Poster Session 5: Pediatric Urology, Basic Science
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MP 5.1

Beyond routine pyeloplasty: An observational series of pediatric pyeloplasty in duplex, malrotated, ectopic, concurrent UPJ and UVJ and horseshoe collecting systems

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Introduction: Ureteropelvic junction obstruction (UPJO) is a common cause for congenital hydronephrosis, often requiring surgical correction. Concurrent renal anomalies, such as duplex, malrotated, ectopic, and horseshoe kidney systems, as well as concurrent ureterovesical junction obstruction (UVJO), can introduce surgical complexity and may carry an increased risk of surgical complications and re-do pyeloplasty.

Methods: We reviewed 816 children who underwent pyeloplasty at our institution between 2008 and 2023, identifying 59 children with a concurrent renal anomaly and 59 matched controls. Patients with solitary kidneys in the absence of other congenital defects were excluded. Data was abstracted regarding demographics, surgical details, and pre- and postoperative imaging findings. The primary outcomes were surgical complications and re-do pyeloplasty.

Results: Baseline characteristics were similar among complex patients and matched controls, including age, sex, symptoms, and side of anomaly. Complex patients had a longer median procedure time (159 minutes [IQR 123, 183.5] vs. 130 minutes [IQR 110.5, 161], p=0.01). No differences were found in primary outcomes, including re-operation (5% per group) and complication rate (17% vs. 27%, p=0.73). No differences were found in functional measures between groups. Within the complex cohort, no differences were found in baseline characteristics, with minor differences in surgical approach found in some groups (p=0.01). No differences were found in rate of re-operation (p=0.19). Preoperative APD was similar among the five groups; however, there were differences in second postoperative APD (p=0.02) that resolved at final followup (p=0.54).

Conclusions: Pyeloplasty in patients with complex anatomy is feasible, and careful attention is required on followup imaging. We did not appreciate an increased rate of re-do pyeloplasty compared to the classically accepted failure rate.

MP 5.2

Oxygen-rich dressing for hypospadias repair: Systematic review and meta-analysis

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Introduction: Postoperative dressing selection after hypospadias repair varies widely and is largely guided by surgeon preference. Oxygen-rich and ozone-based topical dressings have demonstrated improved wound healing and antimicrobial effects in adult chronic wounds, but their role in pediatric hypospadias surgery remains uncertain. We performed a systematic review and meta-analysis to evaluate outcomes associated with oxygen-rich or ozone-based postoperative dressings compared to standard care following hypospadias repair.

Methods: Clinical studies involving pediatric or adult patients undergoing hypospadias repair were eligible if they compared oxygen-rich or ozone-based dressings with standard postoperative care. Searches included oxygen and ozone terms to maximize capture. Studies of hyperbaric oxygen therapy, abstracts without full-text, and basic science reports were excluded. CENTRAL, CINAHL, EMBASE, MEDLINE, PubMed, Scopus, and Google Scholar were searched on July 31, 2025. Two reviewers independently screened records and assessed risk of bias using the Cochrane Risk of Bias 2 tool. Random-effects meta-analyses were performed using inverse variance methods, with outcomes expressed as mean differences or risk ratios.

Results: Of 594 records identified, five full-text articles were assessed and three randomized controlled trials met inclusion criteria, comprising 264 children undergoing distal hypospadias repair. Two trials were published in 2021 and one in 2025, with per-arm sample sizes of 32, 57, and 43 patients. All trials demonstrated some or high risk of bias, primarily due to lack of preregistration and incomplete blinding of subjective outcomes. Compared with standard dressings, oxygen-rich or ozone-based dressings were associated with faster wound healing (mean difference -9.80 days, 95% CI -15.85 to -3.75; I^2=89.2%) and fewer reoperations (risk ratio 0.24, 95% CI 0.07–0.75; I^2=0). Differences in foreskin dehiscence, wound infection, and urethrocutaneous fistula were not statistically significant (Table 1).

Conclusions: Evidence supporting oxygen-rich or ozone-based dressings after hypospadias repair is limited and methodologically constrained. Available data suggest shorter healing times and fewer reoperations, while effects on specific postoperative complications remain uncertain. Well-designed, preregistered, randomized trials with standardized outcome reporting are required before routine adoption can be recommended.

MP 5.2. Table 1. Pooled meta-analytic outcomes of oxygen-rich and ozone-based postoperative dressings after hypospadias repair

Outcome	Studies (n)	Effect measure	Pooled estimate (95% CI)	I^2 (%)
Wound-healing time	3	Mean difference (days)	**-9.80 (-15.85 to -3.75)**	89.2
Re-operations	3	Risk ratio	**0.24 (0.07–0.75)**	0
Foreskin dehiscence	3	Risk ratio	0.38 (0.09–1.65)	5.1
Urethrocutaneous fistula	2	Risk ratio	0.28 (0.05–1.67)	0
Wound infection	2	Risk ratio	0.36 (0.03–3.95)	0
SWAS ≤ 1 at day 14	2	Risk ratio	**1.56 (1.32–1.83)**	0
Any postoperative complication	2	Risk ratio	**0.25 (0.06–0.95)**	0

MP 5.3

To CIRC or not to CIRC? That is the question for patients with posterior urethral valves

