Poster Session 2: Basic Science and Pediatrics
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Abstract #14

The diagnostic accuracy of pulsed fluoroscopy retrograde urethrogram vs. the traditional retrograde urethrogram in diagnosing urethral stricture: A randomized, prospective, comparative study

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Introduction: Retrograde urethrogram (RUG) is the standard imaging method used to evaluate the urethral stricture. The ALARA principle ("as low as reasonably achievable") emphasizes minimizing radiation exposure through strategies such as time management, distance optimization, and shielding. This study explored the diagnostic accuracy and reliability of pulsed fluoroscopy RUG (1FPS) compared to traditional RUG (4FPS) in identifying urethral strictures.

Methods: The study is a prospective RCT conducted at TBRHSC institute as of September 2022 and is still ongoing; it includes a total of 45 participants. RAND function in Excel assigned 21 patients to the traditional RUG arm and 24 to pulsed fluoroscopy RUG. The demographic data, dose, and duration were obtained, as were stricture location during RUG and intraoperative procedure.

Results: A total of 77 RUG procedures were performed from September 2022 to the present. The median age of patients was 68 years (range 39–88). Of these, seven patients were found to have no strictures, confirmed through cystoscopy. Another 25 patients were excluded due to the presence of complex stricture disease or the need for procedural manipulation. The preliminary results showed that average X-ray exposure time during RUG for the pulsed fluoroscopy RUG group (n=25), set at one frame per second (FPS), was 0.76 seconds, while it was 0.98 seconds for the traditional RUG group (n=21). The average radiation dose for the traditional RUG was 0.00411 µGy, compared to 0.00373 µGy for the pulsed RUG group. Data analysis conducted using IBM SPSS (v30.0) and Excel, yielded an F-statistic of 1.24, which was compared to the critical F-value (24,21) of 2.05 at a 95% confidence interval (α=0.005). This result indicated no significant difference in radiation doses between the two groups (p=0.30). RUG results were compared with intraoperative findings, with results showing specificity of 100% and an accuracy of 100%. Urethral strictures were categorized as bulbar urethral strictures (66.66%) and penile urethral strictures (33.33%).

Conclusions: Pulsed retrograde urethrography (RUG) demonstrates exceptional diagnostic accuracy (100%) while significantly reducing X-ray exposure time (ALARA principle). Although the observed reduction in radiation dose did not reach statistical significance — potentially due to the judicious use of the X-ray paddle by the physician and the variability in patients' BMI — these findings nonetheless highlight the potential of pulsed RUG to enhance patient safety. Further studies and data are warranted to establish the feasibility of pulsed RUG as an innovative and safer diagnostic modality for the evaluation of urethral stricture in male patients.

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Abstract #15

Characterization of tumor-associated macrophages in male genital lichen sclerosis and penile squamous cell carcinoma

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Introduction: The immune cell environment in male genital lichen sclerosus (LS) and penile squamous cell carcinoma (pSCC) has not been fully characterized. CD68+ macrophages have previously been found in LS samples. CD68+/CD163+ tumor associated macrophages are a subset of tumor-infiltrating immune cells involved in oncogenesis and portend aggressiveness of multiple cancer types including squamous cell carcinoma. To investigate the potential link between LS and pSCC, we sought to characterize the immune cell environment between these conditions.

Methods: In this retrospective study, penile biopsies of LS (n=4), pSCC (n=1), and synchronous LS + pSCC (n=1) were obtained; 5 µm sections were cut for H&E and immunohistochemical staining (IHC) from formalin-fixed, paraffin-embedded tissue blocks for examination by an experienced genitourinary pathologist. Dual anti-CD163 (MRQ-26) mouse monoclonal antibody and anti-CD68 (KP-1) primary antibody were performed in each case. Cells were counted over 10 fields using 400 magnification and were independently counted in epidermis, derma-epidermal junction, and dermis.

Results: In LS, CD68+, CD163+, and CD68+/163+ macrophages were not commonly infiltrating the epidermis. The dermal-epidermal junction demonstrated the presence of CD163+ but not CD68+ macrophages, with one biopsy revealing 6 CD68+/163+ macrophages. CD163+ infiltration in the dermis was heavily seen in all LS lesions, with two cases showing >50 CD163+ cells. The single SCC sample contained a small population of CD68+, CD163+, and CD68+/163+ macrophages in the epidermis, >50 CD68+, CD163+, and CD68+/163+ in the dermal-epidermal junction, and >50 CD163+ cells in the dermis. In the case of synchronous LS and pSCC, the LS portion was characterized by minimal macrophages in the epidermis and dermal-epidermal junction, but with a marked increase in CD163+ macrophages in the dermis. The SCC portion was characterized by significant CD68+, CD163+, and CD68+/163+ macrophages in the epidermis, dermal/peritumoral region and dermis (Table 1).

Conclusions: In our preliminary analysis, we report that CD68+, CD163+, and CD68+/CD163+ macrophage infiltration is enriched in pSCC, with prominent differences in epidermal infiltration and dual CD68+/CD163+ macrophages, while LS shows a decreased CD68+ cell count and almost no double-stained macrophages. Given that CD68+/CD163+ macrophages have not been thoroughly studied in pSCC, our findings highlight the need for further studies with larger sample sizes to elucidate their role in pSCC pathogenesis.

Abstract #15. Table 1

Case	Lesion	Skin Level	CD68+	CD163+	CD68+/CD163+
		Epidermis	0	2	0
		Dermal/Epidermal Junction	0	10	0
1	LS	Dermis	0	27	0
		Epidermis	0	0	0
		Dermal/Epidermal Junction	0	7	0
2	LS	Dermis	0	>50	0
		Epidermis	2	2	0
		Dermal/Epidermal Junction	0	11	1
3A	LS & SCC - LS Lesion	Dermis	0	>50	1
		Epidermis	>50	>50	>50
		Dermal/Epidermal Junction	>50	>50	>50
		Dermis	>50	22	>50
3B	LS & SCC - SCC Lesion	Dermal/Peritumoral	>50	>50	>50
		Epidermis	3	22	13
		Dermal/Epidermal Junction	>50	>50	>50
4	SCC	Dermis	0	>50	0
		Epidermis	0	0	0
		Dermal/Epidermal Junction	0	5	0
5	LS	Dermis	0	17	0
		Epidermis	0	1	2
		Dermal/Epidermal Junction	0	3	6
6	LS	Dermal	0	>50	0

Abstract #16

YAP/TAZ are novel inducers of WWP1 during kidney fibrosis

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Introduction: The hippo pathway regulates organ size by preventing Yes-associated protein (YAP) and transcriptional coactivator with PDZ-binding motif (TAZ) accumulation in the nucleus, thereby, restricting growth. Hippo pathway is often dysregulated during renal disease progression.

