pro-inflammatory cytokines and increase the level of circulating anti-inflammatory cytokines, enhance peroxidase activity and reduce malondialdehyde content at each time point. After the addition of the PI3K inhibitor, the mRNA expression and protein secretion of indoleamine 2,3-dioxygenase 1 and heme oxygenase 1 of various mesenchymal stem cells were significantly reduced, and that of mesenchymal stem cells treated with poly(I:C) (anti-inflammatory phenotype) was more obvious. **Conclusion**: Polyriboinosinic-polyribocytidylic acid (poly(I:C)), a synthetic double-stranded RNA, whose pretreatment induces mesenchymal stem cells to differentiate into the anti-inflammatory phenotype. Anti-inflammatory mesenchymal stem cells induced by poly(I:C) can better protect renal function, alleviate tissue damage, reduce circulating inflammation levels and enhance antioxidant capacity, and achieve stronger anti-inflammatory effects through the TLR3/PI3K pathway.

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Topics: *General Urology*

A Novel Scoring System and Timer Based Repositioning Protocol to Reduce Well-Leg Compartment Syndrome (WLCS) in Patients Undergoing Prolonged Surgery

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ABSTRACT: Introduction: Patients undergoing prolonged surgery may develop compartment syndrome in one or both lower limbs in the absence of trauma or pre-existing vascular disease known as WLCS. Although uncommon it has devastating consequences for postoperative recovery including loss of life, limb or disability. Our primary aim was to create a novel scoring system for WLCS preoperative risk assessment and run a timer based repositioning protocol for patients undergoing prolonged pelvic surgery. Secondary aim was to asses feasibility and surgeon satisfaction of these measures in the operating room. **Methods**: We recruited Colorectal, Urology and Plastics Surgery patients undergoing pelvic surgery in lithotomy or Trendelenburg position at SKH from July to December 2024. Preoperative novel WLCS score was calculated: Body mass Index (BMI) ≥ 25, Age < 35 and Peripheral Vascular Disease each category scoring 1 point. Highest WLCS score was 3 and lowest 0. Intraoperatively, timer based repositioning was performed once operative time reached 4 h for 15 min each time with calves at heart level or lower. Feasibility and satisfaction scores were measured with surveys. **Results**: 484 patients participated. There were 0 WLCS cases. WLCS score was 0 in 50%, 1 in 45%, 2 in 14%, 3 in 0%. 11.5% of patients were repositioned, of whom 76% were repositioned once and 24% twice. WLCS scoring did not correlate with number of repositioning. Surveys revealed the 95% satisfaction rate of staff with perceived disruption of below 10%. **Conclusion**: WLCS score and timer based repositioning should be performed for all patients undergoing prolonged pelvic surgery and contribute to low rates of WLCS.

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Topics: *General Urology*

A Study on Changes in Testosterone According to Age in Korean Men

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ABSTRACT: Introduction: This study aims to investigate age-related changes in testosterone levels and the influencing factors in healthy Korean men. **Methods**: Health checkup results were collected from hospitals distributed across the country over a 10-year period from 2014 to 2023. Age and testosterone levels were analyzed. We examined whether there were differences in testosterone at each age. **Results**: Data from a total of 29,170 individuals from 20 hospitals across the country were analyzed. The average age was 54.4 ± 9.8 years. The average testosterone level was 4.8 ± 1.8 ng/mL. The testosterone levels by age group were as follows: 31–39 years, 4.8 ± 1.8; 40–49 years, 5.0 ± 1.8; 50–59 years, 4.8 ± 1.7; 60–69 years, 4.6 ± 1.8; ≥70 years, 4.6 ± 1.9. The distribution of testosterone levels below 2.5 ng/mL by age group showed that in the 30–39 years group, 108 individuals (7.3%) had testosterone levels below 2.5 ng/mL, 424 individuals (5.5%) in the 40–49 years group, 774 individuals (6.3%) in the 50–59 years group, 534 individuals (9.6%) in the 60–69 years group, and 237 individuals (11.6%) in the ≥70 years group. There was a trend of increasing prevalence as age increased ($p < 0.01$). Age, BMI, fasting glucose, and triglycerides showed a negative correlation with testosterone levels, indicating that higher age, BMI, fasting glucose, and triglyceride levels were associated with lower testosterone levels ($p < 0.01$). HDL and LDL showed a positive correlation with testosterone levels. **Conclusion**: Individuals who are older, have a higher BMI, and exhibit elevated fasting glucose and triglyceride levels are more likely to have lower testosterone levels. Therefore, close monitoring of testosterone levels is necessary for populations with these risk factors.

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Topics: *Functional Urology Transplantation*

The Gore Test: Tackling the Diagnostic Challenge of Intraprostatic Ductal Urinary Reflux in Men with Chronic Pelvic Pain Syndrome

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ABSTRACT: Introduction: Chronic Pelvic Pain Syndrome (CPPS) is a commonly diagnosed disease, yet its aetiology remains poorly understood. Intraprostatic urinary reflux (IPUR) is recognised as a possible aetiology, however proving its presence remains a diagnostic challenge. We present our findings on how Phenazopyridine, commonly used for symptomatic treatment, can help identify IPUR. Phenazopyridine is known to cause urine discolouration, which we hypothesise that in the presence of IPUR, discoloured urine mixes with intraprostatic semen causing persistent semen discolouration after stopping Phenazopyridine. We name this the “Gore test”. **Methods:** We present a case series of five CPPS patients who received a course of Phenazopyridine as part routine clinical management, and was asked to monitor for any semen discolouration after stopping Phenazopyridine. The same test was performed on three healthy control subjects. This study was approved by the Institutional Review Board. **Results:** Of the five patients included, four patients had a positive result of persistent semen discolouration. One of these patients underwent Video Urodynamic Study, with evidence of detrusor sphincter dyssynergia. These four patients were trialled on a combination of either ESWT, Baclofen, or urethral sphincter Botox injection, with favourable outcomes. One patient had a negative test result, and showed improvement on Tamsulosin alone without the need for further CPPS treatment. All three control subjects had negative results. **Conclusion:** The Gore test is a simple, non-invasive, accessible tool to demonstrate the presence of IPUR. This allows us to not only gain insights into the aetiology of the disease, but also provides direction for future clinical management.

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Topics: *General Urology*

Effect of Pentosan Polysulfate Sodium on Testosterone-Induced Benign Prostatic Hyperplasia Rats

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ABSTRACT: Introduction: Pentosan polysulfate sodium (PPS), marketed as Penpol, is an oral medication primarily used for the treatment of interstitial cystitis and bladder pain syndrome (BPS). In addition to its established therapeutic applications, PPS has been reported to exhibit anti-inflammatory properties and promote extracellular matrix degradation. However, its potential role in benign prostatic hyperplasia (BPH) has not been investigated. In this study, we evaluated the efficacy of PPS in a rat model of BPH. **Methods:** BPH was induced by orchiectomy followed by administration of testosterone propionate and β-estradiol for eight weeks to simulate hormonal imbalances associated with the condition. PPS was administered during the final four weeks of the induction period. The effects of PPS on prostate weight, histopathological changes, inflammatory cytokine expression, and extracellular matrix remodeling were assessed. **Results:** The results showed that while prostate weight was significantly increased in the BPH group, PPS administration did not lead to a significant reduction in prostate weight. However, histopathological analysis revealed a significant improvement in epithelial cell thickness and inflammation scores in the PPS-treated group, suggesting a potential reduction in urethral compression. Additionally, PPS administration reduced key BPH-related markers, including prostate-specific antigen (PSA), dihydrotestosterone (DHT), 5-alpha reductase type 2 (5A-R2), and androgen receptor (AR) levels in prostate tissue. **Conclusion:** These findings suggest that PPS may have therapeutic potential in alleviating BPH-related pathology, particularly through its anti-inflammatory and hormonal regulatory effects.

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Topics: *Minimally Invasive Surgery*

Comparative Outcomes of Robot-Assisted and Laparoscopic Radical Nephrectomy: A 7-Year Single-Centre Review

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ABSTRACT: Introduction: Radical nephrectomy remains the standard surgical approach for renal cell carcinoma (RCC) in cases unsuitable for nephron-sparing surgery. This retrospective audit compares perioperative outcomes, staging, and trends between robot-assisted and laparoscopic radical nephrectomies performed at East Surrey Hospital between 2018 and 2024. **Methods**: A retrospective audit of 113 radical nephrectomy cases from 2018 to 2024 was performed (robotic: 50; laparoscopic: 63). Data were analyzed for operative time, complications, TNM stage, length of stay, margin status, and POSSUM scores. **Results:** Robotic nephrectomy was used more frequently in advanced cases (T3a/pT3a: 23 vs. 12). Mean operative time was longer for robotic (238 vs. 191 min), though margin positivity was slightly lower (2 vs. 3). Average length of hospital stay was shorter in robotic cases (3.61 vs. 4.22 days, $p = 0.69$). Both groups had comparable transfusion needs and complication rates. ICU admissions occurred in 3 robotic and 5 laparoscopic patients ($p = 1.0$; OR = 0.74), with most complications being Clavien-Dindo Grade I–II. POSSUM-predicted morbidity and mortality were higher in robotic cases (21.92% vs. 17.37%; 4.04% vs. 2.95%). Surgical trends showed a marked increase in robotic use from 0% in 2018 to 70% in 2024. National and international audits show similar trends in surgical precision and recovery profiles without compromising safety or oncological outcomes. **Conclusion**: Robot-assisted nephrectomy is a safe, effective alternative to laparoscopic surgery, with equivalent oncological and perioperative outcomes. Its increasing use is driven by improved precision and ergonomics, particularly for complex cases. Further research should explore long-term outcomes and extend comparisons to partial nephrectomy and nephroureterectomy.

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Topics: *Endourology and Stone Diseases*

Post PCNL Emphysematous Pyelonephritis with Sub Capsular Collection—A Rare Case

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ABSTRACT: Introduction: Emphysematous pyelonephritis (EPN) is a rare, life-threatening infection of the renal parenchyma characterised by the presence of gas in the renal tissue, which can progress rapidly to renal failure and sepsis. This report describes a case of EPN in a post (PCNL) patient with a double-J (DJ) stent, which was managed by PCN drainage. **Case**: A 62-year-old female known case of diabetes and CKD with a history of renal stone disease underwent PCNL and URSL and had a DJ stent placed for post-operative drainage. She subsequently presented with fever, flank pain, and dysuria after one month of procedure. Imaging studies revealed gas within the renal parenchyma and pelvicalyceal system with peri-nephric collection, confirming the diagnosis of EPN grade 3a was made. Position of the DJ stent was confirmed on x ray. Patient was started on broad spectrum antibiotics,10 Fr per cutaneous nephrostomy catheter was inserted and subcapsular collection was drained. Repeat CT scan was done which showed resolution of collection and air foci. There was minimal drainage in the PCN and hence was removed after 7 days. Patient recovered clinically. Final CT scan showed a clear picture with DJ stent *in situ*. DJ stent was removed after 6 weeks. Patient recovered well and managed well. **Conclusion**: The outcome was favourable with clinical improvement following drainage and antibiotic. This case highlights the importance of early recognition and prompt management of EPN in post-PCNL patients, particularly in the presence of urinary drainage devices such as DJ stents. PCN drainage is a viable therapeutic approach, especially in cases where surgical intervention may be contraindicated or delayed.

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Topics: *General Urology*

Does the Length of the Male Urethra Change with Age in Korean Men?

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ABSTRACT: Introduction: Information on male urethral length is important for planning urological reconstructive surgeries such as urethroplasty. However, data on normal urethral length in men, regardless of race, are limited. This study aimed to measure urethral length in Korean men across different ages. **Methods**: Male patients undergoing lower urinary tract evaluations had urethrocystoscopy performed using a graduated Olympus flexible cystoscope. Distances from the urethral meatus to the external urethral sphincter, verumontanum, and bladder neck were measured and compared by age. **Results**: From July 2023 to April 2025, urethral length was measured prospectively in 124 patients: 22 in their 50 s, 42 in their 60 s, 41 in their 70 s, and 19 in their 80 s. The mean length from the meatus to the bladder neck was 17.2 ± 1.8 cm with no significant difference among age groups (p = 0.30). The distance from the meatus to the external sphincter was 12.9 ± 1.3 cm, similarly without significant age-related difference (p = 0.25). However, the prostatic urethra length from the verumontanum to the bladder neck averaged 2.0 ± 0.8 cm and significantly increased with age (p = 0.002). **Conclusion**: In Korean men, the average urethral length was 17.2 ± 1.8 cm and did not vary with age. In contrast, the prostatic urethra length showed an age-related increase.

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Topics: *Uro-oncology*

Desperation Retroperitoneal Lymph Node Dissection in Chemorefractory Testicular Germ Cell Tumor: A Case Report

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ABSTRACT: Introduction: Non-seminomatous germ cell tumors (NSGCTs) of the testis typically have excellent outcomes with surgery and chemotherapy. However, a subset of patients develop persistent serum tumor marker (STM) elevation despite treatment, requiring surgical intervention such as Desperation Retroperitoneal Lymph Node Dissection (RPLND). **Methods:** A 28-year-old male presented in March 2020 with a right testicular mass, retroperitoneal lymphadenopathy, and lung nodules. Right high inguinal orchidectomy confirmed NSGCT with embryonal carcinoma and yolk sac tumor elements. He received four cycles of BEP chemotherapy, achieving remission for 3.5 years. In August 2024, rising AFP levels and PET-CT findings suggested disease recurrence. He underwent two cycles of TIP chemotherapy followed by three cycles of Gem-Ox; however, AFP continued to rise, reaching 4221 ng/mL by February 2025, with enlarging retroperitoneal nodes. **Results:** Desperation RPLND was performed successfully via a midline incision with complete resection of retroperitoneal nodes. The postoperative course was uneventful, and the patient was discharged on postoperative day 4. Histopathology revealed mature teratoma and yolk sac tumor components. Postoperative tumor markers showed significant decline, indicating treatment response. **Conclusion:** Desperation RPLND can offer durable disease control in select patients with chemorefractory NSGCT and progressive STM elevation. Careful patient selection, precise surgical technique, and multidisciplinary management are critical. This case underscores the importance of timely surgical intervention even when systemic therapies have failed.

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Topics: *Endourology and Stone Diseases*

Preputial Stone Disease (PSD) Mimicking Penile-Scrotal Abscess due to Incomplete Circumcision: A Unique Case Report

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ABSTRACT: Introduction: PSD is an uncommon type of urolithiasis. PSD is mainly related to severe phimosis in uncircumcised males. This is the first case of PSD mimicking penile-scrotal abscess due to incomplete circumcision. **Methods:** The data was collected from the patient at the Sekarwangi Regional Hospital from January 7th to 5th February 2025. Informed consent was obtained before collecting the data. The patient was observed daily during in-hospital and once a week after hospitalization. All therapies and their changes were documented. **Results:** A 55-year-old male presented with penile and scrotal pain. The patient was circumcised at four years old, but it was incomplete as the skin still covered the glans completely when in the flaccid state. The penis and scrotum were severely swollen. The prepuce seemed to be phimosis as the skin completely covered the penile glans, with a skin fistula opening found ventrally with a flow of pus. Initially, the patient was diagnosed with a penile-scrotal abscess due to its swollen shape, and the patient was managed by urgent surgical intervention. Post operation, the patient was diagnosed with preputial stone with phimosis in incomplete circumcision, skin fistula, and scrotal abscess. The patient was discharged on the third day after surgery and recovered well. **Conclusion:** Our findings suggest that we need to always suspect a PSD in the case of penile and scrotal swelling, regardless of the shape. Also, proper circumcision is required to prevent PSD.

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Topics: *Endourology and Stone Diseases, Minimally Invasive Surgery*

Optimizing Percutaneous Access Sheath for Upper Urinary Tract Stones: A Personalized Approach

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ABSTRACT: Introduction: While standard PCNL (sPCNL) achieves a high stone-free rate (SFR), it remains invasive and carries significant morbidity. Recent innovations led to miniaturized instruments, resulting in terms like: Mini-PCNL (18–16 Fr), Ultra-mini PCNL (12–14 Fr), Super-mini PCNL (10–13 Fr). Instead of comparing sizes, we recommend selecting tube size individually for each patient. **Methods:** We recommend limiting tube size to a maximum of 16 Fr for stones up to 2.0 cm and 22 Fr for stones more than 2.0 cm, highlighting that PTFE (polytetrafluoroethylene) tubes are less traumatic and more effective than metal tubes. Our approach advocates for a condition-dependent tubeless closure of the procedure, which reduces hospital stay and optimizes outpatient follow-up. **Results:** From 2023–2025, our center performed 470 PCNLs: (1) 27 cases (5.7%) required sPCNL (24–28 Fr) due to stones >30 mm or patient condition; (2) 443 cases used smaller sheaths (14–18 Fr), with stone size as the key criterion; (3) Ureteral/kidney stones (6–10 mm): 14–16 Fr; (4) Stones (10–20 mm): 18 Fr PTFE sheaths. Single-step dilation reduced operative and fluoroscopy time, lowering complications. Tubeless procedures were performed in 195 cases (41.5%), including 28 totally tubeless. 248 cases required 12–14 Fr silicone/latex Foley tubes due to bleeding, infection, or inflammation. **Conclusion:** (1) The most successful PCNL outcomes involve minimal invasiveness and tubeless/totally tubeless techniques; (2) Clinics should maintain a range of nephrostomy tubes (standard, mini, micro) and compatible nephroscopes; (3) Smaller, single-use PTFE sheaths reduce radiation, operative time, and complications. We strongly recommend individualized access sheath selection for optimal PCNL outcomes.

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Topics: *Endourology and Stone Diseases*

In-Vitro Deflection Comparison of 3 Flexible and Navigable Suction Ureteral Access Sheaths (FANS) of 2 Sizes across 7.5Fr Single-Use Flexible Ureteroscopes: An AUSET-EAU Endourology Collaboration

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ABSTRACT: Introduction: The use of flexible ureteroscopy (fURS) with Flexible and Navigable Suction Ureteral Access Sheaths (FANS) has rapidly gained popularity worldwide, yet there is limited literature on how the deflection ability of different FANS compare with different 7.5Fr fURS. We aim to evaluate the *in-vitro* the deflection ability of three different FANS of two sizes each, with two different 7.5Fr fURS. **Methods:** We compared the 7.5Fr fURS from Innovex and Pusen with and without FANS. Six FANS were compared, including the 10/12Fr and 11/13Fr Innovex, ClearPetra, and Reborn FANS. fURS deflection angles were measured under four different working channel conditions: (1) empty working channel, (2,3) 150 µm and 200 µm SOLTIVE Thulium fiber laser, and (4) 1.9Fr Zero Tip Nitinol Basket. **Results:** The Innovex fURS had greater deflection angles than the Pusen fURS in all four different working channel conditions with and without FANS, but only statistically significant without FANS with an empty working channel ($p = 0.02$) and 200 µm fiber laser ($p = 0.05$). All 10/12Fr FANS had greater deflection angles than their 11/13Fr counterparts, but this was not statistically significant. When comparing FANS, the Innovex FANS showed the greatest deflection ability, followed by the ClearPetra FANS then the Reborn FANS for both 10/12Fr and 11/13Fr. **Conclusion:** Greater deflection with a 7.5Fr fURS was achieved with 10/12Fr compared to 11/13Fr FANS. There was similar deflection ability between Innovex and ClearPetra FANS, outperforming Reborn FANS. This study allows urologists to consider the expected performance of various fURS and FANS, aiding appropriate instrument choices according to patient's anatomy and stone characteristics.

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Topics: *Endourology and Stone Diseases*

In Vitro Suction Comparison of 3 Flexible and Navigable Suction Ureteral Access Sheaths (FANS) of 2 Sizes using a 7.5Fr Single-Use Flexible Ureteroscope: An AUSET-EAU Endourology Collaboration

Rachel Shu-En Lau[1], Yu Xi Terence Law[1], Yi Quan Tan[1,2], Wei Zheng So[1], Jia-Lun Kwok[3], Ei Ei Aung Htoo[1], Kar Kei Steffi Yuen[4], Sung Yong Cho[5], Takaaki Inoue[6], Ho Yee Tiong[1], Bhaskar Kumar Somani[7] and Vineet Gauhar[2]

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ABSTRACT: Introduction: With the increasing availability of different Flexible and Navigable Suction Ureteral Access Sheaths (FANS), we aim to evaluate the *in-vitro* suction performance of three different FANS of two sizes each. Our secondary aim was to study the impact of digital occlusion versus thumb sliders on suction performance. **Methods:** A 7.5Fr single-use Flexible Ureterorenoscope from Innovex Medical was used with six FANS: 10/12Fr and 11/13Fr FANS from Innovex, ClearPetra, and Reborn. Time taken to suction 100 mL saline, and time taken to suction 1000 mm^3 of 1 to 2 mm stones in the upper and lower pole of a kidney model was measured. **Results:** All 11/13Fr FANS had suction rates three times faster than their 10/12Fr counterparts ($p = 0.001$). The 10/12Fr and 11/13Fr Innovex and ClearPetra FANS both had faster suction rates than Reborn FANS when suctioning 100 mL saline. There was no difference in suction rate when using the thumb slider versus digital occlusion for the Innovex FANS, however the Reborn FANS had slower suction rates with the thumb slider. Innovex FANS was the fastest in suctioning upper pole calculi, followed by ClearPetra FANS, and Reborn FANS for 10/12Fr (198 s, 237 s, and 537 s respectively, $p < 0.001$) and 11/13Fr (158 s, 174 s, and 332 s respectively, $p < 0.001$). The Reborn FANS were not able to reach the lower pole calculi. Between ClearPetra and Innovex FANS, there was no significant difference in suctioning lower pole calculi. **Conclusion:** Faster suction was achieved with 11/13Fr compared to 10/12Fr FANS. The Innovex and Clearpetra FANS performed similarly better in their suction performance than the Reborn FANS.