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Introduction: Antibiotic prophylaxis (AP) and circumcision are commonly used to prevent urinary tract infections (UTIs) in children with posterior urethral valves

(PUV), but there is insufficient research examining their efficacy when used together. This study compared the effectiveness of AP when used alone and in combination with circumcision in preventing UTIs in PUV patients.
Methods: We retrospectively reviewed PUV patients managed at our institution from 2000–2019 with a two-year followup period after initial presentation. Treatment exposure was modelled as time-varying. Person-time receiving AP without circumcision was classified as 'AP only', and person-time receiving AP after circumcision was classified as 'combined treatment.' UTIs were defined based on patient symptoms, microbiologic confirmation, and/or clinical documentation. A multivariable mixed-effects Poisson regression model was used to compare UTI incidence rates between treatment exposures, adjusting for the duration of AP received prior to circumcision for combined treatment, neonatal intensive care unit (NICU) admission status, distance to hospital, and socioeconomic deprivation. Socioeconomic status was assessed using the Canadian Index of Multiple Deprivation (CIMD) scores and quintiles, which include situational vulnerability, residential instability, economic dependency, and ethnocultural composition.
Results: Of 61 patients with PUV, 32 received AP only (52.5%), 24 received combined treatment (39.3%), one received circumcision only (1.6%), and four received neither of the two interventions (6.6%). The median age at circumcision, AP initiation, and first UTI was 90 days (IQR 28, 275), 7.5 days (IQR 2, 38), and 46 days (IQR 14, 114), respectively. Among the cohort, 31 patients required NICU admission (50.8%), median distance to hospital was 69.5 km (IQR 22.9, 120), and median CIMD score was 3 (IQR 2.25, 3.31). The incidence rate of UTIs in the AP-only periods was 0.71 per person-year (95% CI 0.53, 0.94), and 0.51 per person-year in the combined treatment periods (95% CI 0.30, 0.79). Multivariable analysis showed that combined treatment was associated with an 80% lower UTI incidence rate compared to AP-only (incidence rate ratio 0.20, 95% CI 0.07, 0.63, p=0.006). Greater socioeconomic deprivation (p=0.04) was associated with higher UTI rates, whereas prior AP duration (p=0.17), patient distance to hospital (p=0.90), and NICU admission (p=0.87) were not significant.
Conclusions: Combined treatment with circumcision and AP may be more effective than AP alone in preventing UTIs in PUV patients. In our cohort, degree of socioeconomic deprivation was predictive of UTI occurrence. Further investigation through implementation of a national, multicenter PUV registry could inform future practices in the management of UTIs in PUV patients.
Funding: This study is supported by the BC Children's Hospital Department of Surgery's Ashmore Chair Funds.
Acknowledgements: This abstract was included as an unmoderated poster at the AUA 2026 Annual Meeting and as an oral presentation at the EAU 2026 Annual Meeting.

MP 5.4

Characterization of clinical, system, and socioeconomic factors that may affect the timing of initial management of patients with posterior urethral valve

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Introduction: We aimed to characterize clinical, system, and socioeconomic factors as potential barriers to healthcare access, measured by timing of posterior urethral valve (PUV) management.
Methods: We retrospectively reviewed PUV patients managed at our institution from 2000–2019. Primary outcomes were time to first imaging (renal ultrasound and/or voiding cystourethrogram) and surgery. Univariate analyses assessed associations with clinical (antenatal suspicion, prematurity), system (NICU admission, transfer status, hospital distance), and socioeconomic factors. Socioeconomic status was assessed using the Canadian Index of Multiple Deprivation (CIMD) scores and quintiles, which include situational vulnerability, residential instability, economic dependency, and ethnocultural composition.
Results: Among 59 patients, the median time to initial investigation was three days and the median time to initial management was 10 days. NICU admission was significantly associated with shorter time to both initial investigation (mean difference -43.7 days, 95% CI -79.8 to -7.5, p=0.019) and initial management (mean difference -20.4 days, 95% CI -39.5 to -1.2, p=0.038). Greater distance to hospital was associated with longer delays to care, with each additional 10 km associated with increased time to initial investigation (mean difference 0.48 days, 95% CI 0.01–0.96, p=0.045) and initial management (mean difference 0.48 days, 95% CI 0.23–0.74, p<0.001). Antenatal suspicion showed a trend toward shorter time to initial management but did not reach statistical significance (p=0.066). Prematurity, transfer status, and CIMD composite score of deprivation were not significantly associated with time to investigation or management.
Conclusions: NICU admission was associated with more timely investigation and management, while greater distance to hospital was linked to significant delays in care. Together, these findings suggest that NICU capacity and geographical access may act as key determinants of timely diagnosis and treatment of posterior urethral valves, underscoring the importance of improving healthcare accessibility and care pathways for patients living farther from tertiary centers. Limitations of this study include its single-center design, small sample size, and retrospective nature, which may limit generalizability. Building on these findings, future research should explore multicenter studies and incorporate patient and family perspectives through questionnaires and qualitative interviews to better understand barriers to care.
Funding: This study is supported by the BC Children's Hospital Department of Surgery's Ashmore Chair Funds.
Acknowledgements: This abstract was presented at the Western Section of the AUA 2025 Annual Meeting and ASN Kidney Week.