Overexpression of YAP and TAZ in the renal tubular and interstitial cells has been implicated in the development of fibrosis. We recently established that YAP/TAZ promote tubular maladaptive repair leading to fibrosis. WW domain-containing E3 ubiquitin protein ligase 1 (WWP1) is a member of E3 ligase family; however, WWP1 involvement in CKD is not investigated. We hypothesize YAP/TAZ upregulate renal WWP1 induction.

Methods: To investigate the association between YAP/TAZ and WWP1, we employed a combination of Western blotting, immunofluorescence, and immunohistochemistry. Human proximal tubular epithelial (HK-2) cells were stably transduced with YAP and TAZ vectors. Protein lysates were subjected to Western blot analysis using antibodies specific to WWP1, YAP, TAZ, and various fibrosis markers. For subcellular localization studies, nuclear and cytoplastic cell fractions were isolated from various transgenic cells. Immunohistochemistry was used to evaluate renal expression differences of WWP1 between fibrotic and normal mouse kidneys.

Results: YAP/TAZ-overexpressing epithelial cells robustly upregulate WWP1 expression (compared to vector controls). Furthermore, either YAP or TAZ induction alone is sufficient to induce WWP1 expression. Immunofluorescence and subcellular localization studies confirmed that WWP1 is induced in both the cytoplasm and nucleus by YAP/TAZ. Immunohistochemistry revealed that WWP1 is highly upregulated in renal tubules and interstitium of the fibrotic kidneys.

Conclusions: We identify YAP/TAZ as novel inducers of WWP1 expression. Both YAP and TAZ can upregulate WWP1. In mouse fibrotic kidneys, WWP1 is also highly upregulated, suggesting that WWP1 can likely promote kidney disease progression. Future studies will determine whether WWP1 silencing attenuates YAP/TAZ-driven renal fibrosis progression.

Abstract #17

Effect of androgen synthesis inhibition on circadian clock gene expression in a human male neuronal cell line

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Introduction: Circadian clock genes are expressed at different levels during a 24-hour period and regulate cell homeostasis. Disruption of clock genes is associated with both prostate cancer (PCa) and dementia. Next, androgen deprivation therapy (ADT), a mainstay therapy for primary and metastatic PCa, may affect clock gene expression in PCa cells. Finally, ADT may be associated with cognitive deficits due to some ADT and PCa cell mediators crossing the blood brain barrier; however, ADT's effects on human neuronal cells are not well-characterized. This study aimed to characterize changes in neuroblastoma clock gene expression when directly exposed to the anti-androgen drug abiraterone acetate (AA) or conditioned media from PCa cells.

Methods: In experiment 1, five male BE(2)M17 neuroblastoma cells were exposed to 0, 5, or 10 μM AA for 24 hours. In experiment 2, LNCaP androgen-sensitive PCa cells were exposed to 0, 5, or 10 μM AA ± 5 nM dihydrotestosterone (DHT) for 24 hours. Then, six BE(2)M17 cells were exposed to conditioned media for 24 hours. Real-time PCR was used to quantify mRNA expression relative to GAPDH for NPAS2 (neuronal PAS domain protein 2), RORA (RAR-related orphan receptor A), PER1 (period circadian regulator 1), and BMAL1 (basic helix-loop-helix ARNT-like 1). Data was analyzed using Excel and PRISM.

Results: Direct AA exposure increased NPAS2, RORA, and PER1 mRNA levels in BE(2)M17 cells. AA-conditioned media exposure was associated with decreased expression of all genes; DHT+10 μM AA-conditioned media exposure was associated with increased expression of all genes. Exposure to DHT and DHT+5 μM AA-conditioned media did not significantly affect mRNA levels of these clock genes (Table 1).

Conclusions: This study shows that direct AA and PCa mediator exposure affect clock gene mRNA levels in neuroblastoma cells, which may disrupt the circadian clock. Also, DHT alters the effect of AA-conditioned media from downregulation to upregulation of clock genes. This suggests that the effect of AA with castrate-level testosterone on clock gene expression may depend on the relative effect of AA vs. PCa mediator exposure and may change with testosterone flares. Future studies are needed to assess the effects of AA and other ADT drugs on clock gene regulation and cognition in animal models.

Abstract #17. Table 1. Summary of the effects of AA±DHT direct exposure and conditioned media on circadian clock genes

	Direct Exposure			Co-Culture in LNCaP Media					
	5 μM AA	10 μM AA	5 vs 10 AA	5 μM AA	10 μM AA	5 vs 10 AA	5 nM DHT + 5 μM AA	5 nM DHT + 10 μM AA	5 vs 10 AA (+DHT)
NPAS2	↑*	↑****	↑***	↓***	No Change	↑**	No Change	↑**	↑***
RORA	↑*	↑*	No Change	↓****	↓***	No Change	No Change	↑**	↑***
Per1	↑*	↑***	No Change	↓****	↓****	No Change	No Change	↑**	↑**
BMAL	No Change	No Change	No Change	↓**	↓**	No Change	No Change	↑*	↑**

Abstract #18

YAP (Yes-associated protein)/TAZ (transcriptional coactivator with PDZ-binding motif) is upregulated in renal transplant allograft dysfunction

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Introduction: The hippo pathway, consisting of the nuclear transcription regulators YAP and TAZ, has been implicated in the progression of renal fibrosis in both acute and chronic kidney disease. Previous studies have demonstrated that tubular and interstitial overexpression of YAP and TAZ are causatively linked to tubular maladaptive repair and tubulointerstitial fibrosis progression;
however, the role of the signaling pathway in transplant allograft dysfunction is not well-characterized. We hypothesized that YAP/TAZ expression would be upregulated in renal transplant allograft dysfunction.

Methods: A total of 115 renal biopsy samples from renal transplant patients with an elevation in serum creatinine were collected, along with 31 renal biopsy samples from donor kidneys prior to deceased donor kidney transplantation. Renal histopathologic changes were evaluated using hematoxylin and eosin staining. Extent of YAP/TAZ expression in the renal tubules and interstitium were evaluated using immunohistochemical (IHC) staining graded by percentage. YAP/TAZ expression was compared between the donor samples and those with allograft dysfunction. Demographic data and medical history were collected by chart review. Two-tailed t-test was used for statistical analysis.

Results: The donor cohort had a median age of 47, with average creatinine at biopsy of 2.05. The allograft dysfunction cohort had a median age of 54, with average creatinine at biopsy of 3.04. Both groups consisted of 56% male and 44% female participants. The allograft dysfunction cohort exhibited significantly higher extent of interstitial (2.0-fold, $p<0.01$) and tubular (2.2-fold, $p<0.001$) YAP/TAZ staining when compared to the donor cohort. In the subgroup of biopsy specimens with only minimal-mild fibrosis, we similarly found significantly increased YAP/TAZ staining in both the interstitium (1.8-fold, $p<0.05$) and renal tubules (2.4-fold, $p<0.001$) in the renal allograft dysfunction compared to the donor cohort.