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Topics: *Uro-oncology*

Injection at Home: Redefining Convenience in Patient Treatment

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ABSTRACT: Introduction and Objectives: The use of Degarelix, a monthly androgen deprivation therapy (ADT), is often limited by the need for patients to return to the hospital for administration. Prostate cancer patients, typically elderly and at higher risk of falls, also face increased infection risks from frequent hospital visits. Monthly hospital-based injections can be burdensome, especially for those with mobility issues or limited caregiver support, leading to missed or delayed doses. To address these challenges, we introduced a nurse-administered home injection service to enhance convenience, safety, and adherence. This service was supported by Temasek Foundation. **Materials and Methods**: Eligible patients were prescribed Degarelix monthly, until their next follow-up. Those with psychiatric history or the absence of a female caregiver were excluded. Medications were delivered to patients, followed by scheduled nurse visits for subcutaneous injections. The nurse was well trained in delivering subcutaneous injections. **Results:** From June 2024 to March 2025, seven patients were enrolled, receiving a total of 29 injections at home. Patient satisfaction survey collected from all 7 patients showed 100% agreed or strongly agreed that the injections were comfortable, easy to arrange, and facilitated timely treatment. Eighty-six percent found the service convenient, while 14% responded neutrally. All patients reported being satisfied with the overall service. **Conclusion:** This home injection service demonstrated improved convenience and treatment adherence by allowing timely administration of Degarelix in a safe, comfortable environment. Future plans include expanding the service to include other therapies such as bone-modifying agents such as Zolendronic acid, Denosumab, and additional forms of ADT such as Leuprorelin, Goserelin

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Topics: *Minimally Invasive Surgery*

Impact of AirSeal® on Peri-Operative Outcomes in Robotic-Assisted Partial Nephrectomy: A Retrospective Comparative Study

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ABSTRACT: Introduction: The AirSeal® system (AS) is an insufflation system designed to improve peri-operative outcomes by maintaining stable pneumoperitoneum and valve-free access to the abdomen. This study compares the clinical impact of AS and conventional insufflation (CI) in robotic-assisted partial nephrectomy (RAPN). **Methods:** This retrospective study reviewed 87 patients (Male N = 59 (68%), Mean age 56.3 ± 12 years) who consecutively underwent RAPN from January 2022 to March 2024 at the National University Hospital, Singapore. Patients were divided into AS (N = 55 (63%)) and CI group (N = 32 (37%)). RAPN was performed with warm ischemia, using a pneumoperitoneum maintained at <15 mmHg. Use of AS or CI was based on surgeon preference. Baseline demographics, clinical parameters and perioperative outcomes were compared between the groups. **Results:** No significant differences ($p > 0.05$) were found between AS and CI groups respectively for mean age (55 ± 12 vs. 58 ± 12 years), male gender (N = 35 (64%) vs. 24 (75%)), Chinese race (N = 41 (75%) vs. 25 (78%)), median BMI (25.2 vs. 26.0) and ASA ≤ 2 proportion (N = 46 (84%) vs. 27 (84%)). Complexity of RAPN in terms of median tumour size (2.5 vs. 2.6 cm), median RENAL score (7 vs. 8), multiple arteries cases (N = 8 (15%) vs. 9 (28%)) were similar (p = NS). Retroperitoneal and arterial-only (AO) clamping approaches were utilized in 10 (18%) and 48 (87%) patients in AS group respectively. This was significantly higher than the corresponding 0 (0%), $p < 0.05$ and 16 (50%), $p < 0.01$ in CI group. AS group had significantly lower estimated blood loss (50 (IQR 20–150) vs. 100 (IQR 50–200) mL, $p < 0.01$) than CI group, which required 1 blood transfusion. Mean operative time (268.7 ± 53.4 vs. 263.7 ± 46.8 min) and complication rates (N = 0 vs. 2) were similar. Surgical margin involvement was proportionally lower in AS group (N = 3 (6%) vs. 4 (13%), $p = 0.42$). **Conclusion:** The AS facilitates greater use of retroperitoneal access and AO clamping in RAPN, resulting in significantly lower blood loss and probable advantages in transfusion and surgical margin rates over CI.

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Topics: *General Urology*

Navigational Error: Foley Catheter into Renal Pelvis of Ectopic Kidney

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ABSTRACT: Introduction: Foley catheter insertion is frequently regarded as a routine procedure; however, improper technique or malposition can cause serious complications. We present the first documented case of accidental foley catheter placement into the renal pelvis of an ectopic left kidney. **Methods:** A 54-year-old diabetic male with a history of left ureteric reimplantation for primary obstructive megaureter (POM) of left ectopic kidney presented with intermittent left flank pain, fever, dysuria, and storage lower urinary tract symptoms for one month. An ultrasound of the abdomen and pelvis revealed a grossly hydronephrotic, low-lying ectopic left kidney with pyelonephritic changes and a prostate measuring 50 g. He was started on antibiotics and alpha-blockers and was catheterized. However, the catheter appeared unusually short outside the urethral meatus but was still draining urine. Non-contrast CT and MRI confirmed a grossly hydronephrotic ectopic left kidney in the lumbar region with thinned parenchyma and the Foley catheter traversing the left ureter into the renal pelvis. A renogram showed that the left kidney had only 8% function. Under fluoroscopic guidance, the Foley catheter was carefully removed, and cystourethroscopy revealed a patulous left ureteric orifice, consistent with prior reimplantation. Due to poor renal function, left nephrectomy was performed. **Results and Conclusion:** Always obtain a detailed past urological history and consider imaging to identify anatomical variations before placing a Foley's catheter. Maintain a high index of suspicion for catheter misplacement in cases of poor drainage, persistent leakage, difficult balloon inflation, or an unusually short catheter outside external urethral meatus.

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Topics: *General Urology*

Clinical and Surgical Insights into Parameatal Urethral Cyst

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ABSTRACT: Introduction: Parameatal cyst is a rare benign congenital urethral disorder which typically presents a small, translucent cyst near the ventral or lateral part of urethral meatus. It was first reported by Thompson and Latin in 1956, and since then 50 cases have been published. The formation of cyst is believed due to obstruction of paraurethral duct, and most cases have size of <1 cm. It is more commonly found in children than adults, man more than women with prevalence of 1–6% in adult women. Two such cases are presented here. **Methods:** Here, we present two cases of parameatal urethral cysts in males, diagnosed relatively later in life: one in a young adult in his early 20 s and the other in a mid-adolescent. The young adult sought treatment for urine splaying and challenges with sexual intercourse, whereas the adolescent was primarily concerned about the cosmetic appearance of the cyst. Both cases were treated with surgical excision, considering the optimal approach according to the literature. Histopathological examination revealed that the cyst walls were lined with stratified squamous epithelium in both instances. Follow-up showed excellent cosmetic results, with no recurrence or voiding difficulties. **Results and Conclusion:** Parameatal urethral cysts are rare which usually present at birth or early childhood, but it can present late in young adults. They are usually asymptomatic but can lead to urinary complains, cosmetic concerns or painful sexual intercourse. Diagnosis can typically be made through physical examination, and complete excision is reported to be an effective treatment, with low recurrence rates and good cosmesis.

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Topics: *General Urology, Uro-oncology, Andrology and Subfertility*

Application of Dynamic Sentinel Node Biopsy for Early Penile Cancer: A Multi-Centre Case Series in Singapore

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ABSTRACT: Introduction and Objectives: Penile cancer is a rare uro-oncological condition, of which involvement of inguinal lymph node is an important prognostic factor. The European Association of Urology (EAU) recommends intermediate-risk (pT1b, Grade 1 or 2) or high-risk (pT2 or greater) penile cancer patients with non-palpable inguinal lymph node (cN0) to undergo either an invasive bilateral modified inguinal lymph node dissection (ILND) or dynamic sentinel node biopsy (DSNB). While most Urological centres in Singapore have yet to start a DSNB service and instead offer modified radical ILND as its preferred staging technique, it is offered as an option in 2 hospitals in Singapore. **Material and Methods**: We detail a case series of 8 patients across 2 centres in Singapore ranging from a median follow-up period of 23 months. The patients underwent preoperative imaging with either a lymphoscintigraphy or a single-photon emission computer tomography (SPECT) before undergoing DSNB. Our centres incorporated a dual tracer method with a gamma detection probe and methylene blue for sentinel lymph node identification. **Results:** We report 8 patients who have undergone the DSNB procedure. In 4 out of 8 patients, histology came back positive for metastatic disease, and subsequent appropriate lymph node management (surveillance vs. definitive ILND vs. radiotherapy) was advised. None of the patients report complications associated with DSNB, and all 8 patients remain disease-free. **Conclusion**: We recommend DSNB as a viable option for accurate nodal staging of penile cancer for indicated patients due to its lower risks of long-term morbidity. Specialized training and adequate preparation are vital in ensuring the success of the procedure.

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Topics: *Endourology and Stone Diseases*

Climate Change, Heat Stress, and Kidney Stones: A Retrospective Analysis of Emergency Department Visits in Singapore (2008–2020)

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ABSTRACT: Background: Rising global temperatures and more frequent heat stress events have been linked to a higher incidence of kidney stone disease. Despite its equatorial climate and year-round heat, Singapore experiences seasonal temperature and humidity variations that may influence renal colic presentations. **Objective**: To investigate the correlation between ambient heat stress and emergency department (ED) visits for renal colic at Singapore General Hospital (SGH) from 2008 to 2020. **Methods**: A retrospective study was conducted using de-identified ED registry data from SGH (IRB2021/2122). Cases of renal colic were identified via ICD-9/SNOMED CT coding and free-text searches. Extracted variables included patient age, gender, race, four-digit postal code, and date/time of ED registration. Meteorological data corresponding to the study period were obtained including yearly and monthly maximum/minimum and mean ambient temperatures; and outdoor wet bulb glob temperatures (WBGT) from 2010–2020. **Results**: Between 2008–2020 there were 1,833,908 ED visits with 30,392 visits for renal colic (1.66%). The commonest age group of colic presentation was between 30–59 years with predominantly Male gender. There was a positive correlation between higher monthly temperatures and increased renal colic presentations from March to October. This also corresponded to the WBGT peaks during the period. **Conclusion**: This study supports a link between heat stress and renal colic presentations in Singapore, underscoring the potential impact of climate variability even in equatorial regions. These findings may inform public health planning, especially in the context of climate adaptation and hydration awareness during high-risk periods, as well as targeted interventions for vulnerable groups during such heat stress.

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Topics: *Uro-oncology*

An Initial Case Series Experience of Peri-Rectal Spacer Use for Prostate Radiotherapy

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ABSTRACT: Introduction: Radiotherapy for prostate cancer has rectal toxicity in up to 30% of patients. The utilisation of peri-rectal spacers has emerged as a strategy to reduce rectal toxicity. We demonstrate the early learning curve of peri-rectal spacer implantation, investigate factors affecting procedural difficulty and report our outcomes. **Methods:** We analysed 23 patients between May 2024 and May 2025. Spacer placement was performed transperineally under ultrasound guidance as day surgery. All patients had a Magnetic resonance imaging (MRI) done post-procedure to confirm spacer position and for treatment planning. Data, including demographics, pathological and procedural details, were captured. **Results:** 16 patients of Gleason Grade Group 2–3 and 7 in Group ≥4 (total 23 patients—median age 71 years). Mean operative time of 14 min 57 s. Post-procedure MRI revealed a mean prostate to rectal wall distance of 11.98 mm (range: 4.15 mm to 18.45 mm). 4 patients had prior BPH procedures, and 8 patients had Extra-prostatic extension (EPE). In both instances, there were no significant differences in operation time or deployment failures. Post-procedure MRI confirmed optimal spacer positioning in 17 cases, in 1 case, there was intra-prostatic capsular injection of the spacer, and in 1 case, there was rectal wall infiltration. Grade 2 rectal toxicity occurred in 1 patient. No other rectal toxicities were reported. **Conclusion:** Peri-rectal spacer injection is feasible and safe. Prior BPH procedures and EPE did not affect the procedural difficulty. The high rate of optimal spacer positioning and low incidence of significant radiation side effects support the increased use of peri-rectal spacers.

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Topics: *Minimally Invasive Surgery*

Early Experience of Minimally Invasive Surgical Therapy (MIST) for Catheter-Dependent Patients in Singapore

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ABSTRACT: Introduction: Traditionally, for catheter dependent patients, options were formal prostate surgery or long-term catheterization. MIST presents an alternative, which avoids general anasthesia, and preserves sexual function. This series describes the outcomes of 11 catheter dependent patients after MIST at our institution. **Methods:** Patients who had MIST between December 2022 & January 2025 were reviewed in clinic until May 2025. Surgical outcomes including catheter dependence 3 months post operatively, post void residual urine (PVRU) and Qmax were recorded. Patient factors recorded were reasons for choosing MIST, prostate volume, cystoscopic appearance and medical comorbidities. Early and late complications were also included. **Results:** 11 patients were included in the series. 4 patients had Urolift, while 7 patients had Rezum. 8/11 had MIST due to poor fitness for general anasthesia (GA) while 2/11 had MIST due to preference. Prostate volumes (PV) ranged from 35 cc to 110 cc, mean PV was 86.6 cc. Using the American Society of Anesthesiologists (ASA) scoring, out of 11 patients, 6 patients were ASA 3, 4 were ASA 2. 10/11 (90.9%) patients were catheter free 3 months post operatively till end of follow up period. 9/10 (90%) of patients had a best PVRU of <150 mL. No persistent adverse events were reported. **Conclusion:** MIST shows promise as a safe and effective option for catheter dependent patients who are either unsuitable or decline traditional surgical approaches. Our series also demonstrates successful outcomes in larger prostates (PV > 80 cc). We recommend further larger scale study into the efficacy and safety of MIST for catheter dependent patients.

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Topics: *Technology and Artificial Intelligence*

Embracing AI in Urology: Bridging Enthusiasm and Caution—Insights from a Singaporean Tertiary Centre

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ABSTRACT: Introduction: Artificial intelligence (AI) is increasingly recognised for its potential to enhance clinical practice. However, successful implementation depends on the acceptance and readiness of users. Despite growing interest and emerging applications, the perspectives of urology clinicians on AI remain under-examined. This study assesses the attitudes, concerns, and preparedness for AI integration among urology staff at a high-volume tertiary care hospital. **Methods:** A cross-sectional online survey was distributed to urology students, nurses, medical officers, and consultants at Singapore General Hospital. The 21-item validated questionnaire evaluated exposure to artificial intelligence (AI), perceived benefits, concerns (such as job security and diagnostic over-reliance), and interest in training opportunities. Data were analysed descriptively. **Results:** Among 41 respondents, 82.9% (34/41) reported minimal clinical exposure to AI. 68.3% (28/41) viewed AI as a tool to enhance efficiency and reduce workloads, with only 17.1% (7/41) expressing concerns about job security. However, the greatest concern, highlighted by 39% (16/41), was apprehension regarding over-reliance on AI for diagnoses. Notably, 78% (32/41) supported broader AI implementation, with strong interest in AI training workshops. **Conclusion:** Despite limited hands-on experience, urology staff largely support AI integration, emphasizing workflow efficiency over concerns about job displacement. The primary concern, over-reliance on AI for clinical decisions, suggests a need for frameworks that promote balanced human-AI collaboration. Strong interest in AI education indicates readiness to address knowledge gaps. These results highlight the need for targeted training to optimize AI's potential, maintain clinician autonomy, and foster trust through transparency and education to ensure sustainable adoption as AI influences urologic practice.

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Topics: *Endourology and Stone Diseases*

Laser Analysis for Stone Treatment (LAST): An *Ex-Vivo* Comparative Study of Magneto Holmium:YAG and Fiber Dust Thulium Fiber Lasers: Primary Effects on Ablation, Propulsion, Fragmentation, and Heat Generation Using Phantom Urologic Stones

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ABSTRACT: Introduction: This *ex-vivo* study aims to compare the retropulsion, fragmentation efficiency, heat generation and crater generation of MAGNETO Ho:YAG using three pulse modulation settings: The standard, MAGNETO setting, Virtual Basket setting, and comparing with Thulium Fiber using both short and long pulse laser settings, in gypsum-based phantom stones at three energy levels (0.5 J, 1 J, and 2 J) and 2 types of laser (200 µm and 550 µm). Aim is to compare which laser and settings are best for the lithotripsy of urinary stones for clinical application. **Methods:** Gypsum (100 g) and water (50 mL) mixture cured forming stones 0.5 cm square dimension. Quanta System MAGNETO Holmium-YAG Laser (Cyber Ho 150 W Magneto) and Thulium Fiber Laser (TFL) Tools: High-speed camera for capturing retropulsion, Acrylic water bath box stone immersion with laser access, Digital thermometer. **Results:** Retropulsion: TFL (Short pulse) and Ho:YAG Magneto demonstrated slightly more consistent and reduced retropulsion trends. Ablation efficiency: TFL Short pulse had significant higher ablation efficiency than Ho:YAG Standard and Virtual Basket. Heat generation: TFL Long pulse had significant higher temperature than all Ho:YAG settings. TFL Short noted more heating than Ho:YAG Standard Fragmentation time: TFL Short and Ho:YAG MAGNETO significant reduced fragmentation time compared to Ho:YAG Standard. Laser efficacy: TFL Short pulse had significant greater efficacy than all Ho:YAG modes. **Conclusion:** The Ho:YAG MAGNETO setting is superior for stone treatment. The Ho:YAG MAGNETO setting balances performance and safety, with faster fragmentation time, competitive ablation efficiency similar to TFL short, but less heat generation. Findings support Ho:YAG Magneto as an optimized laser setting that bridges efficacy and safety for clinical laser lithotripsy.

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Topics: *Endourology and Stone Diseases*

Deployment of A Novel Woven Segmental Ureteral Stent: Proof of Concept in a Yorkshire-Landrace Pig Model

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ABSTRACT: Introduction: Stent-related symptoms have a high prevalence and may affect over 80% of patients. Our project aims to reduce stent footprint in the urinary system down to a bare minimum to reduce stent symptoms. **Methods:** We have designed and fabricated WeeveTM, a woven segmental ureteral stent which comprises of a single Prolene 3-0, woven into a hollow cylindrical structure of 3 cm in length which is approximately 6 mm in diameter. The top part of the string is coated with radiopaque material. This novel stent has a distal string tail-end extending into bladder for the purpose of removal. 4 Yorkshire-Landrace pigs weighed ~40 kg were put under general anaesthesia. Retrograde pyelogram (RPG) was performed and ureter diameter was measured. Woven segmental stent was inserted unilaterally via 11/13F ureteral access sheath and positioned at upper ureter. Repeat RPG was performed on day 7, 14 and 21 to measure ureter dilatation and migration of stent. The pig was euthanized at the end of the experiment and bilateral kidneys, ureters were harvested for histological analysis. Pig 3 and 4 were fed with 4% hydroxyproline to induce hyperoxaluria. **Results:** There was no recorded complication including stent migration or encrustation, gross hematuria or infection in the animals, despite 2 animals being fed with a high oxalate diet. The Weeve stent have all achieved the intended effect of causing ureteric dilatation. In all cases, the insertion, removal and frogging mechanism were successful. **Conclusion:** This study has proven the deployability, removability, physiological effects and safety of a novel woven segmental ureteral stent within an *in-vivo* porcine model.

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Topics: *General Urology*

Renal Angiomyolipoma with Tumour Thrombus—A Rare Phenomenon Requiring Surgical Management

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ABSTRACT: Background: Renal Angiomyolipomas (AML) are benign renal tumours composed of blood vessels, smooth muscles and adipose tissue. Though, AMLs are commonly regarded to be benign in nature, the tumours can extend into the surrounding perirenal fat, renal sinus, nearby organs or lymphatics. There are rare reports of tumour thrombus extending through the renal vein into the vena cava. In this case series, we would like to discuss three cases of renal AML with tumour thrombus undergoing surgical treatment. **Case Presentation:** Between 2022 and 2024, three cases of AML with tumour thrombus were identified within a single institution. The range of age of presentation was 54–78 years of age and all AMLs were right sided. One patient presented with retroperitoneal haemorrhage requiring embolisation. The extent of tumour thrombus was as follows: level I (n = 1), level III (n = 1) and level IV (n = 1). All patients underwent open nephrectomy and tumour thrombectomy. **Conclusions:** Surgery remains to be the gold standard for management of AML with fat thrombus.

