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The Use of Peritoneal Interposition Flap for the Prevention of Lymphocele Formation After Pelvic Lymph Node Dissection During Robotic-Assisted Laparoscopic Radical Prostatectomy: A Systematic Review and Meta-analysis

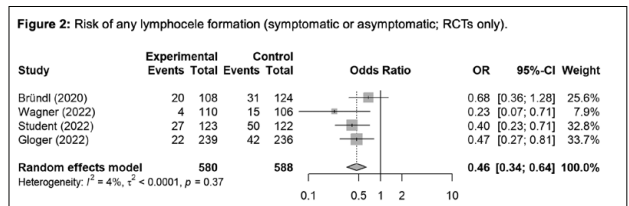
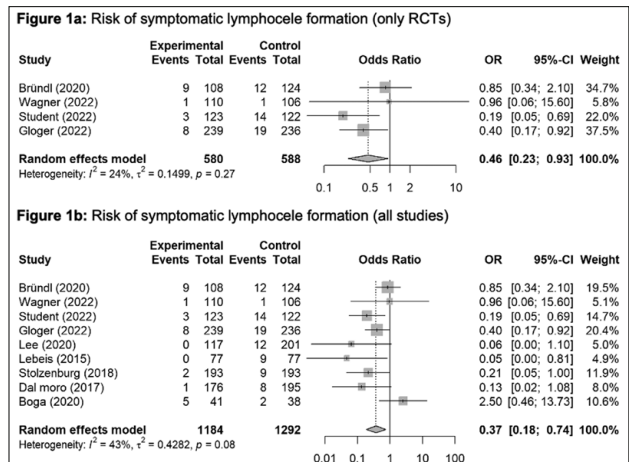
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Background: Lymphocele formation is a well-known complication after pelvic lymph node dissection (PLND) in robotic-assisted laparoscopic radical prostatectomy (RARP) and can be associated with high morbidity. Consequently, multiple strategies have been proposed to reduce the rate of lymphocele formation. One of the most promising such techniques is the use of a peritoneal interposition flap (PIF). Herein, we conducted a systematic review and meta-analysis to evaluate the association of PIF with lymphocele formation and postoperative complications after RARP.

Methods: We conducted a systematic search of MEDLINE, Embase, Web of Science, and the Cochrane Central Register of Controlled Trials through January 18, 2023 with a professional librarian. Two investigators independently selected studies for inclusion in the final analysis. A random effects meta-analysis was then performed to evaluate the associations of PIF with the following outcomes: symptomatic/asymptomatic lymphocele and non-lymphocele postoperative complications within 90 days of surgery.

Results: A total of four randomized controlled trials (RCTs) and five retrospective studies, including a total of 2,476 patients, met eligibility criteria and were included in the final analysis. Compared to a standard technique, the use of PIF was associated with a reduced risk of 90-day symptomatic lymphocele formation after RARP when examining only RCTs (pooled OR 0.46, 95% CI 0.23-0.93; I² = 24%, Figure 1a) or both RCTs and observational studies (OR 0.37, 95% CI 0.18-0.74; I² = 43%, Figure 1b). Similarly, use of PIF was associated with a reduced risk of 90-day any lymphocele formation (OR 0.46, 95% CI 0.34-0.64, I²=4%; Figure 2). There were no statistically significant differences in postoperative complications between the two groups (OR 0.98; 95% CI 0.73-1.32; I²=11%; Figure 3).

Conclusions: Use of the PIF is associated with an approximately 50% reduced risk of symptomatic and any lymphocele formation within 90-days of surgery, and it is not associated with an increase of postoperative complications.



Discharge Without Opioids Following Percutaneous Nephrolithotomy is Safe and Feasible Using a Nonopioid Pathway

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Background: Recent studies have demonstrated the success of opioid-sparing pathways for ureteroscopy, however, the feasibility of opioid-free discharge after percutaneous nephrolithotomy (PCNL) has not been evaluated. This study aims to determine the feasibility of a novel nonopioid protocol consisting of enhanced preoperative counseling, multimodal nonopioid analgesics and detailed postoperative instructions.

Methods: A prospective feasibility study supported by NIGMS/NIH (P20GM125507) was conducted at a single institution. All subjects underwent single tract 30fr PCNL with urologist access and ureteral stent placement. Control arm subjects received postoperative opioid prescriptions at the discretion of the provider. Patients in the intervention arm underwent preoperative counseling, standardized orders (Figure 1) and specialized discharge instructions. Primary outcomes assessed were discharge without opioid prescription, emergency department (ED) visits for pain, worrisome telephone calls or requests for prescription refills.

Results: Fourteen subjects were enrolled in the control arm. Of these, 10 (71%) were discharged with opioid prescriptions and 4 (29%) were discharged without opioids. Of the 10 discharged with opioids, 2 (14%) presented to the ED for pain concerns and received a new prescription for opioids. One subject (7%) called the office and was provided reassurance over the phone. No outpatient prescription refills were ordered. Six subjects underwent intervention and received the novel nonopioid protocol. All subjects (100%) in the intervention arm were discharged without opioids. No subjects (0%) presented to the ED for pain concerns. One subject (17%) called the office and was provided reassurance. No new prescriptions for opioids were written.

Conclusions: This small feasibility study demonstrates that patients undergoing PCNL via this novel nonopioid pathway can be safely discharged without opioid prescriptions without impact on outpatient resources. Four subjects in the control arm were discharged without opioids based on provider discretion, suggesting that the standard of care to include an opioid prescription may be changing. Larger studies are ongoing to fully evaluate this protocol.

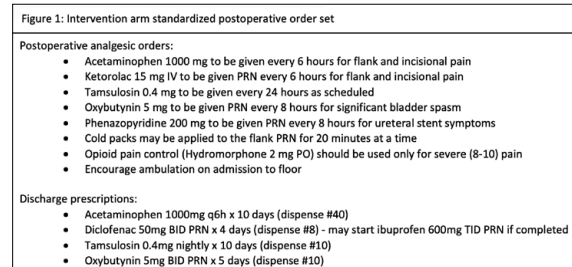


Table 1: Pain control and outpatient postoperative course

	Control(N=14)	Intervention(N=6)
PRN opioid received on floor (yes)	10 (71%)	2 (33%)
Scheduled tylenol ordered (yes)	14 (100%)	3 (50%)
Inpatient intravenous morphine equivalent daily dose (mg/day) Median [IQR]	4.0 [2.0]	0 [0]
Inpatient oral morphine equivalent daily dose (mg/day) Median [IQR]	7.5 [2.5]	16.0 [8.0]
Scheduled NSAID ordered (yes)	7 (50%)	6 (100%)
Most severe pain score during inpatient stay Median [IQR]	7.0 [3.5]	6.0 [2.75]
Pain score at time of discharge Median [IQR]	2.0 [3.75]	2.5 [3.25]
No new opioid prescription given at time of discharge	4 (29%)	6 (100%)
Morphine Equivalent Daily Dose (MEDDD) Median [IQR]	30.0 [10.0]	N/A
ED visit within 30 days (yes)	2 (14%)	0 [0%]
Telephone call to office for pain, GU complaint within 30 days (yes)	1 (7%)	1 (17%)
Operative reintervention for same nephrolithiasis (yes)	1 (7%)	1 (17%)
Secondary nonoperative procedure within 30 days not during initial stay (yes)	0 (0%)	0 (0%)
Request for refill pain medication (yes)	0 (0%)	0 (0%)
Patient was prescribed an opioid within 30 days (yes)	2 (14%)	0 (0%)

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Association of Dietary Vitamin E Intake with Current Stone Formation: A NHANES Analysis 2017-2020

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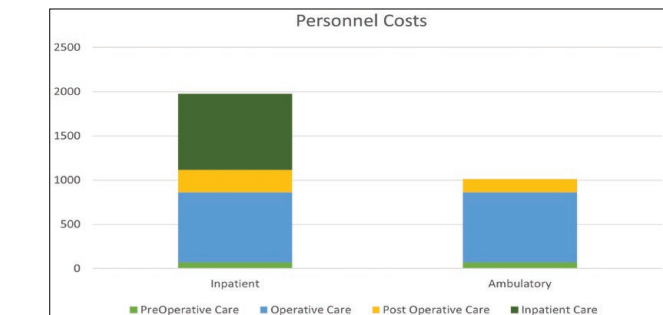
Background: Free radical-mediated oxidative renal tubular injury secondary to hyperoxaluria is a proposed mechanism in the formation of calcium oxalate stones. Vitamin E, an important physiologic anti-oxidant, has been shown in animal models to decrease oxidative injury and calcium oxalate crystal deposition. Current recommendations are to maintain 15mg/day vitamin E intake. Our objective was to determine if insufficient dietary vitamin E intake was associated with increased annual incidence of stones.

Methods: We analyzed data from the 2017-2020 NHANES (National Health and Nutrition Examination Survey), a nationally representative sample (N=7,707). A multivariable logistic regression model was used to assess the association between elevated dietary vitamin E intake (>15mg/day) and nephrolithiasis within the previous 12 months, controlling for gender, race/ethnicity, BMI, diabetes, water, sodium, calcium, and vitamin C intake.

Results: The annual cumulative incidence of nephrolithiasis was 1.53% (CI 1.29%-1.80%). In patients consuming a <15mg/day vitamin E, the annual cumulative incidence was 1.8% compared to 0.8% in patients with vitamin E intake >15mg/day (p=0.024). In adjusted models, participants who consumed <15mg/day vitamin E had significantly higher odds of reporting stones in the previous 12 months (aOR=2.17, 95% CI [1.01-4.55]).

Conclusions: Vitamin E intake less than the recommended 15mg/day is associated with a 2x greater odds of nephrolithiasis, a finding maintained with multivariable adjustment. These data are consistent with basic science literature suggesting that vitamin E may play an important protective role in the pathogenesis of calcium oxalate stone formation. Future investigation of vitamin E supplementation in recurrent stone formers may help further determine if vitamin E is useful in the management of calcium oxalate stones.

*Max K. Willscher Award Eligible



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Adoption of Same Day Discharge After Percutaneous Nephrolithotomy: Implications for Patient Safety and Resource Utilization

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Background: Percutaneous nephrolithotomy (PCNL) remains a recommended first-line therapy for individuals presenting with advanced stone burden and traditionally involves a 1-2 day postoperative hospitalization. There is emerging evidence that PCNL may be performed in an ambulatory setting, in the appropriately selected patient population. PCNL followed by same-day discharge presents an opportunity to improve health-care resource utilization and decrease costs associated with surgical treatment of nephrolithiasis. We aimed to assess the safety and quantify the financial implications associated with shifting PCNL to an ambulatory pathway.

Methods: A retrospective review of PCNL procedures was performed at a large academic medical center from January 2020 to June 2022. Patients were excluded from the ambulatory pathway and stratified into the inpatient pathway based upon complex medical comorbidities, planned multi-tract access, history of infection stones, need for overnight monitoring, intraoperative concern, inadequate social support, or if residing a long distance from the hospital. Preoperative clinical demographics and intraoperative parameters were compared between the two groups. To comparatively analyze cost differential between inpatient ambulatory PCNL, we used time-driven activity-based costing (TDABC), an accounting methodology used to calculate the cost of healthcare resources. A team of stakeholders created a detailed process maps and calculated personnel capacity cost rates. Once all personnel costs were determined, the costs were applied to the models for the inpatient and same-day discharge scenarios for the final cost comparison.

Results: We identified 101 PCNLs, of which 25 were ambulatory and 76 were inpatient. No statically significant differences were identified between age, gender, or comorbidity status. When compared to the ambulatory PCNL cohort, the inpatient PCNL group more frequently had standard (24Fr) access, a larger stone diameter, and a higher EBL. There were no statistically significant differences identified between the two cohorts in terms of readmission and 30-day complication rates or ED visits (Table 1). Inpatient PCNL was associated with estimated per-patient costs of \$1977, while ambulatory PCNL was associated with per-patient costs of \$1014. The inpatient stay portion contributed 43% of the overall personnel costs associated with inpatient PCNLs (Figure 1).

Conclusions: In appropriately selected patients, ambulatory PCNL represents a safe alternative to inpatient PCNL, without an increase in post-operative complications, ER utilization, or hospital readmission. Ambulatory PCNL pathway was associated with a cost reduction of \$963 (49%) per patient, when compared to traditional inpatient PCNL. The main drivers of costs were nursing time during inpatient hospitalization and excess time spent in the post anesthesia care unit, suggesting potential targets for improved resource utilization and cost reduction efforts.

	Inpatient PCNL	Ambulatory PCNL	p value
Patient no.	76	25	
Age, yrs (IQR)	62 (56, 67)	64 (53, 69)	NS
Male (%)	39 (51%)	13 (52%)	NS
Female (%)	37 (49%)	12 (48%)	NS
Diabetes (%)	24 (32%)	3 (12%)	P=0.055
ASA score	3	3	
Max Stone Diameter, mm	21 (18, 27)	19 (16, 25)	P=0.04
Operative Time, min	182 (168, 230)	145 (128, 182)	P=0.001
Sheath Size			
24F	51 (67%)	15 (60%)	P=0.016
Mini or Ultra-Mini	25 (33%)	10 (40%)	
Estimated Blood Loss, mL	50 (25, 100)	35 (25, 50)	P=0.004
Length of Stay, hrs	29 (26, 50)	N/A	
ED, 30d post-op	6 (8%)	1 (4%)	NS
Any Complication 30-days	9 (12%)	1 (4%)	NS
Readmission	4 (5%)	1 (4%)	NS
Time-driven activity based cost	\$1,977	\$1014	

Table 1: Comparative analysis between inpatient and ambulatory PCNLs

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Does a Ureteral Stent Tracking Database Reduce the rate of Retained Ureteral Stents?

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Background: Retained ureteral stents can result in significant patient morbidity, leading to urinary tract infections, hematuria, voiding symptoms, and due to encrustation, require additional procedures for removal. In addition, retained stents are a source of medicolegal liability for urologists. To reduce the rate of retained stents at our institution, we devised and implemented an operating room billing software based ureteral stent tracking system. In this study, we compared the incidence of retained stents and the average stent dwell time before and after implementation of our stent tracking system.

Methods: The stent tracker system went live on June 24th, 2020. Patients were enrolled automatically into the system whenever the circulating nurse billed for a ureteral stent associated with the patient's surgery. Stents were queried in a database by either surgeon or date of placement and reconciled as removed by the provider who removed the stent and/or the quality assurance team in our urology practice. We retrospectively enrolled all patients who underwent ureteral stent insertion by urologists or transplant surgeons at our institution from May 19th, 2019 to June 23rd, 2020, and prospectively enrolled all patients who underwent stent placement from June 24th, 2020 to December 30th, 2022. We excluded patients with chronic indwelling stents on routine exchanges (i.e. for malignant obstruction) as well as patients who expired with an indwelling stent. Patients whose stent was removed but at an unknown date were also excluded from analysis. Retained stents were defined as stents in place for more than 90 days. We calculated both the rate of retained devices and the average dwell time. We compared the retrospective to the prospective cohort using descriptive statistics and comparisons between groups were done with the Student's T test.

Results: From May 19th, 2019 to December 31st, 2022, a total of 1818 stents (588 pre-database and 1230 post-database) were placed in 1160 patients. A total of 6 patients (0.5%) could not be located to determine the status of their stent – 1 retrospective and 5 prospective. The retrospective cohort had a significantly longer average dwell time (pre: 33±40 vs. post: 29±34, p<0.05). There was a significant decrease in the rate of retained stents (pre: 15.7% [61/388] 5.4% [46/858], p<0.01) after implementation of the database.

Conclusions: Tracking of ureteral stents is essential to prevent patient morbidity. Implementation of an electronic medical record-based stent tracking system decreased stent dwell time and frequency of retained stents, thus protecting patients from unnecessary complications, and protecting urologists from potential liability.

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Natural History of Observed Staghorn Calculi: Multi-Institution Update

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Background: The AUA Guidelines recommend surgical treatment of staghorn calculi in patients fit for surgery; however, some patients opt for observation. Data from >40 years ago report that non-operative management of staghorn calculi is associated with 28% 10-year mortality and up to 70% risk of renal failure or urosepsis within 6 years. Counseling is currently based on non-contemporary data. Herein we provided a multi-institutional update on the natural history of observed staghorn calculi.

Methods: A multi-center retrospective review was performed of patients from 6 institutions with an observed staghorn calculus diagnosed on CT scan between 2007 and 2022, with a minimum 6 months of follow up. Data was analyzed regarding stone-related complications and the interval from diagnosis to complication.

Results: A total of 73 patients met inclusion criteria with a mean follow up of 49 months (range 6-162). At diagnosis, 89% patients (n=65) declined intervention, and the remaining 11% (n=8) initially elected delayed intervention with a delay of at least 6 months. The overall complication rate was 30% (n=22) for all patients. For the observation cohort, the complication rate was 27.3% (n=19) on average 34 ± 42 months after diagnosis. Of those observed, 19% developed sepsis (n=12, mean 24 ± 24 months), 9% required urgent stent placement (n=6, mean 47 ± 59 months), 2% required urgent nephrostomy placement (n=1, mean 33 months), 8% progressed to renal failure (n=5, mean 18 ± 25 months), and there was an 11% mortality rate (n=7, mean 36 ± 43) with a stone-related mortality rate of 3% (n=2, mean 6 ± 1 months).

Conclusions: Delaying or forgoing treatment for staghorn stones is associated with the potential for morbidity and mortality. This contemporary data suggests overall complication rate is approximately 30% with less than one in five patients developing sepsis. This updated data on the anticipated natural history of observed staghorn calculi may contribute to informed shared decision making.

Impact of Creating a Stone Center on Urologic Care Coordination for Urolithiasis

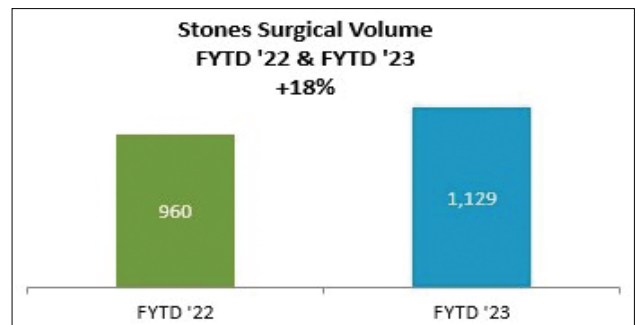
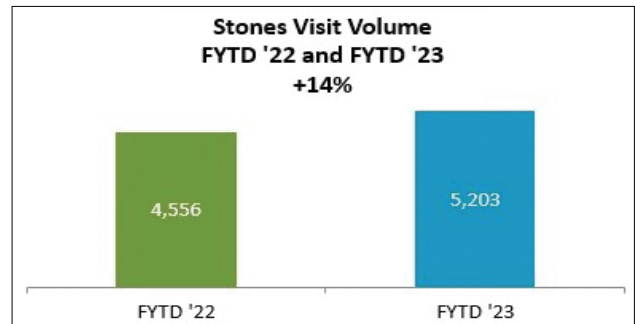
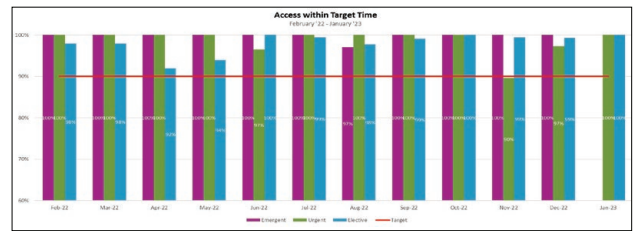
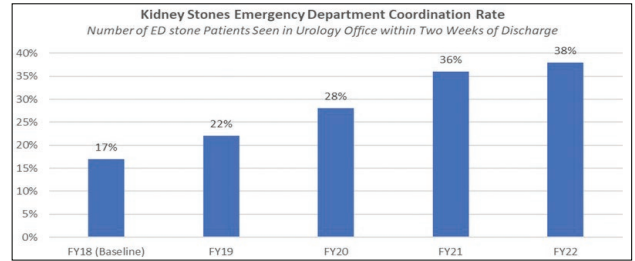
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Background: Urolithiasis is one of the most common urologic conditions with prevalence rates in North America ranging from 7%-13%. It is a significant burden to the healthcare system, with estimates that total cumulative costs for managing patients with urolithiasis is \$2.1 billion representing \$490 million in emergency department spending alone. Entry points for stone patients to urology include the emergency department, primary care, urgent care, nephrologists, and other urologists. Our institution previously lacked a system-wide process for streamlining handoffs of stone patients from the Emergency Department to Urologists. Given the burden that urolithiasis places on patients and the healthcare system, the institution created a Stone Center designed to leverage a coordinated team of nurse navigators to effectively identify patients with urolithiasis and to triage them to urologic care. This is the first such stone center established in the state of Connecticut which triaged its first patient in 2021 and has since triaged 7,706 patients.

Methods: Our team of nurse navigators review all Emergency Department visits related to a urolithiasis diagnosis from the previous 24 hours and categorize each patient as emergent, urgent, or elective based on pre-defined clinical data (fevers, solitary kidney, obstructing stone, etc.). Patients are contacted and scheduled for an appointment within an appropriate time frame based on established guidelines (same day, within one day, or within one week respectively). The collected data from patient electronic medical records diagnosed with urolithiasis are entered into a QI dashboard. The dashboard follows their urologic care with the institution through consultation, surgery, follow up, and any related encounter.

Results: The emergency department coordination rate (defined as diagnosis to urology less than 14 days), improved from 17% to 38% from FY 18 (baseline) to FY22 (Figure 1). Between February, 2022 and January, 2023, at least 90% of patients were offered appointments within their respective appropriate timeframes in all but one month (Figure 2). Office stone visits increased 14% (4,556 to 5,203) from FY22 to FY23 (Figure 3). Additionally, stone surgical volume increased 18% from 960 surgeries in FY22 to 1,129 in FY23 (Figure 4).

Conclusions: The establishment of a Stone Center within a large health care system is an effective tool to improve coordination of care for patients diagnosed with urolithiasis in the emergency department. This has increased overall office stone visits and stone surgeries performed in our institution, which is beneficial to patients, urologists, and the entire health care system.



Is Ureterscopy Using MOSES Laser Lithotripsy Comparable to Percutaneous Nephrolithotomy?

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Background: Percutaneous nephrolithotomy (PCNL) is a mainstay surgery for large renal stones. Ureterscopy with laser lithotripsy also remains a common treatment option. With the advent of newer holmium lasers, such as the MOSES laser, we sought to compare PCNL and ureterscopy using MOSES (mURS) in terms of stone-free rate (SFR) for renal stones >10 mm.

Methods: We retrospectively analyzed our institutional database for patients with renal stone burden between 10 and 30 mm that underwent PCNL or mURS October 2020-June 2022. The primary outcome was SFR (< 3 mm residual stone burden) on follow up imaging. We also examined length of stay, estimated blood loss (EBL), radiation exposure, operative time, stone clearance rate (mm of stone/operative time), and complications. Student's t-test and Pearson chi squared were used for statistical analysis.

Results: We identified 50 patients and 44 patients who underwent PCNL and mURS, respectively. Perioperative characteristics are described in Tables 1 and 2. Patients who underwent PCNL were more likely to have recurrent urinary tract infections (p < 0.01), obstructive sleep apnea (p = 0.01), and larger stone size (mean 21.11 mm ± 5.27 vs. 15.77 ± 6.36, p < 0.01). Patients who underwent PCNL had longer length of stay (2 days vs. 0 days, p < 0.01), higher EBL (69.2 vs. 7.5 cc, p < 0.01), greater radiation exposure (25.69 vs. 9.64 mGy, p = 0.02), and longer operative time (100.8 vs. 78.4 min, p = 0.01). There were no significant differences between stone clearance rate (0.28 vs. 0.22 mm/min, p = 0.06). Postoperative complications were not statistically different (p = 0.11). On follow-up imaging, 40 (80.0%) patients who underwent PCNL were stone-free compared to 37 (84.1%) for mURS (p = 0.12).

Conclusions: Our study suggests that there are no significant differences in SFR for patients with >10 mm renal stone burden who undergo PCNL vs. mURS. PCNL was associated with greater length of stay, EBL, radiation exposure, and operative time. Randomized control trials with non-inferiority study designs are warranted.

	PCNL	mURS	p-value
Number of Patients	50	44	
Age	59.12 ± 14.23	57.22 ± 16.83	0.55
Gender (Male)	27 (54.0%)	19 (43.2%)	0.30
Past Medical History			
CKD	2 (4.0%)	7 (15.9%)	0.05
Obesity	17 (34.0%)	13 (29.6%)	0.64
Hypertension	25 (50.0%)	15 (34.1%)	0.12
Diabetes	9 (18.0%)	7 (15.6%)	0.78
Gout	4 (8.0%)	1 (2.2%)	0.22
Recurrent UTIs	15 (30.0%)	4 (9.1%)	< 0.01
OSA	13 (26.0%)	3 (6.8%)	0.01
Migraines	3 (6.0%)	0 (0.0%)	n/a
CAD	8 (16.0%)	6 (13.6%)	0.75
Anti-Coagulation			0.62
None	35 (70.0%)	36 (81.8%)	
ASA81	9 (18.0%)	5 (11.4%)	
Anti-Platelet	2 (4.0%)	1 (2.27%)	
Direct Oral Anticoagulation	4 (8.0%)	2 (4.55%)	
Stone size (mm)	21.11 ± 5.27	15.77 ± 6.36	< 0.01
Hounsfield Units	1066.88 ± 400.52	953.66 ± 307.80	0.13

Table 1: Preoperative characteristics for patients undergoing PCNL and mURS

	PCNL	mURS	p-value
Length of Stay (days)	1.96 ± 1.24	0.05 ± 0.21	< 0.01
Estimated Blood Loss (ml)	69.20 ± 67.77	7.50 ± 4.38	< 0.01
Fluoroscopy time (sec)	59.24 ± 63.11	25.16 ± 28.41	< 0.01
Radiation Exposure (mGy)	25.69 ± 40.43	9.64 ± 25.67	0.02
Operative Time (min)	100.84 ± 34.37	78.43 ± 39.59	< 0.01
Stone Clearance Rate (mm/min)	0.25 ± 0.21	0.22 ± 0.09	0.38
Stone-Free Rate	40 (80.0%)	37 (84.1%)	0.61
Complication (Clavien Grade)			0.20
0	34 (68.0%)	36 (81.8%)	
1	11 (22.0%)	7 (15.9%)	
2	4 (8.0%)	1 (2.3%)	
3	1 (2.0%)	0 (0.0%)	
4	0 (0.0%)	0 (0.0%)	

Table 2: Perioperative outcomes for patients undergoing PCNL and mURS

Urologists Should Consider Routine Antifungal Prophylaxis in High Sepsis Risk Patients Undergoing Percutaneous Nephrolithotomy

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Background: Current AUA guidelines do not recommend routine antifungal prophylaxis for patients undergoing percutaneous nephrolithotomy (PCNL), and only recommend single dose prophylaxis for patients with asymptomatic funguria detected on preoperative urine culture (PUC) prior to surgery. Previous research demonstrates that PUCs and renal stone cultures (RSCs) obtained during PCNL are often discordant, with RSCs sometimes isolating atypical pathogens. We examined the role for routine antifungal prophylaxis in "high sepsis risk patients," defined at our institution as patients with chronic indwelling catheters (foley, SPT, nephrostomy tube), staghorn stones, limited body mobility due to neurologic conditions, or history of sepsis of urinary origin within three months.

Methods: A systematic retrospective review of all PCNL procedures performed at a single academic institution from October 2016 through February 2023 was conducted. Procedures were included if RSC was obtained and sent during PCNL. Other variables such as PUC and incidence of postoperative sepsis (measured by qSOFA score) were recorded. The association between positive PUC and RSC speciation and postoperative sepsis was analyzed.