Conclusions: YAP/TAZ expression is upregulated in renal transplant allograft dysfunction both in the renal tubules and interstitium independent of the level of fibrosis. Our findings suggest that YAP/TAZ may be an early biomarker for transplant allograft dysfunction.

Abstract #19

Adverse event reporting in early0phase benign urology clinical trials

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Introduction: While most trial design features can be borrowed from oncologic trials, benign urology clinical trial design has not been well-described. The purpose of this study was to compare serious adverse events (SAEs) and other study characteristics in benign vs. malignant lower urinary tract clinical trials to understand safety and tolerability metrics as they apply to clinical trials of benign diseases.

Methods: A search was performed on ClinicalTrials.gov for phase 1 benign lower urinary tract and bladder cancer studies from 2000–2024. Studies without a drug intervention, those investigating multiple malignancy types, and duplicate studies were excluded. The primary endpoints were SAE rates. Secondary endpoints were adverse event (AE) rates, all-cause mortality, and adverse events requiring therapy termination.

Results: A total of 42 phase 1 clinical trials were included: 18 in the benign group and 24 in the malignant group (Table 1). The malignant group had a significantly higher number of SAEs and AEs (Table 2). At the subject-level analysis, 157 of 566 subjects (27.7%) in the malignant group experienced an SAE compared to 16 of 619 subjects (2.6%) in the benign group ($p<0.001$). AEs occurred in 531 subjects (93.8%) in the malignant trials and 228 subjects (36.8%) in the benign trials (<0.001). Despite differences in SAEs and AEs, there was no significant difference in the rate of adverse events requiring therapy termination.

Conclusions: There are significantly higher rates of SAE, AE, and mortality in malignant bladder phase 1 trials, but no difference in therapy termination in comparison to benign trials. More specifics in AE severity, reasons for therapy discontinuation, and study dropout need to be reported to guide future benign urology clinical trials.

Abstract #20

Impact of intraoperative redosing of surgical antimicrobial prophylaxis in pyeloplasty: Results from NSQIP-Pediatrics

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Introduction: Literature suggests that intraoperative redosing of surgical antimicrobial prophylaxis (SAP) reduces the incidence of postoperative surgical site infections (SSI) in various open and laparoscopic surgeries; however, the effect of SAP redosing on postoperative outcomes after pyeloplasty is unexplored. This study aimed to assess the impact of SAP redosing on surgical site infections (SSI) and urinary tract infections (UTI) after pediatric pyeloplasty using data from the National Surgical Quality Improvement Program-Pediatrics (NSQIP-P).

Methods: The NSQIP-P SAP participant user files from years 2021 and 2022 were queried for all pyeloplasties. Patients with unknown (186) or no SAP administration (61) were excluded. Rates of postoperative events between patients who had SAP redosing (RD) and those who did not (nRD) were compared. Primary outcomes of interest were postoperative UTI and SSI rates. Secondary outcomes included rates of readmission and reoperation within 30 days of pyeloplasty. SPSS statistical software was used to perform binomial logistic regressions controlling for various demographic and procedural factors and SAP redosing.

Results: A total of 2980 patients were included in the study, with 653 patients (22.1%) in the RD group and 2327 (77.9%) in the nRD. We found no significant difference between RD and nRD groups in rates of SSIs (1.1% vs. 0.86%, $p>0.05$) and UTIs (3.67% in RD and 3.48% in nRD, $p>0.05$), or rates of 30-day readmission (6.12% vs. 5.75%, $p>0.05$) and 30-day reoperation (1.1% vs. 0.76%, $p>0.05$) (Table 1). On multivariate analysis, undergoing SAP redosing did not decrease risk of postoperative SSIs or UTIs (Table 2). Younger age and female sex were significant predictors of postoperative UTIs, but no such associations were found for SSIs.

Conclusions: To our knowledge, this is the first study assessing the impact of intraoperative SAP redosing in pyeloplasty. We find no demonstrable association between redosing and rates of postoperative SSIs or UTIs. Therefore, the utility of SAP redosing may warrant additional consideration in urologic best practice statements on antibiotic prophylaxis.

Abstract #21

Not just for the privileged prostate: BPH surgery delivers across social risk

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Introduction: Social determinants of health may influence functional outcomes after benign prostatic hyperplasia (BPH) surgery. The Social Vulnerability Index (SVI) is a validated composite measure that incorporates socioeconomic and demographic factors such as income, education, and housing. We aimed to evaluate the effect of SVI on baseline lower urinary tract symptoms (LUTS) and improvement in LUTS after BPH surgery

Methods: This is a retrospective study of patients who underwent surgery for BPH at a single institution between January 1, 2020, and January 31, 2025. International Prostate Symptom Score (IPSS) data — including severity, bother, and quality of life components — were collected preoperatively and postoperatively. The lowest postoperative score within one year after surgery was recorded. SVI was assessed as a continuous variable, and we used 75th percentile or greater nationally to define high SVI. Spearman correlation was used to examine associations between SVI and IPSS scores or score changes. Multivariable linear regression was used to assess the impact of high SVI on baseline scores and symptom improvement, adjusting for type of surgery.

Results: Among 939 patients, SVI was not associated with baseline IPSS severity ($\rho=0.01$, $p=0.74$) but showed a significant inverse correlation with baseline

Abstract #19. Table 1. Characteristics of RCTs: Benign vs. malignant lower urinary tract studies

	All studies		Benign studies		Malignant studies		
	n	%	n	%	n	%	p
Total trials	42		18	42.86%	24	55.81%	
Academic vs non-academic							
Academic	26	61.90%	7	38.89%	19	79.17%	0.008
Non-academic	16	38.10%	11	61.11%	5	20.83%	
Location							
Single	23	54.76%	10	55.56%	13	54.17%	0.031
Multi-institutional	15	35.71%	4	22.22%	11	45.83%	
No location	4	9.52%	4	22.22%	0	0.00%	
U.S.-based vs. international							
U.S.-based	34	80.95%	13	72.22%	21	87.50%	0.046
International	4	9.52%	1	5.56%	3	12.50%	
No location	4	9.52%	4	22.22%	0	0.00%	
Sponsorship							
Industry	29	69.05%	12	66.67%	17	70.83%	0.773
Investigator initiated	13	30.95%	6	33.33%	7	29.17%	
Result							
Completed	32	76.19%	17	94.44%	15	62.50%	0.110
Terminated	7	16.67%	1	5.56%	6	25.00%	
Published	1	2.38%	0	0.00%	1	4.17%	
Active, not recruiting	2	4.76%	0	0.00%	2	8.33%	
Total subjects enrolled	1185		619		566		

bother (ρ=-0.10, p=0.005). Among patients with followup data (n=586), SVI was not associated with change in IPSS severity (ρ=-0.02, p=0.67) or quality of life (ρ=0.03, p=0.44). In adjusted analyses, high SVI was not significantly associated with changes in IPSS severity (β=-2.1, 95% CI -6.0–1.8, p=0.29) or bother (β=0.09, 95% CI -0.76–0.94, p=0.84) (Figure 1, Table 1).
Conclusions: Higher social vulnerability was weakly associated with lower baseline symptom bother but not with symptom severity or postoperative improvement following BPH surgery. Symptom outcomes after surgery were generally consistent across different levels of social vulnerability.