MP 5.5

Reducing radiation exposure for pediatric urolithiasis: Development and effectiveness of a novel, low-dose computed tomography protocol

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Introduction: Computed tomography (CT) is used for pediatric urolithiasis detection in complex cases where ultrasonography findings are ambiguous. Despite increasing prevalence of pediatric stone disease, there remains a lack of reduced-dose CT protocols for stone detection to minimize radiation exposure. To address this need, a low-dose CT protocol was developed and implemented at our institution to reduce radiation exposure to this pediatric population.
Methods: A novel, low-dose CT protocol was designed and implemented at our institution and compared to a retrospective cohort of patients who underwent standard-dose CT evaluation for pediatric stone disease. Low-dose radiation protocols were designed based on ≥45 kg and <45 kg cutoffs. Baseline demographics and radiation exposure were compared and analyzed using descriptive statistics, Chi-squared, Student's T-test, and Mann-Whitney analysis.
Results: Mean age was 12.6±4.2 years (n=26) in the low-dose CT group compared to 12.4±3.7 years for the standard-dose CT group (n=15). Low-dose CT patients were exposed to an average of 2.29 mSV (≥45 kg) and 2.40 mSV (<45kg) compared to the patients who underwent standard-dose CT (5.15 mSV, ≥45 kg, and 5.98, <45 kg). Comparatively, patients in the low-dose protocol group were exposed to 55.5% (≥45 kg, p=0.02) and 27.8% (<45 kg, p=0.03) less radiation. There were no differences in stone sizes between patient groups. The low-dose protocol was able to detect stones seen on ultrasound with 100% accuracy in patients with known stones previously visualized, preserving detection accuracy.
Conclusions: Reduced-dose CT protocols are crucial for minimizing radiation exposure in this vulnerable patient group with increasing incidence of stone disease. Implementation of this novel low-dose CT protocol was able to significantly decrease radiation exposure without sacrificing detection accuracy.
Acknowledgements: This study is pending publication in the Journal of Pediatric Urology, titled: "Minimizing radiation exposure in pediatric nephrolithiasis: The effectiveness of a low-dose computed tomography protocol." DOI: 10.1016/j.jpurol.2026.105728

MP 5.6

Socioeconomic status does not predict catheterization adherence in children with PUV: Reassuring evidence from a universal-access healthcare system

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Introduction: Clean intermittent catheterization (CIC) is an essential component of posterior urethral valves (PUV) bladder management. Concerns persist that families with lower socioeconomic status (SES) may face greater barriers to adherence, particularly in insurance-based healthcare settings. In our single-payer, publicly funded system, we sought to determine whether SES influences CIC adherence in children followed in a dedicated PUV clinic.

Methods: We retrospectively reviewed PUV patients prescribed CIC (2000–2025). Adherence was defined as performing ≥80% of prescribed catheterizations for all clinic visits (self-reported). SES was evaluated using postal code-linked indices: the Ontario Marginalization Index (ON-Marg) and the Canadian Index of Multiple Deprivation (CIMD). Associations between SES indicators, CIC adherence, and recurrent urinary tract infections (UTIs) were assessed using Chi-squared and t-tests.

Results: Ninety-three children were prescribed CIC; 29 (31.1%) were non-adherent. Forty-three experienced recurrent UTIs. Residence in the highest-marginalization quintile of any ON-Marg or CIMD domain was not associated with CIC non-adherence. Similarly, SES measures did not predict recurrent UTIs, and CIC adherence itself was not associated with differential UTI outcomes (Tables 1, 2).

Conclusions: In a universal-access healthcare system, socioeconomic marginalization was not associated with poor CIC adherence among children with PUV. These findings are reassuring: equitable access to supplies, multidisciplinary followup, and publicly funded care may mitigate SES-related disparities seen elsewhere. Future work should explore individualized, non-SES-related barriers to adherence to further optimize outcomes for this population.

MP 5.6. Table 1. Highest marginalization status vs. adherence to CIC regimen

Domain	Non-adherent (n=29) Mean ± SD	Adherent (n=64) Mean	p (t-test)
ON-MARG Q5 – Residential instability	0.210±0.216	0.188 ±0.215	0.663
ON-MARG Q5 – Material deprivation	0.198±0.225	0.193±0.242	0.920
ON-MARG Q5 – Dependency	0.151±0.159	0.112±0.162	0.283
ON-MARG Q5 – Ethnic concentration	0.462 ±0.387	0.475±0.395	0.888
CIMD Q5 – Residential instability	0.177±0.204	0.193±0.223	0.738
CIMD Q5 – Economic dependency	0.155±0.164	0.128±0.159	0.453
CIMD Q5 – Ethno-cultural composition	0.573 ±0.406	0.587±0.414	0.874
CIMD Q5 – Situational Vulnerability	0.133±0.170	0.151±0.200	0.660

MP 5.6. Table 2. Association between recurrent UTI and CIC adherence

Recurrent UTI	Non-adherent (n)	Adherent (n)	Total
No recurrent UTI	17	31	48
Recurrent UTI	12	31	43
Total	29	62	91

Fisher's exact test: OR 1.41, 95% CI 0.53, 3.83, p=0.5035.