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Topics: *Technology and Artificial Intelligence*

Can Artificial Intelligence (AI)—Based ChatGPT Enhance Patient Education in Undescended Testis Cases?

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ABSTRACT: Introduction: This study investigates ChatGPT's ability to provide accurate, accessible, and culturally appropriate educational content about undescended testis (cryptorchidism), a prevalent congenital anomaly in males with potential implications for fertility and long-term health. **Methods:** ChatGPT 4.0 was used to answer 15 structured questions about diagnosis, treatment, and postoperative care for undescended testis. The Suitability Assessment of Materials (SAM) tool evaluated responses based on content quality, literacy demand, and cultural relevance. Nine pediatric urologists participated in the assessment, converting scores into percentages. **Results:** ChatGPT achieved an overall SAM score of 77.62%, categorizing the material as superior. Diagnosis averaged 72.26%, treatment scored the highest at 79.87%, and postoperative care reached 80.76%. All questions across domains surpassed the 70% threshold for superior classification. However, some responses demonstrated variability due to incomplete contextual accuracy. **Conclusion:** ChatGPT exhibits strong potential as a patient education tool for undescended testis, delivering superior responses in diagnosis, treatment, and postoperative care. To enhance reliability, continuous evaluation, refinement, and adherence to ethical guidelines are essential for improving Artificial Intelligence (AI)-driven health education platforms.

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Topics: *Uro-oncology, Technology and Artificial Intelligence*

Cost-Effectiveness Analysis of a Biopsy-Free Diagnostic Strategy for Prostate Cancer Using Combined mpMRI and PSMA-PET/CT

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ABSTRACT: Introduction: Prostate-Specific Membrane Antigen Positron Emission Tomography Computed Tomography (PSMA PET/CT) has shown a higher diagnostic accuracy in prostate cancer imaging when compared to conventional modalities, with improved sensitivity and specificity rates when combined with multiparametric prostate Magnetic Resonance Imaging (mpMRI). We evaluated the cost-effectiveness of a combined PSMA PET/CT and mpMRI, biopsy-free diagnostic approach for clinically significant prostate cancer (csPCa). **Methods:** A decision tree model was designed to compare two diagnostic strategies for csPCa in men with raised Prostate Specific Antigen (PSA)—the first with conventional mpMRI followed by transperineal prostate biopsy, versus a second biopsy-free, PSMA PET/CT plus mpMRI combined imaging, strategy. We evaluated the impact of each strategy on costs and Quality-Adjusted-Life-Years (QALYs). Willingness-to-pay thresholds were set at 1× and 3× Gross Domestic Product (GDP). One-way sensitivity analysis and probabilistic sensitivity analyses were performed. **Results:** A combined mpMRI and PSMA PET/CT diagnostic strategy dominated the conventional mpMRI and biopsy strategy with an incremental cost-effective ratio (ICER) of—SGD$385,690 per quality—adjusted life year (QALY). Probabilistic analyses showed that the combined imaging strategy was 99.54% and 99.14% likely to be cost-effective at willingness-to-pay thresholds of SGD$121,160 and SGD$363,480 respectively. **Conclusion:** Combined mpMRI and PSMA PET/CT for csPCa diagnosis is a cost-saving and more effective strategy in terms of health utility over the conventional approach for diagnosing csPCa in men with raised PSA, potentially reducing the need for invasive diagnostic procedures.

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Topics: *Uro-oncology, Minimally Invasive Surgery*

A Pitfall Complication Following Laparoscopic Radical Cystectomy: A Rare Case in a 57-Year-Old Male with High-Grade Urothelial Carcinoma

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ABSTRACT: Introduction: Laparoscopic radical cystectomy has revolutionized the surgical approach for the treatment of invasive bladder cancer, offering notable advantages such as reduced. Postoperative pain, shorter hospital stays, and faster recovery times compared to traditionalopen surgery. As the technique has become more widely utilized, it is increasingly important to recognize and manage both common and rare complications that may arise following this complex procedure. While the majority of postoperative issues are predictable and relatively manageable, such as urinary tract infections, hemorrhage, and wound infections, more unusual and severe. complications may occur, demanding a high level of clinical awareness. The mechanism of herniation through the perineal area is multifactorial. It is hypothesized that following LRC, the extensive manipulation of the abdominal cavity, combined with the creation of the pelvic space for bladder removal as well as performing a total urethrectomy, may lead to weakness or injury to the perineal fascia or pelvic floor. This case report aims to explore this rare occurrence of small intestine herniation into the perineal area after LRC, emphasizing the possible mechanisms and contributing factors behind this unusual complication. **Methods:** Descriptive study. **Conclusion:** Radical cystectomy remains a cornerstone in the management of invasive bladder cancer, yet it carries a significant burden of postoperative complications. While most complications are well recognized and anticipated, rare entities such as urethral hiatus herniation demand heightened clinical awareness due to their potentially severe consequences and diagnostic difficulty.

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Topics: *Uro-oncology*

Neoadjuvant Chemohormonal Therapy for High Risk Prostate Cancer: A Systematic Review and Meta-Analysis

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ABSTRACT: Introduction: The optimal treatment regime for high-risk prostate cancer has yet to be established. In the recent decade, neoadjuvant chemohormonal therapy (NHCT) has shown great potential in improving the outcomes of individuals with high risk prostate cancer. This systematic review and meta-analysis assess the effectiveness of NHCT in high risk prostate cancer. **Methods:** Five databases were searched from inception to 20 April 2025 for articles comparing the use of NHCT in high-risk prostate cancer. The primary outcome of interest was biochemical recurrence free survival (BRFS). **Results:** A total of 4901 individuals with high-risk prostate cancer across 13 studies were included in this meta-analysis, 2945 individuals were in the NHCT arm, while 960 individuals were in the radical prostatectomy (RP) only arm and 996 individuals were in the hormonal therapy (HT) arm. 1-year BFRS was 89% (95% confidence interval (CI):76%–95%), 77% (95%CI: 64%–86%) and 78% (95% CI: 71%–84%) in the NHCT arm, HT and RP only arm respectively. 2-year BFRS was 58% (95%CI: 39%–74%), 50% (95%CI: 26%–73%) and 73% (95%CI: 64%–80%) in the NHCT arm, HT and RP only arm respectively. 3-year BFRS was 56% (95%CI: 38%–73%), 31% (95%CI: 18%–49%) and 36% (95%CI: 9%–77%) in the NHCT arm, HT and RP only arm respectively. **Conclusion:** Our findings suggest that NHCT prior to radical prostatectomy for high risk prostate cancer has the highest 1-year, 2-year and 3-year BFRS with the most noticeable difference at the 3-year mark, though the results did not attain statistical significance.

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Topics: *General Urology*

Management and Outcome of Ureteric Stent-Related Symptoms

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ABSTRACT: Introduction: Ureteric stent/s is one of the most commonly used instrument in Urology. It does, however, affect certain aspects of patient's life namely urinary symptoms, pain, work performance, general health, sexual matters, and quality of life. This audit mainly focuses on assessing urinary symptoms. It is hypothesized that post-stent urinary symptoms come from the stent's distal coil, irritating the bladder. The objective is to assess the outcome and management of urinary symptoms pre and post ureteric stent insertion. **Methods:** The audit was conducted from 8 January to 7 February 2025. The target subjects are patients who are referred acutely or electively for renal calculi or obstructive uropathy. A questionnaire was given pre-operatively and 1 week post-operation. The said questionnaire is derived from USDT, covering only the urinary symptoms aspect. **Results:** Majority of patients (69.2%) had a symptom improvement 1 week post-stent insertion with a mean score change of −4.38. It appears that patients whose had shorter duration and self-removal of stents had the better outcome with an average score change of −3.8. 23% of patients were noted to be taking anticholinergics pre-op (and post-op). This group of patient appears to have the best outcome. **Conclusion:** This audit shows that post-stent urinary symptoms were still significantly lower compared to their scores pre-operation. Stent duration matters and shows that shorter duration gets better outcome. The group of patients who were on anticholinergics shows the best outcome. Following up patients via phone call can help in assessing the need for such drugs.

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Topics: *Endourology and Stone Diseases*

Changing the Narrative of Bilateral Stone Management: 8-Year Journey of a Novel Approach to Simultaneous Bilateral Percutaneous Nephrolithotomy (SB-PCNL)

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ABSTRACT: Introduction: Bilateral renal stones, typically managed via staged procedures, produce significant patient and economic burdens. Simultaneous bilateral percutaneous nephrolithotomy (SB-PCNL) reduce hospitalizations and anesthesia exposure. This study assesses the safety and efficacy of SB-PCNL in a Sri Lankan cohort. **Methods:** A prospective study was conducted among 63 patients undergoing SB-PCNL from January 2016 to August 2024 at five Sri Lankan hospitals. A novel approach was adopted, both sides were cleaned and draped simultaneously, and bilateral punctures were made at the outset. The less complex side was dealt with first, and neither the operating table nor the image intensifier was altered from the original position. The higher Guy's Stone Score (GSS) between the two kidneys was used for assessment. Operative data, stone-free rates (SFR), and postoperative outcomes were analyzed. **Results:** Patients had a mean age of 47.4 years; 74.6% were male. Stone size averaged 1.38 cm (max 5.3 cm). Mean operative time was 57.3 min, decreasing over time. Mean hospital stay was 1.47 days, with earlier discharges in private hospitals. The overall SFR was 92.1%, with residual fragments (7.9%) linked to high-density stones. A weak positive correlation existed between GSS and operative time. Stones of 31 patients were analyzed, 83.9% were calcium oxalate monohydrate. **Conclusions:** B-PCNL is a safe, efficient treatment for bilateral renal stones, with high clearance rates and reduced morbidity. Discharge variability indicates the need for standardized protocols. Further research should compare SB-PCNL to staged approaches in randomized trials.

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Topics: *General Urology*

Novel Noninvasive Predictors for Differentiating Detrusor Underactivity from Bladder Outlet Obstruction in Male Patients with Non-Neurogenic Luts: A Retrospective Study

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ABSTRACT: Introduction: Patients with detrusor underactivity or BOO usually have nonspecific symptoms which overlap significantly. Differentiation is critical, as surgical intervention for BOO may be ineffective for patients with DU. Currently, pressure-flow studies (PFS) are the gold standard for DU diagnosis. This study aimed to identify noninvasive predictors using clinical, radiological, and uroflowmetry parameters to reliably distinguish detrusor underactivity from bladder outlet obstruction in nonneurogenic male patients presenting with LUTS. **Methods:** A retrospective analysis of 80 men presenting with LUTS from April 2023 to April 2024, and diagnosed with either detrusor underactivity (DU) or BOO based on pressure-flow studies (PFS), was conducted. Patient records were reviewed for clinical history including comorbidity, International Prostate Symptom Score (IPSS), including storage (IPSS-S) and voiding (IPSS-V) sub-scores, USG KUB for prostate volume and bladder wall thickness (BWT), and uroflowmetry parameters, including post-void residual, PVR ratio (PVR-R) and bladder voiding efficiency (BVE). Predictive modeling was performed using univariate and multivariate logistic regression to identify noninvasive predictors of DU. **Results** Among the cohort of 80 patients, 30 (37.5%) were diagnosed with DU. Median age (64 years vs. 61 years) and duration of diabetes (5 years vs. 3.5 years) was higher in DU group. Multivariate logistic regression analysis identified significant independent predictors of DU. **Conclusion:** This study highlights that these noninvasive clinical, radiological, and uroflowmetry predictors that may reliably differentiate DU from BOO, particularly where PFS is unavailable, contraindicated, or declined by patients.

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Topics: *Endourology and Stone Diseases*

Abdominal Taping and Impact on Skin to Stone Distance in Supine Percutaneous Nephrolithotomy

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ABSTRACT: Introduction: Thick abdominal folds and fat have been known to make percutaneous nephrolithotomy (PCNL) access more challenging, especially in supine PCNL with ultrasound. We studied the novel method of taping the abdomen to bring the skin folds and subcutaneous layers away from the flank, arguably making the skin taut to facilitate ultrasound guided access. We aim to evaluate the impact of abdominal taping on skin to stone distance (SSD). **Methods:** Patients listed for supine PCNL from 29 June 2021 to 21 May 2024 were prospectively recruited. All were positioned in the Modified Galdakao−Valdivia position, with abdominal taping. SSD was measured with ultrasound pre and post taping at the intended access site by the same surgeon, ensuring uniform visualization of the kidney (coronal view) and stone. The change in pre and post taping SSD was calculated. **Results:** 75 patients were recruited. Median age was 64 years (IQR 54 to 70) and body mass index (BMI) 25.3 (Min = 18.1, Max = 47.3, IQR 22.2 to 27.6). Pre taping SSD significantly correlated with weight ($R^2 = 0.22$, $p < 0.001$) and BMI ($R^2 = 0.18$, $p < 0.001$). There was a significant effect of abdominal taping on pre and post taping SSD (mean of differences 1.4 mm, SD 5.2, $p = 0.02$). 63% of patients had a positive change in SSD from taping (i.e., longer SSD). Subgroup analysis showed no difference in change of SSD between BMI <25 vs. ≥25, or <30 vs. ≥30 subgroups. **Conclusion:** Our results suggest that abdominal taping affects SSD in supine PCNL. In some patients, this can result in increased SSD. Pre taping SSD is longer with heavier weight and higher BMI.

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Topics: *Uro-oncology*

A Comparative Study between Plasma Kinetic Transurethral Resection of Bladder Tumour and Laser En-Bloc Resection of Bladder Tumour

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ABSTRACT: Introduction: Approximately 75% patients with bladder cancer present with non-muscle-invasive bladder cancer (NMIBC). Plasma kinetic transurethral resection of bladder tumour (PK-TURBT) and laser en-bloc resection of bladder tumour (ERBT) are two common procedures used in our department to manage these patients. AIM: To compare the safety and efficiency of PK-TURBT and ERBT while managing bladder tumours. **Methods:** We included the patients who were diagnosed with a bladder tumour between June 2021 to June 2024. Demographic data, pre-operative imaging, intraoperative and post-operative data was collected and compared between the two groups. Patients who were lost to follow-up were excluded. **Results:** A total of 120 patients, 60 patients underwent PK-TURBT and 60 underwent ERBT. No significant differences in age, gender, tumour size, tumour number, location, or risk between the two groups. The ERBT group was associated with a significantly shorter operation duration (p = 0.018), shorter hospitalization time (p = 0.036), shorter postoperative irrigation time (p = 0.027), shorter catheterization time (p = 0.035) and a higher proportion of histopathological evidence of detrusor (p = 0.006) than the PK-TURBT group. No significant differences in post-operative complications and recurrence-free rates between the two groups. PK-TURBT group required a second sitting in 10% of the cases, while ERBT group did not. Additionally, the patients operated with ERBT had lesser bleeding despite being on anticoagulants. **Conclusion:** ERBT reduces operation duration time, hospitalization time, postoperative irrigation time, catheterization time and avoids a second surgery. Confirmation of histopathologically visible detrusor muscle is more than 98%. ERBT achieved a more complete resection not requiring a second sitting, making it safer and more effective for NMIBC.

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Topics: *Endourology and Stone Diseases*

A Comparision between Thulium Laser Vapoenucleation of Prostate vs. Holmiumlaser Enucleation of Prostate: A Single Centre Experience

Arjav Hemang Nanavati, Prashant Pattnaik, Vineet Shukla, Yashraj Sapkal and Sameer Deshmukh

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ABSTRACT: Introduction: Benign Prostatic Hyperplasia (BPH) is a common condition affecting older men, leading to urinary symptoms due to prostate enlargement. Transurethral lasers have been most frequently used in the current era especially for large prostate glands with pre-existing comorbidities. Different techniques have been employed to treat the prostate with this technology, including enucleation, vapoenucleation, vaporization and resection. This study aims to compare the clinical outcomes of ThuVEP and HoLEP in the treatment of BPH. **Methods:** All patients who underwent a ThuVEP and HoLEP between July 2014 and July 2023 were considered for the study. The primary outcomes assessed were intraoperative bleeding, catheterization duration, hospital stay length, and postoperative complications. Secondary outcomes included patient satisfaction and cost-effectiveness. **Results:** Our study included a total of 600 patients. 300 patients underwent ThuVEP and 300 underwent HoLEP. ThuVEP demonstrated significantly reduced intraoperative bleeding ($p < 0.05$) and shorter catheterization duration ($p < 0.01$) compared to HoLEP. Additionally, patients treated with ThuVEP had a shorter hospital stay ($p < 0.01$) and fewer postoperative complications ($p < 0.05$). The mean decrease in IPSS score was more for ThuVEP, and the procedure was found to be more cost-effective in the long term, indicating better overall patient satisfaction. In high risk patients, like post CABG, dependant on anticoagulants, ThuVEP could be performed without any complications. **Conclusion:** ThuVEP offers several advantages over HoLEP, including reduced bleeding, shorter catheterization time, decreased hospital stay, cost effectiveness, regardless of the prostate gland size. These findings suggest that ThuVEP may be a more effective and efficient treatment option for BPH.

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Topics: *Endourology and Stone Diseases*

Efficacy of Ultrasound-Guided Extracorporeal Shock Wave Lithotripsy (Usg-Eswl) in Treating Renal Stones in Pediatric Patients

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Bombay Hospital Institute of Medical Sciences, India

ABSTRACT: Introduction: Renal stones in paediatric patients present a unique clinical challenge. Traditional fluoroscopy-guided ESWL involves concerning radiation exposure. Ureteroscopy and percutaneous nephrolithotomy are invasive and may cause discomfort and potential complications. Ultrasound-guided ESWL (USG-ESWL) offers a radiation-free alternative, utilizing high-frequency sound waves for precise stone localization and fragmentation without any instrument induced trauma in the urinary tract, without the need of a double-J ureteric stent. This study evaluates the efficacy and safety of USG-ESWL in treating renal stones in paediatric patients. **Methods:** A retrospective study was conducted on paediatric patients with renal stones between January 2002 and January 2022. Two groups: Group A received USG-ESWL, while Group B received fluoroscopy-guided ESWL. USG-ESWL was delivered from 2 approaches with a rotatable therapy head giving the shockwaves anteriorly and posteriorly. Electromagnetic shockwaves were used with a ramping and slow rate. Treatment efficacy was assessed using Stone-Free Rate (SFR), Pain intensity, Urinary Biochemical Variables, Mean Hospital Stay and complications. **Results:** We studied 1200 patients, 600 in each group. Group A demonstrated a higher SFR ($p < 0.001$), lower VAS pain scores ($p < 0.001$), improved urinary biochemical variables and shorter mean hospital stay ($p < 0.001$). Complications were minimal and comparable between both groups. **Conclusion:** USG-ESWL is an effective and safe treatment modality for renal stones in paediatric patients, offering higher stone-free rates, reduced pain, without urinary tract intervention thereby preventing complications. USG-ESWL further avoided radiation exposure. With the twinkling effect (colour doppler), we could track the fragmentation in real-time. Hence we strongly advocate USG guided ESWL as a first treatment of choice in paediatric urolithiasis.

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Topics: *Endourology and Stone Diseases*

Postoperative Urosepsis Following Mini Percutaneous Nephrolithotomy (PCNL): A Retrospective Analysis to Identify Preventive Measures

Arjav Hemang Nanavati, Prashant Pattnaik, Vineet Shukla, Yashraj Sapkal and Sameer Deshmukh

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ABSTRACT: Introduction: Mini Percutaneous Nephrolithotomy (Mini PCNL) is a minimally invasive surgical procedure designed to remove kidney stones through a small incision. Despite its advantages, such as reduced blood loss and shorter hospital stays, postoperative urosepsis remains a significant complication. This retrospective study aims to identify preventive measures of postoperative urosepsis in patients undergoing mini PCNL. **Methods:** A total of 500 patients who underwent mini PCNL between March 2014 and March 2023 were included. Group 1 consisted of 150 patients with preoperative urosepsis who were treated with antibiotics, while Group 2 included 350 patients without such history. Data on patient demographics, preoperative risk factors, intraoperative details, and postoperative outcomes were collected and analysed. All patients had adequate antibiotic coverage. Each min PCNL was done with a 13Fr nephroscope with a suction amplatz sheath and with thulium fiber laser. Every patient had an end on USG-guided papillary puncture followed by a single step dilator. **Results:** The incidence of postoperative urosepsis was 62% in Group 1 and 2% in Group 2. Preoperative urosepsis ($p < 0.001$), positive urine culture ($p < 0.001$), and longer operative time ($p = 0.01$) were significant risk factors. Preoperative urine culture with targeted antibiotic prophylaxis, reduced the incidence of postoperative urosepsis by 50% in Group 1. **Conclusion:** Preoperative identification of urosepsis and targeted antibiotic prophylaxis are effective preventive measures for reducing postoperative urosepsis following mini PCNL. Papillary puncture, usage of smaller amplatz sheath, low power suction and tubeless mini PCNL are preventive strategies that may be applied. Further studies are needed to validate these findings and develop comprehensive guidelines for clinical practice.