Abstract #22

Increasing the number of first case on-time starts within the urology department: A quality improvement initiative

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Introduction: First case on-time starts (FCOTS) is a hospital metric valued by hospital administration for maximizing operating room (OR) utilization. Our study aimed to identify reasons for delays in FCOTS within the urology department and increase the percentage of urology FCOTS to >80%. Our primary outcome was the number of first cases that start on time, and our secondary outcome was total delayed minutes per month.
Methods: Baseline data regarding first case start time for urology cases was collected by chart review from July to December 2024. Intervention was implemented starting January 2025. Intervention consisted of resident physicians obtaining consent 30 minutes prior to case start time and prebriefing with room staff about required equipment. Postintervention data was collected for a total of two months (January to February 2025). Chi-squared analysis was used to compare pre- and postintervention data. A cost analysis was performed based on number of minutes delayed and operating room costs.
Results: From July to December 2024, 410 first cases were evaluated for pre-intervention data in both the ambulatory surgery center and main surgical center, of which 216 first cases started on time (52.7%) and 194 were delayed (47.3%). The most common reason cited for delay was "Other" (20.6%). Postintervention, 129 first cases were evaluated. In this period, 90 cases were on time (69.8%) and 39 cases were delayed (30.2%). The most common reason for delay was room setup (45.5%). Robotic cases (28%) were more commonly delayed. The ambulatory surgery center had 26% cases delayed, while the main campus had 33% (p=0.57); however, the average delay time at the ambulatory center was six minutes/case vs. 13 minutes/case at the main surgical center. Pre-intervention, delay time was on average 396 minutes/month, while post-intervention it averaged 203 minutes/month. This equated to estimated cost savings of $28 950/month.
Conclusions: Obtaining consent 30 minutes prior to case start time and prebriefing with OR staff significantly increased the number of FCOTS. This equated to significant cost savings. Additionally, identification of room setup as the primary reason for case delay allows future endeavors to focus on staff education for room setup, particularly for robotic cases.

Abstract #19. Table 2. SAE and AE of benign vs. malignant lower urinary tract RCTs

	All studies		Benign studies		Malignant studies		
Trial level analysis	Trials (n)	%	Trials (n)	%	Trials (n)	%	p
Number of SAEs							
0	19	45.24%	13	72.22%	6	25.00%	<0.01[a]
1	4	9.52%	1	5.56%	3	12.50%	
2	5	11.9%	1	5.56%	4	16.67%	
>2	14	33.33%	3	16.67%	11	45.83%	
Number of AEs							
0	3	7.32%	2	11.11%	1	43.48%	0.23[a]
1–10	6	14.63%	4	22.22%	2	8.70%	
11–20	8	19.51%	5	27.78%	3	13.04%	
21–30	6	14.63%	4	22.22%	2	8.70%	
>30	18	43.90%	3	16.67%	15	65.22%	
AE requiring therapy termination							
Yes	11	26.19%	5	27.78%	6	25.00%	0.545
No	26	61.90%	12	66.67%	14	58.33%	
Missing	5	11.90%	1	5.56%	4	16.67%	
All-cause mortality							
0	31	73.81%	18	100.00%	13	54.17%	0.004
1	9	21.43%	0	0.00%	9	37.50%	
Missing	2	4.76%	0	0.00%	2	8.33%	
Subject-level analysis	Subjects (n)	%	Subjects (n)	%	Subjects (n)	%	
Subjects with SAE	173	14.60%	16	2.58%	157	27.74%	<0.001
Subjects with AE	759	64.05%	228	36.83%	531	93.82%	<0.001
Event-level analysis	Events (n)	%	Events (n)	%	Events (n)	%	
Total SAEs	301		20		281		0.005
Average SAE per trial (SE)	0.26 (0.08)	–	0.04 (0.02)	–	0.45 (0.13)	–	
Total AEs	4742		334		4408		0.002
Average AE per trial (SE)	4.75 (1.27)	–	0.56 (0.13)	–	8.03 (2.03)	–	

[a]Comparisons performed in quintiles.

Abstract #23

Evaluation of voiding dysfunction in pediatric patients with Ehlers-Danlos syndrome

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Introduction: Appropriate bladder function depends on the compliance of the bladder wall, which may be altered in the setting of connective tissue disorders such as Ehlers-Danlos syndrome (EDS). This may, in turn, increase the rate of bowel and bladder dysfunction (BBD) in these patients. Prior studies have established a baseline BBD rate of 21% within the general pediatric population. We hypothesize that the prevalence of BBD is higher in the EDS population than the general population, with higher rates of urology referral.

Methods: This is a cross-sectional institutional review board-approved study evaluating the prevalence of voiding dysfunction in patients with a diagnosis of EDS or joint hypermobility syndrome compared to the general pediatric population. Eligible patients ≤22 years old were identified by institutional records review and subsequently recruited by phone. Patients with concomitant neurogenic disorders were excluded. We used the validated Dysfunctional Voiding Scoring System (DVSS) surveys to assess BBD symptoms and performed retrospective chart

Abstract #20. Table 1. Results of independent t-tests and chi-squared analysis comparing demographics and outcomes between patients who received SAP redosing (SAP-RD) and those who did not (SAP-NRD) prior to pyeloplasty

	SAP redosed (RD) (n=653)	SAP not redosed (nRD) (n=2327)	p
Age (years)	5.79±5.56	4.61±4.11	<0.001
Sex			0.03
Female	207 (31.7%)	635 (27.3%)	
Male	446 (68.3%)	1692 (72.7%)	
Race			<0.001
White	432 (66.1%)	1459 (62.7%)	
Asian	37 (5.7%)	92 (3.9%)	
Black	48 (7.3%)	183 (7.9%)	
Multiple races	0 (0%)	8 (0.3%)	
Other races	30 (4.6%)	60 (2.6%)	
Unknown race	106 (16.2%)	525 (22.5%)	
Prematurity			0.057
No	537 (82.2%)	1989 (85.5%)	
Yes	54 (8.3%)	181 (7.7%)	
Unknown	62 (9.5%)	157 (6.7%)	
ASA Status			0.419
ASA 1	102 (15.6%)	394 (16.9%)	
ASA >1	551 (84.4%)	1930 (82.9%)	
Operative time (mins)	249.74±65.34	185.83±53.42	0.001
Stent placement	222 (33.9%)	603 (25.9%)	0.124
SSIs	7 (1.07%)	20 (0.86%)	0.613
UTIs	24 (3.67%)	86 (3.48%)	0.812
30-day readmissions	40 (6.12%)	134 (5.75%)	0.724
30-day reoperations	7 (1.1%)	17 (0.76%)	0.624