MP 5.7

Revisiting the association between pediatric obstructive sleep apnea and failure of standard enuresis therapy

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Introduction: Obstructive sleep apnea (OSA) affects approximately 5.7% of children, yet its role in refractory nocturnal enuresis (rNE) — defined as persistent bedwetting despite ≥6 weeks of alarm therapy and/or desmopressin — remains unclear. We sought to characterize a large cohort of children with rNE and compare clinical features and improvement patterns between those with and without OSA.

Methods: Children with rNE seen in a pediatric complex bladder and bowel dysfunction clinic (2020–2025) were retrospectively reviewed. Demographics, comorbidities, enuresis subtype, prior therapies, and a clinical diagnosis of OSA were recorded. Outcomes included NE improvement during followup. Descriptive statistics were performed and Chi-squared tests used for comparison.

Results: Among 188 children with rNE, 25 (13.3%) had OSA — more than double the expected population prevalence. Children with OSA were older (median 146 vs. 116 months) and had higher rates of obesity and ADHD. A larger proportion of children with OSA demonstrated no improvement in rNE compared with those without OSA (60% vs. 43%), although this difference was not statistically significant (p=0.317). Clinical characteristics and comorbidities are summarized in Table 1.

Conclusions: OSA is substantially over-represented among children with rNE and is associated with a trend toward poorer treatment response. This signal suggests OSA remains an under-recognized contributor or predictor of treatment resistance, particularly in older children. Screening for sleep-disordered breathing should be considered in rNE, and larger prospective studies are needed to define whether targeted management of OSA can improve enuresis outcomes.

MP 5.8

Diuresis renography scans in patients with hydroureteronephrosis: Does the region of interest impact results?

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Introduction: Hydronephrosis, or urinary tract dilation, is one of the most identified anomalies on pre-natal ultrasound images. This finding is estimated to impact 1–5% of pregnancies with a spectrum of postnatal outcomes. MAG3 diuretic renograms are frequently employed to assess for underlying causes and determine their severity. According to the "well-tempered renogram," the kidney and entire dilated portion of the urinary tract should be encompassed in the region of interest (ROI) for MAG3 studies; however, there is a paucity of literature comparing relevant outputs of diuretic renography, and correlation to clinical

MP 5.7. Table 1. Demographics and clinical characteristics of patients with rNE with and without OSA

		Sleep apnea		Missing	No sleep apnea		Missing	p
Number of patients	188							
	Overall	25	13.3%					
	Median age (months)	146 (IQR 47)			116 (IQR 64.5)			
	Male	11	44%		14	9%		<0.001
	Weight (>95th)	10	40%	0	40	26%	8	0.103
	Medications	6	24%	0	34	21%	0	0.128
	Primary monosymptomatic enuresis	4	16%	0	14	9%	0	0.241
	Primary non-monosymptomatic enuresis	6	24%	0	17	10%	0	0.054
	Secondary enuresis	2	8%	0	1	1%	0	0.006
Comorbidities								
	Obesity	4	16%		1	0.6%		
	ADHD	3	12%		2	1.2%		
	ADD	1	4%		2	1.2%		
	Autism spectrum disorder	1	4%		4	2.5%		
	Anxiety	2	8%		3	1.8%		
	Depression	1	4%		1	0.6%		
	Learning disability	1	4%		1	0.6%		
	Developmental delay	1	4%		2	1.2%		
	Cerebral palsy	0	0%		0	0.0%		
	Seizure disorder	0	0%		0	0.0%		
	Other	5	20%		19	11.7%		
	Nocturia same or worsened	6	60%	15	28	43%	98	0.317

outcomes, in patients with HUN if the ROI includes only the kidney and renal pelvis (KRP) vs. if it includes the kidney, renal pelvis, and dilated ureter (KRPU).
Methods: This is an ongoing retrospective study analyzing diuretic renography scans of patients with HUN at the IWK Health Centre. Scans were reprocessed by nuclear medicine technologists to compare results between ROIs of KRP vs. KRPU. Structured chart reviews were conducted for patients with reprocessed scans using REDCap.
Results: To date, MAG3 Renal Lasix scans have been reprocessed and reviewed for 28 kidneys (18 right, 10 left, 19 patients) with documented HUN. Mean age at the time of MAG3 was 11.9 months. The most common causes of HUN were VUR (n=8, 42.1%) and primary obstructive megaureter (n=7, 36.8%). Overall mean differential function did not differ significantly based on ROI (KRP 54.77% vs. 53.37%, p=0.20). Overall mean T1/2 did not differ significantly based on ROI (KRP 8.72 min vs. KRPU 9.07 min, p=0.27). Obstruction classification based on standard T1/2 thresholds (<10, 10–20, >20 minutes) showed excellent agreement between methods, with no significant difference in the proportions of non-obstructed, indeterminate, or obstructed kidneys (p=0.94). Reclassification of obstruction category occurred in only one of 28 kidneys (3.6%).
Conclusions: Our early data suggests that for pediatric patients with HUN, there is no clinically significant impact on the on the results of MAG3 Renal Lasix scans between ROIs of KRP vs. KRPU. Further accrual of reprocessed scans and correlation to clinical outcomes will facilitate subgroup analysis by causes of HUN to better understand the role of the "well-tempered renogram" in the diagnosis and management of HUN.