Results: Of 263 procedures included, 86 (33%) had positive RSC (Table 1). Within the positive RSC group, 21 (24%) stone cultures grew yeast. Yeast was the second most common pathogen speciated. Other dominant species in positive RSC included Enterococcus (29%), Proteus (23%), Pseudomonas (13%), and E. coli (13%). Of the patients with yeast-growing RSC, 16 (76%) patients in the yeast-growing RSC group were considered "high sepsis risk" according to our institutional criteria. 5 (24%) developed postoperative sepsis and only one of these received antifungals preoperatively. All 5 patients were classified as high sepsis risk. The overall incidence of patients with positive RSC and concordant positive PUC was 70% (Table 2). Only 5/21 (24%) patients with RSC demonstrating yeast had a concordant PUC with yeast growth. Yeast was the fifth most common pathogen speciated in PUCs. The overall incidence of postoperative sepsis was 7%.

Conclusions: Routine antifungal prophylaxis should be considered for any patient with high risk for sepsis undergoing PCNL regardless of preoperative urine culture. Yeast was found to be present in a high proportion of renal stone cultures which was not apparent on corresponding preoperative urine cultures. Our institution has implemented a high sepsis risk protocol utilizing a routine preoperative course of three days of fluconazole in addition to targeted antibiotics and antifungals with broad spectrum antibiotics perioperatively. Studies are ongoing to evaluate infectious outcomes following initiation of this protocol. We encourage other urologists to study their institutional stone culture antibiogram as this may inform augmented antimicrobial prophylaxis to reduce sepsis in these high risk patients.

Table 1: Speciation of positive renal stone cultures (RSC)

	Overall (N=263)
Positive renal stone culture	86 (32.7%)
Enterococcus spp.	25 (29.1%)
Yeast	21 (24.4%)
Proteus spp.	20 (23.3%)
Pseudomonas spp.	11 (12.8%)
Escherichia coli	11 (12.8%)
Staphylococcus (non-staph aureus)	10 (11.6%)
Klebsiella spp.	7 (8.1%)
Providencia spp.	5 (5.8%)
Enterobacter spp.	3 (3.5%)
Morganella spp.	3 (3.5%)
Staphylococcus aureus	3 (3.5%)
Streptococci spp.	1 (1.2%)
Other	8 (9.3%)

Table 2: Speciation of preoperative urine culture (PUC) in those with positive renal stone culture (RSC)

	Overall (N=86)
Positive preoperative urine culture	59 (70.2%)
Klebsiella spp.	9 (10.5%)
Enterococcus spp.	7 (8.1%)
Escherichia coli	7 (8.1%)
Proteus spp.	7 (8.1%)
Yeast	5 (5.8%)
Enterobacter spp.	4 (4.7%)
Pseudomonas spp.	4 (4.7%)
Staphylococcus (non-staph aureus)	2 (2.3%)
Citrobacter spp.	2 (2.3%)
Acinetobacter spp.	1 (1.2%)
Morganella spp.	1 (1.2%)
Corynebacterium	1 (1.2%)
Staphylococcus aureus	1 (1.2%)
Streptococci spp.	1 (1.2%)
Other	16 (18.6%)

Factors Associated with Postoperative Complications from Robotic-Assisted Laparoscopic Radical Prostatectomy in Contemporary NSQIP Data
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Background: For localized clinically significant prostate cancer (csPca), robotic-assisted laparoscopic prostatectomy (RALP) is a gold standard treatment. Despite a low overall complication rate, continued quality assurance (QA) efforts to minimize complications of RALP are important, particularly given movement toward same-day discharge. In 2019, NSQIP began collecting RALP-specific data. In this study, we assessed pre- and perioperative factors associated with postoperative complications for RALP to further QA efforts.

Methods: NSQIP was queried for patients with csPca undergoing RALP (CPT 55866) from 2019-21. Data were merged on patient identifiers with RALP-specific data from 2019-2021. Multivariate logistic regression was used to explore the association of risk factors and postoperative complications. Risk factors included ASA class, age, operative time, BMI, and from the extended dataset, PLND, number of nodes evaluated, perioperative antibiotic use, postoperative VTE prophylaxis use, history of prior pelvic surgery, and history of prior radiotherapy. Outcomes included infection, pulmonary embolism (PE), deep venous thrombosis (DVT), acute renal failure, pneumonia, or any surgical complication.

Results: 11,811 patients were included in analysis. All records were found to be complete. After RALP, 3.0% of patients had any complications, including 1.8% infections, 0.6% PEs, 0.5% DVT, 0.1% acute renal failures, and 0.3% episodes of pneumonia. There was increased risk of developing complications with older age, higher BMI, longer operative time, absence of perioperative antibiotics, and prior radiotherapy. There was increased risk of infection with history of prior radiotherapy, longer operative time, and higher BMI. Perioperative antibiotic use was found to decrease organ space infections only. Lack of perioperative antibiotic use and higher BMI were associated with PE. Patients with older age were at greater risk for DVT. There was higher risk of acute renal failure with prior radiotherapy. Lack of perioperative antibiotics was associated with pneumonia.

Conclusions: In contemporary NSQIP data, RALP is associated with low complication rates. However, operative time, BMI, age, prior radiotherapy, and perioperative antibiotics are consistent predictors of complications. Attention to these risk factors in peri- and postoperative care are important to minimize risk of postoperative complications and return to a healthcare setting after discharge.

	All Compli- cations	Any Infec- tion	Super- ficial Infec- tion	Deep In- cisional Infec- tion	Organ Space Infec- tion	Pulmonary Embolism	DVT	Acute Renal Failure	Pneumonia
ASA Class									
1	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
	~	~	~	~	~	~	~	~	~
2	0.8615	1.0634	0.0748	21.3166	20.7940	-0.0955	21.0301	19.0033	18.8429
	(-0.54,2.26)	(-0.91,3.04)	(-1.92,0.07)	(121567.1,121609.74)	(30059.12,30100.71)	(-2.09,1.9)	(48814.45,48856.51)	(79480.9,79518.91)	(29821.04,29859.48)
3	0.9107	1.1046	0.0605	20.3043	20.9674	-0.0934	20.6122	20.1474	19.5939
	(-0.5,2.32)	(-0.88,3.08)	(-2.07,1.95)	(121568.12,121608.72)	(30058.95,30100.89)	(-2.1,1.92)	(48814.87,48856.09)	(79479.76,79520.05)	(29820.29,29859.48)
4	1.2061	1.3694	0.8431	0.7499	20.5573	-19.6375	21.9919	-1.0434	-0.3429
	(-0.46,2.87)	(-0.92,3.66)	(-1.59,3.28)	(202950.24,202951.74)	(30059.36,30100.48)	(-24312.06,24272.79)	(48813.49,48857.47)	(129412.86,129417.8)	(49664.44,49663.76)
Perioperative Antibiotics									
No	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
	~	~	~	~	~	~	~	~	~
Yes	0.7586**	0.5692*	0.3427	-2.0018*	-0.7975**	-0.8511**	-0.7850	20.2984	-1.6347***
	(-1.18,-0.34)	(-1.14,0.01)	(-1.07,1.76)	(-4.21,0.21)	(-1.45,-0.14)	(-1.7,-0.0)	(-1.81,0.24)	(49746.15,49786.74)	(-2.62,-0.65)
Postoperative VTE prophylaxis									
No	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
	~	~	~	~	~	~	~	~	~
Yes	-0.1620	0.3216	0.5866	21.0815	-0.2116	-0.1264	21.2679	19.9231	-0.9224
	(-0.81,0.48)	(-1.09,0.45)	(-1.75,0.58)	(94170.4,94212.56)	(-1.22,0.8)	(-1.54,1.29)	(40288.47,40331.0)	(63427.58,63467.43)	(-2.41,0.56)
Prior Radiotherapy									
No	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
	~	~	~	~	~	~	~	~	~
Yes	1.2152**	1.0548**	1.1984	-19.9526	0.9627	0.7010	-21.4101	2.3496**	1.2668
	(0.51,1.93)	(0.13,1.98)	(-0.25,2.64)	(173231.91,173192.0)	(0.22,2.14)	(-1.3,2.7)	(-72397.12,72354.3)	(0.18,4.52)	(-0.78,3.31)
Prior Pelvic Surgery									
No	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
	~	~	~	~	~	~	~	~	~
Yes	0.1391	0.2030	0.1894	-20.7922	0.2526	-0.1492	0.0782	1.1068	0.2445
	(-0.13,0.41)	(-0.13,0.54)	(-0.37,0.75)	(38408.22,38366.64)	(0.16,0.67)	(-0.8,0.5)	(-0.59,0.74)	(-0.25,2.46)	(-0.62,1.11)
PLND									
No	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
	~	~	~	~	~	~	~	~	~
Yes	0.3470*	0.4271*	0.3030	20.6205	0.5072	-0.1112	0.5581	0.2453	0.3474
	(-0.01,0.71)	(-0.04,0.89)	(-0.41,0.02)	(-0.82,0.6)	(40106.39,40147.63)	(-0.11,1.12)	(-0.36,1.48)	(-2.03,2.52)	(-0.92,1.61)
Number of Nodes Evaluated									
	-0.0026	0.0079	0.0287	0.0280	-0.0005	0.0114	-0.0155	-0.0054	0.0134
	(-0.02,0.01)	(-0.03,0.01)	(-0.07,0.01)	(-0.04,0.1)	(-0.03,0.02)	(-0.02,0.04)	(-0.06,0.03)	(-0.11,0.09)	(-0.03,0.05)
Age	0.0202**	0.0143	0.0126	-0.0820	0.0189	0.0353*	0.0694***	0.0528	0.0303
	(0.0,0.4)	(-0.01,0.03)	(-0.02,0.05)	(-0.21,0.05)	(-0.01,0.04)	(-0.0,0.07)	(0.03,0.11)	(-0.05,0.15)	(-0.02,0.09)
Operative Time	0.1276**	0.1892***	0.2171***	0.3834	0.1600**	-0.1425	0.1064	0.0939	0.1682
	(0.04,0.21)	(0.09,0.29)	(0.05,0.38)	(-0.11,0.87)	(0.03,0.29)	(-0.36,0.07)	(-0.1,0.32)	(-0.4,0.59)	(-0.08,0.41)
BMI	0.0361**	0.0363***	0.0498**	-0.0607	0.0309*	0.0595***	0.0508**	0.0873*	0.0273
	(0.02,0.06)	(0.01,0.06)	(0.01,0.09)	(-0.27,0.14)	(-0.0,0.06)	(0.02,0.1)	(0.0,0.1)	(-0.01,0.19)	(-0.04,0.1)
	(-0.01,0.71)	(-0.04,0.89)	(-0.41,0.02)	(-40106.39,40147.63)	(-0.11,1.12)	(-0.82,0.6)	(-0.36,1.48)	(-2.03,2.52)	(-0.92,1.61)

Investigating Outcomes in Patients With PI-RADS 5 Lesions and No Clinically Significant Prostate Cancer: Is Immediate Treatment the Right Response?
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Background: The Prostate Imaging Reporting and Data System (PI-RADS) score is a useful, predictive tool in analyzing suspicious prostate lesions on multi-parametric magnetic resonance imaging (mpMRI). Higher PI-RADS scores are associated with increased risk of clinically significant prostate cancer (csPCA). However, the management of PI-RADS 5 patients with no-csPCA is uncertain, given the possibility of false negative prostate biopsy versus false positive radiographic result. Our objective is to describe the outcomes of patients with PI-RADS 5 lesions but no-csPCA detected on transrectal ultrasound-guided (TRUS) fusion+standard template prostate biopsy.

Methods: Patients who underwent mpMRI and TRUS fusion biopsy between February 2014 and June 2022 at an academic, tertiary-care center were retrospectively reviewed. Biopsies with all benign findings or Grade Group (GG) 1 prostate cancer on fusion and/or standard cores were classified as no-csPCA. Patients with PI-RADS 5 lesion(s) and no-csPCA were subsequently included. Patient demographics, laboratory and imaging data, operations, and follow-up care were recorded.

Results: Of 1,817 patients in the database, 542 had a PI-RADS 5 lesion, of which 163 (30.0%) had no-csPCA on biopsy. Of these patients, 115 (70.5%) and 48 (29.5%) were found to have GG1 and benign findings, respectively. The indications for mpMRI and biopsy in 84 (51.5%), 42 (25.8%), 33 (20.2%), and 4 (2.4%) patients was elevated prostate specific antigen (PSA) with no prior biopsy, low-risk prostate cancer on active surveillance, elevated PSA with prior negative biopsy, and abnormal digital rectal exam, respectively. Notably, of 33 individuals with a previous negative biopsy, 19 continued to have benign findings on biopsy. Table 1 describes the follow-up interventions in this cohort. Of those with GG1, 57 continued to immediate radical prostatectomy or radiation, while 50 were monitored with active surveillance. PSA density (PSAd) was higher in the former sub-group (0.21±0.1 vs. 0.16±0.11, p=0.04, for immediate treatment vs. active surveillance, respectively). Table 2 summarizes the imaging results in the patients with repeat mpMRI and Table 3 outlines the pathologic outcomes in the sub-group of repeat biopsy and radical prostatectomy. Notably, on repeat mpMRI, 35.5% of patients had lower PI-RADS score or disappearance of lesion, while 75.8% patients had no-csPCA on repeat biopsy.

Conclusions: Despite no csPCA on biopsy, one-third of patients with PI-RADS 5 lesions underwent radical prostatectomy or radiation, suggesting a high PI-RADS score and PSAd weigh heavily in clinical decision-making. However, a significant proportion of patients show disappearance of lesion on repeat MRI and a majority show non-worsening results on repeat biopsy. Further research is needed to identify the subgroup of PI-RADS 5 patients with GG1 who require immediate treatment.

Table 1: Outcomes of patients with >1 prior PI-RADS 5 lesion and no csPCA on fusion TRUS biopsy.

OUTCOME	PATIENTS (N=163)	
Observation/Active Surveillance	91 (55.8%)	
-Repeat PSA only	38 (23.3%)	
-Repeat biopsy and PSA	8 (4.9%)	
-Repeat mpMRI and PSA	21 (12.8%)	
-Repeat mpMRI, biopsy, and PSA	24 (14.7%)	
Immediate Treatment	57 (34.8%)	
-Radical Prostatectomy	33 (20.1%)	
-Radiation Therapy	24 (14.7%)	
Lost to follow-up	15 (9.2%)	

Table 2: Outcomes of patients with >1 prior PI-RADS 5 lesion and no csPCA on fusion TRUS biopsy.

REPEAT MRI OUTCOME	PATIENTS (N=45)	
Lesion Classification		
-No Suspicious Lesion	11 (24.4%)	
-PIRAD 2	1 (2.2%)	
-PIRAD 3	1 (2.2%)	
-PIRAD 4	3 (6.7%)	
-PIRAD 5	29 (64.4%)	
Mean months to repeat MRI (SD)	15.1 (6.5)	

Table 3: Results of repeat biopsy and radical prostatectomy in patients with PI-RADS 5 and no-csPCA

PATHOLOGIC OUTCOME	REPEAT BIOPSY (N=32)	RADICAL PROSTATECTOMY (N=33)
Gleason Classification		
-No cancer	6 (18.2%)	N/A
-GG1	18 (56.2%)	15 (45.5%)
-GG2	7 (21.2%)	16 (48.5%)
-GG5	1 (3.0%)	2 (6%)
Mean months to intervention (SD)	14.3 (6.8)	4.7 (5.3)

Diagnostic Performance of High-Resolution Micro-Ultrasound and Conventional Ultrasound in MRI-Ultrasound Fusion Biopsy for Clinically Significant Prostate Cancer Detection
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Background: Significant improvements in imaging resolution and quality with micro-ultrasound (microUS) compared with conventional ultrasound may improve the diagnostic accuracy of prostate biopsy. The aim of this study was to evaluate the diagnostic outcomes of MRI-ultrasound fusion targeted biopsy in detecting clinically significant prostate cancer using either microUS technology or conventional ultrasound.

Methods: We performed a retrospective analysis of 429 patients who received ExactVu microUS-guided biopsy at a single institution from October 2021 through January 2023. Targeted biopsies (TB) were taken from multiparametric MRI targets (Prostate Imaging-Reporting and Data System [PI-RADS] ≥2), followed by a 12-core systematic biopsy (SB). We also included a matched group of 470 men based on the PI-RADS score and biopsy status who underwent MRI-conventional US fusion biopsy using the Artemis device at the same institution between January 2017 and May 2022. The proportion of cancers detected (any cancer and grade group (GG) ≥2) by TB was compared between MRI-microUS fusion biopsy and (MRI-conventional US fusion biopsy groups).

Results: The overall incidence of GG≥2 cancer was similar between MRI-microUS fusion biopsy and MRI-conventional US fusion biopsy groups (53.6% vs. 55.3%, p>0.05). In patients undergoing MRI-microUS fusion biopsy, detection of any cancer in SB was greater than TB (69.2% vs. 57.1%, p<0.001), while GG≥2 detection was similar between SB and TB (44.9% vs. 40.5%, p=0.06, Table 1). Moreover, detection of any cancer and GG ≥2 using TB were lower in MRI-microUS fusion biopsy group compared with those in MRI-conventional US fusion biopsy group (any cancer: 57.1% vs. 71.9%, p<0.001; GG ≥2: 40.5% vs. 49.7%, p=0.005, Table 1). On multivariate analysis, age (OR 1.05, p<0.001), biopsy-naïve status vs. prior negative biopsy (OR 0.25, p<0.001) and vs. active surveillance (OR 0.61, p=0.009), PSA density (OR 2.29 per 0.1 unit increase, p<0.001), and PI-RADS score 4 vs. 3 (OR 5.11, p<0.001) and 5 vs. 3 (OR 9.67, p<0.001) were significant predictors in the detection of GG ≥2 (Table 2). However, MRI-US fusion method (microUS or conventional US) was not associated with the detection of GG ≥2 (p>0.05).

Conclusions: Among patients undergoing MRI-US fusion targeted biopsy, microUS-guided targeted biopsy of MRI regions of interest yielded lower cancer detection compared with MRI-conventional US fusion biopsy. Nevertheless, both MRI-microUS and MRI-conventional US fusion biopsy groups were comparable in terms of overall cancer detection on combined systematic and fusion targeted biopsy. We await the results of the OPTIMUM randomized trial to clarify the relationship between microUS and conventional US fusion biopsy.

Table 1. Distribution of prostate cancer detected using each biopsy method per study group

Cancer detected	SB		TB		P value (TB vs. SB by McNemar)
	Any cancer	P value*	Any cancer	P value*	
MRI microUS	291/429 (69.2%)		245/429 (57.1%)		<0.001
MRI conventional US	339/470 (72.1%)		338/470 (71.9%)		1.00
P value*	0.34		<0.001		
GG≥2					
MRI-microUS	193/429 (44.9%)		174/429 (40.5%)		0.06
MRI-conventional US	199/470 (42.3%)		234/470 (49.7%)		<0.001
P value*	0.43		0.005		

*Comparison between case (MRI-microUS) and control (MRI-US) groups by Chi-square test

Table 2. Logistic regression models for the prediction of clinically significant prostate cancer

Variable	Univariate		Multivariate	
	OR (95% CI)	P value	OR (95% CI)	P value
Age	1.05 (1.03-1.07)	<0.001	1.05 (1.03-1.08)	<0.001
African-American	1.64 (1.07-2.49)	0.02	1.58 (0.93-2.68)	0.08
Biopsy status				
Biopsy naïve	1.00 (Ref)	-	1.00 (Ref)	-
Prior negative biopsy	0.33 (0.20-0.53)	<0.001	0.25 (0.13-0.45)	<0.001
Active surveillance	0.75 (0.55-1.02)	0.06	0.61 (0.42-0.88)	0.009
PSA density	2.33 (1.95-2.79)	<0.001	2.29 (1.86-2.81)	<0.001
Maximum PI-RADS				
2-3	1.00 (Ref)	-	1.00 (Ref)	-
4	5.59 (3.82-8.20)	<0.001	5.11 (3.35-7.79)	<0.001
5	15.42 (9.95-23.89)	<0.001	9.67 (5.94-15.76)	<0.001
Biopsy method				
Micro-ultrasound	1.00 (Ref)	-	1.00 (Ref)	-
Conventional US	1.07 (0.82-1.39)	0.60	1.17 (0.84-1.62)	0.34

Prior Colorectal Cancer Screening and Shared Decision Making Influence the Likelihood of PSA Screening

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Background: Despite stronger evidence for the benefits of colorectal cancer (CRC) screening and vaguer recommendations for prostate-specific antigen (PSA) screening, it is unclear how men eligible for prostate cancer early detection may be more or less likely to pursue this based on participation in other screening practices. This study aims to compare the rates of PSA and CRC screening and assess the odds of having PSA screening based on race, education, SDM, and use of CRC screening, hypothesizing that PSA screening is associated with other early detection efforts but also demographic factors.

Methods: The 2020 Behavioral Risk Factor Surveillance Survey (BRFSS) was queried for records providing a definite history of SDM or PSA screening. Records between the ages of 50-75 were included. Information on CRC screening habits, SDM, and demographics were captured. Data were weighted and adjusted odds, of having SDM or PSA testing according to the individual traits, calculated.

Results: 30,958 records met inclusion criteria. 12.1% were excluded due to missing data. Average age was 62 years, and all were male at birth. All other reported results for this cohort are weighted. Screening recommendations were met in 62% for PSA and 88% for CRC. Rates of SDM were 39.1% in those who met PSA screening requirements, and 16.2% in those who did not. Odds of PSA screening were higher when SDM was present (AOR=2.68, CI=2.67 - 2.68) or when CRC screening recommendations were met (AOR=1.94, CI=1.94 - 1.94). History of CRC screening was associated with higher odds of SDM (AOR=1.16, CI=1.15 - 1.16). Subset analysis of CRC screening identified that VR colonoscopy is associated with lower odds of SDM (AOR=0.98, CI=0.98-0.99) and PSA testing (AOR=0.95, CI=0.95-0.95). Rates of any level of college education were 85.3% for individuals with SDM, 79.2% for those without, 85.5% for those with PSA testing, and 76.7% for those without. Higher levels of education were associated with higher odds of SDM (AOR=1.93, CI=1.92 - 1.94) and PSA screening (AOR=3.38, CI=3.36 - 3.39). Patients who received PSA identified as: 81.3% White, 7.6% Black, 6.6% Hispanic, 1.6% Asian, 1.1% Multiracial, 0.8% American Indian/Pacific-Islander, 0.2% Native Hawaiian, and 1.1% Other. Compared to White, Black patients had higher odds of SDM (AOR=1.6, CI=1.59 - 1.6) and decreased odds of PSA testing (AOR=0.94, CI=0.94 - 0.95). Hispanic patients had increased odds of SDM (AOR=1.16, CI=1.15 - 1.16) and PSA screening (AOR=1.05, CI=1.05 - 1.06).

Conclusions: Within a weighted nationwide surveyed sample of the US population, PSA screening rates remain far lower than those of CRC screening rates in men ages 50-75. Prior CRC screening was associated with PSA early detection efforts, suggesting that certain men partake in both practices. SDM at the provider level appears to be associated with both practices. Concerningly, SDM for PSA screening remains low, with disparities based on race and education. Further work to improve compliance with screening guidelines and use of SDM efforts at the provider level are needed.

Multiparametric Magnetic Resonance Imaging Underestimates Extraprostatic Extension in Higher Risk Tumors

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Background: Multiparametric magnetic resonance imaging (mpMRI) is increasingly used for risk stratification and pre-operative staging of prostate cancer. Concern for extraprostatic extension (EPE) is a key radiographic feature that suggests wider dissection may be appropriate. Prior studies have demonstrated less reliable mpMRI findings in higher risk tumors (i.e. by D'Amico risk criteria). It remains unclear how Grade Group (GG) alone and more comprehensive multivariable risk assessments may interact with the ability of mpMRI to determine the presence of EPE on surgical pathology.

Methods: A retrospective review of a robotic assisted laparoscopic radical prostatectomy (RALP) database from a single academic institution from 2016-2020 was performed. Radiology mpMRI reports were assessed for positive or possible EPE findings and compared with surgical pathology reports. The data were stratified by GG and a multivariable cluster analysis was performed to incorporate the following variables: age at diagnosis, family history of prostate cancer, BMI, prostate volume estimated by mpMRI, PSA, number of positive biopsy cores, Gleason score, and preoperative grade group based on biopsy. Furthermore, risk ratios were calculated to determine how mpMRI findings and radiographic EPE relate to positive surgical margins.

Results: A total of 297 patients underwent at least one mpMRI prior to RALP. Preoperative mpMRI demonstrated a sensitivity of 39.2% and specificity of 89.3% for pathological EPE, and had a negative predictive value (NPV) of 50.2%, and positive predictive value (PPV) of 84.1%. The PPV of GG 5 tumors increased to 96.0% but NPV decreased to 12.0% (Table 1). On multivariable analysis, a cluster of patients with the most positive biopsy cores (8.64; 95% CI: 8.09-9.23), demonstrated significantly lower NPV relative to the other clusters (Table 2). Additionally, positive EPE on preoperative mpMRI was associated with a significantly decreased risk of positive surgical margins (RR: 0.655; 95% CI: 0.557-0.771).

Conclusions: Because negative mpMRI findings for EPE have low NPV in GG5 tumors and a cluster of patients with high volume disease, urologists should exercise caution in aggressive nerve sparing approaches in these patients. Findings of EPE on mpMRI seem to favorably influence margin status, likely by prompting a wider ipsilateral dissection.

Biopsy Grade Group	n	EPE Concern on MRI	EPE Prevalence on Pathology	Sensitivity	Specificity	Negative Predictive Value	Positive Predictive Value
GG 1-5	297/297 (100%)	82/297 (27.6%)	176/297 (59.3%)	39.2%	89.3%	50.2%	84.1%
GG 3-5	143/297 (48%)	48/143 (33.6%)	109/143 (76.2%)	40.4%	88.2%	31.6%	91.7%
GG 4-5	69/297 (23%)	32/68 (46.4%)	61/69 (88.4%)	49.2%	75.0%	16.2%	93.8%
GG 5	50/297 (17%)	25/50 (50%)	46/50 (92%)	52.2%	75.0%	12.0%	96.0%

Table 1: mpMRI detection of EPE by increasing tumor grade.

Trait	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Demographics				
Age at Diagnosis	62 [60-63]	57 [54-60]	61 [60-62]	62 [61-63]
Family History of Prostate Cancer	100% [100%-100%]	0% [0%-0%]	0% [0%-0%]	15% [9%-23%]
BMI	28 [27-29]	35 [29-42]	28 [27-29]	28 [27-29]
Disease State				
Preoperative Prostate Volume	44 [36-55]	48 [20-231]	53 [44-65]	41 [34-51]
PSA	8 [7-10]	7 [3-35]	8 [6-9]	10 [8-13]
Number of Positive Cores	5.04 [4.59-5.54]	7.00 [4.56-10.74]	3.43 [3.09-3.81]	8.64 [8.09-9.23]
Gleason Score	7.74 [7.55-7.93]	8.00 [6.87-9.13]	7.28 [7.13-7.43]	7.45 [7.29-7.6]
Grade Group	2.49 [2.37-2.6]	2.67 [2.01-3.32]	2.22 [2.09-2.34]	2.29 [2.18-2.4]
Group Frequencies	86	3	102	103
Predictive Value of MRI and Pathology Reports				
MRI % Positive	23% [14%-33%]	-	16% [10%-25%]	37% [27%-47%]
Pathologist % positive	65% [53%-75%]	-	48% [38%-59%]	71% [61%-79%]
Sensitivity	38% [26%-51%]	-	27% [17%-41%]	49% [39%-60%]
Specificity	91% [80%-96%]	-	93% [86%-97%]	79% [65%-88%]
Positive predictive value	87% [73%-94%]	-	75% [56%-88%]	86% [76%-92%]
Negative predictive value	48% [36%-59%]	-	63% [53%-72%]	37% [26%-49%]

Table 2: Clustering analysis of preoperative mpMRI accuracy in the detection of EPE.

Can We Better Evaluate Extraprostatic Extension (EPE) Before Surgery? The Use of Preoperative Prostate MRI EPE Scoring System to Predict Post-Prostatectomy Locally Advanced Prostate Cancer

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Background: Distinguishing between organ-confined disease and extraprostatic extension (EPE) is crucial for the treatment of patients with prostate cancer. EPE is associated with increased risk of recurrence, positive surgical margins, and metastatic disease. An enhanced preoperative assessment of presence and location of EPE can help not only guide surgical decision making as to the nerve-sparing approach, but also in counseling patients. An MRI-based EPE grading system was developed by Mehralivand et al in 2019 (Table 1); however, it has not been adopted in the Urology community. The purpose of this study is to examine the use of MRI-based EPE scoring in its ability to accurately detect EPE based on surgical pathology.