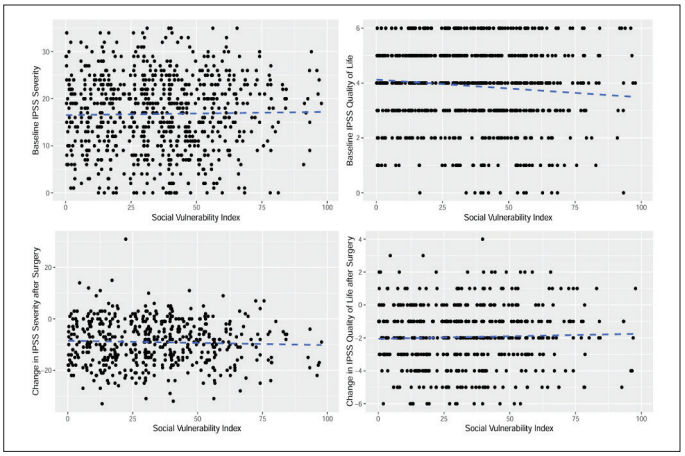
review to evaluate contributing demographic factors. BBD has been defined as a DVSS score at or above 6 for females and 9 for males.

Results: Of 72 eligible patients, 46 completed the DVSS survey (64%). Respondents included 23 females and 23 males, with a mean age of 13.0 years. Mean overall DVSS score was 10.7; 11.3 for females compared to 10.1 for males (p=0.4). Voiding dysfunction criteria was met in 72% of patients, including 18/23 females (78%) compared to 15/23 males (65%) (p=0.5). This rate of BBD was significantly higher than the previously reported population prevalence of 21% (p<0.001) (Figure 1). Twenty-five eligible patients (35%) were referred to urology for a genitourinary complaint.

Conclusions: Our findings demonstrate a significantly elevated prevalence of BBD and high rate of referral to pediatric urology in this population of patients with a diagnosis of EDS or joint hypermobility syndrome. These insights may help raise clinical awareness, guide appropriate counseling, and identify those patients who would benefit from early screening and treatment.

Abstract #20. Table 2. Results of multivariate logistical regression for all patients undergoing pyeloplasty, showing postoperative SSI and UTI rates controlling for age, sex, race, prematurity, ASA status, open vs. laparoscopic, operative time, intraoperative stent placement and intraoperative SAP redosing

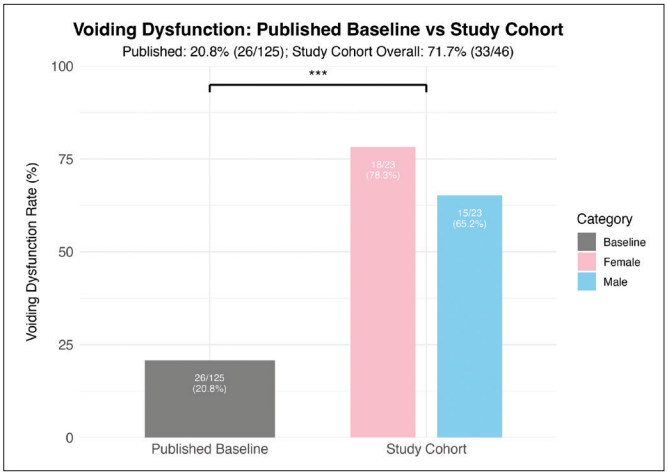
	Surgical site infections		Urinary tract infections	
	OR (95% CI)	p	OR (95% CI)	p
SAP redosing (Reference: No)	2.514 [0.563, 11.224]	0.613	1.283 [0.721, 2.281]	0.397
Age (years)	0.995 [0.984, 1.006]	0.383	0.934 [0.892, 0.978]	0.004
Sex (Reference: Male)	0.654 [0.170, 2.509]	0.536	2.411 [1.626, 3.575]	0.005
Race (Reference: White)				
Asian	0.712 [0.102, 10.835]	0.966	1.556 [0.650, 3.725]	0.321
Black	0.835 [0.106, 6.563]	0.864	0.673 [0.263, 1.722]	0.409
Multiple races	0.644 [0.542, 11.375]	0.986	0.734 [0.348, 7.791]	0.966
Other races	1.910 [0.240, 15.195]	0.555	1.037 [0.315, 3.409]	0.954
Unknown race	0.678 [0.244, 1.881]	0.455	1.171 [0.931, 4.168]	0.101
Prematurity (Reference: No)	3.864 [0.544, 14.454]	0.129	0.709 [0.271, 1.854]	0.484
ASA Status > 1 (Reference: ASA 1)	1.8133 [0.539, 6.233]	0.332	1.341 [0.763, 2.357]	0.308
Open (Reference: Laparoscopic)	1.419 [0.596, 3.377]	0.429	1.125 [0.717, 1.765]	0.649
Operative time (mins)	0.989 [0.999, 1.010]	0.337	0.999 [0.995, 1.002]	0.468
Stent placed? (Reference: No)	0.768 [0.305, 1.933]	0.575	0.901 [0.574, 1.413]	0.649



Abstract #21. Figure 1. Scatterplot representation of IPSS severity and bother baseline scores and changes in score after surgery plotted against social vulnerability index.

Abstract #21. Table 1. Linear regression analysis of effect of high social vulnerability index on reduction of IPSS severity and bother after surgery for BPH

		Univariable			Multivariable		
Model	N	Beta	95% CI	p-value	Beta	95% CI	p-value
IPSS Severity							
High Social Vulnerability Index	515	-2.2	-6.1, 1.7	0.28	-2.1	-6.0, 1.8	0.29
Surgery	586						
TURP		—	—		—	—	
HOLEP		-1.3	-3.0, 0.36	0.12	-1.8	-3.5, 0.03	0.054
MIST		0.37	-1.5, 2.3	0.70	0.16	-1.9, 2.2	0.88
RASP		-0.13	-4.0, 3.7	0.95	0.42	-3.5, 4.3	0.83
RWT		2.9	-0.76, 6.5	0.12	0.94	-3.2, 5.0	0.65
IPSS Bother							
High Social Vulnerability Index	513	0.06	-0.81, 0.92	0.90	0.09	-0.76, 0.94	0.84
Surgery	582						
TURP		—	—		—	—	
HOLEP		-0.62	-0.99, -0.25	**0.001**	-0.64	-1.0, -0.24	**0.002**
MIST		0.14	-0.28, 0.56	0.52	0.12	-0.33, 0.56	0.61
RASP		0.19	-0.65, 1.0	0.66	0.35	-0.51, 1.2	0.42
RWT		-0.02	-0.82, 0.77	0.96	-0.28	-1.2, 0.62	0.55



Abstract #23. Figure 1. Voiding dysfunction: Published baseline vs. study cohort.