MP 5.9

Mapping the landscape of care for neurogenic bowel dysfunction in Canada: Results of a national survey

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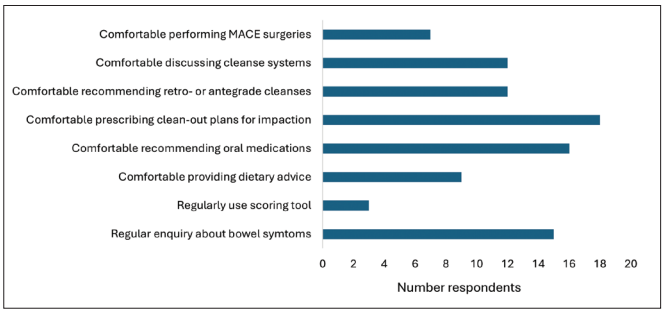
Introduction: Neurogenic bowel dysfunction (NBD) is frequently encountered by children with spinal dysraphism. Effective NBD management improves social continence and may reduce adverse outcomes associated with neurogenic lower urinary tract dysfunction (NLUTD). Stepwise programs incorporating dietary and oral laxative interventions, as well as retrograde/antegrade irrigations, can achieve meaningful results. This nationally distributed survey was intended to help identify which Canadian clinicians are primarily responsible for NBD care and determine what level of therapy and intervention these clinicians are comfortable to recommend and lead. Understanding current practice patterns will help identify gaps in care delivery, inform multidisciplinary collaboration, and provide a foundation for developing national consensus guidelines.
Methods: A REDCap survey was distributed to relevant Canadian clinicians, comprising two sections. The first captured background information (employment role and division, frequency of involvement in NBD care, local arrangements for NBD care). The second interrogated participants' comfort levels with various aspects of NBD care.

Results: Twenty-one responses were received from all Canadian provinces except Newfoundland. No respondents indicated that they provide medical care to Canadian territories. Respondents included pediatric urologists (n=8; 38%); pediatric general surgeons (n=7, 33%); prescribing nurses (n=3, 14%); nurse practitioners (NPs) (n=2; 10%); general urologists and registered nurses (n=1 each, 5%). Most respondents (n=15; 71%) indicated that NDB is managed at a multidisciplinary spina bifida clinic, although general urology, general pediatric, and all-purpose bowel management clinics are also used. Twelve (57%) respondents indicated pediatric urology is primarily responsible for NBD care. Narrative responses indicated care is often a shared responsibility between different types of practitioners. Fifteen (71%) respondents routinely enquire about bowel symptoms in children with NLUTD. Comfort levels regarding recommendations for NBD were variable (Figure 1). Nine (43%) were comfortable providing dietary advice, 16 (76%) were comfortable prescribing oral laxatives, 12 (57%) were comfortable prescribing retro- and antegrade cleanse regimens and discussing cleanse delivery systems. Three (38%) urologists and four (67%) pediatric surgeons were comfortable performing antegrade continence enema surgeries. Fifteen (71%) respondents agreed that most children receiving care for NLUTD also received comprehensive NBD care at their institution.
Conclusions: The responsibility for NBD care in children with NLUTD is shared between pediatric urologists, pediatric general surgeons, specialized nurses, and NPs across Canada, and is often achieved through multidisciplinary collaboration. This survey provided no data on NBD care for children in Nunavut, the Northwest Territories, and the Yukon, which should be specifically interrogated.



MP 5.9. Figure 1. Respondent comfort with various aspects of NBD care.

MP 5.10

The first redo matters: A single-surgeon comparative analysis of first vs. multiple redo hypospadias repairs

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Introduction: Redo hypospadias repair is challenging. Outcomes are thought to deteriorate with repeated redo procedures, but comparative analyses based on number of reoperations are limited. We hypothesize that patients with a single failed procedure had higher chances of success than ones with multiple previous ones.
Methods: Retrospective review of 160 redo hypospadias repairs performed by a single surgeon (2018–2025). Patients were stratified into group A (first redo, n=79) and group B (multiple previous redos, usually referred by other surgeons, n=81). Variables included demographics, operative time, indications, and outcomes. A successful outcome was defined as absence of complications and cosmetically acceptable results without need for further revision at last followup. Ten patients (6.3%) were lost to followup. Statistical analysis included Fisher's exact Chi-squared, and Kaplan-Meier survival analysis.
Results: Mean age at surgery was lower in group A (76.0±51.2 months) compared to group B (107.4±58.6 months, p<0.001). Indications for reoperation differed; for group A: urethrocutaneous fistula (45.6%), glans/urethral dehiscence (41.8%), and stenosis (40.5%); whereas for group B, it was stenosis (39.5%), long dehiscence (29.6%), and curvature recurrence (27.2%). Mean operative times were similar (157 vs. 151 minutes, p=0.469). Surgical technique varied. Group A had staged repair with buccal in 38%, dorsal inlay for 38%, and tubularized incised plate (TIP) in 7.6%, while 39.5% in group B had staged repair with buccal, postauricular (3.7%), preputial (1.2%), dorsal inlay (21%), and TIP in 6.2%. The overall success rate was 90/150 (60%), slightly but clinically significantly higher for group A (66.7%) than group B (53.3%, p=0.133). Kaplan-Meier analysis demonstrated that group A had earlier complications than group B, likely due to more stenosis and chordee recurrence in this group (log-rank p=0.008).
Conclusions: First redo repairs had higher success rates than multiple redos, suggesting that the development of scar tissue and the multiple operations have an impact on proper healing. Patients with repeated procedures presented with more challenging indications for surgery (urethral stenosis, complete dehiscence, and curvature recurrence), likely impacting the complication rate. Even in experienced hands, setting realistic expectations and offering appropriate counseling for these patients and families is critical.