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Topics: *Andrology and Subfertility, Functional Urology Transplantation*

Pelvic Floor Muscle Dysfunction: A Key Factor in the Coexistence of Erectile Dysfunction and Lower Urinary Tract—A Prospective Comparative Study

Arjav Hemang Nanavati, Deepak Gupte, Prashant Pattnaik, Vineet Shukla, Yashraj Sapkal and Sameer Deshmukh

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ABSTRACT: Introduction: Erectile dysfunction (ED) and lower urinary tract symptoms (LUTS) in young males often coexist due to shared pathophysiology involving pelvic floor muscle dysfunction. Dysfunctional pelvic muscles impair penile blood flow (contributing to ED) and bladder control (worsening LUTS). Emerging evidence suggests combining pelvic floor muscle techniques (PFMT) with pharmacotherapy (PDE5 inhibitors [PDE5i] and alpha-blockers) may enhance treatment efficacy. This study aimed to evaluate the therapeutic effectiveness of integrating PFMT with standard pharmacological therapy (PDE5i + alpha-blockers) for managing ED and LUTS in non-comorbid males under 40. **Methods:** Fifty non-comorbid males (<40 years) with ED and LUTS, who upon physical examination were suggestive of altered pelvic floor tone, were divided into two groups: Trimodal group (n = 25): Received PDE5i (Tadalafil 5 mg), alpha-blockers (Alfuzosin 10 mg), and structured PFMT. Bimodal group (n = 25): Received only PDE5i + alpha-blockers. Outcomes were assessed at baseline and over four months using validated tools: IIEF-5, IPSS, and Qmax. **Results:** Both groups showed improvements, with the trimodal group demonstrated statistically superior outcomes ($p < 0.05$ for all metrics): IIEF-5 (Mean increase of 4.44 vs. 3.4), IPSS (Mean reduction of 4.68 vs. 3.56) and Qmax (Mean improvement of 3.336 mL/s vs. 2.708 mL/s). Notably, 64% (16/25) of the trimodal group reduced or discontinued one medication, improving adherence. **Conclusion:** The findings of this study emphasize that integration of PFMT with PDE5i and alpha-blockers significantly enhances treatment outcomes and reduces medication reliance by providing an effective, non-invasive approach to managing these conditions. This combined therapeutic strategy offers a promising approach for improving the quality of life in patients with concurrent ED and LUTS.

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Topics: *Uro-oncology*

A Rare Case of Synchronous Ipsilateral Testicular Carcinoma and Renal Cell Carcinoma

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ABSTRACT: Introduction: Clear-cell renal cell carcinoma is one of the most common malignancy of the genitourinary tract, occurring commonly in the fifth to seventh decades of life, whereas seminoma is one of the most common solid malignant tumour in young men. However, the synchronous occurrence of both of these tumours is a rare presentation. **Case Presentation:** We present a case of a 38-year-old married gentleman who presented with a hard painless swelling of approximately 5 × 2 cm in the right scrotum since 1 month. He did not have any familial history for any genitourinary malignancy. Upon investigation, he was found to have a right testicular mass along with a right renal lower pole mass. His beta-HCG, AFP and LDH levels were within normal limits. He underwent a right inguinal exploration with chevaussu maneuver, which revealed a seminoma, which was confirmed on the histopathology report staged as pT1b. Upon further imaging after 6 weeks, patient did not have any lymphadenopathy on repeat imaging and hence underwent a robotic right nephrectomy which revealed a pT1a clear cell carcinoma. Patient has been on follow-up since and is symptom free and reveals no residual disease on imaging. **Conclusion:** This clinical case of synchronous primary testicular and renal cancers is a rare occurrence and poses a diagnostic dilemma about the choice and timing of appropriate treatment. DNA sequencing of such synchronous tumour tissues could provide more information on the etiopathogenesis. Both malignant tumours should be treated according to the established guidelines, depending on the accurate clinical staging and should be integrated to provide optimal results.

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Topics: *Others*

A Study of Outcomes of Re-Do Hypsopadias Surgery: A Single Centre Experience

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ABSTRACT: Introduction: Redo hypospadias surgery presents unique challenges due to the complexity of previous repairs and variability in patient anatomy. We studied the indications, outcomes and complications of redo hypospadias surgery done at our tertiary care centre. **Methods:** All patients who had undergone a redo hypospadias surgery between December 2018–December 2023 at our hospital by a single surgeon were included in our study. We performed procedures according to their previous surgical consequences and current clinical status. **Results:** 32 patients included—4, operated by us previously and 28 operated at an outside hospital. The mean duration between the prior repair and our redo surgery was 2.5 years. 23 had undergone a single repair in the past, 6 had undergone 2 repairs and 3 had undergone 3 or more repairs. 14 were a failed proximal hypospadias repair, and 9 each were mid and distal hypospadias. The most-common presenting complication was Urethrocutaneous fistula. 8 patients had a single complication while 24 had 2 or more complications. We performed different surgeries as per the nature of their underlying complications and observed a total of 11 complications of which 6 required a surgery. **Conclusion:** Redo hypospadias surgery is challenging and must be attempted by an experienced surgeon who is accustomed to the different approaches of repair. Careful tissue dissection is a must to prevent further tissue scarring and to preserve blood supply. Two-staged repairs for redo cases may have better outcomes for previous multiple failed repairs and for more proximal hypsospadias. Polydiaxonone used for urethroplasty and glansplasty may have better outcomes than other sutures.

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Topics: *Uro-oncology*

Real-World Utilization of Triplet Therapy in High-Volume *De Novo* Metastatic Hormone-Sensitive Prostate Cancer

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ABSTRACT: Introduction: Triplet therapy—comprising androgen deprivation therapy (ADT), docetaxel, and an androgen receptor pathway inhibitor (ARPI)—improves survival in high-volume metastatic hormone-sensitive prostate cancer (mHSPC). However, real-world data on its utilization remain limited. This study aimed to evaluate real-world patterns of triplet therapy use and clinical outcomes in patients with *de novo* high-volume mHSPC. **Methods:** We reviewed consecutive patients presenting to a single institution with high-volume mHSPC (per CHAARTED criteria) between January 2022 and December 2024. All cases were discussed in multidisciplinary meetings and assessed via in-person clinics. **Results:** There were 42 patients included with the median age of 69 years. Median prostate-specific antigen (PSA) was 435 ng/mL (range: 14.4–>5000). Eastern Cooperative Oncology group (ECOG) performance status was as follows: 0 in 64.3%, 1 in 23.8%, and ≥2 in 11.9%. Median follow-up was 16.9 months (range: 5–39.3). Triplet therapy was recommended in 32 cases (76.2%). Doublet therapy (ADT + ARPI) was advised in 10 patients (23.8%). Discrepancies between recommendations and actual treatment occurred in 54.8% of cases, exclusively in patients recommended to receive triplet therapy. Only 28.1% received triplet therapy as planned; 62.5% received doublet therapy, and 9.4% received ADT alone. Reasons for deviation included patient preference (56.5%), medical unsuitability found during consults (17.4%), and other factors including cost (26.1%). Disease progression occurred in 10 patients (3 on triplet therapy, 6 on doublet, 1 on ADT alone), with half developing castration-resistant disease. **Conclusion:** Despite survival benefits, triplet therapy remains underutilized in real-world settings due to patient factors despite an upfront multidisciplinary approach, thereby highlighting challenges in translating trial evidence into routine practice.

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Topics: *General Urology*

Battle of the Bots: ChatGPT vs. DeepSeek on Benign Prostatic Hyperplasia

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ABSTRACT: Introduction: Large language models (LLMs) are increasingly used for patient education. Among them, ChatGPT and DeepSeek are popular platforms providing medical information. However, the quality of their responses may vary. **Objective:** To compare the quality and readability of responses from ChatGPT and DeepSeek to common patient questions about benign prostatic hyperplasia (BPH). **Methods:** Ten patient-centered BPH questions were developed based on expert input and clinical experience. Responses were generated using ChatGPT (version 4o) and DeepSeek (version 3) on 17 April 2025. Fourteen urology-trained reviewers (10 medical officers, 4 consultants/registrars) independently assessed each response using the CLEAR criteria (Completeness, Lack of false information, Evidence-based, Appropriateness, Relevance). Readability was measured using Flesch Reading Ease (FRE) and Flesch-Kincaid Grade Level (FKGL). Inter-rater reliability was calculated using two-way, mixed-effects intraclass correlation (ICC). **Results:** With high inter-rater ICC (0.7319, $p < 0.001$) from all 14 reviewers, DeepSeek achieved higher mean CLEAR scores compared to ChatGPT (DeepSeek 20.49 vs. ChatGPT 19.85, $p = 0.048$), driven by the relevance of the response (DeepSeek 4.407 vs. ChatGPT 4.200, $p = 0.032$). However, ChatGPT's responses had higher FRE (DeepSeek 26.95 vs. ChatGPT 33.84, $p = 0.009$), while both models performed similarly on FKGL (DeepSeek 12.71 vs. ChatGPT 13.47, $p = 0.9273$). **Conclusion:** DeepSeek provided more relevant and higher-quality responses, while ChatGPT offered greater readability. Both models show promise as tools for patient education on BPH, but further research is needed to guide their safe and effective clinical use.

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Topics: *General Urology, Uro-oncology*

When Kidneys Suffer in Silence: Non-Cancer Mortality Risk from Surgically Induced CKD in Renal Tumor Patients

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ABSTRACT: Introduction: Surgically induced chronic kidney disease (CKD-S) is a known consequence of nephrectomy, yet its link to non-cancer-specific mortality (NCSM) is less recognized compared to medically induced CKD (CKD-M/S). This study evaluates NCSM in renal tumor patients post-surgery, accounting for comorbidities—often overlooked in CKD risk assessment. **Methods:** A total of 1643 consecutive patients were included between 2000 and 2024 from a prospectively maintained uro-oncology registry. Patients were stratified by pre-operative and post-operative eGFR into: No-CKD: both ≥60 mL/min/1.73 m^2; CKD-S: pre-op ≥ 60, post-op < 60; CKD-M/S: both <60. Kaplan–Meier survival analyses were conducted with adjusted Charlson Comorbidity Index (CCI). **Results:** The cohort comprised 712 CKD-M/S, 376 CKD-S, and 555 No-CKD patients. NCSM differed significantly among the groups (p < 0.001), with median survival of 135, 210, and not reached, respectively, for CKD-M/S, CKD-S, and No-CKD respectively. High comorbidity burden (CCI ≥ 2) was associated with worse NCSM across all CKD groups (median: 120–156 months; p < 0.0001). In contrast, NCSM was similar among patients with no or low comorbidity (median: 136–210 months; p > 0.05). Within CKD-S, patients with postoperative eGFR < 45 mL/min/1.73 m^2 had worse NCSM than those with higher function (median: 159 vs. not reached; p < 0.05). **Conclusion:** Divergent non-renal-cancer mortality was observed within the CKD-S group for eGFR less than 45 mL/min/1.73 m^2. Postoperative CKD-S patients—particularly those with eGFR < 45 mL/min/1.73 m^2 or CCI ≥ 2—may derive the greatest benefit from early nephrology referral to mitigate non-cancer-specific mortality through medical management.

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Topics: *General Urology, Uro-oncology*

Two Decades of Surgical Evolution in Early-Stage Renal Cell Carcinoma Management: Functional Gains without Oncological Compromise

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ABSTRACT: Introduction: Nephron-sparing surgery (NSS) has gained traction in managing early-stage renal cell carcinoma (RCC), but long-term trends and outcomes in real-world settings remain underexplored. We evaluated evolving surgical practices from 2000 to 2020 and their impact on renal function, complications, and survival outcomes. **Methods:** Data were drawn from a prospectively maintained RCC registry at Singapore General Hospital. A total of 1528 patients treated for T1–T2 RCC between 2000 and 2020 were included. Surgical approach, postoperative renal function, complications, and survival outcomes were analyzed. **Results:** From 2000 to 2020, overall postoperative eGFR improved from 44 to 55 mL/min/1.73 m^2. Nephron-sparing surgery (NSS) better preserved renal function than radical nephrectomy (RN) (mean eGFR drop: 7 vs. 12 mL/min/1.73 m^2, $p < 0.01$) and significantly reduced new-onset stage 3 CKD (15.3% vs. 23%, $p < 0.01$). Hospital stay (4 days, $p = 0.92$) and severe complication rates (Clavien-Dindo ≥ 3: 19% vs. 14%, $p = 0.2$) were comparable between NSS and RN. Minimally invasive surgery independently reduced the risk of severe complications (HR 0.39, $p < 0.01$). Oncological outcomes were similar: RN was associated with worse overall survival (HR 2.13, $p < 0.01$), while cancer-specific survival was not significantly different. **Conclusion:** This large, real-world dataset affirms that nephron-sparing surgery offers superior renal preservation without compromising oncological safety. The trend towards NSS—especially when performed minimally invasively—should be encouraged in eligible patients with localized RCC.

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Topics: *Functional Urology Transplantation*

Is there a Role for Pre-Operative Urodynamics Prior to Diverticulectomy in Patients with Bladder Outlet Obstruction?

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ABSTRACT: Introduction: Bladder diverticula pose a challenge in management requiring complex considerations for their treatment. Diverticulectomy and bladder outlet obstruction surgery aims to restore normal voiding function. However, predicting which patients will be able to void independently post operatively remains a challenge. This study aims to evaluate whether pressure/flow urodynamic studies can predict successful voiding in men following concurrent bladder diverticulectomy and outflow obstruction surgery. **Methods:** A retrospective cohort analysis from January 2020 to December 2024 was performed. All patients underwent TURP/TURBNI concurrently with open extraperitoneal bladder diverticulectomy. Urodynamics including flowmetry and pressure/flow studies were performed in all cases. Linear and logistic regression was performed to identify variables that predict for successful voiding. Receiver operating curves were produced to identify the cut off for positively predictive variables. Independent voiding was defined as spontaneous voiding without the aid of indwelling/intermittent catheter, and residual urine <150 mL. **Results:** A total of 42 patients were included, 37 undergoing TURP, and 5 undergoing TURBNI alongside diverticula surgery. The median pDet@Qmax was 67 (IQR: 41.5, 92), and BOOI was 51.5 (IQR: 25.5, 81.6). In total, 40 patients were able to void independently post-surgery (95%). pDet@Qmax and BOOI collectively were strongly correlated with improvement in residual urine post-surgery (R = 0.501, p = 0.04). BOOI was able to successfully predict for independent voiding post-surgery (R = 0.348, p = 0.026). ROC analysis showed that a BOOI cut-off of 48.3 yielded a 74.1% sensitivity, and 80% specificity for successful voiding after surgery. **Conclusion:** Pressure/flow studies may be useful to predict the likelihood of successful independent voiding in men post bladder diverticulectomy and bladder outlet obstruction surgery.

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Topics: *Uro-oncology*

A 5-Years Retrospective Comparison of Perioperative Results between Robotics and Open Partial Nephrectomy for Localized Kidney Cancer

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ABSTRACT: Introduction: Partial nephrectomy (PN) has become the standard treatment for T1a renal cell carcinoma (RCC). This study aims to compare the perioperative outcomes of robotic-assisted laparoscopic and open PN for localized RCC in a Hong Kong tertiary center. **Methods:** A retrospective review was conducted on patients with T1 renal cell carcinoma (RCC) who underwent partial nephrectomy (PN) at Queen Mary Hospital between January 2019 and December 2023. Perioperative outcomes were compared between robotic-assisted laparoscopic PN (RALPN) and open PN using Student's *t*-test and ANOVA for continuous variables. **Results:** A total of 117 patients (median age: 66 years old) were included. 67 patients (57.3%) undergoing robotic-assisted laparoscopic partial nephrectomy (Group 1) and 50 (42.7%) undergoing open PN (Group 2). The mean tumour size was 2.3cm in group 1 vs. 3.23 cm in group 2 ($p < 0.001$). The robotic assisted laparoscopic partial nephrectomy group has a shorter mean operative time (165 min vs. 187.5 min, $p = 0.004$). Also, there is less blood loss (257 mL vs. 444.64 mL, $p = 0.031$) and a shorter postoperative length of stay (3.8 days vs. 5.5 days, $p \leq 0.001$) were found in Group 1. The mean warm ischemic time was 19.5 min in group 1 vs. 16.6 min in group 2, $p = 0.046$. In general, the complications of PN were low with 13% being Claviden-Dindo Grade I or II (e.g., fever and urinary tract infection) and 0.8% had pseudoaneurysm requiring embolization. **Conclusion:** Partial nephrectomy for T1 RCC demonstrates favorable perioperative outcomes. The safety profile was excellent, with low complication rates and durable renal function outcomes at follow-up.

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Topics: *Uro-oncology*

Rectal Spacer: A Single Tertiary Institution Experience of Administration in Patients Undergoing Radiation Therapy for Prostate Cancer

Shauna Jia Qian Woo[1], Kenneth Chen[1], Ma Than Than Shwe[2], Velangini Swathi Thamadapu[2], Alvin Yuan Ming Lee[1], Yu Guang Tan[1], You Quan Li[2], Terence Wee Kiat Tan[2], Michael Lian Chek Wang[2], Kae Jack Tay[1], Jeffrey Kit Loong Tuan[2] and John Shyi Peng Yuen[1]

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ABSTRACT: Introduction: Advancements in spacer devices have reduced rectal toxicity in prostate cancer patients receiving radiation therapy. This study aims to evaluate locoregional disease factors influencing spacer dimensions based on our experience in a tertiary institution. **Methods:** Anonymized retrospective data of 144 patients who underwent rectal spacer from August 2021 to June 2024 were analysed. Data included demographics, disease characteristics, spacer measurements, and safety outcomes. **Results:** Mean spacer volume was 10.6 mL, likely due to spacer expansion and contributed by hydrodissection. Mean distances were 1.12 cm, 1.89 cm, and 1.33 cm at the apex, mid-gland and base, surpassing consensus guidelines of 1 cm. Patients with T1c disease had significantly greater mean spacer volumes (11.2 mL; SD = 3.27) compared to those with T2 and greater (9.69 mL; SD = 2.81; Mann-Whitney-U = 1861.5, Z = –2.346, $p = 0.019$). Spacer dimensions were not affected by extra-prostatic extension or seminal vesicle invasion. Prostate volume negatively correlated with mean spacer distance ($r = -0.18$, $p < 0.05$), as did prostate height (cranial-caudal measurement), with overall mean, apex, and mid-gland spacer distances ($r \approx -0.24$, $p < 0.05$). There was no relationship between locoregional staging or BMI with operative times (M = 13.8 min) and post-operative complications. Five patients experienced CD-I complications (four catheterisations, one mild antibiotic allergy), none delaying radiation therapy. Among 5 occurrences of anterior rectal spacer infiltration, none had transmural injury or rectal leak. **Conclusion:** Overall, rectal spacer has a good safety profile. Patients with locally advanced disease had lower spacer volumes, likely due to technical challenges in posterior dissection. Larger prostates with greater volumes and height also affected spacer dimensions, as the hydrogel is more widely spread.

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Topics: *General Urology*

Real World Outcomes of MIST for Prostatic Enlargement at a Regional Hospital in Singapore

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ABSTRACT: ABSTRACT: Introduction: Benign prostatic hyperplasia (BPH) lower urinary tract symptoms (LUTS) affect up to 60% of men at 90 years. Local studies (2005 to 2012) show increasing prevalence; 14% to 16.5%; reflecting Singapore's aging population, increasing healthcare burden, and the need to adapt practice for patients unsuitable for surgery. Minimally Invasive Surgical Therapies (MIST) have emerged as an effective surgical alternative. We share our real-world outcomes of MIST; Rezum and Urolift. **Methods:** A retrospective study was performed from 13th July 2022 to 11th February 2025; 62 MIST patients with minimum 3 month follow-up. **Results:** 36 underwent Rezum, 26 underwent Urolift. Mean age was 67 years, mean prostate volume was 61 cm^3. The most common indications were failed (45.2%) or declined medical therapy (36.8%), and retention (14.5%). 74.2% had general anaesthesia, but notably the remainder required only local or regional anesthesia, and/or sedation only. Improvement in Qmax (Rezum +4.2 mL/s, Urolift +4.0 mL/s), International Prostate Symptom Score (Rezum −11.8, Urolift −12.7) and Quality of Life (Rezum −2.4, Urolift −3.2) at 3 months were comparable. 33.9% had complications (infection, hematuria, retention, LUTS), all Clavien-Dindo 1–2, except one suprapubic catheter insertion (Clavien-Dindo 3a). Importantly for healthcare utilization, 83.9% were day surgery, only 4.8% required re-admission within 30 days, 67.7% were medication free and 96.8% were catheter free at 3 months, while re-treatment rate was only 3.2% (over median follow-up 5.9 months). **Conclusion:** MIST is a safe and effective treatment for BPH LUTS, with demonstrable improvement in Qmax, IPSS and QOL. It's minimally invasive nature improves patient care while reducing healthcare resource utilization.