Abstract #24

Risk factors for postoperative vesicoureteral reflux and urinary tract infections in pediatric patients with ureteroceles

Cristian Mathew[1], Jordan Gitlin[2], Shreya Patel[3], Jordan Mendelson[2], Steven Friedman[4], Ronnie Fine[2], Mark Horowitz[2], Richard Schlussel[5], Lori Landau-Dyer6, Paul Zelkovic[6], Jaime Freyle[4], Israel Franco[7]

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Introduction: Cystoscopic incision or puncture is commonly used to manage ureteroceles in children, but it can be associated with complications such as vesicoureteral reflux (VUR) and urinary tract infections (UTIs), which may necessitate further interventions. This study aimed to identify patient-specific risk factors associated with the development of VUR or UTIs after cystoscopic incision.

Methods: A retrospective, single-practice chart review was performed, identifying 139 patients treated for ureteroceles over 16 years. Preoperative, postoperative, and most recent data on VUR, hydronephrosis, UTI frequency, reoperation needs, and ureterocele/kidney characteristics were analyzed. Statistical analysis included Chi-squared, Fisher's exact test, odds ratio (OR) calculations, and multivariate logistic regression using R-studio.

Results: A total of 76 patients treated with initial cystoscopic incision/puncture were analyzed; 42 (55%) were found to have postoperative VUR, 28 (37%) of whom did not have VUR prior to intervention. Twenty-nine (38%) developed UTI following initial incision. Patients with duplex kidney system were more likely to develop postoperative VUR compared to those with a single system (76.6% vs. 20.7%, relative risk 3.73, 95% CI 1.81–7.71, p<0.0001). Urethral obstruction due to ureterocele significantly increased risk of postoperative VUR compared to those without obstruction (74.2% vs. 42.2%, OR 3.93, 95% CI 1.451–10.68, p=0.006). Ectopic ureteroceles also showed a higher risk compared to intravesical (71.4% vs. 41.5%, OR 3.53, 95% CI 1.101–8.00, p=0.018). Univariate logistic regression analysis showed that the presence of postoperative reflux significantly increased the likelihood of developing a UTI, with an OR of 3.16 (95% CI 1.041–9.56, p=0.037). Of the 26 patients treated conservatively with antibiotics, only three (11.5%) developed UTIs (Table 1).

Conclusions: The findings from this study suggest that the presence of a duplex systems, urethral obstruction due to the ureterocele, or ectopic ureteroceles are significant risk factors for the development of postoperative VUR and UTIs. These factors should be taken into further consideration when planning surgical intervention of ureteroceles and followup care of these patients to minimize complications and improve outcomes.

Abstract #24. Table 1. Endoscopic management of ueterocele outcomes

Table 1: Endoscopic Management of Ureterocele Outcomes

Parameter	Kidney System		Ureterocele Type		Preoperative Reflux Status		Urethral Obstruction Status		Preoperative UTI Status	
	Single System	Duplex System	Intravesical	Ectopic	Absent	Present	Absent	Present	Absent	Present
# of Patients	29	47	41	35	57	19	44	32	57	19
Did not require Second Surgery	24 (82.8%)	20 (42.6%)	30 (73.2%)	14 (40%)	38 (66.7%)	6 (31.6%)	32 (72.7%)	12 (37.5%)	36 (63.2%)	8 (42.1%)
Required Second Surgery	5 (17.2%)	27 (57.4%)	11 (26.8%)	21 (60%)	19 (33.3%)	13 (68.4%)	12 (27.3%)	20 (62.5%)	21 (36.8%)	11 (57.9%)
Post-Operative Reflux	6 (20.7%)	36 (76.6%)	17 (41.5%)	25 (71.4%)	28 (49.1%)	14 (73.7%)	19 (43.2%)	23 (71.9%)	30 (52.6%)	12 (63.2%)
Post-Operative UTIs	2 (6.9%)	10 (21.3%)	4 (9.8%)	8 (22.9%)	5 (8.8%)	7 (36.8%)	4 (9.1%)	8 (25.0%)	9 (15.8%)	3 (15.8%)

Abstract #25

Spatial transcriptomics of pediatric renal tumors

Brett Teplitz[1], Michael Morikone[2], Dhivyaa Rajasundaram[2], Omar Ayyash[1], Karen Kenyon[1], Glenn Cannon[1], Rajeev Chaudhry[1], Michael Ost[1]

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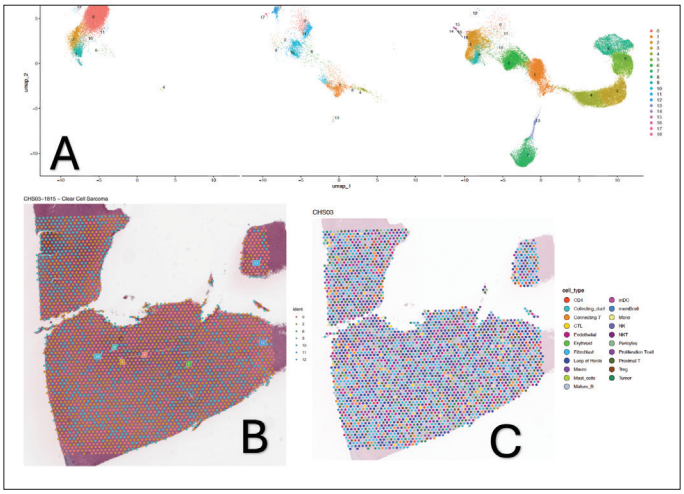
Introduction: Renal cell carcinoma (RCC) in the pediatric population is rare, comprising only 2–4% of pediatric renal tumors, and commonly associated with translocation mutations associated with a high incidence (46%) of lymph node-positive disease. Prior analysis has shown higher RCC incidence and worse pathology in the Appalachian region compared to national statistics; however, little is known about the tumor microenvironments and how they may differ geographically, pathologically, and prognostically. Spatial transcriptomics is a molecular profiling method that allows visualization and quantitative analysis of the transcriptome in entire tissue sections while preserving their architecture, with resolution down to the level of individual cells and even subcellular localization. The purpose of this study was to use this emerging and promising technique to build a greater understanding of local tumor microenvironments in pediatric renal tumors, specifically non-Wilms tumors, to guide diagnosis, management, evaluation of response to therapy, and ultimately, surgical decision-making.