Methods: We conducted a retrospective chart review on a prospectively collected database of male patients who underwent a prostate MRI with EPE scoring by a trained genitourinary radiologist and subsequent robotic radical prostatectomy at our institution from September 2020 to December 2022. The associations between MRI EPE score (mEPE) and the presence of EPE on surgical pathology (pEPE) were examined using logistic regression.

Results: A total of 194 patients were identified in our analysis with a median age of 63 years and median PSA of 7 ng/mL. The rates of pEPE across mEPE scores are presented in Table 2. Among those with mEPE score 3, 96% had pEPE (Table 2). On univariable regression, those patients who had an mEPE score >= 2 had an increased risk of pEPE compared to those with mEPE score of 0 (OR 10.2; 95% CI 4.7-22.1, p<0.05). Furthermore, those with an mEPE score 3 were significantly more likely to have pEPE compared to those with mEPE score 0, 1 and 2 independently (Table 3).

Conclusions: MRI EPE is an easily definable tool that strongly correlates with the presence of pEPE. Moving forward, mEPE status could assist in counseling patients regarding nerve-sparing approach.

Table 1: Mehralivand Radiologic MRI EPE grading system

EPE Grade	Criteria
0	No suspicion for pathologic EPE
1	Either 1.5cm or greater curvilinear contact length or capsular irregularity and/or bulge
2	Both 1.5cm or greater curvilinear contact length and capsular irregularity and/or bulge
3	Frank EPE visible at MRI or invasion of adjacent anatomic structures

Table 2: Presence of pathologic EPE across MRI EPE scores

Characteristic	Highest Grade for EPE			
	0 66 (34%) ¹	1 52 (27%) ¹	2 53 (27%) ¹	3 23 (12%) ¹
EPE on pathology				
No	51 (77)	29 (56)	18 (34)	1 (4)
Yes	15 (23)	23 (44)	35 (66)	22 (96)
n (%)				

Table 3: Univariable Logistic Regression Model - EPE on Pathology

Characteristic	OR (95% CI) ¹
Prostate volume (g) from MRI report	0.99 (0.98, 1.00)
PIRADS score	
<=4	—
5	6.42 (3.37, 12.2)*
Highest grade for mEPE score	
0	—
1	2.70 (1.22, 5.97)*
2+	10.2 (4.70, 22.1)*
Highest grade for mEPE(3 reference)	
3	—
0	0.01 (0.00, 0.11)*
1	0.04 (0.00, 0.29)*
2	0.09 (0.01, 0.71)*
D'Amico Risk Classification category	
Low Risk	—
Intermediate Risk	0.69 (0.24, 1.98)
High Risk	1.62 (0.54, 4.83)

Trends in Prostate MRI Interpretation and Performance Over Time

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Background: Multiparametric MRI (mpMRI) is a standard of care approach for evaluation of clinically significant prostate cancer (csPCa) in men with elevated PSA or other risk factors. Criticisms have included radiologist learning curve and user-dependent interpretation. We evaluated trends in the interpretation of MRI and diagnostic accuracy of MRI fusion biopsy through a quality initiative.

Methods: Patients with no history of prostate cancer who underwent a 3T multiparametric MRI and TRUS fusion biopsy at a single center from 2017-2020 were retrospectively analyzed. csPCa was defined as Grade Group 2 (GG2) or greater, cancer volume >0.5 mL, or presence of extra-prostatic extension. Temporal trends in the probability of csPCa, GG2+ disease, positive biopsy on >50% of cores, perineural invasion, PIRADS 3, 4, or 5, csPCa among PIRADS 3 and 4/5 patients, as well as the association between PSA density and high grade (HG) disease in PIRADS 4/5 patients were evaluated with logistic regression. Trends in cancer volume were analyzed using ordinary least squares regression.

Results: During the study period, 311 subjects met inclusion criteria. The percentage of PIRADS 3, 4, and 5 findings were 18.3%, 29.9%, and 14.5%, respectively. There were increased odds of PIRADS 4/5 (OR 1.53, 95% CI: 1.27-1.84, p<0.001), csPCa (OR 1.40, 95% CI: 1.17 - 1.68, p<0.001), >50% positive cores (OR 1.80, 95% CI: 1.44-2.27, p<0.001), and perineural invasion (OR 1.81, 95% CI: 1.30-2.64, p<0.001) per year. Cancer volume increased by an average of 0.028 mL (SE: 0.0077, p<0.001) per year. csPCa was found in 17.5%, 46.2%, and 60% of PIRADS 3, 4 and 5 exams, respectively. Per year, the odds of finding csPCa in PIRADS 4/5 lesions (OR 1.27, 95% CI: 1.006-1.611, p=0.047) and PIRADS 3 (OR 1.52, 95% CI: 1.26-1.86, p<0.001) lesions significantly increased. Odds of finding HG cancer in PIRADS 4/5 lesions did not significantly change, but increased in PIRADS 3 lesions (OR 1.42, 95% CI : 1.17-1.74, p<0.001). PSA density >0.15 (OR: 2.31 CI:1.12-4.84, p=0.024) and log PSA density (OR 1.76, CI: 1.085-3.03, p=0.03) were associated with higher PIRADS 4/5 specificity.

Conclusions: Over time, odds of PIRADS 4/5 results and csPCa among PIRADS 3-5 lesions for men undergoing mpMRI for prostate cancer risk have increased, suggesting radiologists are becoming more adept and may reflect trends toward more aggressive cancer. Significant disease for PIRADS 5 was lower than expected. A continued challenge of mpMRI is assessment of negative predictive value, as those with normal imaging are often monitored rather than biopsied. Continued assessment of MRI accuracy and trends is essential to ensure high quality risk assessment.

Comparison of Trends and Safety of Same-Day Discharge for Robot-Assisted Laparoscopic Prostatectomy During the Pre-pandemic and Pandemic Periods: Findings from the National Cancer Database
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Background: The COVID-19 pandemic has placed significant stress on the already strained United States healthcare system. In particular, there was a lack of available hospital beds. While hospital systems prioritized those admissions to cancer patients needing urgent surgical procedures, they also encouraged early discharge to optimize resources and bed availability. Therefore, we sought to (1) evaluate the trends of same-day discharge for robot-assisted laparoscopic prostatectomy (RALP) in the "Pre-pandemic" and "Pandemic" periods and (2) examine the independent effect of same-day discharge on readmissions and mortality.

Methods: We queried the National Cancer Database to select men who underwent RALP with or without pelvic lymph node dissection for prostate cancer in the "Pre-pandemic" (2018-2019) and "Pandemic" (2020) periods. We compared patient sociodemographic and clinical data, facility type, and facility RALP volume quartiles for those who had same-day discharge versus non-same-day discharge. We used a multivariable logistic regression to report the odds of same-day discharge during the "Pandemic" compared to the "Pre-pandemic" period adjusting for covariates. Then, we used an inverse probability treatment weighting (IPTW) model adjusting for covariates to evaluate the independent effect of same-day discharge on 30-day readmissions, 30-day mortality, and 90-day mortality.

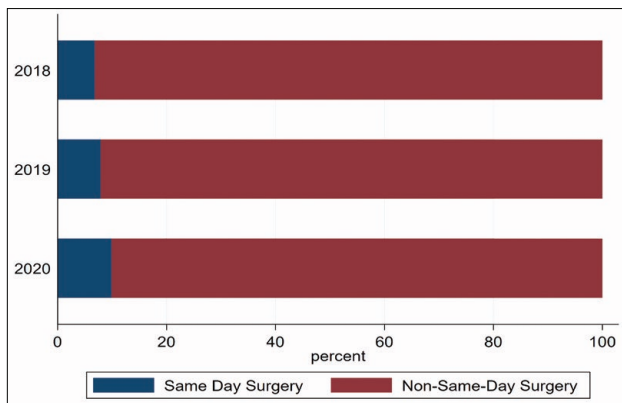
Results: Among the 111,117 men in the cohort, 8,997 (8.1%) had a same-day discharge (Table 1). The 2018-2020 trends in same-day discharge are depicted in Figure 1. Men with more comorbidities, non-private insurance, and high-risk prostate cancer were less likely to be discharged on the same day (p<0.001). Academic facilities and facilities in the top RALP volume quartile had a higher proportion of same-day discharge (p<0.001). Compared to the "Pre-pandemic" period, there was an increase in the odds of same-day discharge during the "Pandemic" period (aOR 1.38; 95%CI 1.31-1.45; p<0.001). After IPTW adjustment, we found no difference in the odds of 30-day readmissions (aOR 0.90; 95%CI 0.77-1.06; p=0.21), 30-day mortality (aOR 0.98; 95%CI 0.48-2.01; p=0.95), or 90-day mortality (aOR 1.09; 95%CI 0.61-1.98; p=0.77) between same-day and non-same-day discharges.

Conclusions: Same-day discharge for RALP has been safely and commonly used during the COVID-19 pandemic. Further institutional studies are warranted to (1) evaluate 30-day complications and (2) evaluate the role of enhanced recovery after surgery protocols that could facilitate same-day discharge after RALP.

Table 1: Comparison of baseline patient- and hospital-level characteristics for same-day discharge and non-same-day discharge for RALP.

	Non-Same Day discharge N=102,120	Same day discharge N=8,997	Total N=111,117	P-value	Raw Standardized Differences (%)	Weighted Standardized Differences (%)
Age						
<60	30,583 (29.9%)	2,827 (31.4%)	33,410 (30.1%)			
60-69	53,205 (52.1%)	4,648 (51.7%)	57,853 (52.1%)	0.004	-4.1%	0.8%
70-79	17,977 (17.6%)	1,501 (16.7%)	19,478 (17.5%)			
>80	355 (0.3%)	21 (0.2%)	376 (0.3%)			
Race/Ethnicity						
White non-Hispanic	78,219 (76.6%)	6,973 (77.5%)	85,191 (76.7%)			
Black non-Hispanic	14,002 (13.7%)	1,076 (12.0%)	15,078 (13.6%)			
Hispanic	5,528 (5.4%)	514 (5.7%)	6,042 (5.4%)	<0.001	-1.6%	1.1%
AANHPI	2,763 (2.7%)	262 (2.9%)	3,025 (2.7%)			
Other	686 (0.7%)	75 (0.8%)	761 (0.7%)			
Unknown	923 (0.9%)	97 (1.1%)	1,020 (0.9%)			
Charlson Comorbidity Index						
CCI = 0	82,083 (80.4%)	7,635 (84.9%)	89,718 (80.7%)	<0.001	-12.4%	1.0%
CCI ≥ 1	20,037 (19.6%)	1,362 (15.1%)	21,399 (19.3%)			
Insurance Coverage						
Private	53,679 (53.0%)	5,060 (56.9%)	58,739 (53.3%)			
Medicare	40,699 (40.2%)	3,339 (37.6%)	44,038 (40.0%)			
Medicaid	3,434 (3.4%)	244 (2.7%)	3,678 (3.3%)	<0.001	-9.3%	1.3%
Other Government	2,528 (2.5%)	166 (1.9%)	2,694 (2.4%)			
not insured	993 (1.0%)	82 (0.9%)	1,075 (1.0%)			
Educational Attainment						
High	56,604 (55.4%)	5,188 (58.1%)	61,792 (55.4%)	0.50	-0.6%	2.1%
Low	30,007 (29.4%)	2,705 (30.1%)	32,712 (29.4%)			
Census Median Income						
<\$38,000	11,344 (11.1%)	942 (10.6%)	12,286 (11.0%)			
\$38,000-\$47,999	17,355 (16.9%)	1,458 (16.3%)	18,813 (16.9%)	<0.001	9.1%	-1.8%
\$48,000-\$62,999	23,814 (23.3%)	1,946 (21.6%)	25,760 (23.1%)			
\$63,000+	34,063 (33.3%)	3,544 (39.5%)	37,607 (33.9%)			
D'Amico Risk Classification						
Low-risk	10,419 (10.2%)	972 (10.8%)	11,391 (10.2%)			
Intermediate-risk	59,893 (58.7%)	5,395 (60.0%)	65,288 (58.8%)	<0.001	4.7%	-1.8%
High-risk	28,428 (28.1%)	2,339 (26.2%)	30,767 (27.6%)			
Pelvic lymph node dissection						
No	20,333 (19.9%)	1,703 (18.9%)	22,036 (19.8%)	0.026	4.3%	-0.8%
Yes	81,732 (80.1%)	7,285 (81.1%)	89,017 (80.2%)			
Facility Type						
Academic	43,401 (42.5%)	4,468 (49.7%)	47,869 (43.1%)	<0.001	-17.7%	1.2%
Non-Academic	58,672 (57.5%)	4,526 (50.3%)	63,198 (56.9%)			
Facility RALP caseload						
Very-low volume	9,006 (8.8%)	829 (9.2%)	9,835 (8.9%)			
Low volume	28,533 (27.9%)	2,360 (26.2%)	30,893 (27.8%)	<0.001	14.4%	-2.0%
Moderate volume	28,983 (28.4%)	1,864 (20.7%)	30,847 (27.8%)			
High volume	35,598 (34.9%)	3,944 (43.8%)	39,542 (35.6%)			
Period						
Pre-pandemic	74,812 (73.3%)	5,985 (66.5%)	80,797 (72.7%)	<0.001	13.3%	1.3%
Pandemic	27,308 (26.7%)	3,012 (33.5%)	30,320 (27.3%)			
Outcomes						
30-Day Readmissions						
No	99,358 (97.6%)	8,757 (97.9%)	108,115 (97.6%)	0.067	-	-
Yes	2,429 (2.4%)	186 (2.1%)	2,615 (2.4%)			
30-Day Mortality						
No	71,659 (99.8%)	5,795 (99.8%)	77,454 (99.8%)	0.97	-	-
Yes	125 (0.2%)	10 (0.2%)	135 (0.2%)			
90-Day Mortality						
No	70,555 (99.8%)	5,596 (99.8%)	76,151 (99.8%)	0.99	-	-
Yes	176 (0.2%)	14 (0.2%)	190 (0.2%)			

† Standardized difference = difference in means or proportions divided by standard error. Imbalance is defined as an absolute value > 10% (small effect size).



Intensified Prostate Cancer Screening In Germline Carriers Of Rare Pathogenic Variants: Interim Results From The Initial Screening Round Of The PROGRESS Study

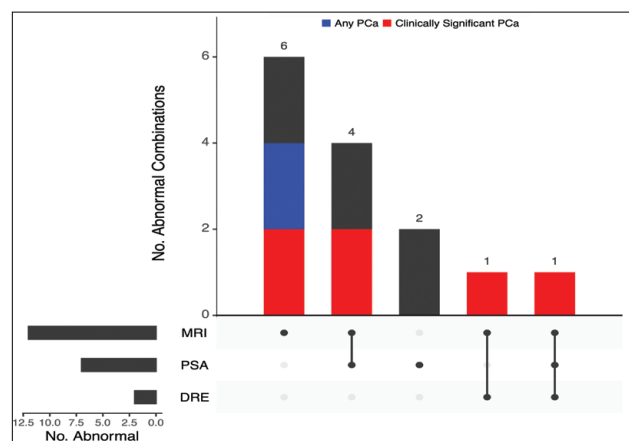
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Background: Men with germline pathogenic variants in prostate cancer risk genes (e.g., *BRCA2*) are at increased risk of developing aggressive prostate cancer and thus warrant special considerations regarding prostate cancer screening. The Prostate Cancer Genetic Risk Evaluation and Screening Study (PROGRESS) is evaluating an intensified screening program for men at high genetic risk for prostate cancer that incorporates prostate MRI-based screening for early detection of prostate cancer.

Methods: Men between 35-75 years old with a pathogenic/likely pathogenic germline variant in one of 19 prostate cancer risk genes and no prior diagnosis of prostate cancer were prospectively enrolled. Screening paradigm included annual DRE and PSA testing and a multiparametric MRI of the prostate every three years. PSA was considered elevated using an age-adjusted threshold of >1.5 ng/mL for 35-49 years of age, >2.0 ng/mL for 50-54 years of age, and >3.0 ng/mL for 55-70 years of age. Patients with an abnormal DRE, elevated age-adjusted PSA, or a positive MRI (PI-RADS ≥3) were recommended to undergo prostate biopsy.

Results: A total of 91 patients have been enrolled to date, 85 of whom have completed the first round of screening. Median age is 57 years (48-65), and median PSA is 0.87 ng/mL (0.58-1.52). Most patients harbored pathogenic variants in either *BRC2* (n=35 [41%]) or *BRC1* (n=31 [36%]). After the first round of screening, 2 (2%) patients had an abnormal DRE, 10 (12%) had an elevated age-adjusted PSA, and 12 (14%) had a positive MRI. All 12 patients with an abnormal MRI, and 2 patients with a normal MRI but elevated PSA, underwent prostate biopsy. MRI was the sole indication for biopsy in 6 of the 14 (43%) patients. Eight of the 14 (57%) patients were diagnosed with prostate cancer (3 *BRC1*, 3 *BRC2*, 1 *ATM*, 1 *TP53*), with clinically significant (grade group ≥2) disease present in half of patients on initial biopsy and another 2 patients on subsequent biopsy or surgical pathology. MRI-based screening did not miss any of the cancers, whereas age-adjusted PSA alone would have missed 5 of the 8 cancers (included 3 of 6 clinically significant cancers).

Conclusions: Our early findings suggest prostate cancer is prevalent among men with high-risk germline genetic variants. MRI-based screening may enhance early detection of prostate cancer beyond PSA-based strategies in this patient population.



Predictors of Positive Biopsy Following a PIRADS 3 Finding on MRI

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Background: MRI is increasingly utilized as an adjunct procedure in the evaluation of patients with elevated prostate-specific antigen (PSA). While the current consensus is to biopsy PI-RADS 4 and 5 lesions, recommendations for PI-RADS 3 lesions are less clear. Historically, the rates of PI-RADS 3 lesions harboring clinically significant (Gleason Grade Group ≥2) prostate cancer (csPCa) vary widely (2-30%). The objective of our study is to evaluate predictors of PCa and csPCa in patients with PI-RADS 3 lesions on MRI.

Methods: We queried our electronic records to identify patients with PI-RADS 3 lesions on MRI from 2014-2022 who subsequently underwent a software targeted (UroNav®) biopsy with concurrent systematic prostate biopsies. In a multifaceted design, patients positive vs negative for PCa on biopsy were compared on demographics, biopsy history and other clinical characteristics. A second analysis compared men positive for csPCa with all others (negative and Gleason Grade Group (GGG) 1). Chi square tests and Wilcoxon rank sum tests were used for analyses of categorical and continuous variables respectively. Logistic regressions were used to explore the independence of predictors, limited in scope by the volume of positive biopsy findings. A separate set of analyses focused only on the MRI targeted cores exploring potential predictors, such as lesion size and location that are specific to the lesion. Given that each set of analyses was repeated for PCa and csPCa, a Bonferroni correction was applied; p<0.025 was used as the criterion value to achieve an overall significance level of p<0.05.

Results: 184 patients met inclusion criteria; 16/184 (8.7%) patients had csPCa; 51/184 (27.7%) patients had any PCa. For the main analyses, age, lack of prior biopsy, prostate size, and PSA density were associated with PCa diagnosis; age, prostate size, and PSA density were associated with csPCa (Table 1). PSA density remained strongly associated with both PCa (OR (95% CI) = 4.1 (1.9- 8.9); p<0.001) and csPCa (OR =12.6 (3.7-43.1); p<0.001) in multivariate analyses independent of age and prior biopsy which were significant for all PCa but not csPCa (Table 2). At the individual lesion level, 30/200 (15.0%) of the targeted biopsies demonstrated PCa; 14/200 (7.0%) harbored csPCa. There was a higher proportion of anterior lesions among those positive for PCa and csPCa but the associations were not significant in this small sample.

Conclusions: With low rates of csPCa, patients with PI-RADS 3 lesions are faced with significant uncertainty. Prostate size, age, and especially PSA density are other factors to consider and may help clinicians identify those men for whom biopsy would be most beneficial.

Patients: combined random and targeted biopsies	No PCa (n=133)	All PCa (n=51)	p	No PCa and GGG1 (n=168)	csPCa (n=16)	p
Age (years) ¹	62.0 (58.0-67.5)	66.0 (61.0-69.0)	0.01	63.0 (58.0-68.0)	68.0 (63.5-70.5)	0.02
Positive family history, n (%)	35 (26.3)	19 (37.3)	0.15	48 (28.6)	6 (37.5)	0.57
Race, n (%)			0.80			0.92
Caucasian	107 (80.5)	44 (86.3)		137 (81.5)	14 (87.5)	
African American	9 (6.8)	4 (7.8)		12 (7.1)	1 (6.3)	
Asian	3 (2.3)	1 (2.0)		4 (2.4)	0 (0.0)	
Other	8 (6.0)	1 (2.0)		8 (4.8)	1 (6.3)	
Unknown	6 (4.5)	1 (2.0)		7 (4.2)	0 (0.0)	
Latino Ethnicity, n (%)			0.27			0.46
Yes	5 (3.8)	1 (2.0)		5 (3.0)	1 (6.3)	
No	119 (89.5)	50 (98.0)		154 (91.7)	15 (93.8)	
Unknown	9 (6.8)	0 (0.0)		9 (5.4)	0 (0.0)	
BMI ^{1,2}	28.2 (25.8-31.9)	27.6 (24.8-30.4)	0.29	27.9 (25.8-31.1)	27.1 (24.2-30.5)	0.46
Prior negative biopsy, n (%)	84 (63.2)	18 (35.3)	0.001	95 (56.5)	7 (43.8)	0.32
Abnormal DRE, n (%) ²	18 (13.7)	7 (14.3)	1.00	23 (13.9)	2 (14.3)	1.00
PSA (ng/dL) ¹	7.1 (5.1-10.1)	6.5 (4.9-11.7)	0.97	6.8 (5.0-10.0)	8.4 (6.0-16.1)	0.08
Prostate size on MRI (cc) ¹	72.0 (52.8-102.8)	53.3 (38.3-69.0)	<0.001	69.0 (51.5-96.9)	39.5 (29.1-46.1)	<0.001
PSA density (ng/dL/cc) ¹	0.09 (0.07-0.13)	0.13 (0.08-0.20)	<0.001	0.09 (0.07-0.14)	0.18 (0.15-0.32)	<0.001
4k score ^{1,2}	13.5 (6.2-26.0)	13.0 (8.5-26.0)	0.81	13.0 (7.0-26.0)	16.5 (7.8-45.0)	0.65
Lesions: targeted biopsies only ²						
No PCa (n=170)		All PCa (n=30)	p	No PCa and GGG1 (n=186)	csPCa (n=14)	p
Lesion size (cm) ¹	1.1 (0.9-1.4)	1.2 (0.9-1.5)	0.23	1.2 (0.9-1.4)	1.2 (0.9-1.5)	0.60
Anterior, n (%) ²	23 (15.1)	8 (30.8)	0.09	26 (15.7)	5 (41.7)	0.04
Peripheral zone, n (%) ²	104 (63.8)	17 (60.7)	0.75	112 (62.9)	9 (69.2)	0.77

¹ Median (IQR)
² Sample sizes (and denominators for categorical variables) vary due to missing data.

Patient Characteristic	Predicting all PCa		Predicting clinically significant PCa	
	Odds ratio (95% CI)	p	Odds ratio (95% CI)	p
PSA density (>0.15) (ng/dL/cc)	4.1 (1.9-8.9)	<0.001	12.6 (3.7-43.1)	<0.001
Age (continuous)	1.1 (1.0-1.1)	0.004	1.1 (1.0-1.2)	0.041
No prior negative biopsy	4.2 (2.0-8.9)	<0.001	2.2 (0.7-6.9)	0.176

Association Between Pelvic Lymph Node Dissection and Survival Among Patients with Prostate Cancer Treated with Radical Prostatectomy

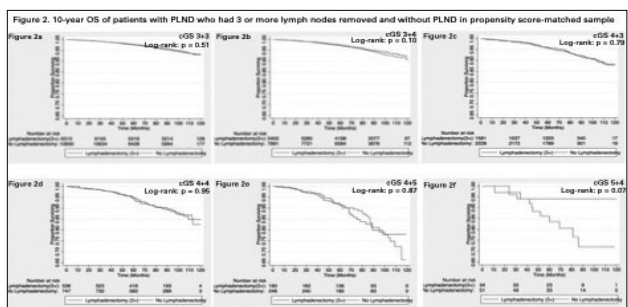
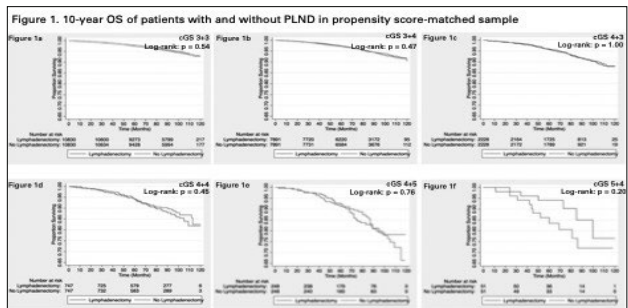
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Background: Pelvic lymph node dissection (PLND) is an accepted standard in prostate cancer patients undergoing radical prostatectomy (RP). Although the clinical benefits of pelvic lymph node dissection (PLND) at the time of RP for prostate cancer remain uncertain, major guidelines recommend PLND based on the risk profile. Thus, the objective of this study was to examine the association between PLND and survival among patients undergoing RP stratified by Gleason grade group (GG) with the aim of allowing patients and physicians to make more informed care decisions about the potential risks and benefits of PLND.

Methods: From the SEER-17 database, we examined overall (OS) and prostate cancer-specific (PCSS) survival of prostate cancer patients who underwent RP from 2010 to 2015 stratified by clinical Gleason score (cGS) (3+3, 3+4, 4+3, 4+4, 4+5, and 5+4). We applied propensity score matching to balance pre-operative characteristics including race, age, and PSA between patients who did and did not undergo PLND for each cGS. Statistical analyses included log-rank test and Kaplan-Meier curves using Stata.

Results: We extracted a matched cohort from 79,222 patients who underwent RP with cGS ranging from 3+3 to 5+4. The median PSA value was 6.0 ng/mL, and the median age was 62-years-old. 48,495 patients underwent PLND (61.21%), while 30,727 (38.79%) did not undergo PLND. There was no difference in OS and PCSS between patients who received PLND and those who did not undergo PLND for all cGS categories (OS - 3+3: p=0.54, 3+4: p=0.47, 4+3: p=1.00, 4+4: p=0.45, 4+5: p=0.76, 5+4: p=0.20; PCSS - 3+3: p=0.05, 3+4: p=0.71, 4+3: p=0.91, 4+4: p=0.44, 4+5: p=0.78, 5+4: p=0.51) (Figure 1). Similarly, patients who underwent adequate PLND with 3 or more lymph nodes removed did not observe a difference in OS nor PCSS compared to their matched counterparts who did not undergo PLND with the exception of 3+3 patients with adequate PLND who actually experienced worse PCSS (OS - 3+3: p=0.51, 3+4: p=0.10, 4+3: p=0.79, 4+4: p=0.95, 4+5: p=0.87, 5+4: p=0.07; PCSS - 3+3: p=0.02, 3+4: p=0.60, 4+3: p=0.90, 4+4: p=0.26, 4+5: p=0.37, 5+4: p=0.38) (Figure 2).

Conclusions: In this observational study, PLND at the time of RP as well as generally an adequate PLND with 3 or more lymph nodes removed was not associated with improved OS or PCSS among patients with cGS of 3+3, 3+4, 4+3, 4+4, 4+5, and 5+4. These findings suggest that until definitive clinical trials are completed, prostate cancer patients who have elected RP should be appropriately counseled on the potential risks and the lack of proven survival benefit of PLND.