MP 5.11

Investigating autoimmunity as a driver of Hunner lesion-interstitial cystitis/bladder pain syndrome in a mouse model

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Introduction: Hunner lesions (HL) are inflammatory lesions associated with epithelial denudation that occur in 5–10% of patients with interstitial cystitis/bladder pain syndrome (IC/BPS). Patients with HL-IC/BPS experience severe symptoms, including debilitating pain, frequent urination, and poor quality of life. The underlying cause of HL-IC/BPS is unknown. We hypothesize that HL-IC/BPS is an autoimmune disease, and symptoms can be recapitulated in a murine model through induction of experimental autoimmune cystitis (EAC) in autoimmune-prone mice experiencing urothelial damage.
Methods: To induce EAC, female autoimmune-prone non-obese diabetic mice (NOD; 6–8 weeks of age) were vaccinated with a 1:1 emulsion of bladder homogenate (BH; 1 mg/mL) with Complete Freund's Adjuvant (CFA; 4 mg/mL) via subcutaneous injection (n=5 mice). Control groups consisted of mice receiving: CFA/PBS; Incomplete Freund's Adjuvant (IFA)/BH; and IFA/PBS (n=5 mice/group). All mice were boost immunized two weeks later (IFA + BH/PBS). To disrupt the urothelium and glycosaminoglycan layer, mice received a single intravesical instillation of poly (L) lysine (0.01%) one week after the boost. Micturition habits (urinary frequency and urinary volume) were assessed weekly beginning the week of boost, until endpoint. Mice were euthanized six weeks post-EAC initiation. Bladders were collected for histopathologic assessment.
Results: All bladders exhibited mucosal abnormalities, including features of regrowth and repair in urothelial cells and lamina propria diminution. Epithelial atrophy was most prominent in EAC bladders compared to control groups. At endpoint, urine output was significantly reduced in all mice receiving CFA, irrespective of whether they received BH or PBS. All mice receiving BH exhibited significantly reduced urination frequency over the duration of the experiment.
Conclusions: Induction of EAC in autoimmune-prone mice does not recapitulate clinical features of HL-IC/BPS. Additional studies are ongoing.
Funding: CIHR.

MP 5.12

Intraoperative diuretic drainage test to guide laparoscopic vascular hitch vs. laparoscopic dismembered pyeloplasty in UPJO with crossing vessels

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Introduction: Crossing lower-pole vessels are a frequent cause of extrinsic ureteropelvic junction obstruction (UPJO), yet intrinsic narrowing may coexist and mandates reconstruction. We evaluated a simple intraoperative diuretic drainage test to verify the mechanism of obstruction and guide real-time selection between laparoscopic vascular hitch (Hellström) and laparoscopic dismembered pyeloplasty.
Methods: After complete mobilization of the renal pelvis, proximal ureter, and lower-pole crossing vessels, patients received a 10 mL/kg crystalloid bolus followed by intravenous furosemide. The crossing vessels were gently elevated for

5–20 minutes while the pelvis was observed for decompression. Brisk decompression was interpreted as purely extrinsic compression and treated with vascular hitch; persistent dilation suggested intrinsic UPJ narrowing and prompted dismembered pyeloplasty with anterior transposition of the anastomosis. A single-surgeon pediatric series at a tertiary center using the diuretic drainage test in consecutive cases with preoperative imaging was consistent with UPJO and crossing vessels. Two representative index cases (adolescents) demonstrated severe hydronephrosis with delayed drainage on MAG3 and are shown with pre-/postoperative cross-sectional and ultrasound comparisons (Table 1). Primary outcomes were operative time, hospital length of stay (LOS), change in renal pelvis anteroposterior diameter (APD) on ultrasound, and complications. Group comparisons (pyeloplasty vs. hitch) used t-tests/Fisher's exact tests.

Results: Thirty-eight patients were included (pyeloplasty n=15; hitch n=23). Age and laterality were similar between groups (mean age 10.8±3.8 vs. 11.2±3.9 years, p=0.732). Vascular hitch significantly reduced operative time (148.2±40.6 vs. 224.4±47.3 minutes; mean difference -76.2 min, 95% CI −105.4 to -47.1, p<0.001) and LOS (10.2±12.5 vs. 44.4±42.2 hours; mean difference -34.2 h, 95% CI -58.0 to -10.4, p=0.008). Improvement in APD was comparable (absolute change 1.82±1.32 vs. 2.49±1.79 cm, p=0.196; relative reduction 0.58±0.20 vs. 0.61±0.20, p=0.626). Complication rates were low and not different (8.7% vs. 13%, p=0.418). The test identified intrinsic UPJ narrowing intraoperatively in the pyeloplasty cohort and confirmed purely extrinsic obstruction in hitch cases, with favorable postoperative imaging in both scenarios.