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Topics: *Uro-oncology*

A Comparative Study of Outcome of Surgical Management of Symptomatic vs. Incidentally Detected Localized Renal Mass—A single Center Experience

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ABSTRACT: Introduction: Renal cell carcinoma (RCC) constitutes 3% of adult cancers and 85% of kidney tumors, mostly affecting men aged 55–75. Risk of metastasis rises by 3.5% per cm. Metastatic risk at 5 years is 7%. Small enhancing renal masses carry >85% RCC risk with increasing risk as the size increases. Local therapies show high progression rates. We retrospectively compared the post operative outcomes of symptomatic vs. incidentally detected localized renal masses. **Methods:** This retrospective study (Dec 2018–May 2024) analyzed surgically treated localized renal masses at a tertiary center. Patients were grouped as incidental renal masses (IRM) [Group 1] or symptomatic masses [Group 2], based on clinical presentation. Exclusions included those under active surveillance, biopsy-confirmed cases, and metastatic presentations. Pre-operative, Intra-operative and post-operative data was compared between the two groups. **Results:** We operated 150 cases for a known renal mass, 92 were IRMs and 58 were symptomatic renal masses. 60 of the 92 IRMs were detected prior to 60 years of age, whereas 27/58 symptomatic cases presented before 60 years ($p < 0.05$). 42/92 IRMs were amenable to nephron sparing surgery (NSS) whereas only 8/52 symptomatic cases were manageable with NSS ($p < 0.05$). Earlier detection of IRM was associated with NSS whereas a delayed detection of IRM required a radical nephrectomy. Each NSS we performed had a margin free frozen section with no conversions to radical nephrectomy. IRMs had a less aggressive histology on histopathological examination, ensuring a better overall prognosis. **Conclusion:** Patients with an IRM. (1) When detected early are benefited with a NSS; (2) Have a favorable histopathological diagnosis; (3) Have a better disease-free survival.

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Topics: *General Urology*

Ringing in a New Standard: Evaluating the Efficacy of Shang Ring Circumcision

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ABSTRACT: Introduction: Shang Ring circumcision is a minimally invasive technique performed under topical local anesthesia (LA), introduced as an alternative to conventional circumcision under general anesthesia (GA). This study evaluates its efficacy, safety, and patient-reported outcomes in a tertiary hospital setting. **Methods:** Nine patients underwent Shang Ring circumcision between December 2023 and May 2025. Preoperative concerns were documented. Postoperatively, pain scores (10-point scale), cosmetic satisfaction, device-related inconvenience, and impact on daily activities and work were assessed. **Results:** Preoperatively, the top three concerns were pain, device convenience and need for GA at 44%, 11% and 11% respectively. Postoperatively, the mean and median pain scores were 1.84 and 1, respectively. Three patients required additional penile block, including one due to pinhole phimosis precluding EMLA use. Complaints included delayed pain onset (n = 2), painful erections with the device (n = 1), minor postoperative bleeding (n = 1), and glans sensitivity post-removal (n = 1). All were managed conservatively without complications. None of the patients required revision or repeat surgery. Patients with delayed pain were effectively managed with oral analgesia. The single bleeding episode occurred in a patient who resumed aspirin prematurely on the day of ring removal. Most patients reported minimal disruption to daily activities and work, and cosmetic outcomes were satisfactory. The mean satisfaction score was 8.1/10, with 100% of patients reporting they would recommend the procedure. **Conclusion:** Shang Ring circumcision under LA is effective, safe, and well-tolerated, with minimal complications and high patient satisfaction. It represents a viable alternative to conventional circumcision under GA.

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Topics: *Uro-oncology*

Open Partial Nephrectomy with Perirenal Fat Renorrhaphy

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ABSTRACT: Introduction: Open partial nephrectomy (OPN) is a cornerstone technique for organ-sparing resection of renal tumors, aiming to maximize cancer-specific survival while preserving renal function. Despite advancements, achieving effective hemostasis remains a challenge. Traditional hemostatic bolsters, while effective, have limitations such as potential for foreign body reactions, enhancement and presence of air locules on CT scan, masquerading the true status of the operative site. This study explores the use of perirenal fat renorrhaphy as an alternative technique to address these limitations. **Methods:** 6 patients were operated by a single experienced surgeon, between January 2024 to June 2024 for an OPN in view of a localized renal mass with a perirenal fat renorrhaphy instead of the hemostatic bolstered renorrhaphy. Demographic details, tumour characteristics, postoperative outcome and follow-up visits were recorded. **Results:** Our cases ranged from 3.4–8.7 cm (5.58 cm), with operative time, ischemia time and blood loss comparable to the conventional renorrhaphy. We experienced only 1 complication in our case series. The patients otherwise had a postoperative course similar to the conventional OPN done at our institute. Postoperative imaging neither revealed any enhancement nor any additional complications in our follow-up of 9–15 months far. No reported cases of recurrences, residual tumour or acute kidney injury. **Conclusion:** Perirenal fat renorrhaphy is a promising technique for OPN, providing effective hemostasis with no additional complications and no postoperative imaging dilemma. Further prospective studies are warranted to validate these findings and establish standardized protocols.

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Topics: *Uro-oncology*

Intraoperative Intravesical Gemcitabine Instillation during Pure Laparoscopic Radical Nephroureterectomy—A Single Centre Experience

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ABSTRACT: Introduction: Upper-tract urothelial carcinoma (UTUC) carries a 30–50% risk of bladder recurrence following radical nephroureterectomy (RNU). Guidelines now recommend a single perioperative intravesical chemotherapy dose—gemcitabine is favoured for its low toxicity and ease of preparation—yet data on intraoperative use remain limited. This study assesses the feasibility, safety, and histological predictors of early bladder recurrence following intraoperative gemcitabine during laparoscopic RNU. **Methods:** We retrospectively reviewed 27 high-risk UTUC patients who underwent pure laparoscopic RNU with watertight bladder-cuff closure (2016–2024). A single 2 g dose of gemcitabine in 100 mL saline was instilled intraoperatively and retained for ≥60 min. Outcomes included feasibility, safety (open conversion, Clavien-Dindo grade ≥ III complications, cystitis, leaks, length of stay), and time to bladder recurrence stratified by tumor grade and stage. Median follow-up was 24 months. **Results:** Gemcitabine was successfully instilled in 23 of 27 patients (85.2%), 20 of whom had preoperative ureteroscopy. Of the 4 untreated, 1 was added emergently and 3 had no documented rationale. Median operative time was 323 min (IQR 294–336), with median length of stay 3 days (IQR 2–4). There were no open conversions, major complications, cystitis, or leaks. Among treated patients, 11 (48%) developed bladder recurrence at a median of 263 days. High-grade invasive tumors (*n* = 9) recurred earlier (median 190 days IQR 112–300) than low-grade, non-invasive tumors (*n* = 2; median 1100 days IQR 421–1780). **Conclusion:** Intraoperative gemcitabine during laparoscopic RNU is feasible, safe, and guideline-concordant. Histological aggressiveness predicts early recurrence, supporting closer surveillance in high-risk cases.

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Topics: *Uro-oncology*

Comparing Perioperative Outcomes and Complications between Salvage Open Radical Cystectomy and Salvage Robot Assisted Radical Cystectomy: A Retrospective Multicentre Analysis

Adriel Song Wei Leong and Karthik Thandapani

Ng Teng Fong General Hospital, Singapore

ABSTRACT: Introduction: We aim to compare perioperative outcomes and complications between salvage open radical cystectomy (sORC) and salvage robot assisted radical cystectomy (sRARC) in this study. **Methods:** We utilised retrospective standing cystectomy data sets from the University College London Hospital and Lister Hospital. Between 2006 and 2023, 76 patients with a history of prior radiation therapy, of which 16 underwent sORC and 60 had sRARC. Patient medical records were retrospectively reviewed and perioperative outcomes were analysed using statistical models. **Results:** Patient age and BMI were similar between the sORC and sRARC group. Mean ASA scores were higher in sRARC group (2.7 vs. 2.2, $p = 0.02$). All but one patient received an ileal conduit as urinary diversion, exception being a mitrofanoff catheterizable pouch. Pelvic lymph node dissection was performed in 35% of sORC group and 69% of sRARC group. Final pathological T staging indicated higher proportion of T4 in sORC group (50% vs. 19.1%) and higher T2-T3 in sRARC group (T2 7.1% vs. 19.1%; T3 7.1% vs. 29.8%). Post-operatively, no statistically significant differences were reported in hospitalization duration, intraoperative complications, blood loss and transfusion rates between both groups. 17 30-day and 19 90-day Clavien-Dindo complications were recorded respectively, with no significant difference between both groups ($p = 0.296$, $p = 0.688$). No significant difference reported in 30-day and 90-day readmission. No 90-day mortalities were reported in either group. **Conclusion:** Overall perioperative complication rates for salvage cystectomy were comparable to previously published rates, with no significant difference in perioperative outcomes between sORC and sRARC.

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Topics: *Uro-oncology*

Ambulatory Prostatectomy: The Advent of a New Era in Singapore Prostate Cancer Care

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ABSTRACT: Introduction: The total extraperitoneal approach in robot-assisted radical prostatectomy (TEP RRP) reduces postoperative pain, bowel disturbance, and hospital stay. This pilot study reassesses its feasibility in an ambulatory setting. **Methods:** We reviewed a cohort of 77 men with low to intermediate-risk localized prostate cancer who underwent TEP RRP by a single surgeon between July 2021 and April 2024. We recorded their post-anesthesia discharge scoring system (PADSS) within four hours post-surgery and interviewed them about barriers to discharge readiness. Building on this, from October 2024 to May 2025, 7 patients were counseled preoperatively and offered TEP RRP in a true ambulatory setting. **Results:** The first cohort had a mean age of 67 years and a mean BMI of 24.3. Most (88.3%) had a Charlson comorbidity index of 2 or less. The median hospital stay was 23 h. Seventy-one patients (92.2%) had a PADSS score qualifying them for same-day discharge. On a retrospective interview, 32% felt fit for discharge on the same day; limiting factors included pain (19%), availability of a carer (54%), and mobility (19%). With adequate preparation five patients were subsequently discharged on the same day. These had a mean operative time of 198 min, blood loss averaging 80 mL, underwent nerve-sparing procedures, and had comparable early continence and erectile function to hospitalized cases. **Conclusion:** With appropriate counseling and preparation, ambulatory prostatectomy is feasible without compromising outcomes. Further studies are needed to determine broader applications and improve patient acceptability.

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Topics: *General Urology, Uro-oncology, Andrology and Subfertility*

Real World Data on the Use of Androgen Deprivation Therapy and Its Impact on Testosterone Suppression and Bone Health in Metastatic Prostate Cancer Patients

Teng Yang Terence Lian[1], John Joson Ng[2], Shao Xian Chew[3], Janice Tin[3], Norlela Binte Hashim[3], Kiat Wee Lim[3], Cassandra Chang[3], Alvin Lee[4], Yu Guang Tan[4], Kae Jack Tay[4], Henry Ho[4], John Yuen[4] and Kenneth Chen[4]

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ABSTRACT: Introduction and Objectives: Androgen Deprivation Therapy (ADT) is a key component in managing advanced prostate cancer. However, variations in drug type, dosage, duration and compliance may influence hormonal suppression and treatment outcomes. This study aims to investigate these factors in relation to testosterone suppression, treatment response and bone mineral density (BMD). **Materials and Methods**: Data from a prospectively maintained database of 139 metastatic prostate cancer patients treated with leuprolide, triptorelin or goserelin over 16 years was analysed using multivariate regression models. Independent variables included drug type, dosage, duration and compliance status. Primary outcomes included depth of castration, time to nadir testosterone (TTNT) and testosterone variability. Secondary outcomes included PSA nadir, time to PSA nadir and castrate resistance (TTCR). Clinical outcomes and adverse effects were also assessed. **Results**: Use of goserelin was significantly associated with lower testosterone variability compared to leuprolide (Coef = −0.313, $p = 0.0218$), with the lowest observed variability (SD: 0.58 nmol/L). Both triptorelin and goserelin were significantly associated with higher nadir testosterone levels compared to leuprolide. (Triptorelin: Coef = 0.119, $p < 0.001$; Goserelin: Coef = 0.166, $p < 0.001$). Drug dosage and compliance were not significant predictors of nadir testosterone or TTNT. Longer duration of ADT was significantly associated with reduced hip BMD (Coef = −0.00042 per day, $p = 0.00935$) and lumbar spine BMD (Coef = −0.000569 per day, $p = 0.0162$). **Conclusion**: In this study, the findings suggest that goserelin may provide more stable testosterone suppression. However, extended therapy duration is associated with bone loss. These findings underscore the need for individualised treatment strategies balancing oncologic outcomes with long-term adverse effects.

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Topics: *General Urology, Uro-oncology*

Predictors of Severe Hemorrhagic Cystitis after Radiation Therapy for Prostate Cancer: A 20-Year Tertiary Care Center Experience

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ABSTRACT: Introduction: Radiation therapy (RT) is a cornerstone of prostate cancer management but can lead to hemorrhagic cystitis, a significant late complication with substantial morbidity. This study identifies clinical and demographic predictors of severe radiation cystitis. **Methods:** A retrospective review was conducted on prostate cancer survivors treated for hematuria at our center between 2014 and 2024. Patients with cystoscopy-confirmed radiation cystitis were analyzed. Logistic regression was used to assess risk factors for severe outcomes. **Results:** Of the 52 patients studied, 20.3% required more than two transurethral bladder fulguration (TUBF) procedures, and 37.0% experienced multiple hospital admissions. Three patients underwent cystectomy. Univariate analyses highlighted ischemic heart disease (OR: 5.17), antiplatelet therapy (OR: 5.18), and delayed initial presentation (OR: 5.02) as significant predictors. Multivariate analysis confirmed antiplatelet therapy (OR: 2.8, $p = 0.05$) and delayed TUBF (OR: 1.8, $p = 0.02$) as independent risk factors. **Conclusion:** Patients on antithrombotic agents and those with delayed treatment initiation are at higher risk for severe complications. Early identification and tailored management strategies are essential to mitigate morbidity in these patients.

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Topics: *Minimally Invasive Surgery, Technology and Artificial Intelligence*

Hinotori Robot-Assisted Surgery for Radical Prostatectomy—Insights from Initial Six Months of Adoption

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ABSTRACT: Introduction: The advent of novel robotic platforms, like the Hinotori Robotic Surgical System (HRSS), introduced in our institution in 2024, has disrupted the monopoly of da Vinci Surgical System (dVSS). Our study aims to compare the initial outcomes and technical differences between the HRSS and dVSS for robot-assisted radical prostatectomy (RRP). **Methods:** Consecutive patients undergoing RRP from October 2024 to April 2025 within a single institution. Baseline characteristics and peri-operative data including setup/console time, estimated blood loss and complications were analysed. Technical insights were qualitatively-described. **Results:** 100 patients were analysed, including 50 consecutive cases performed with HRSS and 50 historical cases with the dVSS. There were no significant differences in baseline characteristics such as age, serum prostate-specific antigen, clinical tumour stage or prostate volume. There were no significant differences in intra-operative or post-operative complications. Total setup time was 10 min longer with HRSS (20 vs. 30 min, $p = 0.009$) and console time was 46 min longer with HRSS (157.5 vs. 203.5 min $p < 0.001$). Compared to the initial 10 consecutive cases respectively, there was an overall decrease in total setup time and console time. HRSS's docking-free design confers a more-spacious extracorporeal working environment but requires careful setup of pivot points to avoid instrument friction, causing jerky movements or difficulty in exchanging instruments. Adaption of HRSS appears seamless with no clinically significant decline in performance among experienced surgeons. **Conclusion:** Our study confirms the feasibility and safety of HRSS for RRP, demonstrating similar peri-operative outcomes to dVSS.

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Topics: *Uro-oncology*

A comparison of Androgen Receptors Pathway Inhibitors—Real World Data from a Prospectively Maintained Registry

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ABSTRACT: Introduction: Prostate cancer is a leading cause of cancer-related morbidity and mortality among men worldwide. Treatment intensification with doublet and triplet therapy involving androgen receptor pathway inhibitors (ARPIs) has superseded Androgen deprivation therapy (ADT) as the standard of care with well-established oncological benefits. However, with the lack of head-to-head randomised controlled trials, the paper aims to review real-world data between different ARPIs in metastatic hormone-sensitive prostate cancer (mHSPC) to evaluate their comparative performance. **Methods:** Data from a prospectively-maintained IRB-approved cancer registry of mHSPC patients was analysed. Time-to-event endpoints were assessed by Kaplan–Meier analysis with log-rank tests, and pairwise hazard ratios were obtained from Cox proportional-hazards models. Nadir PSA levels were compared by one-way ANOVA and illustrated with violin plots. All analyses were performed in RStudio (Posit Software, PBC, Boston, MA) Version 4.3.2. **Results:** 99 patients were included (45 on Abitarone, and 44 on Enzalutamide), with a mean age of 71.9 years old (SD = 7.46) and a baseline PSA level at diagnosis of 343 $ngmL^{-1}$ (SD = 620). The mean follow-up time was 47.2 months (SD = 37.6). Enzalutamide is associated with a lower risk of castrate resistance progression compared to Abitarone (HR = 0.61, 95%CI:0.28;1.35), and was associated with a lower risk of mPCa mortality compared to Abitarone (HR = 0.42, 95%CI:0.17;1.04). Furthermore, Enzalutamide achieved the lowest median PSA nadir level of 0.02 $ngmL^{-1}$ (0.01–0.33) compared to that of Abitarone, 0.09 $ngmL^{-1}$ (0.01–0.89). **Conclusion:** In this real-world cohort, Enzalutamide was associated with a deeper PSA response and trends toward improved clinical outcomes compared to abiraterone. Larger studies are needed to confirm its real-world benefits.

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Topics: *Uro-oncology*

Robotic-Assisted Laparoscopic Prostatectomy Outcomes in Octogenarians

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ABSTRACT: Introduction: Prostate cancer's indolent disease course and regular screening often allow elderly patients to outlive the disease. However, rising life expectancy could push the surgical cut-off beyond the conventional 80 years old. This cross-centre study aims to evaluate the peri-operative, oncologic and functional outcomes of robotic-assisted laparoscopic prostatectomy (RALP) on octogenarians with prostate cancer in an Asian context. **Methods:** Using our prospectively maintained database, we identified men with prostate cancer who underwent RALP surgery from January 2019 to December 2023. Data was collected retrospectively from hospital records. Baseline patient and tumour characteristics, peri-operative, oncologic and functional outcomes were compared between the ≥80 and ≤79 age groups. We used chi-squared test or Fisher's exact test for categorical variables and *t*-test for continuous variables. Statistical significance was established with $\alpha = 0.05$. **Results:** Of 695 total patients, 12 (1.73%) were excluded for incomplete data. There were 9 (1.29%) aged ≥80, and 320 (98.7%) aged ≤79 at the time of operation. Table 1a outlines baseline patient and disease characteristics. Those aged ≥ 80 tended to be ASA-3 (57.1% vs. 11.6%, $p < 0.001$). There were no significant differences in tumour histology. Mean estimated blood loss was lower in the ≥80 group (150 ± 90) compared to the ≤79 group (261 ± 220, $p = 0.005$). Complication rates and length of stay were similar. After a median follow-up of 31 months (interquartile range 15–53 months), both groups had similar BCR rates (14.3% vs 18.4%, $p = 0.62$). **Conclusion:** RALP is safe and feasible in carefully selected patients with localised prostate cancer, potentially a valid curative option on top of radiation therapy.