Perioperative Outcomes and Cost Differences Between Open and Robotic Vesicovaginal Fistula Repair

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Background: Vesicovaginal fistulae are the most commonly acquired fistula of the genitourinary tract globally, likely related to obstetrical complications in the developing world. Although less common in the US, VVF are most often associated with iatrogenic injury during gynecological procedures. Supra-trigonal fistulae have traditionally been managed with open abdominal repair. However, given the recent widespread adoption of robotics in urologic surgery, there has been a trend towards minimally-invasive surgery (MIS). In this study, we sought to evaluate intraoperative and postoperative outcomes and costs for the open and robotic approach to determine feasibility of widespread adoption of a MIS technique.

Methods: We performed a retrospective cohort study of adult women undergoing open and robotic VVF repair from 2011 to 2020. The data were abstracted from the Premier Hospital Database (PHD), a national hospital discharge dataset representing approximately 20% of non-federal hospital discharges in the United States, using relevant ICD and CPT codes. We assessed for an association between surgical approach (open vs robotic) and postoperative outcomes including 90-day surgical complications, operating room time, need for blood transfusion, length of stay, readmissions and 90-day overall costs. All multivariable logistic and quantile regression models were controlled for clinical, demographic and hospital factors.

Results: A total of 1,072 women in PHD underwent vesicovaginal repair during the 10-year period of the study. There were no differences between the surgical approaches for 90-day minor (Clavien grade 1-2), major (Clavien grade 3-5) complications, intraoperative and postoperative hemorrhage, or 90-day readmission. The robotic approach was associated with a longer median operating room time (+78 min, 95% CI: 42 to 113 min, p<0.0001), a minimally shorter hospitalization (-0.6 day, 95% CI: -1.2 to -0.05 days, p=0.034), and higher 90-day cost (+US\$3,024, 95% CI: \$1,254 to \$4,793, p=0.001).

Conclusions: Despite the national trend towards robotic surgeries, open VVF offers comparable outcomes compared to the robotic approach while keeping healthcare costs low. Therefore, optimal surgical approach should be guided by patient factors and surgeon preference.

P2

The Risk of Fillers in Penile Enhancement

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Background: In the quest for enhanced penile size, men have sought out options and supported the development of many Men’s Health clinics. These clinics advertise injections and guarantee success, generally with a hefty cash only price tag. Fillers of organic materials have been described, including hyaluronic acid, polymethylmethacrylate and other substances, some of which may be inorganic, such as silicone. Many fillers cause uneven distribution and nodule formation, prompting efforts by industrious clinicians to develop novel substances. Unfortunately, fillers represent foreign bodies within tissue and are at risk for infection, which can be catastrophic. We present a case of penile abscess formation after placement of two rounds of fillers.

Methods: A 39 yr old man found a Male Enhancement clinic advertising improved “sexual morale and self esteem” using a proprietary blend of permanent fillers via the LEEP (Loria’s Elongation and Extension Penile) procedure. Two procedures were performed 6 months apart in the office under local therapy. The patient was instructed to wrap the penis with gauze for 35 days (change every 4-5 days). He noticed yellow drainage immediately after the second injection and was given 3 courses of oral antibiotics (5-15 days, each) at his cosmetic surgeon’s instructions. Eight weeks post injection, penile swelling increased significantly along with fevers up to 103. He was admitted for IV antibiotics, imaging, surgical incision and drainage, repeat debridement, and VAC dressing application.

Results: Ultrasound was initially obtained, but echogenic debris prevented adequate evaluation. MRI revealed evidence of substance along the entire length of the penis into the suprapubic area (no air). A small amount of material was seen within one corporal body. Frank purulent material was expressed and sent for culture, ultimately growing Group B and G Strep. While tempting to remove the entire shaft skin given its appearance, we left all skin that revealed some evidence of blood flow on needle prick (approximately 1/3 of the shaft skin was removed). On day 5, a VAC dressing was placed (see attached images for patient course). At first change, the wound had evidence of granulation tissue and further debridement and skin removal were not indicated. Fevers resolved and entry into the corpora wasn’t necessary. Skin grafting was planned.

Conclusions: Most published articles in the sphere of penile enhancement using fillers are reported by dermatologists and plastic surgeons, with urologists much less involved. However, urologists are the ones likely to deal with the complications. Not knowing what the filler is can lead to degloving and aggressive debridement, which can lead to devastating results for these young men. While alarming in appearance both grossly and on imaging, we found “less is more” to be the preferred approach. Urologists should inform themselves of what is being done in their communities and resist the temptation to over debride.



P3

Voiding Dysfunction Among Older Adults with Non-Muscle Invasive Bladder Cancer: Incidence and Predictors of Treatment for Overactive Bladder

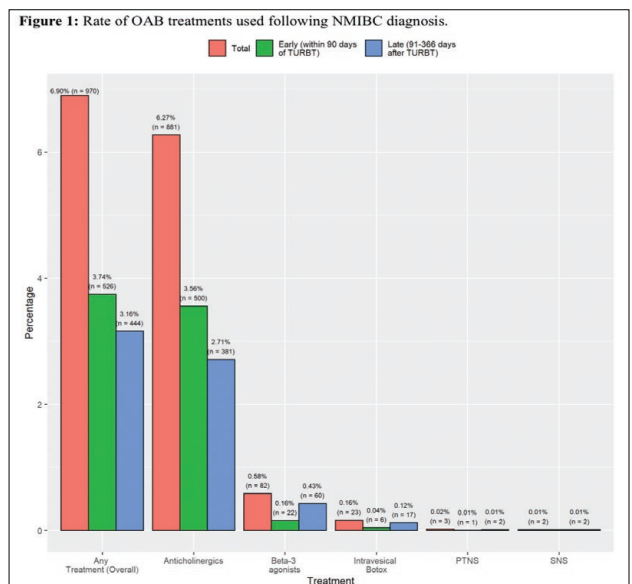
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Background: Non-muscle invasive bladder cancer (NMIBC) is a chronic disease with a lifelong treatment burden. Although survival rates are excellent, the treatments for NMIBC, including endoscopic resection and intravesical therapy, may cause substantial morbidity in urinary function. Such quality of life changes remain notably understudied. We therefore evaluated the incidence and predictors of treatment for overactive bladder (OAB) among older adults following an incident diagnosis of non-muscle invasive bladder cancer.

Methods: We identified adults aged 66-89 years with newly diagnosed NMIBC from 2007-2017 in the linked SEER-Medicare database. We excluded patients with a pre-existing diagnosis of OAB or receipt of OAB treatment in the 12 months before bladder cancer diagnosis. Treatments for OAB were identified using Part D, inpatient, and outpatient Medicare claims. We examined the incidence of treatment initiation for OAB following initial transurethral resection of bladder tumor (TURBT), and evaluated associations with baseline characteristics using Cox regression.

Results: The study cohort included 14,047 patients, of whom 67% had Ta disease, 29% had T1 disease, and 4% had CIS. Within the first 12 months of TURBT, 7% of patients received treatment for OAB (Figure 1), and this increased to 16% of patients at 5 years. In the first year, the most utilized therapies were anticholinergic medications (early 3.6%, late 2.7%) and beta-3 agonists (early 0.2%, late 0.4%), while third-line OAB therapy utilization was rare (0.2%). However, third-line OAB therapy utilization increased to 0.8% at 5-years. On multivariable analysis, the following factors were independently associated with an increased risk of OAB treatment: female gender (HR 1.12, 95% CI 1.02-1.25), younger age (HR 0.99, 95% CI 0.99-1.00), congestive heart failure (HR 1.15, 95% CI 1.01-1.31), sleep apnea (HR 1.21, 95% CI 1.03-1.41), high-grade tumor (ref- low grade HR 1.27, 95% CI 1.16-1.40), and T1 tumor stage (HR 1.29, 95% CI 1.16-1.43 vs. Ta).

Conclusions: The incidence of OAB requiring treatment among patients with NMIBC is not insignificant, with approximately 1 in 6 patients receiving treatment by 5 years after diagnosis. Predictive clinicopathologic features for OAB treatment - including age, sex, and high-risk tumor features - may be useful for clinical counseling.



P4

Heresy - Is There a Role for Ultrasound in Management of Non-Palpable Testicle?

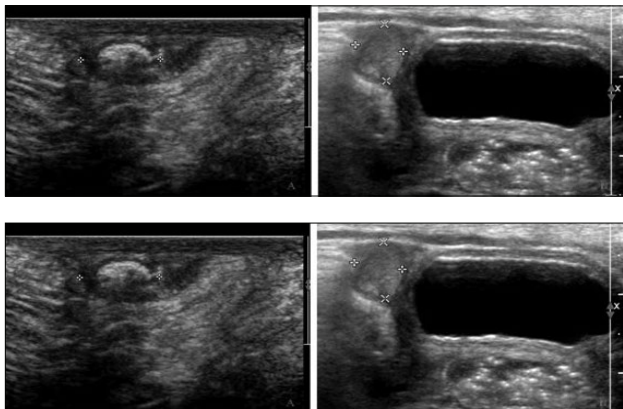
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Background: AUA Guidelines do not support routine use of ultrasound (US) in evaluation of boys with an undescended testicle (UDT) prior to referral to a urologist. Multiple studies including data from the 1980s demonstrate that real time US is inferior to physical examination by a pediatric urologist in detecting an UDT. However, improved US technology, which now permits detection of the non-palpable testis located just proximal to the internal ring, may aid in guiding the surgical approach to the non-palpable testis. We evaluated US findings of boys deemed to have a non-palpable testis and compared them to surgical findings.

Methods: US of boys with non-palpable testis, as reported by a pediatric urologist on physical exam, during a 3-year period, were reviewed. All US were performed jointly by a technician and pediatric radiologist. Patient demographics, laterality, and intra-operative findings were assessed.

Results: Thirty-two boys with a non-palpable testicle on physical exam underwent scrotal/inguinal US at a median age of 7.5 months (IQR 2.5 - 12.3 months). Three patients had bilateral non-palpable testicles, 21 had a non-palpable left sided testicle and 8 had a non-palpable right sided testicle. Of the 35 non-palpable testes, 5 (14.3%) were identified in the inguinal canal. [Figure 1A] 18 (51.4%) were visualized in an intra-abdominal position just proximal to the internal ring. [Figure 1B] Four (11.4%) nubbins or very atrophic testes were identified in the inguinal region or scrotum and 5 (14.3%) testes were not identified on US. Three (8.6%) testes were found to be mobile between just proximal to the internal ring and the inguinal canal. Of the 23 patients (26 testes) who had a viable testicle reported on US and underwent surgical exploration, 22 patients (95.6%) had a viable testis on surgical exploration. Three of the 4 cases of testicular nubbins elected for inguinal surgical exploration, with the testicular remnant identified and excised in all. Of the 8 patients with testis that were identified in the inguinal canal, or mobile between abdomen and inguinal canal, 7 avoided a diagnostic laparoscopy and underwent an inguinal orchiopexy. Of the 19 testicles located [in an intra-abdominal position] just proximal to the internal ring, only 3 underwent laparoscopic orchiopexy. All 5 patients with no testis identified on US underwent diagnostic laparoscopy, with 3 intra-abdominal testes identified.

Conclusions: US in the evaluation of cryptorchidism can guide surgical management in select cases in which a testis is non-palpable following careful examination by a urologist.



P5

Genital Remodeling: A Safe and Effective Alternative to Neovaginoplasty

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Background: Penile inversion neovaginoplasty (NVG) remains the most common genital procedure performed for male-to-female gender affirmation. NVG includes orchiectomy, clitoroplasty, urethroplasty, creation of a neovagina, and labiaplasty. At our institution, Genital Remodeling (our own term; GR), also known as vulvoplasty or zero depth vaginoplasty, is offered as an alternative to neovaginoplasty. GR differs from NVG intraoperatively in that a neovaginal space is not developed and the penile skin (flap) and scrotal skin (graft) are not used to create the neovagina. GR and NVG are similar in construction of the neoclitoris, clitoral hood, labia minora and majora, mucosal strip, and urethral meatus. While the rationale for selection and outcomes of NVG have been comprehensively characterized, those for GR remain poorly described. Therefore, this study aims to characterize the demographics, selection rationale, complications, and sexual endpoints of patients undergoing GR using the largest patient population to date.

Methods: This study is a retrospective analysis of 63 patients who had their GR between January 1, 2016 and February 28, 2023. Demographics, surgical characteristics, reasons for selection of GR, complications, and sexual outcomes were analyzed. All intra- and post-operative complications were classified using the five tier Clavien-Dindo grading system.

Results: A total of 63 patients were included in this study. The average age of patients was 52.88±17.15 years. The mean BMI was 28.06±5.07 kg/m². The primary reason for selection of GR, and not NVG, was a lack of interest in neovaginal penetrative sexual activity (87.3%). Of the total cohort, 28.6% either solely or additionally felt that a neovagina was not necessary to address their gender dysphoria. In addition, 14.3% also cited concerns with neovaginal dilation/maintenance, 14.3% mentioned older age-related concerns, 9.5% cited a desire for less post-operative burden and rehabilitation, and 7.9% had concerns regarding their comorbid medical conditions. Intraoperative and postoperative complications were experienced by 11 out of 63 patients (17.5%). Of the 12 complications, 10 were Grade I or II (83%). Out of the two Grade IIIb complications that occurred, one was hematoma and the second was wound dehiscence, both of which required re-operative intervention within the first days post-operatively. Sexual outcome endpoints were fully collected for 55 patients, of which 91% reported satisfaction with their external genitals. A sensate clitoris was reported by 94% (51/54) of those who had self-stimulated. An orgasmic response was experienced by 76.9% (30/39) of patients who desired that outcome.

Conclusions: In this long-term retrospective analysis, we found that GR is a safe and effective gender affirming procedure for those that do not desire a neovagina. Genital remodeling has high rates of sexual outcome satisfaction and low incidences of intraoperative and post-operative adverse events. Reasons for selecting genital remodeling are numerous, varied, and deeply personal.

P6

P7

Development of Postoperative Bladder Neck Contracture and Urethral Stricture after Holmium Laser Enucleation of the Prostate

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Background: Holmium laser enucleation of the prostate (HoLEP) is an effective treatment for benign prostatic hyperplasia. Like other transurethral surgeries, complications such as bladder neck contracture (BNC) and urethral stricture (US) may occur and can lead to voiding dysfunction. This study compares perioperative variables in patients with and without BNC and US after HoLEP and hypothesizes that risk factors seen in other transurethral procedures will also be identified in patients with post-HoLEP BNC and US.

Methods: We retrospectively identified patients who underwent HoLEP performed by a single surgeon between April 2019 and April 2022. Patients with postoperative BNC or US were identified. Perioperative characteristics including age, body mass index (BMI), medical history, intraoperative findings, operative time, length of stay, postoperative post void residual (PVR), and American Urological Association symptom score (AUASS) and quality of life (QOL) score were assessed. In order to assess the potential effects of experience on complication rate, cases were split into 12-month intervals and compared. Student's t-test and Pearson chi squared were used for statistical analysis using two-sided tests and significance was determined at a p-value less than 0.05.

Results: Of 497 patients who underwent HoLEP, 17 (3.4%) developed BNC and 23 (4.6%) developed US with a mean follow up of 18.9 months (range 6-42.7 months). BNC and US were diagnosed, on average, 7.7 ± 4.1 and 7.9 ± 6.5 months after HoLEP surgery, respectively. Patients who developed BNC or US, respectively, were more likely to be older than 65 years of age (p=0.03, p=0.05) and have a history of myocardial infarction (MI) (p=0.004, p=0.03) compared to those without BNC or US. Intraoperatively, patients who developed US were more likely to have US at the time of HoLEP surgery (p=0.001). Patients who developed BNC or US were more likely to have increased postoperative PVRs (p<0.001, 0.02) and AUASS QOL scores (p=0.04, 0.02) at 3-6 months. Postoperative US was more common in patients who developed BNC (p<0.001) and postoperative BNC was more common in patients who developed US (p<0.001). Other variables shown in Table 1. There were no significant differences seen in the rate of BNC (p=0.22) or US (p=0.07) after HoLEP by year of experience (Table 2).

Conclusions: Postoperative US may be associated with intraoperative US at the time of HoLEP. Age greater than 65 years and history of myocardial infarction may be associated with postoperative BNC or US. The findings of this work suggest that PVRs at initial void trial and 1 month visit may not be sufficient to assess for impending BNC or US and longer follow up may be warranted in higher risk patients. The rates of postoperative BNC or US do not significantly decrease with increased case volume.

Table 1: Perioperative Characteristics for Patients Undergoing HoLEP

	No BNC	BNC	p-value	No US	US	p-value
Age >65 years	65.0% (286)	88.2% (15)	0.05	64.7% (281)	89.0% (20)	0.03
BMI (kg/m ²)	27.8 ± 4.6	27.3 ± 3.4	0.65	27.8 ± 4.5	26.1 ± 4.8	0.07
Pre-op Retention	46.0% (202)	58.8% (10)	0.30	46.5% (202)	45.5% (10)	0.92
Pre-op PVR (mL)	233.8 ± 330.2	244.9 ± 199.9	0.91	234.7 ± 330.6	222.8 ± 243.9	0.88
Hx BNC	0.7% (3)	0% (0)	0.73	0.7% (3)	0% (0)	0.69
Hx US	3.2% (14)	5.9% (1)	0.54	3.0% (13)	8.7% (2)	0.14
Hx MI	5.9% (26)	23.5% (4)	0.004	6.0% (26)	17.4% (4)	0.03
Hx Diabetes	16.8% (74)	29.4% (5)	0.18	17.3% (75)	17.4% (4)	0.99
Hx CKD	4.8% (21)	5.9% (1)	0.83	5.1% (22)	0% (0)	0.27
Intraop BNC	0.2% (1)	0% (0)	0.84	0.2% (1)	0% (0)	0.82
Intraop US	2.5% (11)	0% (0)	0.51	1.8% (8)	13.0% (3)	0.001
Prostate Size (grams)	68.6 ± 55.4	56.1 ± 39.9	0.36	68.9 ± 55.7	54.0 ± 35.2	0.21
Operative Time (min)	112.4 ± 53.2	98.4 ± 37.9	0.28	112.1 ± 53.4	109.3 ± 40.4	0.81
Days Admitted	0.5 ± 0.9	0.4 ± 0.5	0.39	0.6 ± 0.9	0.2 ± 0.4	0.07
Catheterization Duration (days)	2.1 ± 2.8	2.3 ± 1.3	0.71	2.1 ± 1.8	2.5 ± 1.4	0.34
PVR at VT (mL)	47.2 ± 78.3	46.4 ± 55.5	0.97	45.9 ± 77.9	69.8 ± 67.8	0.19
PVR 1 mo PO (mL)	44.7 ± 97.3	57.0 ± 102.0	0.81	43.9 ± 97.6	74.6 ± 83.1	0.41
PVR 3-6 mo PO (mL)	41.3 ± 95.2	163.75 ± 194.68	<0.001	41.5 ± 95.5	108.1 ± 166.1	0.02
AUASS QOL 1 month	11.3 ± 8.4	12.5 ± 12.7	0.78	11.0 ± 8.2	18.5 ± 14.2	0.08
AUASS QOL 3-6 month	7.8 ± 6.5	14.5 ± 5.7	0.04	7.8 ± 6.2	14 ± 11.0	0.02
PO US	3.4% (15)	47.1% (8)	<0.001	-	-	-
PO BNC	-	-	-	2.1% (9)	34.8% (8)	<0.001

Table 2: Postoperative US and BNC after HoLEP by year

	Year 1	Year 2	Year 3	p-value
BNC	0/56 (0%)	8/157 (5.1%)	9/244 (3.7%)	0.22
US	0/56 (0%)	12/157 (7.6%)	11/244 (4.5%)	0.07

TNF-alpha Inhibitor Therapy Suppresses Growth of the Prostate Gland
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Background: Previous studies have established a relationship between prostate inflammation and the development of BPH. Steroid 5 alpha reductase type 2 (SRD5A2) is a pivotal enzyme in the development and growth of the prostate gland and the critical target for BPH therapy. We previously demonstrated that tumor necrosis factor alpha (TNF-a) regulates the epigenetic change of SRD5A2, leading to suppression of SRD5A2 gene and protein expression. However, little is known whether TNF-a inhibitor therapy affects prostatic growth. Here we aimed to evaluate the effect of TNF-a inhibitor therapy on the growth rate of prostate through analyzing the data of serial pelvic imaging scans.

Methods: In this retrospective cohort study, electronic records at Beth Israel Deaconess Medical Center were searched for men aged 18 and over who had serial pelvic Images (MRI or CT scans) while receiving TNF-a inhibitors. 99 men were included in the treatment cohort after applying exclusion criteria (TNF-a treatment duration < 1 year, any pelvic/prostate surgery/radiation, use of 5ARIs, advanced prostate cancer, androgen deprivation therapy, testosterone therapy, poor image quality, or imaging interval <1 year). An age-matched cohort was constructed with the same inclusion/exclusion criteria but absent TNF-a therapy (n=99). The total prostate volume (TPV) was measured and calculated from baseline and follow-up imaging. Clinical data was collected for all men.

Results: There were no significant differences between the two groups in age, demographics, BMI or comorbidities. Mean baseline TPV was similar in the TNF-a inhibitor therapy group and control group (27.52±8.9 cc vs 27.3±9.6 cc, p-value: 0.71). For the entire cohort, the average imaging follow up duration was 3.79±0.32 years with no significant difference between the treatment and control groups. The median growth rate for men in the treatment cohort was significantly lower than those in the control group (-0.01 cc/year IQR= 1.2 compared to 0.68 cc/year IQR= 2.8, P-value 0.001). In a multiple regression model adjusting for age, race, initial TPV and BMI, men in the treatment group still had a significantly lower growth rate compared to the control group (-0.03 cc/year IQR: 0.82 vs 0.67 cc/year IQR: 0.93, p-value: 0.001).

Conclusions: TNF-a inhibitors are negatively correlated with prostatic growth. Men with autoimmune diseases who are treated with TNF-a inhibitors may experience fewer urinary symptoms related to prostatic enlargement. Our study suggests that inflammatory mediators regulate prostatic growth.

P8

Contemporary Time Trend Analysis of Caffeine and Alcohol Intake Among Patients with Urge Incontinence

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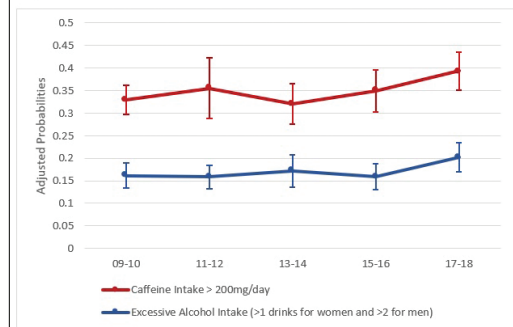
Background: Urge urinary incontinence (UII) affects a substantial number of individuals in the United States. Behavioral therapies, including dietary modifications, have been recommended as first-line treatment since the 2012 guidelines from the American Urological Association/Society of Urodynamics, Female Pelvic Medicine, and Urogenital Reconstruction (AUA/SUFU). We aimed to investigate the national trend of caffeine and alcohol adherence in the past decade, around the time of the 2012 recommendations.

Methods: We utilized data from the National Health and Nutrition Examination Survey 2009-2018 and included all adult individuals who reported UII. The primary outcomes of interest were caffeine and alcohol consumption, represented in binary as moderate consumption vs. above moderate consumption, while the primary independent variable of interest was the years of the survey, stratified into before and after 2012. Univariable and multivariable logistic regression were conducted to analyze patient-level factors associated with the level of alcohol and caffeine consumption. Adjusted difference-in-difference analyses were conducted to understand the time trend.

Results: A total of 7,043 individuals were included in the study. Among them, 71% and 83% had moderate caffeine and alcohol intake, respectively, while 29% and 17% had above moderate intake. In multivariable analysis, the year of the survey was not significantly associated with above moderate caffeine or alcohol consumption. Adjusted difference-in-differences analyses did not show a statistically different change in trend after the 2012 recommendations ($p=0.79$ and 0.80 , respectively).

Conclusions: A sizable proportion of individuals with UII are consuming more than moderate alcohol and caffeine. We did not observe a significant change in trend since the recommendations from the 2012 AUA/SUFU guidelines. Our study highlights the need for healthcare providers to identify effective strategies to improve UII patient adherence to dietary modifications, which could reduce the potential adverse effects from over-medication.

Figure 1. Adjusted Probabilities of Moderate Alcohol and Caffeine Intake Among Patients suffering from Urge Incontinence from 2009-2018



¹Moderate Alcohol Intake is defined as <14g/day for women and <28g/day for men, corresponding to 1 and 2 standard drinks. Moderate Caffeine intake is defined as <200 mg/day for both men and women.

P9

Dr. ChatGPT: Correlation Between a Novel AI Chatbot and AUA Male Sexual Dysfunction Guidelines

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Background: The advent of artificial intelligence (AI) chatbots like ChatGPT will fundamentally change clinical practice due to the convenience and accessibility of medical answers for patients and providers. Despite training on a vast amount of data, however, the model can still generate incorrect responses due to limitations of large-scale language models. It is important for medical providers to be aware of these tools and the potential for misinformation. There is an urgent need to validate ChatGPT's responses to questions about common conditions, especially sensitive ones where patients frequently turn online for answers.

Methods: Focusing on male sexual dysfunction as a test group, we performed a qualitative study comparing ChatGPT generated answers to current American Urological Association (AUA) practice guidelines for erectile dysfunction, Peyronie's disease, and disorders of ejaculation. A single query was designed for each guideline statement to elicit details of the statement. ChatGPT responses were compared to existing guidelines for accuracy and completeness by a board-certified urologist specializing in andrology. Differences in accuracy and completeness among the conditions and strength of recommendation groups were calculated using chi-square and Fisher Freeman Halton tests. SPSS v26 was used for comparative statistics and Statology online for one sample proportion test.

Results: When queried regarding 73 guideline statements from three AUA male sexual dysfunction guidelines, ChatGPT answers included inaccurate and incomplete information in 30% (CI 20-41%) and 36% (CI 25-47%) of responses, respectively (Table 1). Each of these frequencies is significantly different from 0 ($p < 0.0001$). There were no significant differences in accuracy ($p=0.16$) or completeness ($p=0.99$) between each condition guideline. Additionally, the variability in accuracy ($p=0.52$) and completeness ($p=0.39$) between strength of recommendation groups was not statistically significant.

Conclusions: Approximately one-third of ChatGPT responses to male sexual dysfunction guideline-based questions contained inaccurate or incomplete information. AI-powered chatbots will be the future for immediate-access medical answers but caution must be exercised as these language models are improved.

Table 1. Evaluation of ChatGPT responses to queries specific to AUA male sexual dysfunction guidelines

Male Sexual Dysfunction Condition	Strength of Recommendation (n)	Number (%) of guidelines with inaccurate response	Number (%) of guidelines with incomplete response
Erectile Dysfunction	Strong rec (4)	0 (0)	2 (50)
	Moderate rec (8)	3 (38)	3 (38)
	Conditional rec (4)	1 (25)	1 (25)
	Clinical principle (6)	0 (0)	3 (50)
	Expert opinion (3)	0 (0)	0 (0)
	All levels (25)	4 (16)	9 (36)
Peyronie's Disease	Strong rec (0)	--	--
	Moderate rec (10)	5 (50)	3 (30)
	Conditional rec (2)	0 (0)	0 (0)
	Clinical principle (6)	1 (17)	4 (67)
	Expert opinion (4)	2 (50)	1 (25)
	All levels (22)	8 (36)	8 (36)
Disorders of Ejaculation	Strong rec (1)	1 (100)	1 (100)
	Moderate rec (2)	0 (0)	0 (0)
	Conditional rec (6)	3 (50)	2 (33)
	Clinical principle (3)	1 (33)	1 (33)
	Expert opinion (14)	5 (36)	5 (36)
	All levels (26)	10 (38)	9 (35)
All Conditions	Strong rec (5)	1 (20)	3 (60)
	Moderate rec (20)	8 (40)	6 (30)
	Conditional rec (12)	4 (33)	3 (25)
	Clinical principle (15)	2 (13)	8 (53)
	Expert opinion (21)	7 (33)	6 (29)
	All levels (73)	22 (30)	26 (36)

Note: Each guideline statement was previously assigned a strength rating by the AUA

Baseline Comprehensive Geriatric Assessment and Risk of Postoperative Morbidity and Mortality Among Older Adults Undergoing Radical Cystectomy

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Background: Clinical practice guidelines call for the use of comprehensive geriatric assessment (GA) in older adults to identify vulnerabilities in domains that may be optimized prior to treatment. However, the associations of individual GA domains with perioperative outcomes and survival after cancer surgery are understudied. The role of baseline GA is particularly relevant among bladder cancer (BC) patients undergoing radical cystectomy (RC) given the high morbidity of this surgery. We therefore developed a claims-based comprehensive geriatric assessment (cGA) for older adults undergoing RC and evaluated its associations with perioperative outcomes and survival.