Conclusions: A standardized intraoperative diuretic drainage test is a practical adjunct that verifies the mechanism of UPJO and safely tailors operative choice. When extrinsic compression is confirmed, vascular hitch achieves similar anatomic improvement to pyeloplasty while significantly shortening operative time and LOS. This approach may reduce unnecessary reconstruction and optimize recovery in appropriately selected patients.

MP 5.12. Table 1

Parameter	Group 1 (pyeloplasty) n=15	Group 2 (vascular hitch) n=23	Mean difference (95% CI)	P (Fisher exact/t-test)
Age (yrs)	10.8±3.8	11.2±3.9	0.44 (-2.13, 3.01)	0.732
Laterality (right)	5 (33%)	12 (52%)	–	0.326
Operative time (min)	224.4±47.3	148.2±40.6	-76.2 (-105.4, -47.1)	<0.001
Length of stay (hours)	44.4±42.2	10.2±12.5	-34.2 (-58.0, -10.4)	0.008
Followup duration (month)	18.6±10.9	15.6±14.4	-3 (-11.9, 5.8)	0.489
Pre-op APD (cm)	3.8±2.0	3.0±1.4	-0.79 (-1.90, 0.32)	0.156
Post-op APD (cm)	1.29±0.67	1.16±0.84	-0.13 (-0.65, 0.40)	0.628
Absolute difference (cm)	2.49±1.79	1.82±1.32	-0.66 (-1.69, 0.36)	0.196
Relative difference (ratio)	0.61±0.20	0.58±0.20	-0.03 (-0.17, 0.10)	0.626
Complications	2 (13%)	2 (8.7%)	–	0.418
Complication detail	Rhabdomyolysis (n=1) urinary urgency (n=1)	Constipation (n=2)		

MP 5.13

Finasteride and tamsulosin modulate TGF-beta-driven fibrotic signatures in benign prostatic hyperplasia stromal fibroblasts

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Introduction: Benign prostatic hyperplasia (BPH) is driven not only by epithelial proliferation and smooth muscle tone, but also by stromal fibroblast activation and fibrotic remodelling of the prostate. Transforming growth factor-β (TGF-β) is a central regulator of fibroblast activation, extracellular matrix deposition, and inflammatory signalling in the prostate. Recent studies demonstrate that targeting TGF-β/Smad signalling reduces prostate growth and fibrosis in experimental models. Nonetheless, it remains unclear whether commonly prescribed BPH therapies, such as tamsulosin and finasteride, directly modulate prostate fibroblast responses to profibrotic signalling and, if so, whether these effects occur through the TGF-β/Smad pathway.

Methods: Primary BPH fibroblasts, WPMY1 and BHPrS stromal cell lines were stimulated with TGF-β to mimic a fibrotic microenvironment, and then treated with various doses (1–50 μM) of tamsulosin, finasteride, or their combination. We assessed responses using quantitative PCR and Western blotting for fibrosis-associated genes.

Results: TGF-β stimulation considerably increased FN1 expression (coding for fibronectin) in primary patient fibroblasts, WPMY1, and BHPrS fibroblast BPH cell lines (Figures 1 A-C). Treatment with tamsulosin or finasteride attenuated TGF-β-induced FN1 expression, with combination therapy producing the greatest suppression across all cell types (Figures 1 A-C). These findings were supported by reduced fibronectin protein levels by Western blotting and occurred without significant cytotoxicity across the tested concentrations.

Conclusions: These findings demonstrate that finasteride and tamsulosin modulate TGF-β-activated stromal fibroblasts, with the combination outperforming monotherapy. Clinically, this suggests that beyond smooth muscle relaxation and inhibiting epithelial proliferation, these drugs may also mitigate stromal remodeling, a key driver of progressive prostate enlargement and symptom progression.

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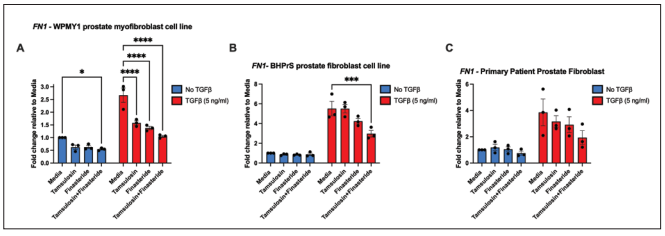

MP 5.13. Figure 1. FN1 expression in prostate fibroblast cell models and primary patient cells following TGF-ß stimulation. FN1 expression (fold change relative to media) was measured in cells treated with tamsulosin (50 uM), finasteride (50 uM), or their combination (50 uM each, 100 uM total) in the presence or absence of TGF-ß (5 ng/ml). (A) WPMY1 prostate myofibroblast cells. (B) BHPrS prostate fibroblast cells. (C) Primary patient prostate fibroblasts. Bars represent mean ± SEM. Each data point represents a biological replicate, with values shown as the average of technical replicates. Statistical significance was determined by two-way ANOVA with Holm-Šídák's multiple comparisons correction (*p<0.05, ***p<0.001, ****p<0.0001).

MP 5.14

Fragility of pediatric nephrolithiasis literature: Analysis of the evidence behind stone management techniques

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Introduction: We aimed to examine the robustness of the pediatric urology literature regarding the efficacy of various endoscopic stone management techniques, using fragility index (FI) and fragility quotient (FQ) calculations.