Methods: Institutional records review identified 16 pediatric non-Wilms renal tumors banked at a single institution over the last 25 years. Twelve tissue sections of clear-cell, RCC, and malignant rhabdoid tumors from the archival samples were subject to Visium CytAssist spatial gene expression profiling, and using the Seurat integrative analysis pipeline, variable genes were identified, spatial clustering was performed, and uniform manifold approximation and projection (UMAP) was applied for visualization.

Results: An average of 4700 high-quality spots were detected per section. Integration of the spatial data from the 12 sections resulted in 19 distinct clusters, which were visualized as a UMAP, and was also overlaid on the image (tissue sections) using SpatialDimPlots. Deconvolution of the sections from RCC were

enriched in immune cells such as CD8 T cells, monocytes, macrophages, and NK cells with unique patterns emerging based on pathology, age, and gender (Figure 1).
Conclusions: Pediatric non-Wilms renal tumors have distinct expression patterns that cluster based on demographic and pathologic characteristics. Spatial transcriptomics is a powerful and promising tool that enables visualization and quantification of these expression patterns while preserving tissue architecture and enabling analysis of cell-cell interactions. This study serves as proof of concept that this technology can be applied to previously generated urologic pathology samples, and further research may yield insights into the diagnostic, prognostic, and clinical implications.
Funding: Department of Urology.



Abstract #25. Figure 1. (A) UMAP of the 19 distinct clusters of the tissue sections embedded in UMAP space, split by pathology. (B) Visualization of the detected clusters as SpatialDimPlot on a single clear-cell sarcoma section. Each spot is covered by a mixture of cells, and not necessarily of the same cell type. (C) Deconvolution of the spots to detect the spatial distribution of immune cell types.

Abstract #26

The success of chordee correction with dermal grafts at a single institution

Shreya Patel[1], Israel Franco[1,2,3], Cristian Mathew[4], Jordan Mendelson[5], Steven Friedman[6], Ronnie Fine[5], Mark Horowitz[5], Richard Schlussel[7], Lori Landau-Dyer[8], Paul Zelkovic[8], Jaime Freyle[6], Jordan Gitlin[5]
[1]Childrenamp; [2]#39; [3]Hospital at Erlanger, [4]SUNY Downstate Health Sciences University, College of Medicine; [5]NYU Langone Hospital - Long Island; [6]Maimonides Medical Center; [7]Hackensack University Medical Center; [8]Westchester Medical Center
Introduction: Penoscrotal hypospadias is commonly associated with significant chordee and requires, in many instances, a two-stage repair that includes a dermal graft followed by buccal graft for hypospadias correction. Due to the complexity of the penoscrotal hypospadias and severity of chordee, a percentage of patients required reoperation following the initial revision. This study aimed to characterize the success of the chordee correction by quantifying the number of patients who required a redo surgery for correction of chordee.
Methods: We undertook an IRB-approved chart review of all patients who underwent hypospadias surgery from 2013–2022. All patients who had penoscrotal hypospadias who had a dermal graft for chordee correction, followed by a buccal mucosal graft for hypospadias correction were included. The patient charts were reviewed to determine the number of patients that required a redo surgery for correction of chordee. Statistics were performed on SPSS.
Results: A total of 119 patients were found with penoscrotal hypospadias that was treated with both dermal and buccal grafts. Six patients (5%) required a redo surgery for correction of recurrent chordee following the initial dermal graft correction. This complication rate is relatively low, given the severity of the chordee in this patient population.
Conclusions: Given the low complication rate, we can conclude that dermal grafts are a safe method for the treatment of severe chordee in cases of penoscrotal hypospadias.

Abstract #27

Idiopathic pediatric testicular asymmetry: Does catchup growth occur?

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Introduction: Testicular asymmetry is well-recognized, with conditions such as undescended testis, varicocele, and prior inguinal surgery (e.g., herniorrhaphy). Far rarer and poorly understood are cases of idiopathic testicular asymmetry without an associated condition. It is often believed that that those with idiopathic asymmetry, typically presenting at the onset of puberty, will have catchup growth during pubertal development. This study evaluated changes in relative testicular volume in pediatric patients with idiopathic asymmetric testes.
Methods: We conducted a retrospective review of pediatric patients seen at the URMC Pediatric Urology Clinic between July 2018 and October 2024 who presented with asymmetric testes. Patients with a history of varicocele or those who had undergone inguinal and scrotal surgical interventions were excluded from the idiopathic asymmetric testes group. Relative testicular volume measurements were obtained during the first and last clinical visits using orchidometer and scrotal ultrasound. A paired t-test was performed to assess the significance of changes in relative volume between visits, with a p-value threshold set at < 0.05 for statistical significance.
Results: The study included a total of 12 patients with idiopathic asymmetric testes, with an average age of 10.5 years (Table 1). Among these, five patients had at least one followup visit, with a mean followup duration of 2.6 years following the initial encounter. This subset revealed an average left testis volume of 2.4 cc, a right testis volume of 7.1 cc, and a relative volume of 0.7 at the first visit. At the latest followup visit, the average left testis volume was 4.0 cc, the average right testis volume was 15.9 cc, and the relative volume was 0.8. There was no significant change in relative volume (p=0.556) (Table 2).
Conclusions: This study highlights that in pediatric patients with idiopathic asymmetric testes, the discrepancy in testicular size does not show significant improvement over the course of pubertal development. These findings influence counseling and followup of these patients. Further research to understand the etiology of testicular asymmetry in this population is warranted.

Abstract #27. Table 1. Demographics of 5 patients with idiopathic asymmetry

Age at first visit (years)	8.2 ± 6.0
BMI	19.2 ± 3.5
Nonwhite race	1 (20%)

Mean values are presented with the corresponding standard deviations (± SD)

Abstract #27. Table 2. Followup visit comparison of 5 patients with idiopathic asymmetry

	Left testis (cc)	Right testis (cc)	Relative volume	p-value
First visit	2.4 ± 2.1	7.1 ± 7.3	0.7 ± 0.1	0.556
Last visit	4.0 ± 2.4	15.9 ± 13.7	0.8 ± 0.2	

Mean values are presented with the corresponding standard deviations (± SD)

Abstract #29

Parental perspectives on pediatric clinic practices

Nicole Ackerman, Laura Williams, Jeffrey Villanueva, Matthew Mason, Anthony Tracey
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Introduction: Pediatric urology encompasses a range of conditions that can significantly affect a child's health and quality of life. Parental involvement is critical, yet their perspectives on clinical practices are underexplored. Understanding caregiver viewpoints can offer valuable insights into care delivery and the family experience. This study evaluated parental opinions on pediatric urologic care — including personal protective equipment (PPE), chaperones, and medical photography — to identify opportunities for more family-centered practices.