Methods: Using SEER-Medicare, we identified patients 66-89 years diagnosed from 2000 to 2017 with T_{any} N_{any} cM0 bladder cancer who underwent RC with Medicare fee-for-service enrollment. The cGA consisted of six domains, each assessed in a baseline period preceding RC: function, assessed by the claims-based frailty index (CFI), a validated deficit accumulation model of frailty; mobility, cognition, and depression, assessed from algorithms based on CMS Chronic Condition Warehouse methods; comorbidity, assessed using the Charlson comorbidity index (CCI); and nutritional deficiency. The associations between cGA domains and 90-day hospital readmission, 90-day ER utilization, healthy days at home, and all-cause mortality were evaluated using multivariable regression.

Results: A total of 4,662 patients were included. Overall, 351 (8%) patients were frail (CFI ≥ 0.25) with 55 (1%) meeting criteria for activities-of-daily-living (ADL) dependence (CFI ≥ 0.35), and 1,864 (40%) patients with CCI ≥ 2. Baseline cGA domains were notable for hip fracture and/or mobility impairment in 95 (2%) patients, cognitive impairment in 214 (5%) patients, depression in 423 (9%) patients, and nutritional deficiency in 546 (12%) patients. Frail patients were significantly more likely to exhibit vulnerabilities in each cGA domain compared to pre-frail patients (CFI < 0.25). The associations of individual cGA domains and each outcome are summarized in Table 1. On multivariable analysis, ADL-dependence, depression, and CCI ≥ 1 were independently associated with increased risks of 90-day readmission and 90-day ER utilization. Deficiencies in all cGA domains, except hip fracture and/or mobility impairment, were associated independently with fewer healthy days at home. Baseline frailty (CFI ≥ 0.25), nutritional deficiency, and CCI ≥ 1 were also independently associated with worse mortality.

Conclusions: Among older adults with bladder cancer undergoing RC, baseline frailty, comorbidity, and depression were independently associated with worse perioperative outcomes, while frailty, comorbidity and nutritional deficiency were associated with worse survival. These observations support the utility of baseline cGA among older adults undergoing urologic cancer surgery, but also highlight the need for further study to better define the role of individual cGA domains in surgical patients

Table 1. Associations between each cGA domain and perioperative outcomes and survival after multivariable adjustment. Two separate CFI modelling strategies were evaluated as depicted below. Model adjusted for the following baseline characteristics: age, gender, marital status, smoking status, year of diagnosis, race, Hispanic ethnicity, SEER registry, tumor grade and stage, receipt of neoadjuvant chemotherapy, annual hospital cystectomy volume, census tract poverty level, census tract income, education level, hospital facility type, rurality, NCI center designation and hospital size.

cGA domain	90-day hospital readmission OR (95% CI) ^{1,2}	90-day ER utilization OR (95% CI) ^{1,2}	Healthy days at home IRR (95% CI) ^{1,2}	All-cause mortality HR (95% CI) ^{1,2}
CFI (Pre-Frail/Frail)				
Pre-frail	---	---	---	Ref
Frail	---	---	---	1.28 (1.11, 1.48)*
CFI (ADL/ADL dependence)				
No	Ref	Ref	Ref	---
Yes	1.82 (1.01, 3.26)*	1.98 (1.11, 3.51)*	0.59 (0.56, 0.62)*	---
Mobility/falls: Hip fracture or Mobility impairment				
	0.62 (0.40, 0.97)*	0.78 (0.50, 1.22)	1.00 (0.97, 1.02)	0.87 (0.68, 1.12)
Cognition/Dementia				
	1.17 (0.87, 1.56)	0.89 (0.66, 1.21)	0.92 (0.91, 0.94)*	1.09 (0.92, 1.29)
Depression				
	1.40 (1.13, 1.73)*	1.40 (1.12, 1.74)*	0.95 (0.93, 0.96)*	0.99 (0.87, 1.13)
Nutritional deficiency				
	0.93 (0.77, 1.13)	0.98 (0.81, 1.20)	0.95 (0.94, 0.96)*	1.13 (1.01, 1.26)*
Charlson Index				
0	Ref	Ref	Ref	Ref
1	1.34 (1.14, 1.57)*	1.47 (1.24, 1.75)*	0.96 (0.95, 0.97)*	1.37 (1.25, 1.51)*
2	1.86 (1.56, 2.22)*	1.77 (1.46, 2.13)*	0.93 (0.92, 0.94)*	1.55 (1.40, 1.72)*
3+	2.17 (1.82, 2.58)*	2.20 (1.83, 2.65)*	0.87 (0.86, 0.88)*	1.84 (1.66, 2.05)*

¹p < 0.05
²HR = hazard ratio; OR = odds ratio; IRR = incidence rate ratio; CI = confidence interval

Holmium Laser Enucleation of the Prostate in Men with Refractory Lower Urinary Tract Symptoms on Active Surveillance for Prostate Cancer: An Updated Cohort Analysis

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Background: The safety and feasibility of surgical treatment for BPH and lower urinary tract symptoms (LUTS) in men who are concomitantly undergoing active surveillance (AS) for known low-risk prostate cancer (PCa) is not well studied. We previously reported 20 patients with low risk PCa on active surveillance who underwent holmium laser enucleation of the prostate (HoLEP). Herein, we provide an updated and expanded cohort analysis, in hopes of assessing the safety and feasibility of HoLEP in this patient population.

Methods: Men on AS who underwent HoLEP between 2013 and 2023 were identified. Data was collected and included patient demographics, pre-operative cancer workup, prostate-specific antigen (PSA) levels, perioperative outcomes, and voiding parameters. Postoperative oncologic data was analyzed, including PSA nadir, further imaging results, prostate biopsy (PbX) results, PSA at last follow-up, and ultimate prostate cancer treatment.

Results: Nineteen more men met inclusion criteria for this expanded cohort analysis, for a total of 39 patients. The average patient age was 66 years (std dev = 5.4 years), with a mean Body Mass Index of 28 Kg/m² (std dev: 9.2 Kg/m²). Most men (97%) were Caucasian. The mean pre-operative maximum flow rate was 8.4 ml/s (std dev = 3.4 ml/sec), with a median post-void residual of 79cc (interquartile range [IQR]: 57 - 269) and a mean prostate size of 101cc (std dev = 32cc). Patients had a median adjusted preoperative PSA of 9.5 ([IQR]: 4.5-13.5) ng/ml. All men had undergone a prior prostate biopsy, with most men having had one core positive for PCa (median 1; [IQR 1-2]). Concerning post-operative oncologic data, the mean resected tissue weight was 79g (Std dev = 43) with improved postoperative flow rate (median improvement = 11 ml/s, [IQR] 6 - 21) and significantly decreased post-void residual (median improvement = 85cc, ([IQR] 35 - 245). A total of 10 (26%) men had PCa in the HoLEP specimen (all Gleason Grade Group 1). The median postoperative PSA nadir was 1ng/ml ([IQR]: 0.5-1.4) at a median of 4 months. At last follow-up (median 17 months, IQR: 4-48), the median postoperative PSA was 1.8 (IQR: 0.5-1.5) ng/ml. Twelve men underwent postoperative multiparametric magnetic resonance imaging (mpMRI) with the identification of a new prostate imaging reporting and data system 5 lesion in four patients, who ultimately underwent prostate biopsy. Of these men, three had progression of disease, of which two decided to undergo treatment.

Conclusions: This updated and expanded analysis of 7 years of follow up data provides further evidence that, while postoperative monitoring with PSA, mpMRI, and biopsy remains necessary to detect disease progression that may require definitive treatment, men on AS for low-risk PCa can safely and feasibly undergo HoLEP with significantly improved voiding parameters.

Table 1. Patient characteristics including preoperative voiding and oncologic parameters.

Patient Characteristics	
Total Participants (N)	39
Age (mean; SD)	66 (5.4)
BMI (kg/m ²) (mean; SD)	30 (9.2)
Pre-operative Voiding Parameters	
Maximum flow rate (ml/s) (mean; SD)	8 (3.4)
Postvoid residual (cc) (median; IQR)	179 (57 - 269)
TRUS-estimated prostate size (cc) (mean; SD)	101 (32)
Alpha-blocker use (N; %)	29 (74)
Finasteride use (N; %)	6 (15)
Pre-operative catheter use (N; %)	12 (31)
Prior bladder outlet procedure (N; %)	6 (15)
Pre-operative Oncologic Parameters	
PSA (ng/ml) (median; IQR)	8 (4.6 - 3.4)
Adjusted-PSA (ng/ml) (median; IQR) ¹	9.5 (4.6 - 13.5)
# of previous biopsies (median; IQR)	2 (2 - 3)
# Cores positive for cancer (median; IQR)	1 (1 - 2)
Maximum % positive of all cores (%) (median; IQR)	7 (5 - 15)

--Abbreviations: IQR, interquartile range; PCa, prostate cancer; PSA, prostate-specific antigen
 --¹PSA corrected for concomitant finasteride use (PSA x 2)

Table 2. Surgical, functional, and oncologic outcomes after HoLEP.

Surgical and Functional Outcomes	
Final pathology weight (g) (mean; SD)	79 (43)
Maximum flow rate (ml/s) (mean; SD)	19 (7)
Postvoid residual (cc) (median; IQR)	21 (0 - 32)
Post-operative complication (n, %)	1 (3)
Post-operative Oncologic Outcomes	
PCa in HoLEP specimen (n, %)	10 (26%)
Post-operative PSA nadir (ng/ml) (median; IQR)	1 (0.5 - 1.4)
Time to PSA nadir (mo) (median, IQR)	4 (3 - 7)
PSA at last follow up (ng/ml) (median; IQR)	1.8 (0.5 - 1.5)
Time to last follow up (mo) (median, IQR)	17 (4 - 48)
Post operative biopsy (n, %)	4 (10)
Post operative disease progression (n, %)	3 (8)
Post-operative prostate cancer treatment (n, %)	2 (5)

--Abbreviations: IQR, interquartile range; PCa, prostate cancer; PSA, prostate-specific antigen

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Self-Adjusted Nitrous Oxide (SANO) during Transrectal Prostate Biopsy: A Survey of Recalled Pain

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Introduction: Studies suggest that a patient's memory of pain may differ significantly from pain reported at the time of a painful procedure. Currently, it is unclear whether a patient's recollection of pain after prostate biopsy changes over time, and whether this impacts willingness to undergo a future prostate biopsy. We previously reported that Self-Adjusted Nitrous Oxide (SANO) is associated with lower pain during transrectal prostate biopsy when compared to oxygen placebo. However, sedation with nitrous oxide has an amnesic effect, which may impact recalled pain and willingness to undergo future biopsy. In the current analysis, we compared patients' recalled pain from prostate biopsy to the pain score they reported the day of the biopsy. We also assessed willingness to undergo this procedure again with or without SANO.

Methods: A single-center PRCT comparing SANO vs. Oxygen in addition to routine peri-prostatic block was conducted with 128 patients undergoing transrectal prostate biopsy between 12/2021-9/2022. A follow-up survey was sent 4-14 months post-procedure to assess participants' recalled experience of the prostate biopsy. Recalled intra-procedural pain was compared with day-of score (0-10). Patient expectations vs. experience of biopsy was assessed using a 10-point Likert scale (range: -5 [much worse than expected] to 5 [much better than expected]). Willingness to undergo a repeat biopsy, with and without the option to receive SANO, was assessed using a 4-point Likert scale (range: 1 [very unwilling] to 4 [very willing]).

Results: 68.8% of study participants completed the follow-up survey (n=88). Median time elapsed between survey completion and prostate biopsy was 8 months (IQR 6-10 months). Average recalled pain was higher than the day-of biopsy reported pain for all participants (recalled: 4.22 vs. day-of: 1.31; p <0.001). The difference between recalled pain and day-of pain was significantly lower in the SANO vs. Oxygen group, such that patients in the SANO group reported a smaller change in recalled pain compared to their day-of-scores (SANO 0.9 → 3.8 vs. Oxygen 1.4 → 4.6; p <0.001). Patients who received SANO reported a significantly "better than expected" experience during prostate biopsy (0.8 vs. -0.45; p=0.037). As time from biopsy increased, patients were more likely to report "better than expected" experience (β=-0.256; p=0.016). Of all participants, 58.6% were willing to undergo a future biopsy regardless of SANO being offered, though 26.4% were willing only if SANO was available. In both groups, patients with higher recalled pain were less willing to undergo a repeat biopsy (p <0.001). Regardless of group assignment, 65.9% of participants preferred to receive SANO for future biopsy.

Conclusions: Patients recollect greater pain from prostate biopsy than they report on the day of the procedure, which has implications for design of future studies of prostate biopsy tolerance. Our findings that patients would prefer to undergo future prostate biopsy with SANO suggest the need for an additional analgesia to supplement the routine peri-prostatic block.

Table 1. Primary and Secondary Outcomes

Primary Measures ¹	Total	SANO n=40	Oxygen n=48	Test Statistic	P
Patient-reported Pain					
Prior non-study biopsy ²	6.3 (2.5)	5.9 (2.8)	6.7 (2.3)	179.5	0.421
Day of study biopsy	1.2 (1.4)	0.9 (1.2)	1.4 (1.5)	777.5	0.107
Study biopsy recall	4.2 (2.7)	3.8 (2.9)	4.6 (2.4)	793.5	0.16
Paired difference (Δ) ³	3.1 (2.6)	2.9 (2.8)	3.2 (2.5)	-7.249	<0.001
Biopsy expectations vs. experience	0.1 (2.4)	0.8 (2.6)	-0.4 (2.1)	720.0	0.037
Secondary Measures⁴					
Willing to undergo repeat prostate biopsy					
With or without SANO	51 (58.6%)	23 (59%)	28 (58.3%)		
Only with SANO	23 (26.4%)	12 (30.8%)	11 (22.9%)		
Only without SANO	7 (8%)	1 (2.6%)	6 (12.5%)		
Unwilling	6 (6.9%)	3 (7.7%)	3 (6.3%)		
Perceived group assignment					
Correct	37 (42%)	13 (32.5%)	24 (50%)		
Incorrect	27 (30.7%)	16 (40%)	11 (22.9%)		
Unsure	24 (27.3%)	11 (27.5%)	13 (27.1%)		
Preference for SANO during repeat biopsy	58 (65.9%)	27 (67.5%)	31 (64.6%)	0.121	0.941

SANO, self-adjusted nitrous oxide. ¹Mean (standard deviation); Mann-Whitney U test. ²Total, n = 41; SANO, n = 20; Oxygen, n = 21. ³Wilcoxon Rank Sum Test. ⁴Frequency (percent %); Pearson's Chi-Square test.

Attitudes Among 2023 Urology Residency Applicants Regarding *Dobbs v. Jackson Women's Health Organization*

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Background: In June 2022, the U.S. Supreme Court ruling *Dobbs v. Jackson Women's Health Organization* overturned *Roe v. Wade* and declared there is no constitutional right to abortion. Twelve states have subsequently passed total abortion bans. We surveyed applicants to the 2023 Urology Residency Match to examine attitudes towards the *Dobbs* decision and its impact on professional decision-making.

Methods: An IRB-exempt REDCap survey was distributed by the Society of Academic Urologists (SAU) following the rank list submission deadline on January 10, 2023. The survey closed on February 1, 2023. Participants were applicants to the 2023 Urology Match over age 18. Responses were anonymous, collected in aggregate, and characterized using descriptive statistics.

Results: Of 508 applicants, 215 (42%) completed the survey (Table 1). Notably, 88% of participants disapprove of the *Dobbs* ruling, with 25% of respondents reporting that the *Dobbs* verdict has factored into their decision to apply or not apply to certain programs. 20% of respondents (15% of male vs. 24% of female) eliminated programs in states where abortion is illegal and 34% (25% of male vs. 44% of female) considered doing so. Overall, 59% (51% of male vs. 70% of female) reported they would be concerned for their or their partner's health and safety were they to match into a program in a state where abortion was illegal and 66% (55% of male vs. 82% of female) would want their program to assist them or their partner should they require abortion care during their residency. Although applicants' decisions on residency program selection are multifactorial, 36% reported access to reproductive healthcare as moderately/extremely important. Due to the competitive nature of urology, 68% of applicants reported feeling somewhat obligated to apply to programs in states where abortion legislation conflicts with the applicant's own beliefs.

Conclusions: The *Dobbs* ruling is showing early impact on the urology workforce distribution by substantially affecting urology applicants' decision-making regarding residency selection and ranking. Although the competitiveness of Urology pressures applicants to apply broadly, many are still taking reproductive healthcare access into consideration. A majority of respondents want support from their program should they or their partner require abortion care during residency.

Table 1: Demographic information*Includes Native American/Alaska Native, Middle Eastern, multiracial, and other**Includes Buddhist, Hindu, and other

Demographics	n (%)
Total Respondents	215
Age in years [median (IQR)]	27 (26-29)
Gender	
Female	84 (39.1)
Male	126 (58.6)
Non-binary	3 (1.3)
Decline to state	2 (1.0)
Race/Ethnicity	
Asian/Pacific Islander	36 (16.7)
Black	10 (4.7)
White	143 (66.5)
Hispanic/Latino	18 (8.4)
Other*	8 (3.7)
Relationship Status	
Single	102 (47.4)
Married/partnered	113 (52.6)
Religion	
Atheist/agnostic	71 (33)
Christian (all denominations)	74 (34.5)
Muslim	11 (5.1)
Jewish	19 (8.8)
Other**	21 (9.8)
Decline to state	19 (8.8)
Prior urology applicant?	
No	178 (82.8)
Yes	37 (17.2)
Applied to additional specialty?	
No	172 (80)
Yes	43 (20)

Urethroplasty With Flaps Or Grafts Is Safe In Current Male Smokers
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Background: Urethroplasty is an effective treatment for male urethral strictures, which may be completed with or without flaps or grafts. Since smoking can impair microvasculature, patients are recommended to quit prior to surgery. However, given the difficulty of smoking cessation, this may delay patients from surgical treatment indefinitely. We aimed to determine if current smoking history was associated with increased risk of wound complication in men undergoing urethroplasty with or without a flap or graft.

Methods: The National Surgical Quality Improvement Program database from 2006-2018 was queried for male patients undergoing urethroplasty with or without a flap or graft. Thirty-day wound complications were identified and categorized (superficial/deep/organ-space surgical site infections and dehiscence). Multivariable logistic regression was performed to determine risk factors associated with wound complications. Smoking history was defined as current smoker within the past year.

Results: Urethroplasty was performed in 2251 males, with 29.90% (n=673) using a flap or graft. There was no significant difference in wound complications for patients undergoing urethroplasty with (n=19, 2.82%) or without a flap or graft (n=43, 2.73%). Patients with a flap or graft had a higher BMI, longer operative time, and longer length of stay (Table 1). On multivariable logistic regression, risk factors associated with wound complications for patients undergoing urethroplasty without a flap or graft were diabetes (OR 2.56, p=0.03) and smoking (OR 2.32, p=0.02) (Table 2). However, these factors were not associated with wound complications in patients undergoing urethroplasty with a flap or graft.

Conclusions: Smoking and diabetes were associated with increased wound complications for men undergoing urethroplasty without a flap or graft, but not in patients with a flap or graft. Current male smokers may safely undergo urethroplasty with a flap or graft, and usage of a flap or graft may be preferable to excision and primary anastomosis in such patients.

Table 1: Patient/Operative Characteristics and Complication Rates for Patients Undergoing Urethroplasty (n=2251).

Patient/Operative Characteristic	No Graft/Flap (n=1578) Median (IQR)/n (%)	Graft/Flap (n=673) Median (IQR)/n (%)	p-value
Age	48.50 (34-62)	49 (34-60)	0.58
BMI	28.69 (25.40-32.89)	29.83 (26.40-35)	<0.01*
ASA ≥3	432 (27.39%)	201 (29.87%)	0.23
Operative Time (mins)	139 (87-193)	188 (146-241)	<0.01*
Length of Stay (days)	1 (0-2)	1 (1-2)	<0.01*
Diabetes	196 (12.42%)	98 (14.56%)	0.168
Smoking	263 (16.67%)	90 (13.37%)	0.05
Wound Complications	43 (2.73%)	19 (2.82%)	0.90
Reoperation	21 (1.33%)	4 (0.59%)	0.13
Readmission	53 (3.36%)	18 (2.67%)	0.40

Table 2: Multivariable logistic regression of risk factors associated with wound complications comparing those who underwent graft/flap and those who did not (n=2251).

Patient/Operative Characteristic	No Graft/Flap (n=1578)			Graft/Flap (n=673)		
	OR	95% CI	p-value	OR	95% CI	p-value
Age	1.01	0.98 1.03	0.64	0.99	0.96 1.02	0.42
BMI	1.02	0.97 1.07	0.44	0.96	0.89 1.04	0.31
Smoking	2.32	1.15 4.70	0.02*	1.06	0.30 3.77	0.93
DM	2.56	1.11 5.92	0.03*	2.83	0.83 9.68	0.10
ASA ≥3	0.70	0.32 1.57	0.39	1.04	0.32 3.39	0.94
OR time	1.00	1.00 1.00	0.88	1.00	1.00 1.01	0.36

BMI = body mass index, ASA = American Society of Anesthesiologists physical status classification.

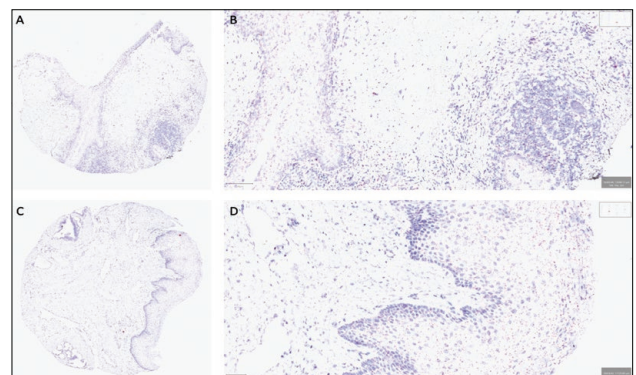
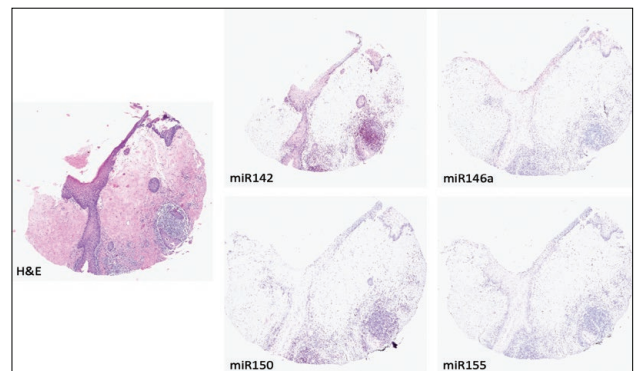
Spatial MicroRNA Expression in Lichen Sclerosus Induced Urethral Strictures
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Background: Lichen sclerosus (LS) is an inflammatory disease of the genital skin that has been linked to urethral stricture disease (USD). LS strictures tend to be longer and are more likely to recur. Little is known about the underlying pathophysiology of this disease. MicroRNAs are small, non-coding segments of RNA that control gene expression by binding to mRNA. Previous studies have shown differential miRNA expression between LS and non-LS USD. We aim to use in situ hybridization (ISH) to evaluate spatial expression of these miRNA between LS and non-LS strictures.

Methods: Four miRNAs (miR-142, miR146a, miR-150, and miR155) were selected for analysis from a pilot study of 8 up-regulated miRNAs. ISH staining was done on tissue microarrays of 2mm punches consisting of 29 non-LS & 17 LS strictures. Five (5) micron sections were stained using heat induced epitope retrieval with miRNAscope HD reagents (ACDBio, Newark, CA). Mucosal and submucosal probe detection was scored using QuPath software. Continuous variables were evaluated using the Mann-Whitney U test and categorical variables were evaluated using the Chi-squared test, with SPSS v.28.

Results: There was a significant difference in the expression of submucosal miR-155 between LS and non-LS tissue (0.44 vs 0.07, respectively, p = 0.002). No significant difference was seen for the submucosa of miR-142, miR-146a, miR-150, or the mucosal tissue for any of the miRNAs. A significant difference was seen in the number of patients that had lymphocyte-dense tissue between LS and non-LS submucosa (70.6% vs. 27.6%, respectively, p = 0.005).

Conclusions: In previous studies we have shown that there is an overall up-regulation of miR-142, miR-146a, miR-150, and miR-155 in the tissue of LS strictures, but with ISH have shown that only miR-155 has a differential spatial expression, prominent significantly in the submucosa. More research is needed to determine the significance of this up-regulation and determine its role in the diagnosis, prognosis, and therapy for LS strictures.



Real-World Adherence and Persistence of Vibegron Versus Mirabegron and Anticholinergics in Patients With Overactive Bladder: A Retrospective Claims Analysis

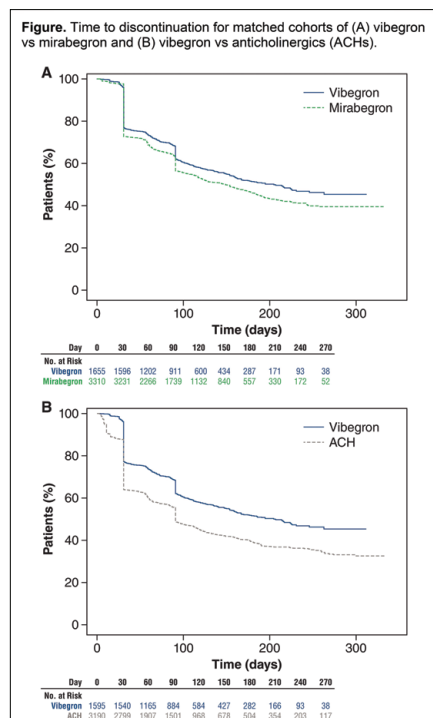
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Background: Overactive bladder (OAB) management with pharmacotherapy is limited by low real-world adherence and persistence. This analysis compared real-world adherence and persistence of patients initiating vibegron, a β_3 -adrenergic receptor agonist approved in December 2020 for OAB, with mirabegron and anticholinergics (ACHs).

Methods: This retrospective study used pharmacy claims data from the Optum Research Database. Study criteria included patients ≥ 18 years old with ≥ 1 pharmacy claim for vibegron, mirabegron, or ACH from April 1, 2021–December 31, 2021; continuous enrollment in a commercial or Medicare Advantage health plan with pharmacy and medical benefits for 3 months preindex (baseline) and ≥ 2 months postindex (follow-up); and no index medication during baseline. Two independent propensity-score models were used to match patients treated with (1) vibegron vs mirabegron and (2) vibegron vs ACHs. Adherence was measured by proportion of days covered (PDC) from index to end of follow-up and defined as PDC $\geq 80\%$. Persistence was defined as days to discontinuation of index medication (first 30-day gap) or end of follow-up. Adherence and persistence were analyzed descriptively and by Kaplan-Meier analysis, respectively.

Results: After matching, 1655 and 3310 patients were included in the matched vibegron and mirabegron cohorts, respectively; 1595 and 3190 patients were included in the matched vibegron and ACH cohorts. Cohorts were generally well balanced with respect to age, gender, and race. Patients receiving vibegron had greater adherence vs patients receiving mirabegron (0.71 vs. 0.68, respectively; $P=0.004$) or ACHs (0.71 vs. 0.61; $P<0.001$). A greater percentage of patients receiving vibegron were adherent vs. those receiving mirabegron (53.4% vs. 49.2%, respectively; $P=0.005$) or ACHs (53.7% vs. 43.2%; $P<0.001$). Persistence was longer with vibegron vs mirabegron (median [95% CI]; 205 [162-246] vs. 148 [126-162] days, respectively; $P<0.001$) and ACHs (207 [167-246] vs. 91 [91-95] days; $P<0.001$) (Figure).