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Topics: *Uro-oncology*

Confirmatory Biopsy Remains Relevant for Active Surveillance in Prostate Cancer

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ABSTRACT: Introduction: Active surveillance (AS) is the recommended approach for managing low-risk prostate cancer, but its implementation varies across Asia. Existing literature reports Gleason score upgrading rates of 17.9–45.9% on confirmatory biopsy. This study evaluates the value of confirmatory biopsies in AS. **Methods:** A retrospective cohort study was conducted on 202 men with low-risk prostate cancer (Gleason score ≤ 6, PSA < 10 ng/mL, clinical stage T1–T2a) diagnosed between 2015 and 2022 at a tertiary centre in Singapore. Patients underwent MRI-guided Transperineal Biopsies with Targeted and Saturation Cores (median 26). Clinical and treatment data were analysed. Patients were grouped by treatment decision: AS or definitive treatment (surgery, radiation or focal therapy). *t*-tests, Mann-Whitney U tests, and Fisher's Exact tests were used for comparisons. **Results:** Of 202 patients, 181 (89.6%) initially underwent AS. AS and definitive treatment groups were similar in age (median 64 vs. 63 years, $p = 0.65$) and PSA (mean 6.2 vs. 5.9 ng/mL, $p = 0.44$). Among 42 patients (23%) who underwent a second biopsy, 23 (54.8%) were upgraded to Gleason 7–10 (Gleason 7 (22), Gleason 8 (1)). No significant differences were found in PSA, age, prostate volume, or PSA velocity between upgraded and non-upgraded patients. Most (79%) met the biopsy adequacy threshold of ≥0.5 cores per mL. Following reclassification, 78% received curative treatment (13% radiotherapy, 48% radical prostatectomy, 17% focal therapy). **Conclusion:** Despite high AS uptake, over half of patients undergoing confirmatory biopsy were upgraded, supporting its value in ensuring safe AS management for low-risk prostate cancer.

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Topics: *Endourology and Stone Diseases*

Overcoming Anatomical Challenge: Lateral Percutaneuos Nephrolithotomy (PCNL) in Patient with Adult Idiopathic Scoliosis

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ABSTRACT: Introduction and Objectives: Spinal deformities such as scoliosis pose significant perioperative challenges for conventional percutaneous nephrolithotomy (PCNL), particularly in achieving optimal patient positioning and renal access. Lateral PCNL has emerged as a promising alternative for patients with complex anatomical variations and high operative risk. This case aims to illustrate the safety and effectiveness of lateral PCNL in the management of renal stones in an adult patient with idiopathic scoliosis. **Materials and Methods:** This was a case report of a 53-year-old male with a history of right open nephrolithotomy presented with right flank pain. Abdominal computed tomography (CT) revealed recurrent multiple right renal stones measuring 23 × 12 mm and 13 × 5 mm with associated hydronephrosis. Spine evaluation confirmed adult idiopathic thoracolumbar dextroscoliosis. Given the anticipated difficulties with prone and supine positioning, a lateral approach to PCNL was selected. Renal access was obtained through the postero-inferior calyx, and stone fragmentation was performed using an ultrasonic lithotripsy device. **Results:** Postoperative imaging demonstrated complete stone clearance. The patient had an uneventful recovery and was discharged on postoperative day three without any perioperative complications. **Conclusion:** Managing renal stones in patients with spinal deformities like scoliosis is challenging due to limitations in positioning and access. While PCNL remains the gold standard, lateral PCNL is a safe and effective alternative in cases where traditional positioning is not feasible.

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Topics: *General Urology, Uro-oncology*

Risk Factors for Biochemical Recurrence of Prostate Cancer Post Radiotherapy

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ABSTRACT: Introduction: Despite the advent of magnetic resonance imaging (MRI), risk classification scores for biochemical recurrence (BCR) in prostate cancer (PCa) have yet to be updated. This study aims to identify risk factors of BCR in PCa patients who underwent radiotherapy. **Methods:** A retrospective cohort study between 2012 and 2022 in a tertiary institution was conducted, identifying a total of 565 patients with PCa undergoing radiotherapy. Baseline characteristics were assessed, and BCR was defined as two prostate-specific antigen (PSA) values of 0.2 ng/mL. Kaplan-Meier and Cox regressions tested time and predictors of BCR. **Results:** Overall, 32 (5.7%), 226 (40%), and 307 (54.3%) patients had low-, intermediate- and high-risk disease according to the EAU risk groups. The overall BCR-free survival rate was 76.2%. No significant differences were observed in BCR survival between the EAU risk groups ($p = 0.21$). Univariate Cox regression revealed PSA levels at diagnosis ($p < 0.01$), Clinical Node stage (cN) ($p < 0.001$) and MRI Tumor (MRI T) stage, namely seminal vesical invasion (SVI) ($p < 0.001$) proved to be significant predictors of BCR. With multivariate Cox regression, significant predictors of BCR included cN1 (HR 5.69, 95% CI 1.85–17.50, $p = 0.002$), and MRI T stage, specifically SVI (HR 2.52, 95% CI 1.07–5.97, $p = 0.035$). **Conclusion:** Risk factors of BCR in the advent of MRI were identified and further research towards novel risk stratification system for PCa patients undergoing radiotherapy should be considered.

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Topics: *Uro-oncology, Minimally Invasive Surgery*

Short-Term Outcomes of Irreversible Electroporation Focal Treatment for Periurethral Prostate Cancer

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ABSTRACT: Introduction: Irreversible electroporation (IRE) is an emerging non-thermal focal therapy (FT) method for treating men with localized clinically significant prostate cancer (csPCa). Its mechanism of action theoretically preserves connective tissue architecture providing a scaffold for cell regrowth. We evaluate short-term safety and functional outcomes of FT-IRE for periurethral csPCa. **Methods**: A prospective registry (ProAMFocal, NCT06491056) tracked patients undergoing FT-IRE for periurethral csPCa (≤5 mm from urethra) between February 2023 and April 2025. Primary outcome measures were post-FT complications, PSA and quality of life measured using serial Expanded Prostate Cancer Index Composite (EPIC) scores compared to baseline. **Results**: We treated 18 periurethral csPCa lesions (13 grade-group [GG] 2, and 5 GG3; 1 PIRADS 3, 16 PIRADS 4, and 1 PIRADS 5) in 13 patients. Median follow-up was 9 (range 6–18) months, age 67 (range 62–72) years, PSA 6.2 (range 4.8–8.1) ng/mL. Median lesion volume was 0.64 (range 0.19–2.03) ml. Median lesion-urethra distance was 1 (range 0–5) mm. Post-FT-IRE, 6-month PSA decreased to 2.1 (range 1.5–3.0) ng/mL. EPIC scores at 1-, 3- and 6-months showed a minimal changes in urinary function (median change: −3, IQR: −5 to 0) and sexual function (median change: −4, IQR: −7 to −1). No intraoperative complications occurred. 30-day complications included 1 patient (7%) with a prolonged catheterization (7 days), two patients (15%) had self-resolving hematuria, and one (7%) had severe hematuria requiring admission, manual washout and cystoscopy (Clavien-Dindo Grade 3a). **Conclusion**: Focal IRE for periurethral csPCa is safe and demonstrates satisfactory short-term urinary and sexual functional outcomes.

KEYWORDS: Periurethral; Prostate cancer; Irreversible electroporation; Focal therapy

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Topics: *Endourology and Stone Diseases, Minimally Invasive Surgery*

Utility and Challenges of Flexible and Navigable Suction Ureteral Access Sheath (FANS) vs. Suction Mini-PCNL in Children: A Comparative Analysis

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ABSTRACT: Introduction: Pediatric kidney stone disease poses unique challenges due to smaller anatomical structures and the need to minimise morbidity. Flexible and Navigable Suction Ureteral Access Sheath (FANS-UAS) for Retrograde Intrarenal Surgery (RIRS) and suction mini-percutaneous nephrolithotomy (SM-PCNL) have emerged as promising options for treating renal stones ≤2 cm in children. This study aims to compare the efficacy and safety of FANS-UAS and SM-PCNL in children, focusing on stone-free rates (SFR), operative efficiency, and perioperative outcomes. **Methods:** A prospective, multicenter study enrolled 96 pediatric patients (50 FANS-UAS, 46 SM-PCNL) across eight centers. Inclusion criteria included age ≤16 years, normal renal anatomy, and a stone burden ≤2 cm. Outcomes measured were SFR (via 30-day non-contrast CT scan), operative time, complications, and hospital stay. Two multivariable regression analyses identified predictors of SFR and overall complications. FANS-UAS used 10–12Fr sheaths with laser lithotripsy, while SM-PCNL utilized 18Fr sheaths with laser/pneumatic devices. **Results:** FANS-UAS and SM-PCNL achieved comparable SFR (66.0% vs. 58.7% for zero fragments). However, FANS-UAS had shorter operative times (42.5 vs. 82.5 min, $p = 0.025$) and hospital stays (2 vs. 3 days, $p < 0.001$). FANS-UAS was preferred for multiple stones (28% vs. 0%, $p = 0.005$). Complication rates were similar (12.0% vs. 8.7%, $p = 0.845$). Limitations include small sample size, non-randomized design, and short follow-up. **Conclusion:** FANS-UAS and SM-PCNL are both effective for managing large renal stone burdens in children. Age is not a limiting factor, but BMI may influence choice of procedure. Surgeon experience and comfort level remain crucial in determining success and complications in pediatric stone management.

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Topics: *General Urology, Minimally Invasive Surgery*

Early Experience and Tolerability of Temporary Implantable Nitinol Device (iTind) in Asian Men with Benign Prostatic Hyperplasia: A Single-Centre Prospective Study

Roy Teng, Ee Jean Lim, Valerie Huei Li Gan, Yong Jin and Edwin Jonathan Aslim

Department of Urology, Singapore General Hospital, Singapore

ABSTRACT: Introduction: The Temporary Implantable Nitinol Device (iTind) is a minimally invasive treatment for lower urinary tract symptoms (LUTS) caused by benign prostatic hyperplasia (BPH) or bladder neck obstruction (BNO). This study aims to assess the tolerability of iTind *in situ* and early functional outcomes in Asian men. **Methods:** This single-centre IRB-approved prospective study (2024–2025) included 21 consecutive iTind procedures performed in men with LUTS from BPH or BNO, confirmed by pre-operative flexible cystoscopy. Routine postoperative medications included prednisolone, antibiotics, analgesics, and occasionally Mirabegron. Alpha-blockers were continued for up to 2 weeks after device removal at 5–7 days post-operatively. International Prostate Symptom Scores (IPSS), Quality of Life scores (QoL), and peak flow rate (Qmax) were assessed at baseline and a month post-procedure. A daily survey evaluated pain using Visual Analogue Score from 0–10, urinary symptoms, daily function, and string discomfort from 0–5. **Results:** At one month, average IPSS, QoL and Qmax improved by 30%, 30%, and 42%, respectively. Mean pain scores fell from 7.3 on day 1 to 4.8 by day 5 ($p < 0.05$). 86% experienced incontinence, with 12 men requiring change of pad at least twice daily. All experienced dysuria, urinary frequency, hematuria, and abdominal pain, initially severe but improving by day 5 by 69%, 43%, 64%, and 51% respectively, with an overall 57% mean symptom improvement ($p < 0.05$). All patients reported disruptions to daily activities, and 11 lacked confidence to work or socialise. **Conclusion:** iTind demonstrates promising symptom and flow improvements consistent with major studies. However, further studies are needed to explore and optimise tolerability of iTind.

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Topics: *General Urology*

Bridging Critical Monitoring Gaps in Continuous Bladder Washout: A Smart Alert System

Ma Victoria Dela Cruz Gonzalves, Magnolia Samaniego Olaes, Romelita Abendan Del Pilar, Sivagame D/O Maniya and A/Prof Lee Lui Shiong

Sengkang General Hospital, Singapore

ABSTRACT: Introduction: Continuous bladder washout (CBWO) is a fundamental urological procedure that traditionally requires intensive manual monitoring. It is manually intensive and there is an inherent clinical risk if not adequately monitored. The study aims to evaluate a device to aid monitoring of Continuous Bladder Washout (CBWO). The system's functionality relied on weight-based measurement of the urinary collection bag, incorporating an alarm system for flow disruption detection and alerts for bag capacity thresholds. **Methods:** The study was conducted in one institution recruiting elective post TURP patients requiring CBWO. Between 2022 and 2024, 40 participants required CBWO over a median usage time of 7 h per individual. CBWO systems were ran at flow rates greater than 100 mL per minute. The study was concluded when CBWO was stopped by the clinical team. **Results:** The device demonstrated 100% sensitivity in detecting flow rates below 60 mL/h, successfully identifying all 117 cases that led to staff intervention. The positive predictive value was 98% and there were three false positives attributed to temporary flow disruptions from patient movement. There were no false negative cases. **Conclusion:** The study successfully demonstrated a practical and feasible solution for automated CBWO monitoring. The implementation of this system shows promise in achieving earlier detection of flow interruptions, thereby improving patient safety in a cost-effective manner.

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Topics: *Others*

Mind the Gap: Safety and Efficacy of Rectal Spacers in Locally Advanced Prostate Cancer

Kaiying Wang[1], Chen'En Ye[2], Arshvin Kesavan[1], Woon Chau Tsang[1], Ziting Wang[1], Sin Mun Tham[3], Kiat Huat Ooi[2], Jeremy Chee Seong Tey[2] and Edmund Chiong[1,3]

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ABSTRACT: Introduction: There is minimal data on the use of rectal spacers in locally-advanced prostate cancer (PCa). This study aims to evaluate the safety and efficacy of rectal spacers in patients with cT3 disease receiving external beam radiotherapy (EBRT). **Methods:** From 2022 to 2024, we collected prospective single-centre data of consecutive patients with biopsy-proven cT1c to cT3 PCa who underwent perirectal spacer placement (either SpaceOAR or Barrigel) followed by EBRT. Dosimetry ranged from 50–79.2Gy given over 20 fractions. Rectal distances, complications, and toxicity outcomes were evaluated. **Results:** 181 men were included, of which 17 (9.4%) had T1c disease, 102 (56.4%) T2 disease, and 62 (34.2%) cT3a/b disease. Rectal spacing achieved was similar: in the cT3 group versus T1c/T2 group, rectal spacing achieved was 0.94 cm ± 0.32 vs. 0.82 ± 0.3 (p = 0.01) at base, 1 cm ± 0.36 vs. 1.05 cm ± 0.37 (p = 0.34) at midgland, and 0.52 cm ± 0.27 vs. 0.59 ± 0.3 (p = 0.12) at apex. Toxicities were similar, with 12.9% (8/62) reporting acute grade 1/2 GI toxicity and 4.3% (2/46) reporting late toxicity in the cT3 group, compared to 5.1% (6/119, p = 0.06) acute and 1.1% (1/90, p = 0.22) late toxicities in the T1c/T2 group. No grade ≥3 toxicity was reported. Regarding complications, 14.5% (11/62) of cT3 patients and 11.7% (14/119) of T1c/T2 patients developed temporary urinary retention (p = 0.44). There was no refractory urinary retention, infective complications, or rectal mucosal injury in both groups. **Conclusion:** Patients with cT3 disease experience similar rectal toxicity and post-procedural complication rates. Rectal spacers are safe and effective in patients with locally-advanced cT3 PCa.

Moderated Video

1

Topics: *Uro-oncology, Minimally Invasive Surgery*

Post Chemotherapy Robotic-Assisted Laparoscopic Retroperitoneal Lymph Node Dissection (RPLND)—Key Technical Steps & Anatomy

Kit Mun Chow, Alvin Lee Yuan Ming, Yu Guang Tan, Kae Jack Tay, Henry Ho Sun Sien, John Yuen Shyi Peng and Kenneth Chen

Singapore General Hospital, Singapore

ABSTRACT: Introduction and Objective: Retroperitoneal lymph node dissection (RPLND) can be a technically demanding procedure, particularly post-chemotherapy when desmoplastic reactions obscure tissue planes. We present our experience using a robotic approach for both unilateral and bilateral RPLND to achieve oncological clearance, reduce morbidity, and maximise nerve sparing. **Methods:** Two patients (aged 27 and 46) with advanced non-seminomatous germ cell tumours (NSGCT) and residual retroperitoneal disease post-chemotherapy underwent unilateral left and modified bilateral RPLND, respectively. The second patient also underwent left adrenalectomy for adrenal metastasis. A five- and eight-port configuration was used. Key technical aspects of our approach included: Interchangeable camera and instruments which enabled multi-quadrant access via the Da Vinci Xi system. Definiting template borders before nodal dissection to protect vital structures. Meticulous clipping of lymphatic vessels to prevent lymphatic leakage. Nerve-sparing techniques, including preservation of the sympathetic chain and limiting contralateral dissection to the inferior mesenteric artery. **Results:** Operative times were 5 h 45 min and 11 h 40 min, with minimal blood loss (<300 mL). Both patients had uneventful post-operative recoveries and were discharged on post-operative days 3 and 4. On surveillance imaging at 3, 6, and 12 months, neither patient had had disease recurrence, and both reported preserved sexual function. **Conclusion:** Robotic-assisted RPLND allows for improved anatomical visualisation and fine dissection. In both unilateral and bilateral templates, favourable oncological outcomes and nerve sparing was achieved.

External Resource:

https://youtu.be/9Fvd4EjNDmY

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Topics: *Uro-onclogy, Minimally Invasive Surgery*

Retzius-Sparing Robot-Assisted Radical Prostatectomy in Renal Transplant Recipients

Jeffrey J Leow[1,2], Santhosh Nagasubramanian[2,3], Zafer Tandogdu[2], Ashwin Sridhar[2], Prabhakar Rajan[2,4,5], Prasanna Sooriakumaran[2,6,7,8] and Benjamin W Lamb[2]

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ABSTRACT: Introduction: We share our experience in performing Retzius-Sparing Robot-Assisted Radical Prostatectomy (RS-RARP) in renal transplant recipients, as it can reduce the risk of damaging the transplant kidney and vesico-ureteric anastomosis. **Methods:** In our practice, the procedure begins with access to the peritoneum via Hasson's technique using a supra-umbilical incision for camera port insertion. Using a posterior first Montsouris approach, we dissect the vasa and seminal vesicles. During this initial phase of the operation, it is prudent to zoom out and visualise the transplant to ensure that the robotic arms are not causing traction on or compression of the kidney. Posterior dissection proceeds with either inter- or intra-, or extra-fascial technique depending on the surgical plan. The prostatic pedicles are divided. Bladder neck sparing dissection and anterior sub-DVC dissection is performed, followed by DVC closure and vesico-urethral anastomosis. **Results:** From our prospectively-maintained UCLH prostatectomy database (January 2018 to July 2023) of 3507 patients who underwent non-salvage RARP, 4 were kidney transplant recipients. All had intermediate- to high-risk prostate cancer with Gleason Grade Group 2–3 disease. Patients stayed for a mean of 2.75 days (±1.5); likely due to caution with postoperative monitoring of kidney function. No patients suffered a 30-day complication or readmission. There were no significant differences in the preoperative vs. postoperative estimated glomerular filtration rate (59.5 ± 17.8 vs. 58.3 ± 20.3, $p = 0.37$). Limitations: lack of long-term follow-up. **Conclusion:** RS-RARP is feasible and safe for renal transplant recipients, minimising risk of injury to transplant ureter and anastomosis, whilst offering an effective treatment option for localized prostate cancer.

External Resource:

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3

Topics: *Uro-oncology, Minimally Invasive Surgery*

Robotic-Assisted Single Stage Pelvic and Inguinal Lymph Node Dissection for Penile Cancer: Surgical Anatomy and Step-by-Step Technique

Sunil Ravinder Gill, Yi Ling Chua, Alvin Lee Yuanming, Yu Guang Tan, Henry Ho, John Yuen and Kenneth Chen

Department of Urology, Singapore General Hospital, Singapore

ABSTRACT: Introduction: Inguinal and pelvic lymph node dissections are essential components in the diagnosis, staging, and management of penile cancer. However, traditional open approaches are associated with significant morbidity, including wound infection, dehiscence, and lymphoedema. Advances in robotic surgery have the potential to mitigate these complications. **Methods:** We present the surgical anatomy and technique for performing single-stage robotic pelvic and inguinal lymph node dissection using the Da Vinci Xi Surgical System. This includes patient positioning, surgical access, intraoperative transitioning of the robotic system, a retrograde approach to inguinal lymph node dissection, and operative strategies aimed at minimising postoperative morbidity. **Results:** In our experience, the Da Vinci Xi system provides superior visualisation of anatomical planes, facilitates meticulous dissection, and allows for safe and effective completion of both pelvic and inguinal lymph node dissection in a single session. This approach was associated with reduced postoperative morbidity and faster recovery. **Conclusion:** Single-stage robotic pelvic and inguinal lymph node dissection represents a safe and effective technique in the management of penile cancer. The use of robotic platforms offers distinct advantages in visualisation, precision, and patient outcomes, and may define the future standard of care in this domain.