Methods: A national survey was distributed via the ResearchMatch platform. Of 57 295 adults aged 18–60 contacted, 1377 agreed to participate, and 1135 met inclusion criteria and completed the survey. Respondents confirmed they were parents, guardians, or caretakers of children aged 0–18; 15% had seen a pediatric urologist with their child. The survey was administered through REDCap and included items on PPE use, chaperone presence, and genital photography. Data were analyzed using descriptive statistics.

Results: Regarding PPE, 60.9% of parents preferred providers to wear gloves during genital exams. While 29.7% had no preference, 4.9% preferred no gloves if hands were clean. In contrast, only 22.9% preferred providers to wear masks; 68.1% had no preference. PPE positively impacted the provider relationship for 25.9% of respondents and negatively for 6.3%. Since the COVID-19 pandemic, 39.4% indicated an increased preference for PPE. On chaperones, 57.6% preferred only the provider and parent in the room. Another 18.9% supported adding a chaperone. A smaller portion — 7.5% — preferred to step out while a chaperone stayed, and 3.2% were comfortable with just the provider and patient. Regarding genital photography, 45.8% were comfortable with photos stored in the electronic medical record, while 54.1% opposed it.

Conclusions: These findings highlight caregiver preferences in pediatric urologic care. The heightened emphasis on PPE, likely influenced by the pandemic, reflects shifting expectations around hygiene and professionalism. Preferences for parental presence and concerns around photography indicate a strong desire for transparency. Incorporating these insights into clinical workflows may improve trust, communication, and promote individualized, family-centered care.

Abstract #30

Postoperative opioid prescription in hypospadias repair: Institutional experience and an NSQIP-P analysis

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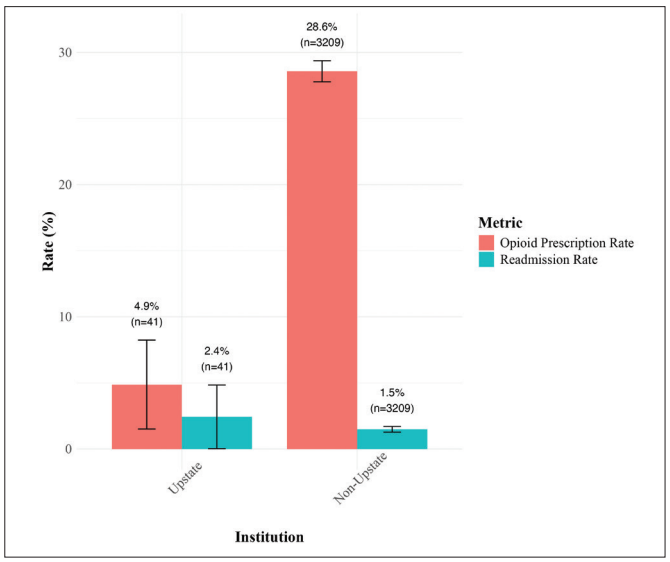
Introduction: Postoperative opioid prescription remains a debated topic in pediatric urology, particularly penile surgery. While some studies indicate opioid prescription reduces the rate of unplanned postoperative provider contact, others demonstrate an increased risk of opioid dependence with no improvement in postoperative outcomes. Our institution seldom prescribes opioids to hypospadias patients based on surgeon preference, and not institutional guidance, state mandates, or experimental purposes. We sought to determine how our opioid prescription and readmission rates compare to others, as well as demographic and surgical factors modulating these rates.

Methods: With institutional approval, we examined records of our 2023 hypospadias cases submitted to the National Surgical Quality Improvement Program-Pediatrics (NSQIP-P) database. Forty-one of our institution's cases were identified in the 3250 hypospadias cases within the 2023 NSQIP-P record. Hypospadias type, opioid prescription rates, and 30-day readmission rates were determined for our institution and other NSQIP-P cases separately. Multivariate logistic regression was performed for both the prescription and readmission rates to determine factors associated with each. Analyses were performed using R (version 4.4.0, R Foundation for Statistical Computing).

Results: On univariate analysis, patients at our institution were significantly less likely to receive opioids at discharge (4.9% vs. 28.6%, p<0.001), with no significant differences in the proportion of hypospadias repair type (distal, proximal, or revision, p=0.51) or readmission rate (2.4% vs. 1.5%, p=0.47) (Figure 1). Upon multivariate logistic regression, our institutional cases, patients of other/unknown race, and patients with a longer postoperative hospital stay had decreased odds of opioid prescription, while older patients and proximal hypospadias cases had increased odds of prescription (Table 1). Furthermore, only proximal hypospadias cases and other/unknown race had increased odds of readmission on multivariate analysis. Notably, opioid prescription did not affect readmission odds.

Conclusions: Using both our institutional and international data, opioid prescription does not appear to alter the odds of readmission in hypospadias cases. Older patients and proximalhypospadias cases had increased odds of opioid prescription, while a longer postoperative stay decreased odds. Readmission odds increased with proximal hypospadias cases and other/unknown race. Future analyses can explore other postoperative parameters, non-opioid analgesics, and more nuanced racial classifications to identify disparities. Ultimately, these data suggest that postoperative opioid prescription is not necessary in routine hypospadias repairs.



Abstract #30. Figure 1. Opioid prescription and readmission rates by institution.

Abstract #30. Table 1. Table displaying odds ratios and 95% confidence intervals for the multivariate logistic regression analyses of opioid prescription and 30-day readmission

Variable	Opioid prescription		30-day readmission	
	OR (95% CI)	p	OR (95% CI)	p
Age (months)	1.01 (1.00, 1.01)	<0.001***	1.00 (1.00, 1.01)	0.22
Outpatient surgery	1.04 (0.71, 1.54)	0.84	0.50 (0.22, 1.18)	0.11
Proximal hypospadias	1.50 (1.20, 1.89)	<0.001***	2.37 (1.18, 4.57)	0.01*
Revision hypospadias	1.03 (0.80, 1.32)	0.83	0.80 (0.27, 2.02)	0.65
Upstate case	0.11 (0.02, 0.37)	0.003**	2.22 (0.12, 11.08)	0.44
Asian race	1.02 (0.69, 1.48)	0.93	0.70 (0.10, 2.65)	0.65
Black race	0.83 (0.65, 1.07)	0.16	0.45 (0.07, 1.57)	0.29
Other/unknown race	0.66 (0.54, 0.79)	<0.001***	1.99 (1.04, 3.82)	0.04*
High-risk ASA score (3-5)	1.10 (0.74, 1.60)	0.63	2.41 (0.89, 5.55)	0.06
Length of post-op stay (days)	0.62 (0.51, 0.74)	<0.001***	0.97 (0.72, 1.15)	0.80
Opioid prescription at discharge	N/A	N/A	1.30 (0.68, 2.39)	0.40

*p<0.05. **p<0.01. ***p<0.001.