Conclusions: In this retrospective analysis, real-world adherence and persistence was higher in patients initiating vibegron compared with patients initiating mirabegron or ACH when matched on baseline characteristics.



Mixed-Methods Study of Post-Partum Urinary Incontinence in a Cohort of Women Traditionally Underrepresented in Clinical Trials

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Background: Post-partum urinary incontinence (PPUI) can significantly decrease quality of life for individuals who are relatively young and healthy. This mixed-methods study assessed symptoms of urinary incontinence, knowledge and attitudes in a group of individuals who were at least 1 year post-partum or pregnant. The participants comprise underrepresented populations cared for at an urban safety net hospital.

Methods: This study was approved by the local IRB. English and Spanish speaking women (n=55) attending Boston Medical Center (BMC) pediatrics clinic for their birthed child's (>12 months of age) routine well baby visit participated in the quantitative portion of this study. Pregnant women (n=7) and post-partum women (n=8) attending BMC obstetrics clinic participated in focus groups for the qualitative portion of this study. For the quantitative analysis, participants self-administered questionnaires (ICIQ, IIQ, OABSS and investigator generated questions) and the responses were quantitated and analyzed. For the quantitative study, participants were asked by an experienced facilitators (fluent in both Spanish and English) about UI, specifically where their knowledge of these conditions came from and their experiences and degree of bother with UI during pregnancy and post-partum.

Results: Table 1 shows the demographic details for the quantitative portion of the study where the majority (54.5%) were non-Hispanic Black and 29% were Hispanics. Table 2 and 3 shows the responses to ICIQ, IIQ, OABSS validated instruments. Of the 55 participants in the quantitative study, ~25% reported that their perception of overall bladder control was worse than prior to pregnancy. The majority of the 55 participants answered that healthcare providers did not convey information about UI or PPUI and did not provide information about UI during their pregnancy. Several themes were elicited from the qualitative study. 1. PPUI is not discussed by most providers though women hear about it in other ways. 2. PPUI is a sensitive topic of discussion. 3. PPUI disturbs daily life. 4. PPUI is not a priority relative to other pregnancy-related topics.

Conclusions: Urinary incontinence during and after pregnancy is a source of physical and psychosocial morbidity resulting in substantial decrease to quality of life. However the education provided by healthcare providers to pregnant and postpartum individuals does not reflect this severity. As such, this study identifies a healthcare gap in which guidelines can be instituted which encourages healthcare providers to educate pregnant patients on UI and provide pelvic floor exercises and therapy in order to prevent it. Future PPUI prevention trials are justified in an underrepresented population.

Table 1		Table 2	
Age	N (%)	Frequency of Leakage	N (%)
<25	5 (9.1)	None	21 (38.2)
25-29	13 (23.6)	1x/wk or less	13 (23.6)
30-34	15 (27.3)	2-3x/week or more	21 (38.2)
35 or older	22 (40.0)	Interference (1-10)	N (%)
Racial Demographics	N (%)	0	25 (45.5)
Hispanic	16 (29.1)	1	5 (9.1)
Non-Hispanic White	6 (10.9)	2	6 (10.9)
Non-Hispanic Black	30 (54.5)	3	5 (9.1)
Other	3 (5.5)	4 or more	14 (25.5)
		Table 3	
		Score (range)	Mean (S.D.)
		ICIQ (0-19)	5.6 (6.0)
		IIQ (0-21)	5.4 (6.3)
		OABSS (1-27)	11.4 (6.5)

Outcomes of Urethroplasty for Synchronous Anterior Urethral Stricture
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Background: The incidence of male anterior urethral stricture disease (USD) has been well described. Less is known regarding the management strategies and outcomes in patients with synchronous USD (SUSD). SUSD is the presence of two distinct urethral strictures separated by a healthy intervening urethral segment. This study sought to assess the functional outcomes following repair of SUSD.

Methods: Patients with documented SUSD within a multi-institutional database were retrospectively assessed and compared to patients with solitary USD. Patients who underwent single-stage or staged anterior urethroplasty were included. Patient's with a posterior urethral stricture or bladder neck involvement were excluded. Stricture classification according to the LSE (Length, Urethral Segment, Etiology) was performed. Stricture recurrence, defined as undergoing repeat treatment, between cohorts was assessed. Logistic regression was performed to assess predictors of failure.

Results: 168 of the 2,299 patients had SUSD (7.3%). Patients with SUSD had a significantly shorter mean primary stricture length than those with solitary USD, 3.6 cm vs. 4.7 cm, p <0.001. Mean stricture length for the secondary stricture was 2.6 cm. Patients with SUSD had a larger proportion of strictures classified as S2b, S2c and S2d than in those with solitary USD (p<0.001). Patients with SUSD were more likely to be due to Lichen Sclerosus (LS) or hypospadias (Table 1). On univariate analysis, SUSD had a higher stricture retreatment rate, 8.0% vs. 13.1%, p = 0.02. On multivariable analysis, SUSD was not associated with higher retreatment rates, OR 1.37 (0.79 - 2.28), p = 0.2. Patient with SUSD and stage S1a, S1b, S2c, S2d and S3 stricture location demonstrated higher rates of stricture recurrence than controls, (Table 2).

Conclusions: Patients with SUSD have higher rates of stricture recurrence following urethroplasty compared to patients with solitary USD on univariate analysis. Patients with LS and hypospadias are more likely to have SUSD.

Table 1—Descriptive characteristics of 2,299 patients who underwent a urethral stricture repair, grouped by presence or absence of a synchronous stricture.

	Solitary USD 2,131 (92.6%)	SUSD 168 (7.3%)	Total 2,299 (100%)	P-Value
Body Mass Index	29.8 (17.7 – 57.5)	30.6 (14.7 – 56.0)	30.0 (14.7 – 57.5)	0.20
Age at Time of Surgery	48	49	48	0.90
Smoking Status				
Active	208 (9.8%)	17 (10.1%)	225 (9.8%)	0.88
Never/Former	1,923 (90.2%)	151 (89.9%)	2,074 (90.2%)	
Number of Prior DVIUs	0.8 (0.00 – 10.00)	0.95 (0.00 – 7.50)	0.88 (0.00 – 10.00)	0.63
Number of Prior Dilations	1.6 (0.00 – 10.00)	1.4 (0.00 – 10.00)	1.6 (0.00 – 10.00)	0.51
Operative Stricture Length #1	4.7 (0.20 – 25.00)	3.6 (0.50 – 17.00)	4.6 (0.20 – 25.00)	<0.001
Operative Stricture Length #2	-	2.6 (0.50 – 12.00)	-	-
S Stage #1*				
S1a	947 (44.4%)	57 (33.9%)	1,004 (43.7%)	<0.001
S1b	362 (17.0%)	16 (9.5%)	378 (16.4%)	
S2a	214 (10.0%)	10 (6.0%)	224 (9.7%)	
S2b	226 (10.6%)	36 (21.4%)	262 (11.4%)	
S2c	140 (6.6%)	25 (14.9%)	165 (7.2%)	
S2d	114 (5.3%)	18 (10.7%)	132 (5.7%)	
S3	128 (6.0%)	6 (3.6%)	134 (5.8%)	
S Stage #2*				
S1a	-	68 (40.5%)	-	-
S1b	-	19 (11.3%)	-	-
S2a	-	9 (5.4%)	-	-
S2b	-	31 (18.5%)	-	-
S2c	-	6 (3.6%)	-	-
S2d	-	15 (8.9%)	-	-
Other	-	20 (11.9%)	-	-
E Stage†				
1	205 (9.6%)	11 (6.5%)	216 (9.4%)	<0.001
2	919 (43.1%)	46 (27.4%)	965 (42.0%)	
3a	259 (12.2%)	24 (14.3%)	283 (12.3%)	
3b	241 (11.3%)	30 (17.9%)	271 (11.8%)	
3c	105 (4.9%)	5 (3.0%)	110 (4.8%)	
4	30 (1.4%)	0 (0.0%)	30 (1.3%)	
5	136 (6.4%)	18 (10.7%)	154 (6.7%)	
6	154 (7.2%)	27 (16.1%)	181 (7.9%)	
Repair type				
Substitution	1,442 (67.7%)	96 (57.1%)	1,538 (66.9%)	<0.001
Anastomotic	170 (8.0%)	7 (4.2%)	177 (7.7%)	
Excisional	161 (7.6%)	27 (16.1%)	188 (8.2%)	
Perineal Urethrostomy	199 (9.3%)	3 (1.8%)	202 (8.8%)	
Hypospadias	27 (1.3%)	0 (0.0%)	27 (1.2%)	
Meatoplasty	12 (0.6%)	11 (6.5%)	23 (1.0%)	
Fistula	22 (1.0%)	0 (0.0%)	22 (1.0%)	
Other	98 (4.6%)	24 (14.3%)	122 (5.3%)	

* (S): S1a = proximal bulb; S1b = distal bulb; S2a = bulbar/penile; S2b = penile only; S2c = penile/fossa; S2d = fossa only; S3 = bulb/penile/fossa
 † (E): E1 = external trauma; E2 = idiopathic; E3a = internal trauma; E3b = urethroplasty failure; E3c = radiation; E4 = hypospadias; E4/6 = inflammatory/lichen sclerosis
 USD: Urethral Stricture Disease; SUSD: Synchronous Urethral Stricture Disease; DVIU: Direct Visual Internal Urethrotomy

Table 2—Descriptive characteristics of recurrence in patients who underwent a urethral stricture repair, grouped by presence or absence of a synchronous stricture.

	Control Group 2,131 (92.6%)	Study Group 168 (7.3%)	Total 2,299 (100%)	P-Value
Retreatment**				
Functional Success	1960 (92.0%)	146 (86.9%)	2106 (91.6%)	0.02
Functional Failure	171 (8.0%)	22 (13.1%)	193 (8.4%)	
Retreatment: Endoscopic†				
No	2011 (94.4%)	151 (89.9%)	2162 (94.0%)	0.02
Yes	120 (5.6%)	17 (10.1%)	137 (6.0%)	
Retreatment: Revision Urethroplasty				
No	2,055 (94.4%)	158 (94.4%)	2,213 (96.3%)	0.1
Yes	76 (5.6%)	10 (6.0%)	86 (6.0%)	
Recurrence Length (cm)	2.1 (0.0 – 12.0)	1.3 (0.0 – 7.0)	2.0 (0.0 – 12.0)	0.12
Functional Failure[§] (Patients with functional failure/total)				
S1a	52/947 (5.5%)	7/57 (12.3%)	-	
S1b	38/362 (10.5%)	3/16 (18.8%)	-	
S2a	27/214 (12.6%)	1/10 (10.0%)	-	
S2b	22/226 (9.7%)	1/36 (2.8%)	-	
S2c	14/140 (10.0%)	4/25 (16.0%)	-	
S2d	4/114 (3.5%)	4/18 (22.2%)	-	
S3	14/128 (10.9%)	2/6 (33.3%)	-	
Recurrence Location				
Excisional Anastomosis	27/2104 (1.3%)	8/160 (4.8%)	35/2264 (1.5%)	<0.001
Proximal Graft	29/2102 (1.4%)	4/164 (2.4%)	33/2266 (1.4%)	0.29
Distal Graft	32/2099 (1.5%)	6/162 (3.6%)	38/2261 (1.7%)	0.04
Mid Graft	39/2092 (1.8%)	8/160 (4.8%)	47/2252 (2.0%)	0.01
Other	22/2109 (1.0%)	11/157 (6.5%)	33/2266 (1.4%)	<0.001
Number of DVIUs as treatment for recurrent urethral stricture	1.13 (1.00 – 2.00)	1.22 (1.00 – 2.00)	1.14 (1.00 – 2.00)	0.48
Number of urethral dilations as treatment for recurrent urethral stricture	1.23 (1.00 – 4.00)	1.22 (1.00 – 3.00)	1.23 (1.00 – 4.00)	0.98

* Described as undergoing any form of treatment for recurrence, includes clean intermittent catheterization, DVIU, dilation or revision urethroplasty.
 † Patients who underwent both endoscopic management and revision urethroplasty were documented as a single event
 ‡ Includes clean intermittent catheterization, DVIU or dilation.
 § (S): S1a = proximal bulb; S1b = distal bulb; S2a = bulbar/penile; S2b = penile only; S2c = penile/fossa; S2d = fossa only; S3 = bulb/penile/fossa

Penile Inversion Neovaginoplasty: A Single Institution's Six Year Experience
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Background: Penile inversion neovaginoplasty (NVG) is the most common genital procedure performed for male-to-female gender affirmation. NVG includes orchiectomy, urethroplasty, clitoroplasty, labiaplasty, and creation of a neovagina. While the complications and outcomes following NVG have been described, our study aims to further contribute to the growing body of literature describing patient demographics, surgical characteristics, intra- and post-operative complications, and rates of revision using a robust patient population cohort.

Methods: Patients over the age of 18 who received gender affirming NVG from January 1, 2016 to January 1, 2022 were included in this retrospective study, all who had greater than 30 days of follow-up. The average follow-up length was 460 days. Patient characteristics, surgical details, complications, and revision rates were recorded for all patients. All intra-operative and post-operative adverse events were graded using the five tier Clavien-Dindo classification system.

Results: A total of 143 patients were included in this study. The average age was 38.42±13.45 years. The mean BMI was 27.43±4.79 kg/m². The estimated blood loss was 262±103 milliliters. The average length of surgery was 335.29±36.11 minutes. Intraoperative and postoperative Grade I/II complications occurred in 26 patients. Intraoperative and postoperative Grade IIIb complications occurred in 14 patients. No patients experienced Grade IV or V complications. Of the Grade IIIb complications, four required re-operative intervention for excessive granulation tissue, while another three required re-operative intervention for wound dehiscence. Rectovaginal fistula, rectoperineal fistula, meatal stenosis, vaginal prolapse, hematoma, necrosis, and skin graft loss contributed once each to the incidence of Grade IIIb complications. Patient desired revisions occurred in 54.5% of patients, of which 44.9% were addressing bothersome stenosis of the neovaginal opening. Urethromeatoplasty with mucosal advancement was desired by 26.6% of patients to optimize the directionality of the urinary stream.

Conclusions: This study represents a longitudinal description of the demographics, surgical characteristics, intra- and post-operative complications, and revision rates following penile inversion neovaginoplasty. Our findings further solidify that NVG is a safe and effective procedure for male-to-female gender affirmation based on a single institution's fairly large database.

Agreement and Reliability of Patient-Measured Post-Void Residual Bladder Volumes

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Background: Post-void residual bladder volume (PVR) measurement in the non-healthcare setting would be a valuable opportunity for remote monitoring of patients with voiding dysfunction. We hypothesized that patient self-measurement of PVR using a smart device-integrated portable ultrasound probe equipped with artificial intelligence (AI)-based automated bladder volume measurement software would demonstrate high reliability, strong agreement with provider measurement, and be preferred by subjects over provider measurements in the healthcare setting.

Methods: Eligible adult subjects were enrolled during outpatient Urology visits. Subject PVRs were measured in triplicate by providers using each of the following FDA-cleared devices: standard bladder scanners (either the Verathon™ BVI 9400 System or the Verathon™ BladderScan Prime System), the portable ultrasound probe with AI-based automated bladder volume measurement software using ultrasound images (Butterfly™ US image mode), and the portable ultrasound probe with AI-based automated bladder volume measurement software using abstract images (Butterfly™ abstract mode). Subjects blinded to the provider measurements then self-measured PVR in triplicate using both the US and abstract modes. Subjects were randomized to use either Butterfly™ US mode or Butterfly™ abstract mode first following a brief tutorial. Subject-reported preferences and evaluations were assessed via electronic survey. Agreement between PVR measurements for each combination of devices was assessed via Bland-Altman analyses using a clinically acceptable difference threshold of 50 mL. Reliability was assessed via intraclass correlation (ICC). Two-sided statistical significance was set at p<0.05.

Results: 50 subjects were enrolled. ICCs ranged between 0.95-0.98 for each device. Results of the Bland-Altman analyses are displayed in Table 1. Mean difference in PVR between provider standard bladder scanner measurement and subject self-measurement were 7.5 mL (95% limits of agreement: -71.73 mL, 86.73 mL) using Butterfly™ US mode and 9.34 mL (95% limits of agreement: -93.84 mL, 112.52 mL) using Butterfly™ abstract mode, respectively. No statistically significant differences in agreement were observed for any combination of devices when stratified by age, sex, BMI, or subject-reported dexterity. Statistically significant differences in agreement were observed between subject US mode and both provider standard bladder scanner (p=0.02) and provider abstract modes (p=0.03) when stratified by subject-reported technological comfort. Most subjects preferred self-measurement over provider measurement (74% vs. 26%, respectively).

Conclusions: Subject self-measurement of PVR using smart device-integrated portable ultrasound probes is feasible, reliable, and preferred by subjects. Limits of agreement between subject self-measurement and provider standard bladder scanner measurement of PVR exceeded our clinically acceptable difference threshold, though the published inherent error of each ultrasound-based bladder volume measurement device should be considered. Additional studies are warranted to determine if longitudinal subject self-measurements of PVR in real-world settings facilitate remote monitoring of patients with voiding dysfunction.

Method 1	Method 2	Bias	95% Limits of Agreement
Standard Bladder Scanner PVR Mean	Provider Butterfly™ US Image Mode PVR Mean	13.17	-59.65, 85.89
Standard Bladder Scanner PVR Mean	Provider Butterfly™ Abstract Mode PVR Mean	12.51	-55.30, 80.33
Standard Bladder Scanner PVR Mean	Patient Butterfly™ US Image Mode PVR Mean	7.50	-71.73, 86.73
Standard Bladder Scanner PVR Mean	Patient Butterfly™ Abstract Mode PVR Mean	9.34	-93.84, 112.52
Provider Butterfly™ US Image Mode PVR Mean	Provider Butterfly™ Abstract Mode PVR Mean	-0.65	-71.28, 69.97
Provider Butterfly™ US Image Mode PVR Mean	Patient Butterfly™ US Image Mode PVR Mean	-5.67	-91.19, 79.86
Provider Butterfly™ US Image Mode PVR Mean	Patient Butterfly™ Abstract Mode PVR Mean	-3.83	-105.05, 97.40
Provider Butterfly™ Abstract Mode PVR Mean	Patient Butterfly™ US Image Mode PVR Mean	-5.01	-85.48, 75.45
Provider Butterfly™ Abstract Mode PVR Mean	Patient Butterfly™ Abstract Mode PVR Mean	-3.17	-71.56, 65.21
Patient Butterfly™ US Image Mode PVR Mean	Patient Butterfly™ Abstract Mode PVR Mean	1.84	-87.99, 91.67

Note: Bias = mean difference of the measurements. Limits of agreement = 1.96 standard deviations from the mean difference. All values are expressed in mL.

Reducing PACU LOS for HoLEP Same-day Discharges with a Nurse Driven Protocol

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Background: Holmium laser enucleation of the prostate (HoLEP) has emerged as a highly effective option for the surgical management of BPH, which can be performed on a wide range of prostate sizes. ¹At our institution, we have transitioned to same day discharges for the majority of our HoLEP patients, however we noticed a trend towards prolonged post anesthesia care units (PACU) durations of several hours for our same day discharges. We postulated that with the implementation of a clear and concise PACU order set, with detailed nursing instructions, that PACU duration on average could be reduced.

Methods: As part of our quality improvement initiative, an EPIC order set was created, which focused on giving nurses autonomy to troubleshoot challenges and assess a patient’s readiness for discharge. The EPIC order set was designed with a focus on continuous bladder irrigation (CBI) duration, need for manual irrigation, and assessing readiness for discharge after CBI was clamped. The order set was launched on May 15th, 2022. PACU duration was analyzed before and after the order set was launched.

Results: From January 1, 2021 to October 12, 2022, we identified 221 cases pre-intervention and 73 cases post-intervention for same day discharges. The mean PACU LOS for the pre-intervention group was 162.59 (mins) and 144.94 for the post-intervention group. The mean difference was 17.64 with a p-value of 0.005. A secondary analysis to determine if the implementation of our intervention could increase the odds of a same day discharge for all our HoLEP patients was performed. For the pre-intervention cohort, 221 patients were discharged the same day and 94 were admitted. For the post-intervention, there were 73 same day discharges and 35 admitted patients. The odds of being discharged the same day following the launch of the order set was 1.127 (95% CI 0.705-1.803).

Conclusions: After the implementation of our nurse driven PACU order set, we were able to demonstrate a statistically significant decrease in PACU duration. While there was no difference observed in the odds of same day discharge, this abstract highlights the utility of a nursing driven protocol to decrease the duration of PACU stays in the same day discharge of patients after HoLEP surgery.

Table 1: Group Statistics in the pre-intervention vs post-Intervention groups measured in mins

Pre-Intervention vs. Post-Intervention	N	Mean	Std. Deviation	Std. Error Mean
Pre-Intervention	221	162.5909	49.11041	3.31102
Post-Intervention	73	144.9452	37.59650	4.40034

Table 2: T-test analyzing the means of the pre vs post intervention groups

	p-value	Mean Difference	Std. Error Difference	95% Confidence Interval of the difference (Lower)	95% Confidence Interval of the difference (Upper)
PACU LOS (Min)	0.005	17.64570	6.28452	5.27683	30.01458

1. Cornu JN et al. A Systematic Review and Meta-analysis of Functional Outcomes and Complications Following Transurethral Procedures for Lower Urinary Tract Symptoms Resulting from Benign Prostatic Obstruction: An Update. *Eur Urol* 2015;**67**(6):1066-1096.

Four-Year Real-World Clinical and Decisional Regret Outcomes of the Rezum System: A Single Office, Retrospective Study in a Diverse, Multiethnic Population

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Background: The Rezum System (Rezum) is an attractive minimally invasive surgical therapy for the treatment of lower urinary tract symptoms (LUTS) secondary to benign prostatic hyperplasia (BPH). We evaluated four-year clinical and decisional regret outcomes of Rezum in a real-world, diverse patient population.

Methods: A single office, retrospective study was conducted on patients treated with Rezum between 2017 and 2019. Patients were included if they had a recorded baseline International Prostate Symptom Score (IPSS) and at least one follow-up within four years. Clinical outcomes, including IPSS, quality of life (QoL), maximum flow rate (Qmax), adverse events (AEs), and BPH medication usage were collected at baseline, 1-, 3-, 6-, 12-, and/or 48-month follow-up. Regret was assessed at 48-month using the validated 5-item Decisional Regret Scale (DRS). High regret was defined as a DRS score >50%.

Results: A total of 267 patients were included, with a mean age of 63.6 ± 8.7 years and median prostate volume and IPSS of 43cc (35, 60) and 18 (11, 24), respectively. The patient population had diverse representation including the largest cohort being Asian (33.0%), followed by Non-Hispanic Black (28.5%) and Hispanic (23.6%). Most patients (83.5%) elected for general anesthesia. Median number of injections per lateral prostatic lobe was 2 (1, 2) and per medial lobe was 1 (0, 1). Significant changes in IPSS and QoL were seen as early as 1-month (IPSS -38.9%, p<0.001; QoL -40.0%, p<0.001), as well as Qmax (66.7%, p<0.001) by 3-months. Improvements remained durable to 48-months (IPSS -72.2%, p<0.001; QoL -80.0%, p<0.001; Qmax 49.0%, p=0.005). Most AEs were transient and Clavien-Dindo I/II, with gross hematuria being the most common (66.3%), followed by penile burning (61.5%). BPH medication usage was 90.4% at baseline, 22.2% by 12-months, and 36.0% by 48-months. By 48-months, 19 patients (7.7%) underwent reoperation. At 48-months, 96 patients (88.1%) reported low regret and 13 patients (11.3%) reported high regret. Those who reported high regret did not experience significant changes in IPSS (-3.3%, p=0.2) and QoL (-20%, p=0.3) from baseline to 48-months.

Conclusions: In a diverse patient population and real-world setting, Rezum provides rapid and durable improvements in LUTS through four years, with low rates of reoperation and decisional regret.

Uptake Of New Surgical Treatments For BPH Varies By Provider Age And Population Density Among States In New England

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Background: Various surgical modalities exist to treat benign prostatic hyperplasia (BPH), including the historical gold standard transurethral resection of prostate (TURP). As new technologies have emerged, there has been limited research into procedural uptake and diversification. Regional characteristics like providers' age and population density may influence the number and types of procedures available to patients. We evaluated whether surgical practice patterns for BPH varied by provider age and rural composition of states in New England.

Methods: Bladder outlet procedures were identified by CPT code in publicly available Medicare data among New England urologists from 2014-2019. TURP (52601), Greenlight laser vaporization (52648), Urolift (52441), Rezum (53854), and Holmium laser enucleation (52649) were included. Data were analyzed by state. Rural composition obtained from the U.S. census and distribution of provider age were compared to uptake of newer procedures over time. Uptake was defined by increasing rates of Urolift, Rezum, and HoLEP relative to TURP and Greenlight. Generalized linear models assessed whether provider age, rural composition, and their combined interaction were related to uptake of newer procedures.

Results: Table 1 summarizes the average provider age, percentage of rural population, and procedural diversity by state. The combined effects model (Table 2) allowed for comparison between four groups defined by rural vs urban composition and distribution of provider age. Rural areas with less variation in provider age demonstrated slower uptake of newer procedures (Cohen's d = -0.65, Z = -2.29, p = 0.0220). Urban areas with more variation in provider age demonstrated more rapid uptake of newer procedures (Cohen's d = 1.36, Z = 2.67, p = 0.0076). The two other groups did not have statistically significant results.

Conclusions: A combined-effects model demonstrates that patients needing bladder outlet surgery who live in rural areas of New England with less variation in provider age have fewer surgical treatment options. They may face a significant travel burden to access newer procedures. A remaining unanswered question is whether the lack of procedural diversity and slower uptake is due to provider preference, skill and comfort, poor healthcare infrastructure, or a combination.

Table 1. Average provider age, population density, and BPH procedural diversity by state.

State	Age (M, SD)	Rural Composition (%)	Procedural Diversity, Procedures (Z score)	Procedural Diversity, Providers (Z score)	Procedural Diversity Increase, Procedures (Z score)	Procedural Diversity Increase, Providers (Z score)
CT	54, 11	12	-1.96	0.08	0.02	-0.33
MA	53, 9	8	0.16	0.21	0.79	0.27
ME	48, 8	61	0.25	0.03	1.00	-1.01
NH	42, 9	40	0.40	-0.04	-0.16	0.05
RI	54, 10	9	0.21	0.23	-1.82	1.79
VT	54, 6	61	0.93	-0.30	0.17	-0.77
Overall	51, 9	32	0.00	0.00	0.00	0.00

Table 2. Combined interaction of provider age and rural composition on procedural diversity.

Comparison	Cohen's d	Z	p
Procedures (Less Common - More Common)			
Rural area, less spread in provider ages	-0.65	-2.29	0.022
Rural area, more spread in provider ages	0.77	1.35	0.1766
Urban area, less spread in provider ages	-0.06	-0.19	0.8481
Urban area, more spread in provider ages	1.36	2.67	0.0076
Providers (Less Common - More Common)			
Rural area, less spread in provider ages	-0.74	-2.28	0.0223
Rural area, more spread in provider ages	0.52	0.8	0.4243
Urban area, less spread in provider ages	0.11	0.3	0.7653
Urban area, more spread in provider ages	1.38	2.36	0.0181

Changes To an Established General Urologist’s Practice Demographics After Offering Holmium Laser Enucleation of the Prostate as a Surgical Treatment For Benign Prostatic Hyperplasia

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Background: Holmium laser enucleation of the prostate (HoLEP) is recognized as a size-independent surgical option for the endoscopic management of benign prostatic hyperplasia (BPH). For providers that are motivated to offer HoLEP, understanding the anticipated changes to their practice is significant. In this study, we analyzed the changes to a general urologist’s patient demographics and practice patterns after the addition of HoLEP to their surgical repertoire.