Methods: A literature review was conducted using Ovid Medline for all studies from 2000–2024, including "ureteroscopy," "percutaneous nephrolithotomy," or related terms. All studies comparing at least two procedural methods of stone removal that had stone-free rate (SFR) as a primary or secondary outcome were included. FI was calculated. For those where $p>0.05$, events were manually subtracted to the group with the lowest SFR while keeping the denominator equal, and Fisher's exact test was repeated until $p>0.05$.

Results: There were 36 reviewed studies published in 13 journals with an average impact factor of 2.7. Median citation count was 19 (1–133); 31% were randomized trials and 58% were retrospective studies. URS was represented in 64% of trials, and PNL (including mini- and micro-PNL) was tested in 58% of trials. Plurality of papers (31%) originated from Turkey. Thirty-three percent of papers had statistically significant SFRs between treatments. Median FI was 5.1 (1–20), with 19% of papers having a FI of 1, indicating extremely fragile results. Median FQ was 0.064 (0.0068–0.226). Five papers (14%) had higher losses to follow up than their FIs, indicating that their results may have been affected by these losses.

Conclusions: Nineteen percent of all endourology papers reviewed had fragile results, with five studies potentially being affected by loss to followup. FI and FQ measures help reduce overreliance on p-values to determine clinical significance and highlight fragility in pediatric endourology literature.

Poster Session 6: Training/Education
Sunday, June 28, 2026 • 16:45–18:00

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MP 6.1

Structured reference letters in urology residency selection: Perspectives from Canadian trainees and program directors

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Introduction: Letters of reference are a cornerstone of the Canadian urology residency selection process. Structured reference letters (SRLs) have emerged as a potential solution to improve standardization and fairness; however, their acceptability and structure for Canadian urology residency selection remains unknown.

Methods: We conducted a survey of a purposively sampled panel comprising of program directors (PDs) and residents from Canadian urology residency programs. The survey included 10 items (five quantitative and five qualitative) addressing three domains: opinions on SRLs, recommended content, and preferred letter structure. Responses collected on seven-point Likert scales were summarized using medians and interquartile ranges, while qualitative data were analyzed using content analysis and frequency counts of codes.

Results: Nine responses (six PDs, three residents) were received from seven unique residency programs. There was strong support for incorporating SRLs into residency applicants (median 6 [IQR 6–7]) and moderate agreement that SRLs are superior to narrative letters (median 5 [IQR 4–6]). Perceived benefits included increased standardization of evaluations (88.9%), greater efficiency for letter writers and file reviewers (44.4%), enhanced transparency (33.3%), and improved accuracy in distinguishing applicant attributes (22.2%). Concerns regarding exclusive reliance on SRLs included diminished granularity in differentiating candidates (44.4%), inability to capture unique applicant experiences (33.3%), and reduced ability to convey personalized insights (22.2%). Recommended global assessment domains included teamwork and collaboration (77.8%), communication (77.8%), initiative and work ethic (55.6%), professionalism and reliability (44.4%), and receptiveness to feedback (22.2%). Urology-specific domains emphasized included procedural skills appropriate to level of training (55.6%), foundational urologic knowledge (44.4%), demonstrated commitment to urology (44.4%), and overall residency potential or program fit (22.2%). All respondents supported the inclusion of a narrative comment section.

Conclusions: Among a cohort of Canadian urology PDs and resident trainees, there was strong support for the incorporation of SRLs into residency selection, particularly when combined with a narrative component. Findings from this study can inform a Delphi-based process for SRL development, including pilot testing to assess feasibility, usability, and potential impact on applicant evaluation.

MP 6.2

Open-access publishing: What has been the real impact on urology to date

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Introduction: The publishing industry relies on unpaid research content and peer review, while access to this work is often restricted by paywalls. Open-access (OA) publishing reduces these barriers, and government mandates may contribute to broader dissemination and impact. Urologists may question the value of publishing OA in trusted urology journals. This study aimed to quantify the impact of OA publishing in urology across academic, societal, and clinical outcomes. Articles were classified as non-OA, gold, green, hybrid, or bronze.

Methods: Seventy-six urology journals, comprising fully open-access or subscription and mixed journals, were identified using the Clarivate Journal Citation Reports. Articles published from 2019–2023 were extracted from both databases to allow for citation accumulation. Citation impact was assessed using Web of Science. Societal impact was measured using Altmetric Attention Score and X mentions, and clinical impact using guideline citations. Citations between OA and non-OA articles were analyzed using linear regressions, and ANOVA with Tukey post-hoc testing was used to compare citations between OA subtypes. Altmetrics and guideline citations were analyzed using non-parametric tests and quasi-Poisson regression.

Results: A total of 39 607 articles were identified in Web of Science and 32 007 in Dimensions. OA articles showed a 104% citation advantage compared with closed articles ($p<0.05$). Citation impact differed across OA models, with hybrid outperforming gold by 70% ($p<0.05$). Altmetric Attention Score did not differ overall by access status but varied by subtype, with hybrid articles showing the highest attention. X mentions were twofold higher for OA articles ($p<0.05$). Clinical impact was similar across OA and closed models.

Conclusions: OA publishing in urology is associated with higher citation impact and public attention, particularly for hybrid articles. Publishing model choice should reflect study goals, target audience, and clinical priorities.