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Topics: *Minimally Invasive Surgery*

Evaluating Success after Robotic Buccal Mucosal Graft Pyeloplasty

Khi Yung Fong[1], Wei Zheng So[2], Melissa Tay[2] and Ho Yee Tiong[2]

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[2]National University Hospital, Singapore

ABSTRACT: Introduction: We aim to describe a case of robotic buccal mucosal graft pyeloplasty for recurrent ureteric stricture and the evaluation of its success. **Methods:** A 44-year-old male, with a past history of open pyeloplasty for congenital right sided pelviureteric junction obstruction, had multiple emergency department admissions with symptomatic urinary tract infection. Despite laser endopyelotomy and balloon dilation, the stricture recurred, causing significant flank pain affecting quality of life. Severe right-sided hydronephrosis was evident on CT urogram, and a MAG3 renogram showed an obstructive picture. The patient was counselled for robotic buccal mucosa graft pyeloplasty 9 months after the failed endourologic therapy. Intraoperatively, the sub-centimeter stricture was identified and pyeloplasty was successfully performed. **Results:** At 3-month follow-up, the CT urogram showed similar collecting system ectasia to the preoperative scan, with edema at the repair site and enhancement along the mucosa causing apparent narrowing. At 6-month follow-up, the enhancement and narrowing resolved, with good flow past the repair site. Similarly, the MAG3 renogram showed persistent obstruction at 3 months, which resolved significantly at 6 months; a transient postoperative worsening of right-sided renal function was offset by eventual recovery to preoperative levels. Symptom control was excellent; the patient did not require any further admissions and had complete resolution of his flank pain. **Conclusion:** Robotic buccal mucosal ureteroplasty is a useful salvage repair option for recurrent strictures. Success of stricture resolution may require a longer follow up period up to 6 months to ascertain, and should be guided by the patient's symptoms.

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Topics: *Minimally Invasive Surgery*

Technical Differences Between Hinotori and Davinci Robotic Systems in the Context of Radical Prostatectomy

Bellamy Brodie, Alvin Lee, Tyrone Yeo, Eleanor Loh, Saiduzzaman Sujon, Yu Guang Tan, Kae Jack Tay, John Yuen, Kenneth Chen and Henry Ho

Department of Urology, SGH

ABSTRACT: Introduction: Intuitive's DaVinci system has long been the standard of care for minimally invasive urological surgery. Now, multiple new systems have been introduced, such as the Medicaroid's Hinotori system. This video aims to compare these two robotic systems in the context of radical prostatectomy, highlighting their technical differences with their practical implications. **Methods:** Both the Davinci and Hinotori consist of a freestanding tower controlled by a surgeon's console. They also both include 3 key modules – the surgeon's console, the patient cart, and the vision cart. This video provides an evaluation of each of these components, and contrasts them to the Davinci. Side-by-side footage of radical prostatectomy is also presented to demonstrate how these differences impact actual surgery. Procedure times, ease of use, and intraoperative handling were all assessed. **Results:** The Hinotori system's key innovation is its dockless architecture, eliminating the need for traditional arm docking to trochars. The main advantages of this design include more space for the surgical assistant and adjustable trochar depths. However, it is disadvantaged by increased set up times, and by how easily it may be influenced by respiratory movements. No significant difference was seen in console time between the two systems, however there was an increase set up time (33 min vs. 25 min) seen with the Hinotori system. **Conclusion:** Four consultant surgeons have now performed over 50 cases of radical prostatectomy with the Hinotori system at our centre. The key difference lies with the Hinotori's dockless architecture, which may influence radical prostatectomy in several ways.

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Topics: *Minimally Invasive Surgery*

Buccal Mucosal Graft Ureteroplasty for Proximal Ureteral Stricture—A First Using the Hinotori Platform

Daniel Wen Xiang Goh, Han Jie Lee, Kenneth Chen, Henry Sun Sien Ho and Jin Yong

Singapore General Hospital, Singapore

ABSTRACT: Introduction: Proximal ureteral strictures often necessitate complex reconstruction. We present the first reported case of robotic buccal mucosal graft ureteroplasty for a long-segment proximal stricture using the hinotori surgical system, demonstrating its technical feasibility. **Methods:** A 45-year-old female presented with a 3.5-cm left proximal ureteral stricture refractory to stenting after previous fulminant left retroperitoneal infection. The hinotori robotic platform was utilized for buccal graft ureteroplasty. The procedure employed modified Valdivia positioning to facilitate simultaneous intraoral graft harvesting and robotic surgical access. A standardized four-port configuration was utilized, comprising two 11 mm robotic ports, one 12 mm assistant port, and an umbilical camera port. The critical surgical manoeuvres included robotic dissection of the strictured ureteral segment, buccal mucosal graft on-lay anastomosis and omental wrap. **Results:** The operation went uneventfully with total console time of approximately 330 min and estimated 300 mL of blood loss. Postoperatively, her drain and catheter was removed and she was discharged 2 days after the operation without complications. Follow-up imaging confirmed stent position. **Conclusion:** This case provides definitive evidence of the hinotori platform's technical capability for robotic buccal graft ureteroplasty, establishing its role in complex proximal ureteral reconstruction. Furthermore, it confirms the therapeutic efficacy of BMG for long-segment proximal ureteric strictures. These findings represent a significant advancement in robotic-assisted urologic surgery, with important implications for the management of challenging ureteral pathology.

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Topics: *Functional Urology Transplantation*

One-Sided Dissection Substitution Urethroplasty in A Post-Bulbar Urethroplasty Recurrent Stricture Setting

Daanesh Huned Hassanbhai and Weida Lau

Department of Urology, Khoo Teck Puat Hospital, Singapore

ABSTRACT: Introduction: For a patient with a history of failed anterior urethroplasty, a one-sided anterior urethroplasty can be a viable option for reconstruction, potentially preserving the vascular supply and achieving a high success rate. We present our adoption of this technique for a patient who developed a urethral stricture following a urethroplasty that was previously performed for a bulbar urethral fistula. Materials and Methods: Our patient is a 56-year-old gentleman who had initially presented with recurrent perineal abscesses and was found to have a bulbar-urethral cutaneous fistula based on urethrogram. He underwent an anterior substitution urethroplasty with successful voiding outcomes but was lost to follow up post-operatively. He presented 4 years after with worsening urinary flow (maximum flow rate [Qmax]: 7.4 mL/s) and recurrent urinary tract infections. Assessment with cystoscopy and urethrogram confirmed an anterior (penile) urethral stricture. The patient subsequently underwent an elective one-sided anterior urethroplasty and suprapubic catheter insertion (SPC). Results: Intraoperatively, patient was noted to have a long segment of penile and distal bulbar urethral stricture measuring 13 cm with a fixed bulbar-membranous junction due to prior repair. Lingual and buccal grafts were harvested. The patient was discharged on post-operative day (POD) 1 with both an SPC and indwelling catheter (IDC) *in situ*. Upon review on POD 21, a peri-catheter ascending urethrogram revealed no leak and IDC was removed. On further follow up, Qmax improved to 19.1 mL/s with good healing of operative wounds. Conclusions: One-sided anterior urethroplasty is an effective and safe treatment for patients with severe penile urethral strictures following prior infections in the setting of prior urethral reconstruction.

External Resource:

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8

Topics: *Uro-oncology*

Totally Minimally Invasive Laparoscopic Nephroureterectomy; Modified Loop Ligation Techinque for the Management of the Distal Ureter/Ureteric Orifice

Weiren Chen, Shu Hui Neo, Palaniappan Sundaram, Raj Tiwari, Thomas Chan, Yong Wei Lim, Benjamin Lim and Lui Shiong Lee

Sengkang General Hospital, Singhealth, Singapore

ABSTRACT: Introduction: We present a reproducible and cost-effective endoscopic technique for the management of the distal ureter and ureteric orifice during a Laparoscopic Nephroureterectomy. To achieve the best outcomes, this requires a balance of early control of the ureteric orifice, maintaining a totally minimally invasive approach and avoiding tumor spillage. **Methods:** We use a T6 ureteric catheter and prolene 2/0 suture to create the looping device. Once the ureteric orifice has been circumscribed using a Collin's knife, we ligate the ureteric stump using the looping device through a cystoscope. **Results:** The technique is reproducible in 4 cases. There were no peri operative complications. We found it to be significantly cheaper when compared to a commercially available looping device. **Conclusion:** The modified loop ligation technique is a reproducible and cost-effective technique that is safe and achieves early control of the distal ureter to avoid tumor spillage.

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Topics: *Endourology and Stone Diseases*

Percutaneous Antegrade Lithotripsy Using Flexible and Navigable Suction Ureteral Access Sheath: A Novel Application

Daanesh Huned Hassanbhai[1], Soon Hock Koh[1], Steffi Kar Kei Yuen[2,3], Frédéric Panthier[3,4,5], Vineet Gauhar[3,5,6], Olivier Traxer[3,4,5], Etienne Xavier Keller[3,5,7,8] and Jia-Lun Kwok[1,3,5]

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ABSTRACT: Introduction: We demonstrate a novel technique utilizing a flexible and navigable suction ureteral access sheath (FANS) in an antegrade fashion for proximal ureteric stone lithotripsy. We present a 51-year-old gentleman who was admitted for left flank pain with renal angle tenderness on examination. **Materials and Methods:** Computed tomography (CT) imaging revealed a 1198 mm3 L4 proximal ureteric stone. **Results:** As initial attempts at retrograde and percutaneous antegrade advancement of guidewires past the impacted proximal ureteric stone were unsuccessful, an 8Fr percutaneous nephrostomy tube was inserted. In view of acute kidney injury, staged surgery was planned using an antegrade approach due to anticipated difficult retrograde access to the stone. A mini percutaneous nephrolithotomy (mPCNL) 15/16Fr sheath, with antegrade use of a 12/14Fr 40 cm FANS, and a 8.7Fr flexible ureteroscope to steer the access sheath to the proximal edge of the stone. This was due to the rigid 12Fr nephroscope not being able to visualize the calculus, despite maximal torque. Lithotripsy was then performed using a pulsed Thulium:YAG laser together with FANS suction. **Conclusion:** At the end of surgery, there were no residual fragments radiologically or endoscopically. Laser ablation efficiency was 0.08 mm3/J. Visual inspection showed no ureteric injury. A 7Fr 26 cm ureteric stent was placed and a tubeless exit strategy was adopted. The patient was discharged within 24 h with no complications. CT on postoperative day 18 demonstrated that the left ureter was stone free. The outcomes of this technique should be further evaluated in future larger scale studies.

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10

Topics: *General Urology*

Precision Morcellation: Redefining Safety in Laser Enucleation of the Prostate with Real-Time Ultrasound Guidance

Joseph Wong Cai Sheng and Thiruchelvam Jegathesan

Tan Tock Seng Hospital, National Health Group, Singapore

ABSTRACT: Introduction: Morcellation during Laser Enucleation of the Prostate (LEP) carries a risk of bladder injury, especially in patients with large prostates or distorted bladder anatomy. This case series evaluates the use of real-time transabdominal ultrasound (TAUS) during morcellation in four elderly patients undergoing LEP for benign prostatic hyperplasia (BPH), aiming to enhance intraoperative safety through continuous visualization of bladder dynamics and morcellator position. Methods: Four male patients aged 72–78 years with chronic urinary retention, indwelling catheters, and significant comorbidities underwent LEP in May 2025. Prostate volumes were 86 cc, 106 cc, 149 cc, and 175 cc. TAUS was employed continuously during morcellation to monitor the morcellator tip, assess bladder distension, and guide tissue removal. Outcomes included tissue yield, procedural safety, and utility of TAUS in intraoperative decision-making. Results: TAUS provided dynamic assessment of bladder filling, continuous tracking of morcellator position, and radiological detection of residual fragments. It also facilitated in the estimation of remaining enucleated tissue volume during morcellation. Tissue volumes morcellated ranged from 62 g to 149 g. No mucosal injuries or intraoperative complications occurred. TAUS was simple to implement, well-tolerated, and especially useful in cases with altered bladder anatomy. Conclusion: TAUS-guided morcellation is a feasible, low-cost adjunct that improves procedural safety in LEP, while also supporting training for junior surgeons. Its evolving role includes confirming complete enucleation, monitoring for capsular perforation, and ensuring thorough evacuation of adenoma chips. By offering real-time anatomical feedback and improving decision-making in challenging intraoperative cases, TAUS holds promise as a safe, effective and widely adoptable asset in modern endoscopic prostate surgery.

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1

Topics: *Uro-oncology*

Laparoscopic Retroperitoneal Lymphadenectomy with Resection of the Anterior Wall of the Vena Cava and Liver Metastasectomy

Mariana Dias Capinha, Andreia Cardoso, Catarina Tinoco, Ana Sofia Araújo, Luís Pinto, Aparício Coutinho, Ana Mafalda Santos, Luís Vale, Miguel Mendes, Carlos Veiga and Emanuel Dias

Hospital de Braga, Portugal

ABSTRACT: Introduction: Testicular cancer typically has excellent cure rates. However, patients with chemo-refractory tumors face a poor prognosis. Post-chemotherapy RPLND is significantly more complex than primary resections due to secondary fibrosis around major abdominal vessels and it is associated with higher complication rates. This video aims to show a laparoscopic retroperitoneal lymphadenectomy with resection of the anterior wall of the vena cava and liver metastasectomy. **Methods:** The images of the surgery were edited to create this video. **Results:** The authors present the case of a 33-year-old male diagnosed with a right testicular tumor. The patient underwent a right orchiectomy, which revealed a seminoma, stage IIIC. He was submitted to neoadjuvant quimotherapy. The CT scan showed metastases in the liver, and a large inter-aortocaval lymphadenopathy measuring 31 × 25 mm. When performing the retroperitoneal lymphadenectomy, an intraluminal lesion in the insertion of the right gonadal vein extending into the inferior vena cava was discovered. The lesion and a section of the vena cava infiltrated by the lesion were excised, followed by cavorrhaphy. The patient was repositioned for the general surgery team to perform the hepatic metastasectomy. Histopathological analysis revealed two retroperitoneal lymph nodes showing a complete response to therapy and a near-complete response in the right gonadal vein insertion and metastatic liver disease. **Conclusion:** Laparoscopic excision of residual retroperitoneal masses following chemotherapy is a viable and effective option for salvage therapy. Nevertheless, it is a highly complex procedure associated with significant risks. Due to its complexity, this technique should only be performed by surgeons with extensive experience in laparoscopy.

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Duration: 6,49 min

2

Topics: *Uro-oncology*

Laparoscopic Anterior Pelvic Exenteration of A Locally-Advanced Bladder Tumour

Mariana Dias Capinha, Ana Sofia Araújo, Catarina Tinoco, Andreia Cardoso, Luís Pinto, Aparício Coutinho, Ana Mafalda Santos, Luís Vale and Emanuel Dias

Hospital de Braga, Portugal

ABSTRACT: Introduction: Muscle-invasive bladder cancer (MIBC) is an aggressive form of urothelial carcinoma. The standard treatment is radical cystectomy with urinary diversion. Laparoscopic anterior pelvic exenteration (APE) is a challenging but feasible approach for locally advanced bladder cancer, offering potential benefits such as reduced morbidity and faster recovery. This study aims to present a case of laparoscopic APE performed emphasizing the surgical technique and oncological outcomes. **Methods:** The images of the surgery were edited to create this video. **Results:** This video demonstrates the laparoscopic APE procedure in a 79-year-old female patient with a history of uterine cancer treated with radiotherapy. Abdominopelvic CT revealed a suspected locally advanced bladder tumor with left ureterohydronephrosis due to a nodule inseparable from the left iliac vein and left posterolateral bladder wall. Cystoscopy identified a 2 cm calcified lesion on the left wall, and cold biopsy confirmed an urothelial pT1 tumor with epidermoid differentiation. The MRI showed a 5 cm lesion invading the left ureteral meatus and adipose tissue. The patient underwent neoadjuvant chemotherapy with MVAC before laparoscopic APE. The procedure was successfully performed without intraoperative or postoperative complications. Histopathological analysis confirmed an urothelial T2 high-grade tumor with more than 90% regression, N0 R0. **Conclusion:** Laparoscopic APE can be a safe and effective approach for locally advanced bladder cancer, even in patients with prior pelvic radiotherapy. This case highlights the feasibility of the technique. Further studies are needed to validate its long-term benefits compared to open or robotic surgery.

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3

Topics: *Minimally Invasive Surgery*

Salvaging the Tuberculous Kidney: Surgical Nuances Of Robot-Assisted Ureterocalycostomy in A Case of Genitourinary Tuberculosis

Rohit Sanjay Deshpande, Gagandeep Talwar and Gagan Gautam

Medanta-The Medicity, Gurugram, India

ABSTRACT: Introduction: Robot-assisted ureterocalycostomy is a complex procedure that offers a minimally invasive solution for salvaging the tuberculous kidney. However, the surgical nuances of this procedure in the context of genito-urinary tuberculosis (GUTB) remain poorly elucidated. In this case, we aim to decipher the tips & tricks of performing a robot-assisted ureterocalycostomy in a case of genitourinary tuberculosis. **Methods:** We present a challenging case of a 28-year-old female with GUTB, necessitating robot-assisted ureterocalycostomy to salvage the affected kidney. The procedure was performed using the da Vinci Xi robotic system, with meticulous attention to preserving the fragile, tuberculous renal tissue. initially, dense adhesions were encountered surrounding the ureter, which were successfully dealt with robotically, without sacrificing ureteral vascularity or length. **Results:** The procedure was successfully completed with a console time of 153 min and an estimated blood loss of 150 mL. The abdominal drain was removed on post-operative day-2, and the urinary catheter was removed on post-operative day-3. The patient experienced an uneventful postoperative recovery, with preservation of renal function and resolution of symptoms. The patient was discharged on post-operative day-2. **Conclusion:** This case underscores the therapeutic efficacy and technical feasibility of robot-assisted ureterocalycostomy in salvaging the tuberculous kidney, notwithstanding the presence of extensive, debilitating disease. The successful outcome of this procedure highlights the paramount importance of meticulous surgical craftsmanship, precision dissection, and judicious preservation of renal tissue, thereby optimizing postoperative renal function and mitigating the risk of long-term sequelae.

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4

Topics: *Minimally Invasive Surgery, Technology and Artificial Intelligence*

Artificial Intelligence to Identify Surgical Anatomy for Intraoperative Guidance during Laparoscopic Donor Nephrectomy

Chloe Shu Hui Ong[1], Lin Kyaw[1], Manchi Leung[2], Yu-Chieh Lee[2], Bo-An Tsai[2], Jeff Shih-Chieh Chueh[3] and Ho Yee Tiong[1]

[1]National University Hospital, National University Health System, Singapore
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[3]National Taiwan University Hospital, National Taiwan University, Taipei, Taiwan

ABSTRACT: Introduction: Although the risk of intraoperative complications of laparoscopic donor nephrectomy is now acceptably low, the work continues to minimise technical mishaps during this 'high stakes' surgery. This video demonstrates the pilot use of a patented proprietary deep learning-based computer vision to automatically recognise key anatomical structures and prevent intraoperative injuries. **Methods:** 7027 images manually annotated by pixels were selected from 16 surgical videos for training as ground truth; 2266 images from 4 separate surgical videos were used for validation. The YOLO v11x DL network, known for its speed and accuracy in real-time detection, was adapted to train our model, with further optimisation using a sophisticated loss function. Metrics were calculated based on true positives and false negatives: (1) Precision = TP/(TP + FP); (2) Recall = TP/(TP + FN); (3) F1 score = 2(Precision $*$ Recall)/(Precision + Recall). High precision minimises false positives which could disrupt surgical workflows, while high recall ensures comprehensive detection, minimising false negatives that could affect patient safety. F1 serves as the harmonic mean of recall and precision. **Results:** Quantitative evaluation using the hold-out validation method yielded performance metrics as below: Class Precision Recall F1 score, Spleen 0.86 0.76 0.88, Left Kidney 0.78 0.58 0.67, Left Renal Artery 0.83 0.76 0.79, Left Renal Vein 0.78 0.59 0.68, Left Ureter 0.55 0.23 0.32. Prospective evaluation was performed on a video from another surgeon and institution and also in real-time in NUH. **Conclusion:** Our pilot study demonstrates an innovative machine learning design's ability to accurately identify vital anatomical structures in LDN. This is a crucial first step for further artificial intelligence-guided applications.

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5

Topics: *Minimally Invasive Surgery*

Prolapsed Ureterocele in An Adult with Complete Duplex System: Robotic Reconstruction of a Rare Dual Obstruction

Yuecheng Li, Kyaw Lin, David Consigliere, Benjamin Goh, Ho Yee Tiong and Jirong Lu

National University Hospital, Singapore

ABSTRACT: Introduction: Ureteroceles are typically diagnosed in childhood and are commonly associated with complete duplex collecting systems. Adult presentations are uncommon, with prolapsed ureterocele being particularly rare. This video highlights a unique adult presentation of prolapsed ureterocele causing dual obstruction of upper and lower moieties. We describe the successful management using a robotic reconstructive approach. **Methods:** A 64-year-old female with no significant medical or urological history presented with one-week of dysuria, incomplete voiding, fever and new introitus mass. Point-of-care ultrasound revealed right-sided hydronephrosis. CT confirmed complete duplex right kidney with obstruction of both moieties down to bladder insertion. The patient remained febrile despite catheterization and broad-spectrum antibiotics. Percutaneous nephrostomy tubes were placed into both moieties for decompression. Cystoscopy confirmed prolapsed ureterocele. Considering reasonably preserved function in both moieties, decision was made for robotic-assisted ureteric reimplantation of both moieties, with interval excision of prolapsed ureterocele tissue. **Results:** The robotic procedure was completed successfully with operative time of 201 min with minimal blood loss. Post-operatively pain was minimal, requiring only non-opioid oral analgesia. Patient was discharged on post-operative day 2 without complications. By the time of stent removal, the prolapsed ureterocele had completely regressed, requiring no further intervention. Imaging confirmed resolution of hydronephrosis and unobstructed drainage from both moieties. The patient remained symptom-free with stable renal function. **Conclusion:** Robotic ureteric reimplantation was a safe and effective treatment in this rare case. This case underscores the importance of considering congenital anomalies in adult urology and adapting surgical strategies accordingly. It also adds to the growing evidence supporting robotic approaches in managing complex ureteric anatomy.