Methods: We retrospectively reviewed the electronic health record to analyze for changes in a general urologist’s patient population following introduction of HoLEP. Records were reviewed 30 months before and after introduction of HoLEP. We assessed for differences in age, gender, zip code of primary residence and clinical volume. Pearson chi-squared test of independence and student’s t-test were used for statistical analysis.

Results: A total of 4390 unique patients were seen in clinic during the five year period of which, 2052 were seen before and 2338 were seen after the introduction of HoLEP. BPH related clinic visits increased from 893 (43.52%) to 1555 (66.51%). The mean crow fly distance of zip code of residence for patients with BPH to treatment center remained statistically unchanged (pre-HoLEP: 32.52 ± 152.42 miles (IQR: 6.01 – 16.91), post-HoLEP: 29.65 ± 141.79 miles (IQR: 6.01 – 16.91), p = 0.9896) (Figure 1). Surgical volume increased from 380 to 1041 cases with a concordant increase in other BPH related surgeries, with an inflection point at the time of HoLEP introduction (Figure 2).

Conclusions: There was an increase in both clinical and surgical volume to an established general urologist’s practice after offering HoLEP as a surgical treatment for BPH. A majority of these patients were being treated from within the initial catchment area, which may be in part due to under-treatment of large prostate glands.

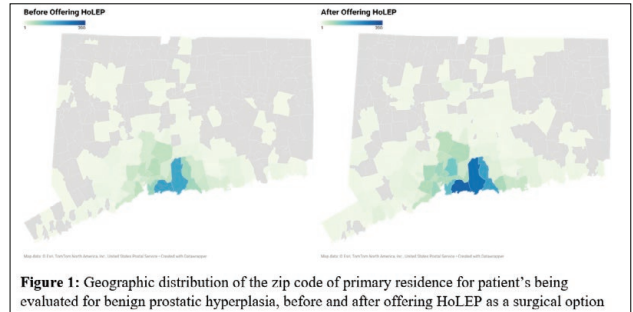


Figure 1: Geographic distribution of the zip code of primary residence for patient’s being evaluated for benign prostatic hyperplasia, before and after offering HoLEP as a surgical option

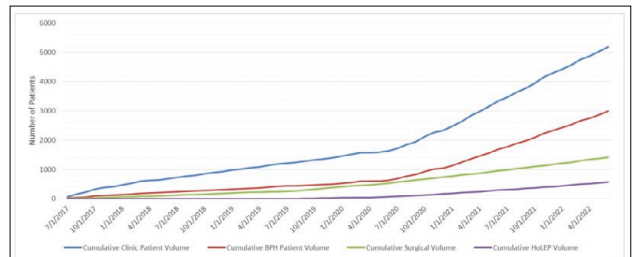


Figure 2: Cumulative frequency of clinical volume of clinic patients and surgical volume with respect to the introduction of HoLEP

Variable	Pre - HoLEP	Post - HoLEP
Number of Clinic Patients	2052	2338
Number of BPH Clinic Patients	893 (43.5%)	1555 (66.5%)
Number of Male Patients	1856 (90.4%)	2252 (96.3%)
Age		
< 49 years	343	131
50 – 64 years	504	494
65 – 74 years	615	866
75 – 84 years	415	632
85+ years	166	204
Surgical Volume by Case Type		
Transurethral Resection of Prostate	63	87
Transurethral Incision of Prostate	14	20
Enucleation of the Prostate	25	539
Ureteroscopy/Laser Lithotripsy/Stent	130	164
Robotic Radical Prostatectomy	64	20
Other	84	211

Table 1: Summary of patient demographics and surgical case volume

A Pilot Study to Assess Effects of Self-Adjusted Nitrous Oxide (SANO) on Urodynamic Study (UDS) Parameters

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Background: A urodynamic study (UDS) is a challenging invasive examination associated with significant patient distress. Sedatives such as ketamine and midazolam have been shown to compromise a patient's ability to give verbal feedback during UDS. Thus, there exists a need for an agent that alleviates pain and anxiety, yet preserves patient communication and reliability of UDS outcomes. Nitrous oxide (NO) is routinely used in the ambulatory setting to relieve peri-procedural pain and anxiety. When administered at concentrations <50%, NO is classified as minimal sedation, eliminating the need for anesthesia personnel, NPO status and a patient escort. NO's rapid onset and offset also allows for near-immediate analgesia. Our study seeks to determine whether SANO alters UDS outcomes and also assess effects of SANO on patient-reported pain.

Methods: This is a single-center prospective randomized controlled trial comparing UDS with or without SANO. Each patient received SANO during catheter placement to determine patient-preferred NO level. Subsequently, the patient underwent two UDS fills, randomized to one run with oxygen and one run with SANO. Both the patient and operator performing the UDS were blinded to which gas was being delivered. UDS were interpreted by two blinded urologists. Primary outcomes were standard UDS parameters (compliance, capacity, detrusor overactivity and contractility, flow rate, and post-void residuals (PVR)). Secondary outcomes included patient-reported pain measured immediately before maximum capacity during both fills using the Visual Analog Scale for Pain (VAS-P). Maintenance of positioning, patient responsiveness, and tolerance of the procedure were rated by the blinded operator performing the UDS. Wilcoxon Rank Sum and Chi-Squared Tests, adjusted for paired observations, were used. Sensitivity analysis was performed to compare outcomes with SANO as the 1st or 2nd round.

Results: 19 participants, each with 2 runs (n=38 UDS) were included for analysis. Between SANO and oxygen runs, there was no significant difference in bladder capacity, maximum flow rate, pressure at max flow rate, detrusor overactivity, void quality, or bladder compliance. Sensitivity analysis adjusting for SANO as the 1st or 2nd round demonstrated no significant difference in outcomes. Two patients were unable to void during the oxygen run, but were able to voluntarily void during the SANO run. Patients reported significantly less pain during the SANO run compared to the oxygen run (0.7 ± 1.5 vs. 2.0 ± 3; p=0.047). The UDS operator rated patient responsiveness and tolerance of procedure to be significantly better than expected during runs with SANO when compared to runs with oxygen (p=0.001, p <0.001, respectively). There were no complications in the 19 participants. Post-procedure survey of the patients revealed that 78.9% (n=15) would prefer to receive SANO during a future UDS if provided the option.

Conclusions: Patients receiving SANO during UDS have comparable UDS tracings while reporting lower pain and future preference to receive SANO. SANO is a feasible and safe alternative with high satisfaction for patients undergoing UDS.

UDS Characteristic	Control, N=19 ²	SANO, N=19 ²	Difference ³	p-value ³
Capacity (mL)	441 (301)	458 (285)	-18 (-211, 175)	0.23
Detrusor Overactivity	4 (21%)	6 (32%)	-11% (-44%, 23%)	0.61
Post Void Residual (mL)	145 (184)	132 (184)	13 (-108, 134)	0.66
Q _{max} (mL/sec)	11 (8)	12 (8)	-1.8 (-7.2, 3.7)	0.78
Pdet at Q _{max} (cmH ₂ O)	48 (27)	50 (25)	-1.7 (-19, 16)	0.73
Bladder Outflow Obstruction Index	31 (36)	30 (38)	0.48 (-24, 25)	0.46
Bladder Contractility index (BCI)	100 (45)	112 (39)	-12 (-39, 16)	0.92
Poor Compliance	2 (11%)	3 (16%)	-5.3% (-32%, 21%)	>0.99
Flat, Short, or Weak Void	14 (74%)	12 (63%)	11% (-24%, 45%)	0.48
Patient Pain & Anxiety				p-value³
Intra-procedural VAS-P	2.3 (2.3)	1.5 (2.5)	0.8 (-0.8, 2.4)	0.047
Intra-procedural VAS-A	1.9 (2.0)	1.5 (1.4)	0.5 (-0.7, 1.7)	0.26
Patient Responsiveness				<0.001
Worse than expected	0 (0)	1 (5.3)	NA	
As expected	19 (100)	5 (26.3)	NA	
Better than expected	0 (0)	13 (68.4)	NA	
Procedure Tolerance				<0.001
Worse than expected	0 (0)	0 (0)	NA	
As expected	18 (94.7)	3 (15.8)	NA	
Better than expected	1 (5.3)	16 (84.2)	NA	

SANO, self-adjusted nitrous oxide; VAS-P, Visual Analog Scale-Pain; VAS-A, Visual Analog Scale-Anxiety; NA, Not Applicable *Mean (SD); n (%) *Mean Difference (95% Confidence Interval) ³Wilcoxon signed rank test with continuity correction; McNemar's Chi-squared test with continuity correction

SRD5A2 Expression is a Predictor of Response to Finasteride in the MTOPS Trial

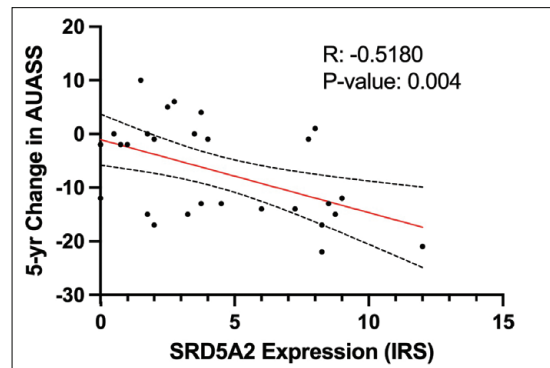
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Background: The Medical Therapy Of Prostatic Symptoms (MTOPS) study was a multi-center, randomized, controlled clinical trial conducted between 1995 and 2001 aiming to evaluate the effect of finasteride, doxazosin, or a combination of both drugs on the progression of urinary symptoms in men with benign prostatic hyperplasia (BPH). We have demonstrated that 30% of adult prostates do not express SRD5A2 through epigenetic regulation, enabling us to postulate that expression of SRD5A2 may be related to response to finasteride. Prostate biopsies and clinical data from 82 MTOPS trial participants were obtained to test the correlation between baseline expression of SRD5A2 and the response to medical treatment with finasteride.

Methods: We classified men based on changing their AUA symptom score (AUASS) into good responders (change of AUASS ≤ -12) and poor responders (change of AUASS ≥ -2). Using immunoreactive score system (IRS score), we quantified the expression of SRD5A2 in the biopsies. We compared baseline age, demographics, AUASS, BMI, serum dihydrotestosterone (DHT) between men in the two groups.

Results: There was no significant difference in TPV between the two groups. Men in the 5ARI good response group were found to have higher expression of SRD5A2 compared to men in the 5ARI poor response group (p-value <0.007). In addition, there was a statistically significant correlation between the expression of SRD5A2 and the 5-year change in AUASS (Pearson's correlation coefficient: -0.4279, p-value: 0.02). In a multiple linear regression model that adjusted for baseline AUA SS, baseline total prostate volume, baseline serum DHT level, age, and BMI, men with higher expression of SRD5A2 still had better response to finasteride with better improvement of urinary symptoms as reflected by AUA symptoms scores.

Conclusions: The MTOPS study was a significant milestone in the curation BPH medical management. Since expression of SRD5A2 is epigenetically regulated during adulthood, our analysis of the biopsies and clinical data provided from the trial shines a light on the importance of SRD5A2 activity and response to 5-ARI therapy. The level of response to 5-ARI therapy correlated to higher SRD5A2 expression. This may contribute to precision medicine by predicting men that are most likely to benefit from tailored therapy by 5-ARI.



P13

Use of Droplet Digital Polymerase Chain Reaction to Identify Biomarkers for Differentiation of Benign and Malignant Renal Masses

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Background: Several microRNAs (miRNAs) have been identified as biomarkers for differentiating clear cell renal carcinoma (ccRCC) from benign renal masses as well as predicting which malignant tumors progress to metastatic disease. Droplet digital polymerase chain reaction (ddPCR) is a relatively novel technology for nucleic acid quantification. It has the potential for superior precision, reproducibility, and diagnostic performance in identifying circulating miRNA biomarkers for cancer compared to conventional PCR. This study aims to evaluate the performance of ddPCR compared to conventional PCR in identifying miRNA biomarkers that differentiate malignant from benign renal masses. The ability to distinguish between malignant and benign renal masses using a minimally invasive, serum-based test could ultimately reduce the morbidity associated with renal mass biopsy, which itself is imperfect in identifying malignant versus benign renal masses.

Methods: Potential biomarkers of ccRCC were identified from literature review. RNA was extracted from the plasma of 56 patients with renal masses and was subsequently reverse transcribed. All samples then underwent nucleic acid amplification via ddPCR as well as traditional quantitative reverse transcription PCR (qRT-PCR) and expression levels were recorded for the following miRNAs: miR-93, miR-144, miR-210, miR-221, and miR-222. Tumors were grouped into low grade ccRCC, high grade ccRCC, papillary RCC and angiomyolipoma (AML). Absolute counts were compared between groups using Kruskal-Wallis tests. All statistical analysis were performed using Statistical Package for Social Sciences (SPSS) software version 27.0.

Results: The miRNAs miR-210 ($p = .031$), miR-224 ($p = .04$), and the combination of miR-210 and miR-222 ($p = .003$) were expressed at significantly higher rates among those with RCC compared to those with AML as measured by ddPCR. Using the combination of miR-210 and miR-222, ddPCR identified significant differences between papillary RCC versus AML ($p = .034$), low grade ccRCC versus AML ($p = .014$), and high grade ccRCC versus AML ($p = .001$). There were no significant differences between these groups using conventional PCR.

Conclusions: Droplet digital PCR was effective in identifying miR-210, miR-224, and the combination of miR-210 and miR-222 as biomarkers to differentiate between benign and malignant renal masses. Using a combination of miRNA biomarkers, ddPCR identified significant differences between benign and malignant renal masses that were not identified by conventional qRT-PCR. Future work should investigate the prognostic capabilities of serum-based miRNAs using ddPCR as it compares to renal mass biopsy in distinguishing between benign and malignant renal masses.

Table 1: Pairwise tumor group comparisons with Kruskal-Wallis test for the combination of miR-210 and miR-222 using ddPCR and conventional qRT-PCR

Method	Tumor group comparison	Test statistic	Standard error	Standard test statistic	p-value
ddPCR	AML vs. Papillary RCC	-14.27	6.72	-2.12	.034
	AML vs. Low-grade ccRCC	-16.76	6.80	-2.47	.014
	AML vs. High-grade ccRCC	-23.30	6.97	-3.34	.001
	Papillary RCC vs. Low-grade ccRCC	-2.49	5.68	-0.44	.66
	Papillary RCC vs. High-grade ccRCC	-9.03	5.89	-1.54	.13
qRT-PCR	Low-grade RCC vs. High-grade ccRCC	-6.55	5.97	-1.10	.27
	AML vs. Papillary RCC	-11.85	6.87	-1.73	.085
	AML vs. Low-grade ccRCC	-11.50	6.94	-1.66	.097
	AML vs. High-grade ccRCC	-13.2	7.10	-1.86	.062
	Papillary RCC vs. Low-grade ccRCC	0.35	5.58	0.062	.95
	Papillary RCC vs. High-grade ccRCC	-1.39	5.78	-0.24	.81
	Low-grade RCC vs. High-grade ccRCC	-1.73	5.86	-0.30	.77

ddPCR = droplet digital polymerase chain reaction; qRT-PCR = quantitative reverse transcription polymerase chain reaction; AML = angiomyolipoma; RCC = renal cell carcinoma; ccRCC = clear cell renal cell carcinoma

P14

Stream Deceleration Score: A novel perioperative metric to predict post-operative incontinence outcomes in patients undergoing Holmium Laser Enucleation of the Prostate

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Background: Holmium laser enucleation of the prostate (HoLEP) has been presented as an alternative to TURP for treating BPH secondary to medium- and large-sized prostates. There is growing interest in urologists learning HoLEP. However, there is growing interest in optimizing metrics to help predict commonly asked patient outcomes such as early incontinence. We present a peri-operative metric known as the Stream Deceleration Score (SDS) to help predict post-operative incontinence outcomes to aid in patient counseling.

Methods: Using a database approved by an institutional review board, we performed a retrospective review of the initial 400 consecutive patients who underwent HoLEP by a single surgeon between April 2019 and June 2022. In our institution, we utilize a thermadex fluid management system with a set pressure of 60mmHg. At the end of the procedure when removing the cystoscope we calculate SDS by measuring the time to stream deceleration. If less than 2 seconds then a score of 0 is calculated, if more than 0 seconds then a score of 1 is calculated. We correlated SDS scores with incontinence rates from 1 month to 12 months across prostate sizes. We also performed a multivariable logistic regression while adjusting for clinical and demographic variables. Incontinence was defined as >2 pads per day.

Results: In our database there were 357 patients with available SDS scores and incontinence data available. For all patients with an SDS of 0 incontinence rates of 41%, 24%, 8%, and 0.5% were noted at 1, 3, 6, and 12 months. For patients with an SDS of 1 rates of 21%, 10.9%, 5.2%, and 1% were noted. When stratified across prostate sizes we identified that for 100g+ prostates there is a significant difference in 1 and 3 month incontinence rates across SDS values (26.0% vs. 30.2% and 15.0% vs. 9.4% respectively, $p < 0.05$) and in 1 month rates for 50-100g prostates (38.0% and 23.8%, $p < 0.05$). Additionally, SDS was associated with 1 month and 3 month incontinence rates in multivariable logistic regression (OR 1.57 [1.08-3.13] and OR 2.48 [1.25-6.54] respectively).

Conclusions: SDS correlates to early incontinence at 1 and 3 months particularly in large volume prostates. SDS may be used as a metric to counsel patients on time frame of return of continence outcomes post-operatively.

Figure 1. Incontinence rates within a 1 year across SDS values for all sized prostates

	1 month	3 months	6 months	12 months
SDS 0	41.1%	24.1%	8.0%	0.5%
SDS 1	21.0%	10.9%	5.1%	1%

P15

Creation and Evaluation of a Nursing Initiated Post-operative Phone Call System to Decrease Healthcare Utilization after Ureterscopy

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Background: Ureterscopy is common and increasing with post-procedure symptoms that are well established and difficult to avoid. Patient concerns lead to calls to clinic and ED visits requiring valuable resources. We hypothesize that calling patients after surgery to address concerns will decrease healthcare utilization.

Methods: QI team including urologist, clinic nurses, data collector, analyst executed a project based on the Plan Do Study Act (PDSA) framework. All patients undergoing ureterscopy called on POD 1-3 with a standardized EHR phone call template. Demographics, comorbidities, calls to clinic, ED visits, and reasons for the calls and ED visits were documented.

Results: A total of 95 cases recorded where 31 received call and 64 did not receive call. There were no differences in age, comorbidities, or prior opioid use in regard to patient calls to clinic or visits to ED. Of 31 pts called, 11 called the office (34%) and of 64 pts not called, 21 called the office (33%). The main reason for call included pain (17), urinary symptoms (10), medication questions (10). A single patient who called went to the ED (3%) while 5 (8%) who were not called presented to the ED where the main reason for ED visit was pain.

Conclusions: A standardized post-operative phone call system after ureterscopy was able to be created and implemented which found the main patient concern to be pain. Calls may decrease ED visits after ureterscopy but, further study is needed. The need for future patient education regarding post-operative medications provided was identified. Another significant barrier is limited nursing availability. Input from nursing and patients regarding satisfaction are future steps for this initiative.

P16

Perineal Urethral Closure for Stress Urinary Incontinence in the Post Prostate Cancer Devastated Bladder Outlet

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Background: Stress urinary incontinence (SUI) is a common complication following prostate cancer surgery. Unfortunately, the artificial urinary sphincter (AUI), the gold standard for treatment of SUI, does not yield satisfactory results in all men. Some men fail AUS or independently develop a devastated bladder outlet, resulting in persistent SUI per urethra which cannot be salvaged with available continence surgeries. The goal of our study was to look at the success rates of perineal urethral closure in this difficult patient population.

Methods: Patients that underwent urethral closure via the perineum to treat refractory post-prostate cancer urinary incontinence from a single institution between 1/1/2010 to 1/1/2022 were retrospectively reviewed. Data collected included patient demographics, prostate cancer therapies, and surgical history. The primary outcome of the study was the number of patients that remained dry following their initial urethral closure surgery.

Results: Six men with an average age of 83-years (range 75-91) underwent urethral closure in the studied time period. Additional patient characteristics are shown in Table 1. The average number of AUS implanted prior to urethral closure was 1.8 (range 0-3). Two patients had undergone XRT for prostate cancer. Average time from date of initial prostate cancer treatment to urethral closure was 19.5 years (range 3-30). Four of the six patients (66%) were dry per perineum after initial urethral closure. Of the remaining two, one became spontaneously dry seven weeks after surgery and the other underwent a transabdominal bladder neck closure. Average follow up after urethral closure was 28 months (range 6 - 77). At last follow up, five patients had an suprapubic tube (SPT) and one was catheterizing an augmented bladder. All were dry per perineum.

Conclusions: This is the largest patient cohort describing success rates of urethral closure in the setting of post-prostate cancer refractory SUI. All patients became dry at the date of last follow up, with only one requiring an additional surgery to achieve continence. Although a limited sample size, these experiences support that perineal urethral closure is an effective way to attain urinary incontinence in this very difficult patient population.

Table 1: Characteristics of patients undergoing perineal urethral closure for stress urinary inconti

Patient	Age at Urethral Closure (yr)	Current or former smoker	Diabetic	XRT for PCa	Urethral Sling Placed	# of AUS	Urethral stricture or Bladder neck contracture	Dry after initial surgery	Current Status
1	77	Yes	Yes	No	Yes	3	Yes	No	SPT
2	75	Yes	Yes	Yes	Yes	0	No	Yes	Cathing augmented bladder
3	80	No	No	Yes	No	2	No	Yes	SPT
4	87	No	No	No	No	2	No	Yes	SPT
5	91	No	No	No	No	3	Yes	No	SPT into neobladder
6	88	Yes	No	No	No	1	No	Yes	SPT

P17

Analysis of Price Transparency in New England Hospitals Demonstrates Poor Compliance and Variability

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Background: The Hospital Price Transparency Final Rule came into effect January 2021, and requires all US hospitals to publish prices for items and services offered at their institution to comply with the Centers for Medicare & Medicaid Services (CMS). Specifically hospitals are required to publish, and update estimated prices on a yearly basis in a comprehensive machine readable file and a patient-friendly list of shoppable services. This study evaluated the relationship of price transparency of two urologic procedures among hospitals in New England and hospital ranking.

Methods: Hospitals in ME, VT, NH, MA, RI, and CT ranked for urology services by U.S. News & World Report (USNWR) were included in this study. This included 71 hospitals total with rankings based out of 100 (best score). Price of robotic/laparoscopic prostatectomy (CPT 55866) and prostate biopsy (CPT 55700) for self-pay individuals was obtained from chargemasters or machine readable files available on hospital websites. Summary statistics were obtained to calculate average price of services by state. Pearson R correlation was used to evaluate correlation between USNWR ranking with price.

Results: Out of 71 hospitals studied, 60.6% (43/71) of the hospitals reported price for prostate biopsy and 45.1% (32/71) reported price of prostatectomy. 40.8% (29/71) hospitals provided prices for both services. Prices were highest in CT for both prostate biopsy (avg. price \$11,649.11, SD \$3,445.10) and prostatectomy (avg. price \$65,298.26, SD \$14,294.38) and lowest in Rhode Island for prostatectomy (avg. price \$34,067.10, SD \$4,214.25) and Maine for prostate biopsy (avg. price \$3,118.68, SD \$1,550.93). The average price of prostate biopsy in RI was second lowest, after ME, at \$3,314.00 and the average price of prostatectomy in Maine was \$38,291.45. Information on the remaining states can be seen in **Table 1**. The average US News ranking of the urology service providing compliant hospitals were as follows: VT 55.2, MA 51.3, RI 48.3, CT 45.6, NH 39.3, ME 33.3 (**Table 2**). There was a moderate positive correlation between prostatectomy price and ranking (Pearson R = 0.514, p = 0.001).

Conclusions: Hospital compliance with price transparency requirements and the price of two urological procedures are inconsistent in New England. Although price variability is expected due to differing operating costs and markets, a patient shopping for care is faced with additional challenges when hospitals are not complying with the price transparency requirements. Prostatectomy prices increase with rising USNWR ranking; further efforts to understand causes of price variation are warranted.

Table 1: Average price of two urologic procedures in New England states.

State	Mean Price CPT 55866 Surgical removal of prostate and surrounding lymph nodes using an endoscope	Mean Price CPT 55700 Biopsy of prostate gland	SD CPT 55866 Surgical removal of prostate and surrounding lymph nodes using an endoscope	SD CPT 55700 Biopsy of prostate gland
Maine	\$38,291.45	\$3,118.68	\$15,353.28	\$1,550.93
New Hampshire	\$48,008.85	\$9,248.20	\$13,812.64	\$7,154.71
Vermont	\$48,143.00	\$5,115.00	-	\$21.21
Rhode Island	\$34,067.10	\$3,314.00	\$4,214.25	\$0.00
Connecticut	\$65,298.26	\$11,649.21	\$14,294.38	\$3,445.10
Massachusetts	\$63,616.30	\$8,607.23	\$29,205.53	\$5,840.67

Table 2: Average rankings of hospitals offering urology services in New England

State	Parameter	Avg. USNWR Ranking Regardless of Compliance	Avg. USNWR Ranking for Hospitals That Report Prostate Bx Price	Avg USNWR Ranking for Hospitals That Report Prostatectomy Price	Avg. USNWR ranking for hospitals that report price for both procedures
VT	Avg. Ranking	56.9	56.9	55.2	55.2
	# hospitals	2	2	1	1
MA	Avg. Ranking	38.5	44.8	50.8	51.3
	# hospitals	35	15	9	8
RI	Avg. Ranking	39.7	48.3	39.7	48.3
	# hospitals	3	2	3	2
CT	Avg. Ranking	40.7	44.9	45.6	45.6
	# hospitals	20	14	9	9
NH	Avg. Ranking	39.0	39.3	39	39.3
	# hospitals	6	5	6	5
ME	Avg. Ranking	36.1	36.1	33.3	33.3
	# hospitals	5	4	4	4

P18

Objective Long-term Bladder Related Outcomes Affecting Quality of Life Following Trimodality Therapy

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Background: Trimodality therapy (TMT) for muscle invasive bladder cancer (MIBC) has been included in our national guidelines as an alternative to radical cystectomy.^{1,2} While limited bladder-related quality of life (QOL) outcomes exist, there remains a need to understand objective secondary long-term TMT outcomes affecting QOL.

Methods: A retrospective review of our IRB approved, institutional database was conducted. Occurrence of bladder stones, gross hematuria (GH), recurrent urinary tract infection (rUTI) and ureteral stricture was evaluated. Bladder stone was defined as any report of calcification in the bladder following completion of TMT. Patients who presented at least once to the emergency department (ED) were counted as having GH. rUTI was defined as ³ 2 infections in 6 months or ³ 3 in 1 year and was evaluated only in patients who retained their bladder over follow up. Ureteral strictures that occurred following salvage cystectomy were not included.

Results: 271 patients were included. 227 (83.8%) retained their bladder at a median follow up of 51.8 [interquartile range (IQR) 18.0-98.1] months (mo). 6 (2.2%) underwent cystectomy for benign causes including refractory lower urinary tract symptoms and poor bladder function (4, 1.5%), GH (1, 0.37%), and nonhealing fistula (1, 0.37%). Bladder stones occurred in 23 (8.5%) patients at a median time of 15.2 [IQR 8.3-23.6] mo. No treatment was needed in 10(43.5%). 1(4.4%) required cystolitholapaxy and 12 (53.2%) were removed endoscopically with forceps and/or irrigation. 49 (18.8%) patients had GH leading to an ED visit. Of these, 13 (26.5%) required no treatment, 12(24.5%) required catheter placement and hand irrigation, 14 (28.6%) needed continuous bladder irrigation, 5 (10.2%) required operative intervention and 5 (10.2%) required transfusion. 19 (8.4%) patients suffered from rUTI. 14 (5.3%) patients developed ureteral stricture at a median time of 27.8 [8.6-61.4] mo. 13 (92.9%) were managed with ureteral stents; 1 (7.1%) required percutaneous nephrostomy tube.