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6

Topics: *Minimally Invasive Surgery*

Tips & Tricks for Flexible Cystoscopic ITIND Insertion—A Promising Outpatient True MIST Solution

Bernice Taam[1] and Yi Quan Tan[1,2]

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ABSTRACT: Introduction: The Temporary Implantable Nitinol Device (iTIND) is a novel Minimally Invasive Surgical Therapy (MIST) for BPH. Globally, it is typically performed with rigid cystoscopy under general anaesthesia or sedation. True MIST is an emerging sub-category of BPH MIST, where "off-the-shelf" devices are used for BPH therapy in the outpatient setting. We demonstrate the feasibility of iTIND insertion under flexible cystoscopy, along with practical pointers, as a potential one-stop True MIST solution for BPH. **Methods:** A 61-year-old gentleman was on follow-up for BPH on Tamsulosin. Ultrasound showed a 42 cc prostate with no intravesical prostatic protrusion. Cystoscopy revealed a trabeculated bladder, with a high bladder neck and partially obstructing lateral lobes. He was offered MIST with iTIND for early outflow deobstruction and medication cessation. While initially planned for standard rigid cystoscopic insertion under sedation, in view of persistent erection, an intra-operative decision was made to perform flexible cystoscopic insertion instead. **Results:** Total operative time was 4 min 30 s. He was discharged home the same day and underwent iTIND removal 1 week later. At 1 month post-operatively, he had stopped BPH medications, with improvements in IPSS and QOL scores, and no sexual side effects. **Conclusion:** There is strong potential for iTIND to be a True MIST, where it represents an "off-the-shelf" option for BPH treatment at the time of diagnostic flexible cystoscopy, in patients found suitable. iTIND can be safely placed under flexible cystoscopy and local anaesthesia in the office setting with sufficient experience, allowing more patients to benefit from such one-stop BPH therapy solutions.

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7

Topics: *Technology and Artificial Intelligence*

Micro-Ultrasound Guided Cognitive Transperineal Biopsy of the Prostate: A Step-by-Step Guide

Jingqiu Li, Benjamin Tze Ying Lim, Yong Wei Lim, Shu Hui Neo, Palaniappan Sundaram, Lui Shiong Lee, Christopher Wai Sam Cheng, Thomas Chan and Raj Vikesh Tiwari

Department of Urology, Sengkang General Hospital, Singapore

ABSTRACT: Introduction: Micro-ultrasound is a high-resolution ultrasound technology operating at 29 MHz, enabling live visualization of prostate tissue and cognitive-fusion transperineal biopsy. Suspicious lesions are assessed using the Prostate Risk Identification Using Micro-ultrasound (PRI-MUS) scoring system (score 1–5), which correlates with Prostate Imaging-Reporting and Data System (PI-RADS). Micro-ultrasound guided prostate biopsy (MUB) has emerged as a non-inferior alternative to MRI-targeted biopsy for detecting clinically significant prostate cancer. This video showcases our clinical experience with micro-ultrasound guided cognitive transperineal prostate biopsy (MUB). **Methods:** Under general anesthesia (GA), patients are placed in lithotomy position with the scrotum elevated and perineum exposed. 50 mL of ultrasound gel is inserted into the rectum to improve imaging. After skin cleansing, the MicroUS probe is inserted rectally and positioned to center the mid-prostate. The probe is swept laterally to visualize the prostate sagittally and calculate its volume. Transitional and peripheral zones are assessed using PRI-MUS, and lesions with scores ≥3 are targeted. The procedure can also be performed under local anesthesia (LA) by anesthetizing the perineal soft tissues and peri-apical triangle. **Results:** Between January and April 2025, 34 patients underwent the procedure—33 under GA and one under LA. The mean age of the cohort was 67.0 years, and 94.2% were Chinese. The mean operative time was 15.1 min. PRI-MUS 3 lesions accounted for 7.9% of biopsies, compared to PRI-MUS 4 (44.4%) and PRI-MUS 5 (47.7%). All patients were discharged the same day without complications. **Conclusion:** MUB is a safe and non-inferior diagnostic tool that can be reproducibly performed under either GA or LA

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8

Topics: *General Urology*

Endocrine-Urological interface in Aging Men—Commentary on Hormones, Sarcopenia, LUTS and Frailty

Nanditha Srinivasan

Sri Ramachandra Institute of Higher Education and Research, India

ABSTRACT: Aging in men is marked by a progressive decline in testosterone levels, which plays a central role in the development of sarcopenia, lower urinary tract symptoms (LUTS), and overall functional decline. This commentary explores the multifactorial role of testosterone in musculoskeletal and urological health, emphasizing the interplay between hormonal aging, muscle loss, and urinary dysfunction. Clinical evidence supports the anabolic effects of testosterone on muscle, with testosterone replacement therapy (TRT) showing potential benefits in improving lean body mass and physical function. Additionally, hormonal decline contributes to pelvic floor weakness and exacerbates LUTS, often co-occurring with frailty. Despite TRT's therapeutic promise, its efficacy remains variable and must be weighed against potential risks. Emphasising a multidisciplinary approach integrating hormonal therapy with lifestyle interventions for optimal management, this commentary also identifies areas for future research, including biomarker development and exploration of metabolic and circadian influences on endocrine-urological health.

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9

Topics: *Andrology and Subfertility*

The Role of Seminovesiculoscopy in the Management of Urogenital Conditions

ming chun chan[1] and yung khan tan[2]

[1]Tan Tock Seng Hospital
[2]Urohealth medical clinic

ABSTRACT: Introduction: With the introduction of smaller endoscopes we are now able to cannulate the access the seminal vesicles. I discuss the possible roles of this technology in the management of Urogenital conditions like haematospermia and obstructive azoospermia. **Methods:** I present 2 cases of the use of seminovesiculoscopy to diagnose and treat haematospermia related to seminal vesicle stones and obstructive azoospermia from a utricle cyst. **Results:** In both cases there was successful resolution of haematospermia and also obstructive azoospermia. **Conclusion:** Seminovasiculoscopy is a relatively rare technique that when used appropriately can treat certain urogenital conditions

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10

Topics: *Uro-oncology*

An initial Experience of Peri-Rectal Spacer Use for Prostate Radiotherapy: An Instructional Video

Shaun Wei Cher Ng[1], Gin Kai Francis Zac Lee[1], Revvand Rajesh[2], Jingqiu Li[2], Thomas Chan[2] and Raj Vikesh Tiwari[2]

[1]Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore, Singapore
[2]Department of Urology, Sengkang General Hospital, Singapore

ABSTRACT: Introduction: Radiotherapy for prostate cancer has rectal toxicity in up to 30% of patients. The utilisation of peri-rectal spacers is a strategy to reduce rectal toxicity. We demonstrate the learning curve of rectal spacer implantation with a technique discussion, investigate factors affecting procedural difficulty and report our outcomes. **Methods:** We analysed 23 patients between May 2024 and May 2025. Spacer placement was performed transperineally under ultrasound guidance. Magnetic resonance imaging (MRI) was done post-procedure to confirm spacer positioning. Data included demographics and procedural details. Video footage was recorded, with emphasis on procedural techniques to ensure accurate placement of the spacer deployment needle. **Results:** 16 patients of Gleason Grade Groups 2–3 and 7 in Group ≥4 (total 23 patients—median age 71 years). Mean operative time of 14 min 57 s. Post-procedure MRI revealed a mean Prostate-to-Rectal-Wall Distance of 11.98 mm (range: 4.15 mm to 18.45 mm). 4 patients had prior benign prostatic hyperplasia (BPH) procedures, and 8 patients had Extra-prostatic extension (EPE). In both instances, there were no significant differences in operation time. Post-procedure MRI confirmed optimal spacer positioning in 17 of the cases with 1 case of intraprostatic injection and 1 case of rectal wall infiltration. Grade 2 rectal toxicity occurred in 1 patient. **Conclusion:** Peri-rectal spacer insertion is feasible and safe, as highlighted by the ease of operative techniques and safety procedures. Prior BPH procedures and EPE affect the procedural difficulty. The high rate of optimal spacer positioning and low incidence of radiation side effects support the increased use of peri-rectal spacers.

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11

Topics: *Uro-oncology*

A Rare Case of Renal Artery Pseudoaneurysm with 2 Feeding Vessels Post Open Nephron Sparring Surgery

Arjav Hemang Nanavati, Jagdeesh Kulkarni, Prashant Pattnaik, Sameer Deshmukh, Yashraj Sapkal and Vineet Shukla

Bombay Hospital Institute of Medical Sciences, India

ABSTRACT: Introduction: Renal artery pseudoaneurysm (RAP) is an uncommon, but potentially life-threatening vascular complication that can occur after renal surgeries, trauma, or percutaneous interventions. The incidence of RAP following open partial nephrectomy is approximately 0.43%, with a slightly higher rate observed in laparoscopic procedures. RAP typically presents with gross hematuria, flank pain, or anemia, often manifesting within 2–4 weeks postoperatively. This report describes a rare case of RAP with two feeder vessels, a presentation undocumented in literature. This report discusses the clinical presentation, diagnostic challenges, and therapeutic interventions, emphasizing the importance of early recognition and prompt treatment to prevent severe outcomes. **Case Presentation:** A 78-year-old male, n dual blood thinners with past history of heart valve replacement, presented with hematuria and was diagnosed with a right kidney upper polar mass and was operated for right open partial nephrectomy after adequate physician fitness. He presented with significant hematuria with clots 10 days post-operatively. Cystoscopy revealed active bleeding from the right upper kidney. A conventional renal angiogram revealed 2 pseudoaneurysms, one of which had two feeder vessels originating from the right renal artery. Although hemodynamically stable, but owing to the active bleed, selective arterial embolization was performed using coils and microsphere particles glue, successfully occluding the feeder vessels and resolving the pseudoaneurysm. The patient recovered uneventfully, with no recurrence of hematuria during follow-up. **Conclusion:** This case report contributes to the limited literature on RAP with multiple feeder vessels, emphasizing the importance of early diagnosis and intervention. Further studies are needed to explore the risk factors and optimal management strategies for such rare presentations.

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12

Topics: *Functional Urology Transplantation*

Buccal Mucosal Graft Urethroplasty and Martius Flap for Female Urethral Stricture

Mengyue Su, Tricia Li Chuen Kuo and Siying Yeow

Khoo Teck Puat Hospital

ABSTRACT: Introduction: Female urethral strictures are an underdiagnosed cause of lower urinary tract symptoms. They are commonly treated endoscopically but this can be associated with high recurrences. Urethroplasty is the definitive form of treatment with good long-term outcomes. **Materials and Methods:** In this video, we describe buccal mucosal graft urethroplasty and Martius flap for the treatment of recurrent female urethral stricture. Ventral buccal mucosal graft (BMG) urethroplasty does not require dorsal dissection, thereby mitigating the risk of postoperative sexual dysfunction and stress urinary incontinence. Interposition of a Martius flap provides a healthy vascular base for the graft, prevents urethrovaginal fistula and facilitates potential future surgery for treatment of stress urinary incontinence. Our patient is a 51-year-old female who presented with acute retention of urine due to recurrent urethral stricture. She had multiple failed prior dilatations, reported difficult self-catheterisation post-dilatations, and was found to have chronic false passages on cystoscopy. She elected to pursue buccal mucosal graft urethroplasty. After informed consent, video recording of the intraoperative surgical procedure was performed and the key steps of the procedure are highlighted. **Outcomes:** She recovered well postoperatively with no symptom recurrence or *de novo* stress urinary incontinence, She remains unobstructed at one-year follow-up. We have since performed this surgery for another patient with female urethral stricture with good outcomes at the latest 3-month postoperative review. **Conclusion:** BMG urethroplasty with Martius flap is an effective definitive treatment for female urethral stricture with good surgical outcomes and minimal morbidity.

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13

Topics: *General Urology, Minimally Invasive Surgery, Technology and Artificial Intelligence*

Robotic Pyeloplasty of Horseshoe Kidney—Considerations and Techniques Used

Eleanor Kei Ying Loh, Sunil Ravinder Gill, Alexander Wei Ren Loo, Kenneth Chen and Jin Yong

Department of Urology, Singapore General Hospital, Singapore

ABSTRACT: Introduction: This video demonstrates a case of a patient with a horseshoe kidney with left pelvi-ureteric junction obstruction (PUJO) who underwent a robotic pyeloplasty. There are different considerations for pyeloplasty for PUJO in patients with normal kidneys as compared to horseshoe kidneys, which we aim to demonstrate. **Methods:** The patient underwent surgery involving cystoscopy to replace her existing double J (DJ) stent with T6 followed by robotic pyeloplasty of the left ureter, using the da Vinci Surgical System XI. Multiple gonadal vessels were encountered during the dissection stage and required careful identification to be delineated from the ureter. **Results:** The patient's chronic flank pain from the horseshoe kidney had resolved post-operatively, and follow up MAG3 scan demonstrated complete drainage and resolution of PUJO. **Conclusion:** A robotic approach in performing pyeloplasty on horseshoe kidneys is a viable and efficacious option. Care should be taken in identification and dissection of the ureter, and can be aided with near-infrared visualization using indocyanine green via the camera of the surgical robot.

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Video duration: 7 min 0 s

14

Topics: *Uro-oncology*

Total Extraperitoneal Robotic Salvage Prostatectomy for Recurrent Prostate Cancer Following Primary Focal Cryotherapy Using Hinotori Surgical Robotic System

Saiduzzaman B M[1], Bryan Guan Jie Loh[2], Alvin Lee[1], Rene Gatsinga[1], Yu Guang Tan[1], John Yuen[1], Henry Ho[1], Kenneth Chen[1] and Kae Jack Tay[1]

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[2]MOHH, Singapore

ABSTRACT: Introduction: Salvage radical prostatectomy following primary focal therapy for prostate cancer poses significant technical challenges due to tissue alterations resulting from the initial treatment. The Hinotori Surgical Robot System is a novel robotic platform designed to enhance surgical dexterity. In this video case report, we demonstrate the feasibility and surgical technique of robotic salvage prostatectomy using the Hinotori system in a patient with recurrent disease following primary focal therapy. **Case Presentation:** A 76-year-old male with localized prostate cancer initially underwent focal cryotherapy. Follow-up biopsy one year later showed clinically significant recurrent prostate cancer. Following a multidisciplinary team discussion, the consensus was to proceed with robotic salvage radical prostatectomy utilizing the Hinotori system, a treatment approach the patient was agreeable to. This video highlights the critical steps; pelvic dissection, prostatectomy, haemostasis, and urethrovesical anastomosis. Particular emphasis is placed on identification and management of adhesions and altered tissue planes resulting from the prior focal therapy. **Outcomes:** The operative duration was 130 min, with minimal estimated blood loss. The patient was discharged on postoperative day one. Final histopathology revealed acinar adenocarcinoma, Gleason score 3 + 4. At one-month follow-up, PSA was <0.02. To date, we have performed three salvage radical prostatectomies for recurrent prostate cancer following primary focal therapy **Conclusion:** This video case report illustrates successful use of the Hinotori System in performing salvage radical prostatectomy for recurrent prostate cancer. Further studies involving larger patient cohorts are necessary to assess long-term oncological and functional outcomes.

KEYWORDS: Prostate Cancer; salvage prostatectomy; focal therapy; hinotori robotic system

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Total Video Time: 6 min 30 s

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15

Topics: *Uro-oncology*

Urologist-Led Contouring Using the Fusion Bx System: Our Institutional Experience

Roxanne Teo, Weida Lau and Amelia Yeap

Department of urology, Khoo Teck Puat Hospital, Singapore

ABSTRACT: Introduction: MRI fusion transperineal biopsy often requires radiologists to outline target lesions before biopsy. We present a video guide of our experience with MRI fusion biopsy under local anaesthesia with urologists led contouring. **Methods:** After reviewing the MRI, urologists contour the lesion(s) using the Fusion MR software. The biopsy is performed under local anaesthesia with the Fusion Bx system. Pivot Pro needle guide was used for freehand targeted biopsy. **Results:** We reviewed 14 patients who underwent biopsy with Fusion Bx between December 2024 and March 2025. A total of 18 lesions were targeted: 10 PIRADS 4/5 and 8 PIRADS 3. The average size was 1.28 cm for PIRADS 4/5 lesions, and 1.0 cm for PIRADS 3 lesions. Clinically significant prostate cancer (csPCa) was detected in 90% of PIRADS 4/5 lesions, and none of the PIRADS 3 lesions. These results are comparable to reported csPCa detection rates (62% for PIRADS 4/5, 16% for PIRADS 3), despite the small cohort.1 No complications were reported. **Several benefits were identified:** First, the software interface is user friendly and intuitive, allowing quick urologist adaptation. Second, the setup is clutter-free and the semi-robotic arm provides steady needle guidance. Pivot Pro's pivoting coaxial needle also adjusts ±20° from the original path and allows for height changes without need for needle removal. Third, urologist-led contouring reduces reliance on radiologists' availability, which also translates to cost savings for patients. **Conclusion:** Our initial experience suggests that MRI fusion biopsy with urologist-led contouring is feasible, with comparable cancer detection rates and workflow advantages.

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16

Topics: *Uro-oncology, Minimally Invasive Surgery, Technology and Artificial Intelligence*

Concurrent Bladder Diverticulectomy During Robotic Radical Prostatectomy, Is it feasible?

Saiduzzaman BM, Alvin Lee Yuanming, Gansinga Rene, Yu Guang Tan, Henry Ho Sun Sien, Kenneth Chen, John Shyi Peng Yuen and Kae Jack Tay

Department of Urology, Singapore General Hospital, Singapore

ABSTRACT: Introduction: Bladder diverticula are often a result of chronic bladder outlet obstruction, which can be caused by benign prostatic hyperplasia (BPH), prostate cancer, urethral strictures, or neurological conditions. Many diverticula are asymptomatic and discovered incidentally. Diverticulectomy can be done by Open, Laparoscopically or Robotically. **Methods:** Here We will show the operative techniques and challenges of 2 cases underwent concurrent Bladder Diverticulectomy during Robotic Radical Prostatectomy surgery. First case procedure was done Da vinci Surgical Robot and Second case procedure was done Hinotori Robotic System. Results: Perioperative results are elaborately discussed in the attached Video. **Conclusion:** Concurrent Bladder Diverticulectomy during RARP is feasible and safe procedure independent of robotic surgical system. Technical difficulty depends on the location and size of the diverticulum as well as Prostate size and bladder wall thickness.

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17

Topics: *Functional Urology Transplantation*

Appendiceal Conduit to Bypass Ureteric Stricture

Bryan Tan[1] and HoYee Tiong[2]

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ABSTRACT: Introduction and Objectives: Appendiceal conduits have been gaining traction as a novel strategy to bypass ureteric strictures when there is failed endourological management or in the case of complex and long strictures not amendable to simpler techniques such as psoas hitch or ureteroneocystostomy. This video depicts a ureteric reimplantation for a 48-year-old female. **Materials and Methods:** Ureteric reimplantation was performed on a 48-year-old female with a background of right distal ureteric stricture 2° to cervical cancer (FIGO staging IIIb, G3, SCC of cervix) invasion. In April 2023, she underwent a psoas hitch with ureteric reimplantation. However, subsequent re-stricture occurred which was not amendable to endourological salvage, resulting in an appendiceal conduit being created. **Results:** Appendix was dissected with proximal and distal ends spatulated whilst ensuring appendiceal artery preservation. Distal ureteric access was then achieved to ensure patency prior to stricture portion and tension free, watertight anastomosis was then performed with both ureter and bladder. A diagnostic URS done 6–8 weeks later demonstrated conduit viability as we were able to scope past previous area of stricture via the conduit. Patient was now able to void normally. **Conclusions:** Appendiceal conduit appears to be a viable alternative to other methods of bypassing ureteric strictures. Patients with distal strictures not amendable to endourological management or those with dense adhesions or altered anatomy due to previous surgeries should be considered for this procedure.

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