Conclusions: The rates of objective bladder related complications affecting QOL after TMT are relatively low. Similarly, the risk of developing an "end-stage bladder" requiring cystectomy and diversion is extremely low. These data support good QOL outcomes after TMT for MIBC.

Table 1. Factors Affecting Quality of Life Following Trimodal Therapy

Age, yrs (median, IQR)	80 [72-87]
Male gender (N, %)	219 (80.8%)
Follow up, mo (median, IQR)	51.8 [18.0-98.1]
Bladder retained (N, %)	227 (83.8)
Reason for cystectomy (N, %)	
Recurrent malignancy	38(86.4)
Benign	6(13.6)
Bladder stone formation (N, %)	23 (8.5)
Time to bladder stone formation, mo (median, IQR)	15.2 [8.3-23.6]
Gross hematuria (N, %)	49 (18.8%)
Treatment for gross hematuria	
None	13 (26.5)
Catheter +/- hand irrigation	12 (24.5)
Continuous bladder irrigation	14 (28.6)
Surgical intervention	5 (10.2)
Blood transfusion	5 (10.2)
Recurrent UTI* (N, %)	19 (8.4%)

* Recurrent UTI was defined as 2 infections within 6 months or 3 infections within one year, and calculated only in the subset of patients who retained their bladder throughout the course of follow up.

P19

Emerging Data Regarding Disparities in Insurance Coverage of Male Sexual Health Conditions

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Background: We previously explored the lack of uniformity that exists for insurance payer coverage for penile prostheses. We sought to expand this investigation to determine insurance coverage criteria for medical and surgical management of other common men's health conditions. Medical policy bulletins are insurance company guidelines for administering plan benefits. These documents determine whether insurers consider procedures/services to be medically necessary. These bulletins, along with member benefit plans, determine which services are covered.

Methods: Common sexual medicine conditions and treatment modalities for each were identified (Table I). Securities and Exchange Commission (SEC) filings were used to find the ten largest private insurers by member enrollment. This list was cross-referenced with the National Association of Insurance Commissioners (NAIC) 2020 Market Share Report. Kaiser and Centene were excluded due to a lack of nationwide medical policy bulletin. We reviewed medical policy bulletins to determine whether the list of treatment modalities for common sexual medicine conditions were identified as medically necessary ("covered"), investigational/cosmetic ("not covered"), or not found ("unknown").

Results: Our review of medical policy bulletins yielded 143 data points - 60 (41.9%) instances of covered services, 18 (12.6%) non-covered services, and 65 (45.5%) services with unknown coverage (Table I).

Conclusion: We encountered substantial difficulty in navigating and interpreting policy bulletins to form significant understanding of which sexual medicine treatments and conditions may be covered. No information was available for nearly half of the data points collected and instances of "unknown" coverage exceeded covered conditions. While 76.9% of conditions for which there was available data were covered, we are unable to draw generalizable conclusions for most conditions as there is such a significant amount of information missing from the online insurance information sources. Further challenges in determining coverage include the additional layers of limitations in member plan benefits, which could lead to confusion for both physicians and patients.

Insurer	Enrollment in Millions (Last year reported)	Prostate Cancer		Erectile Dysfunction		Hypogonadism		Non-surgical ED Treatment		Male Incontinence		Penile Prosthesis		Surgical Penile Prosthesis	
		Medical Necessity	Investigational	Medical Necessity	Investigational	Medical Necessity	Investigational	Medical Necessity	Investigational	Medical Necessity	Investigational	Medical Necessity	Investigational	Medical Necessity	Investigational
United	26.6 (2021)	2	1	2	1	1	2	2	2	2	2	0	2	2	2
Anthem	21.8 (2021)	0	0	2	0	2	2	2	0	1	1	1	2	0	2
Humana	17.1 (2021)	1	0	2	1	1	1	0	1	1	1	1	1	2	2
CVS	25.5 (2019)	1	1	2	1	1	1	1	1	1	1	1	1	1	0
HCSC	17.0 (2021)	1	1	1	1	1	1	1	0	0	1	1	1	2	0
Cigna	17.1 (2021)	1	1	2	1	1	1	1	1	2	0	0	1	1	2
Molina	8.2 (2021)	2	1	2	1	1	2	2	2	2	2	1	2	2	2
BCX	8.1 (2020)	2	2	2	2	2	2	2	1	2	2	2	2	2	2

P20

Lessons Learned From A Single Center's Early Aquablation Experience

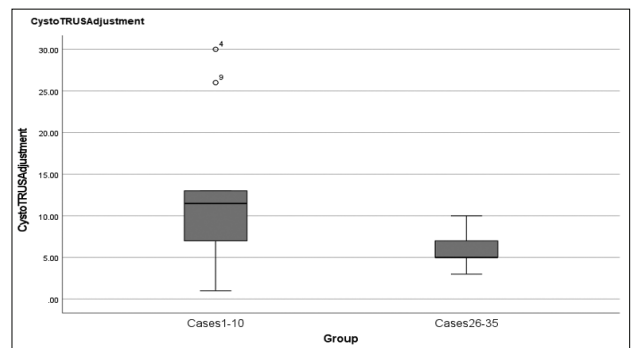
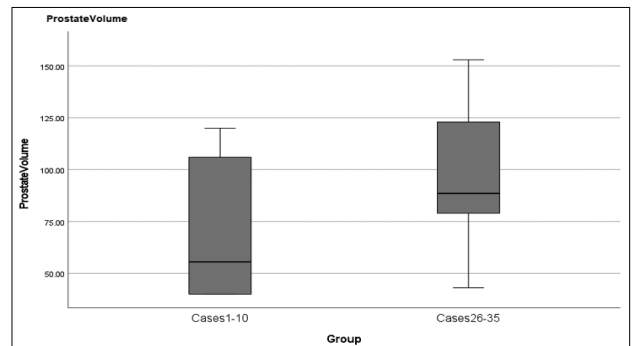
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Background: Urology has long been a field in pursuit of technologies to care for patients in safer, more efficient ways. Incorporating a new procedure into practice is a time-consuming and intimidating prospect but is a necessary skill through a physician's career. This describes our system's initial experience with performing aquablation.

Methods: This prospective study was conducted at a single site of an academic center. Baseline patient demographics, comorbidities, prior treatment history, prostate sizing, PSA, and urodynamic diagnoses were collected. Intraoperatively, times were recorded for each phase of the procedure, with the surgeon notifying record keepers when each portion began and ended. Significant intraoperative and postoperative events (up to 30d) were logged. Unpaired Student's t-test was performed using SPSS to determine significance of findings between the first and last 10 cases in our dataset, with a p-value of <0.05 considered statistically significant.

Results: Average gland size in the first 10 cases was smaller than the last 10 cases (69.6±32.4g, 94.9±32.9g p=0.1), with 11/35 (31.4%) measured as greater than or equal to 110g. Transrectal ultrasound (TRUS) positioning took 6.9±6.4 min initially, down to 4.1±3.6min in the last 10 cases (p=.247). The cystoscope to TRUS adjustment demonstrated a similar trend: 13.9±7.9min to 5.9±2.2min (p=0.006). Mean time to contour the prostate remained within 40 seconds (p=0.77), and total operative time was not noted to be significantly different (63.8±20 to 73.1±32.4 p=.45). Postoperative complications occurred in 4/35 (11.4%) patients, with one event classified as Clavien-Dindo (CD) 4.

Conclusions: Our data represent a single surgeon experience, demonstrating lessons from the aquablation learning curve. Faster cystoscope to TRUS adjustment likely stems from more facile equipment handling with repetition, as was the trend with TRUS positioning- a similar type of task. Bipolar resection and hemostasis were the lengthiest portions of the final 10 cases, which may be reflective of increased resident involvement in the latter half of the 35 operations. Data collection is ongoing to examine this in greater detail.



P21

A Large-Scale Real-World Analysis: BPH-Related Procedures Associated with Medical Therapy Compared to Traditional Surgery and MIST

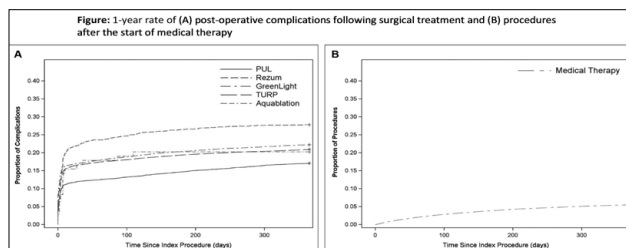
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Background: Effective medical therapy for BPH may be hindered by lack of patient adherence while surgical intervention can provide relief with a single treatment. Here, we analyze large-scale real-world data to compare BPH-related procedures occurring with disease progression on daily medication vs those with surgical treatment for BPH.

Methods: A representative sample of US Medicare and commercial claims (IBM Watson) provided patient-level data on BPH patients who received medical therapy only (α -blockers, 5-ARIs, anti-cholinergics, β 3-agonists, PDE5-inhibitors), or outpatient surgery (TURP, PVP, Aquablation, UroLift PUL, Rezum WVTT) from 2015-2021. CPT codes identified BPH-related procedures occurring either after initiation of medical therapy or post-operatively following surgical treatment. ICD diagnosis codes identified possible underlying causes for procedures in medical therapy patients. Cumulative incidence curves demonstrate BPH-related procedure rates through 12-months post-treatment.

Results: The medical therapy cohort consisted of 203,504 patients and had a mean treatment duration of 716d. Tamsulosin (n=75,698) and tadalafil (n=55,129) were the most commonly used medications. 5.5% of medical therapy patients experienced a BPH-related procedure with a mean time of 121d to onset for any event. The most frequent BPH-related procedures in medical therapy patients were cystoscopy (n=9,920), catheterization (n=1,792), and bladder irrigation (n=975). Cystoscopies in medical therapy patients were associated with diagnoses of urinary retention and LUTS. The surgical cohort was comprised of traditional surgery (TURP (n=24,035), PVP (n=11,911), Aquablation (n=84)) and MIST (PUL (n=8,649), Rezum (n=1,944)) patients. Rates of post-operative BPH-related procedures were highest after Rezum (28%), lowest after PUL (17%), and comparable among traditional surgeries (PVP 22%, TURP 21%, Aquablation 20%). For the surgery cohort, the top post-operative procedures were catheterizations, cystoscopies, and bladder irrigations.

Conclusions: As BPH disease progresses, ~6% of medical therapy patients undergo procedures within 1 year of initiating medication use. Post-operative procedure rates were lowest following PUL and similar between PVP and TURP.



P22

Do High-Risk Patients Diagnosed with Microscopic Hematuria by Primary Care Providers Undergo Urologic Consultation and Receive Guideline Concordant Care?

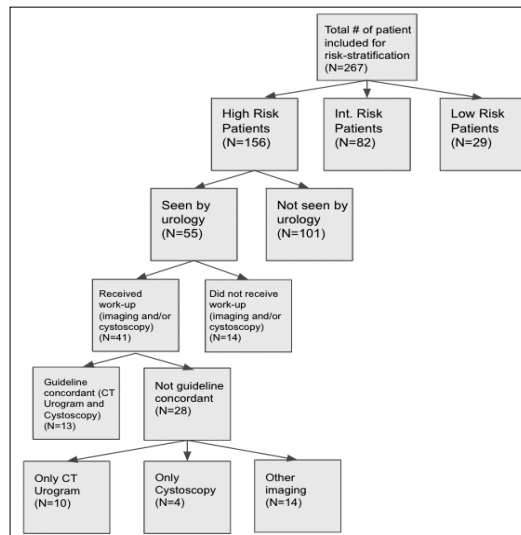
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Background: Microscopic hematuria (MH) is a common diagnosis seen in the primary care setting. Guidelines exist to direct the urologic evaluation of MH however, primary care management, including need for specialist referral, is less well defined. Patients at high risk for urologic malignancy are particularly important to ensure appropriate diagnostic evaluations are performed. Our goal was to identify primary care patients with MH and describe the diagnostic evaluations they received. For high-risk patients, we also evaluated whether the work-ups performed were consistent with the 2020 AUA/SUFU guidelines.

Methods: A retrospective review of patients presenting to the primary care outpatient clinics at an academic medical center with a diagnosis of MH was performed from 1/1/2020 to 12/31/2021. Patient demographics, risk factors, diagnostic tests and visits with urology were recorded. Patients were classified as low, intermediate, and high-risk for urologic malignancy based on the 2020 AUA/SUFU guidelines. Descriptive statistics were generated to describe outcomes.

Results: 368 patients had a diagnosis of MH. The average age of the cohort was 62.5 years and 243 (66.0%) were female. 267/368 (72.6%) patients had all pertinent data available for risk stratification. 156 (58.4%) were considered high-risk (HR) with an average age of 63.4 years and 84 (53.8%) were female. Fifty-five (35.3%) high-risk patients had a urologic visit following the MH diagnosis; 33 out of 108 females (30.6%) and 22 out of 48 (45.8%) males were seen by urology. The average age of the patients seen by urology was 62.1 years and those not seen was 62.4 years. Twenty-nine (18.6%) of the high-risk patients presented with dysuria: 12 (41.4%) were seen by urology while 17 (58.6%) did not have a urology visit. Of the 55 HR patients seen by urology, 41 (75%) were evaluated with imaging studies and/or cystoscopy. Thirteen of the evaluations (31.7%) consisted of both CT urography and cystoscopy in-line with guideline recommendations. Twenty-eight (68.3%) of the work-ups were guideline discordant: 10 (24.4%) with CT urogram alone, 4 (9.8%) cystoscopy alone, and 14 (34.1%) with other imaging studies (ultrasound and/or CT other). Of the 14 who received other imaging studies, 5 (35.7%) received only ultrasound, 4 (28.6%) received only CT other, and 5 (35.7%) received both ultrasound and CT other. (Figure 1)

Conclusions: A large portion of patients diagnosed with MH by primary care providers were considered high-risk based on the AUA/SUFU MH guidelines. Only 35% of these high-risk patients were seen by urology in our cohort. While most received some form of evaluation, only about 1/3 of these were guideline concordant. Female patients were seen less frequently by urology compared to male patients and a higher percentage of high-risk patients presenting with dysuria were not seen by urology. Future efforts should focus on ensuring appropriate urologic referral from primary care providers as well as ensuring that urologic management is guideline concordant in this high-risk population.



P23

Changes in Serial Decipher Genomic Classifier Testing Among Patients with Prostate Cancer Managed with Active Surveillance

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Background: The role of serial tissue-based gene expression (genomic) testing among patients managed with active surveillance (AS) for localized prostate cancer is unclear. We aimed to examine patterns of serial genomic testing with the Decipher genomic classifier (GC) and assess the relationships between changes in GC and short term clinical outcomes.

Methods: We performed a retrospective analysis of patients on AS for prostate cancer who underwent GC testing on at least two distinct prostate biopsies occurring between January 2017 and May 2022. The primary study objective was to assess the association between changes in GC and Gleason grade group (GG) upgrade during surveillance. Among the subset of patients who were treated with radical prostatectomy (RP), we evaluated the relationship between GC changes and the detection of adverse pathology (GG \geq 3 and or pT3a or N1).

Results: We identified 149 patients enrolled in AS for GG1 (n=105, 70.5%), GG2 (n=41, 27.5%), or GG3 (n=3, 2%) prostate cancer who received serial GC testing. GC scores decreased from the first to the second biopsy in 61 (40.9%) patients on AS and increased in 87 (58.4%) (Figure 1). The median change in GC scores was 0.03, (interquartile range, IQR -0.11 to +0.16). Increases in GC were observed in 27 (25.7%) patients with biopsy GG1 on initial biopsy, 11 (26.8%) with GG2, and no patients with initial GG3 disease (p=0.58). Among 71 patients who underwent a subsequent prostate biopsy, Gleason upgrade occurred in 31 (43.7%). In multivariable logistic regression, GC increase (odds ratio, OR per 0.10 increase 0.93, 95% CI 0.71-1.22, p=0.61) was not significantly associated with Gleason upgrade. Adverse pathology was identified in 7 of 25 (28%) patients treated with RP of whom the median change in Decipher score was +0.01, compared with +0.01 of those with favorable pathology (p=0.90).

Conclusions: Among patients undergoing Decipher GC testing during AS for prostate cancer, there was substantial variation in serial test results; however, increases in GC were not associated with short-term biopsy upgrade.

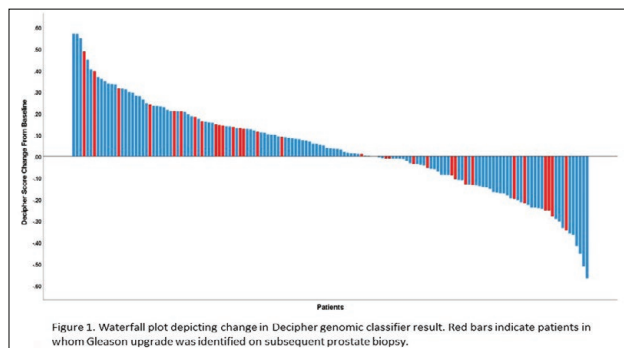


Figure 1. Waterfall plot depicting change in Decipher genomic classifier result. Red bars indicate patients in whom Gleason upgrade was identified on subsequent prostate biopsy.

P24

Breastfeeding Support for Lactating Urologists

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Background: Women are entering surgical fields in increasing numbers, recently accounting for approximately 10.9% of the Urology physician workforce, an increase from 7.7% in 2014. Just over a third of all urology residents who matched in 2022 were female. While we have seen an increase in the number of female urologists entering practice, the number of female physicians entering residency appears to be slowing. If we wish to continue recruiting and retaining female surgeons, we need to understand their specific needs. The most frequently cited barriers to females entering surgical fields include lack of mentorship and lack of support through childrearing. There has been little research in investigating the support that exists for lactating urologists specifically. We aim to uncover perceived support of lactating surgeons in Urology. We hypothesize that there will be variation in breastfeeding support amongst institutions.

Methods: A 23 question survey was distributed to members of Society of Women in Urology (SWIU) and Women Docs in Urology (WDU). All women urologists who breastfed at least one child during their practice or surgical training were included. Data was collected and simple statistics were used to calculate percentage data.

Results: 89 responses were collected over the course of 3 weeks. Participants were on average 6 years into practice. 29 states were represented. Reported practice data include 57% working in a large practice of over 11 physicians, 61.6% work in urban settings, and 66.3% in academic practice. 55.2% worked in a practice with fewer than 50% female providers and another 33.3% were the only female provider in their group. The majority (76.1%) spent an average of 1-2 days in the OR per week. 55.6% used a wearable breast pump (elvie, willow, etc). When asked if they felt supported by their workplace and colleagues to continue to pump the majority (66.2%, 74.1%) agreed or strongly agreed. When asked if they had been penalized, felt they would lose their job or miss out on a promotion the majority disagreed or strongly disagreed (80.9%, 95.5%, 78.6%). Mixed results were seen when asked if they felt their coworkers understood their needs while breastfeeding (55.1%) and if they had adequate time and an appropriate space to pump at work (45%, 47.7% agreed). Space was left at the end of the survey to leave additional comments on and the most common themes mentioned were lack of time, space and loss of RVUs.

Conclusions: Overall there appears to be good perceived support for breastfeeding amongst urologists in our sample. There is a lack of understanding from coworkers regarding our participants specific needs while breastfeeding. Our participants also describe challenges finding enough time and having an appropriate space to continue pumping at work. Our data gives important information that can help us to better understand the needs of lactating urologists. We may use this data to better support lactating surgeons in the future.

Reference: Findlay BF, Bearrick EN, Granberg CF, Koo K. Path to Parity: Trends in Female Representation Among Physicians, Trainees, and Applicants in Urology and Surgical Specialties. *J Urology* 2023;172:228-233.

P25

A Multicenter Evaluation of Penile Curvature Correction in Men with Peyronie's Disease Undergoing Inflation Penile Prosthesis Placement

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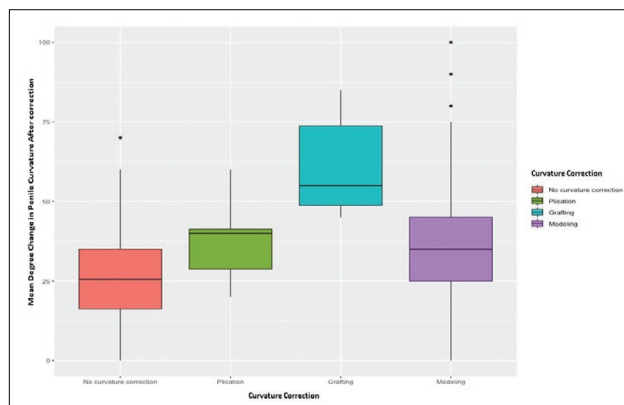
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Background: Inflation penile prosthesis (IPP) insertion is recommended for the treatment of patients with Peyronie's Disease (PD) and significant erectile dysfunction (ED). Adjunctive procedures such as modeling, plication, or incision/excision and grafting can be used when there is residual curvature after IPP placement. We aim to evaluate the management of curvature correction in patients with PD undergoing IPP among high volume prosthetic urologists.

Methods: We performed a retrospective study of 205 patients diagnosed with PD undergoing IPP by 7 high volume penile prosthetic surgeons. Demographic, intraoperative, and postoperative data were collected and analyzed. Descriptive statistics were performed using mean and standard deviation for continuous variables, while incidence and percentages were used for categorical variables. We calculated the mean change in penile curvature after IPP insertion for each of the adjunctive correction techniques. Intra- and post-operative complications were collected.

Results: 205 patients met inclusion criteria with a mean age of 60.7 years (SD=9.2) and a median follow-up of 6 months (0.5-58.5 months). The mean preoperative curvature was 43.4° (SD=18.9°) with dorsal curvature being the most common. Overall, 73 (35.6%) patients had IPP only with no adjunctive curvature correction procedure, 24 (11.7%) underwent plication, 10 (4.9%) underwent grafting, and 98 (47.8%) underwent modeling. Preoperatively, the mean starting curvature was 35.7° for the IPP only group, 48.1° for the plication group, 60.6° for the grafting group, and 46.0° for the modeling group (p<0.001). Patients undergoing grafting had significantly less comorbidities compared to the other groups: only 1 (10%) had diabetes and none were smokers or had cardiovascular disease, p<0.001. After penile curvature correction, the mean curvature change was 25.5° for the IPP only group, 40.0° for the plication group, 55.0° for the grafting group, and 35.0° for the modeling group, p <0.001 (Figure 1). Intraoperatively, proximal perforation occurred in 2 (0.96%) patients, managed by a rear tip extender sling. Post-operatively, there were 33 (16.1%) non-infectious and 4 (1.9%) infectious complications. There was no significant difference in complications between groups.

Conclusions: Although incision/excision and grafting seem to provide the greatest penile curvature correction for PD patients undergoing IPP placement, this adjunctive correction procedure is less commonly performed among high volume prosthetic urologists. Our results suggest grafting is reserved for patients with greater preoperative curvature and less preoperative comorbidities.



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'Cancer-associated Fibroblasts' are Present in Normal Bladder Tissue but Differentially Located in the Bladder tumor Microenvironment Compared to Normal Controls

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Background: Cancer-associated fibroblasts (CAFs) are cells within the tumor microenvironment that have been implicated in tumor growth, progression, and treatment resistance by providing a supportive milieu. Recently, unique CAF subpopulations have been characterized by single cell RNA sequencing (scRNA-seq) supporting a role for fibroblasts in bladder cancer biology. Multiple bladder CAF's have been identified with markers such as SLC14A1, PDGFRA, and RGS5 and contribute to several aspects of cancer biology including inflammation and cancer stem maintenance. Here, we used scRNA-seq on normal human bladders and patient-derived bladder tumor specimens to demonstrate that previously identified CAF subpopulations exist in normal tissue, have corollaries in the mouse bladder, and are associated with other distinct cell types within the microenvironment.

Methods: scRNA-seq was performed on transurethral resection of bladder tumor (TURBT) samples and normal bladder samples from cadavers utilizing 10X chromium gene expression kit. Preprocessing was performed with cellranger and downstream analysis performed via scanpy. After initial processing and clustering, fibroblasts were extracted from normal and tumor datasets for further subclustering analysis. Human fibroblasts were compared with mouse fibroblasts by Pearson correlation of marker genes identified in mouse and human fibroblast datasets. Cell type proportions associated with fibroblasts was confirmed in bulk RNA sequencing datasets from the UROMOL consortium by deconvolution of bulk RNA seq data with Scaden using in-house scRNA seq data as a reference.

Results: Four distinct fibroblasts populations were identified in scRNA-seq data from normal human bladders defined by DPT, SLC14A1, PI16 and CXCL14. The DPR and SLC14A1 populations were present in bladder tumors however the PI16 and CXCL14 populations were absent in tumors. Comparison to mice showed that each of the fibroblasts present in humans had a fibroblast subtype corollary in mice with the DPT and SLC14A1 populations associated with detrusor resident fibroblasts and fully differentiated suburothelial myofibroblasts, respectively. Proportionally, DPT hi and SLC14A1 hi datasets were associated with other cell types and molecular signatures with DPT hi datasets associated with M2-like macrophages and SLC14A1 hi associated with ACKR1+ endothelial cells and PLN+ vascular smooth muscle. These cellular associations were confirmed in bulk RNA seq data where after deconvolution DPT hi datasets and SLC14A1 hi datasets had similar cellular proportion signatures originally identified in scRNA-seq.

Conclusions: We identified distinct fibroblast populations in both normal human bladder and human bladder cancers defined by SLC14A1 and DPT. In normal bladder tissue, SLC14A1 is localized in the suburothelial location and DPT is present within the detrusor muscle. Despite these same fibroblasts being in a different location within bladder cancers compared to normal bladder, SLC14A1 and DPT fibroblasts within bladder canes remain associated with a distinctive microenvironment. SLC14A1 fibroblasts are associated with subtypes of endothelial and vascular smooth muscle and DPT fibroblasts are associated with anti-inflammatory macrophages and regulatory T cells. These findings suggest that tumors have the ability to co-opt normal cellular machinery to create a tumor microenvironment that supports carcinogenesis.

Risk Factors for Lymphoceles following Robot-Assisted Laparoscopic Prostatectomy: Insights from NSQIP Data

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Background: Lymphocele is a common cause for morbidity following robot-assisted laparoscopic prostatectomy (RALP). While previous studies have reported rates of lymphocele after RALP, few have investigated specific patient-level and operative-level factors that may contribute to its development. This study aims to address this gap in the literature by examining a recent and large cohort of patients undergoing RALP.

Methods: We queried the National Surgical Quality Improvement Program (NSQIP) between 2019 and 2021 for men who underwent RALP with pelvic lymph node dissection for prostate cancer. The primary endpoints were 30-day lymphocele development and lymphocele development requiring intervention or reoperation. The patient-level factors were age, clinical T, body mass index, race/ethnicity, 5-item frailty index, bleeding diathesis, prior pelvic operation, and prior pelvic radiotherapy. The operative-level factors were operative time, number of lymph nodes dissected, whether the patient was kept NPO (fasting) for a prolonged time, and whether a drain was placed postoperatively. We fitted a multivariable logistic regression to examine the patient- and operative-level factors associated with lymphocele development and lymphocele requiring intervention adjusting for the aforementioned covariates.

Results: Our cohort included 14,697 men of whom 303 (2.1%) developed a post-operative lymphocele. Out of 303 men who developed a lymphocele, 123 (40.6%) required an intervention or reoperation. **Table 1** compares the baseline characteristics between those who developed and those who did not develop a lymphocele 30 days after RALP. Patient-level factors associated with lymphocele development included prior pelvic operations [OR: 1.56; 95%CI (1.18 - 2.05); p<0.01], obesity [OR: 1.50; 95%CI (1.04 - 2.16); p=0.03, and older age (61-69; OR: 1.38; 95%CI (1.04 - 1.84); p=0.03]. The operative-level factors included prolonged postoperative fasting or nasogastric tube use (OR: 8.69; 95%CI (5.43 - 13.92); p<0.01), and prolonged operative time (3-4 hours; OR: 1.58 95%CI (1.16 - 2.16); p <0.01]. For every one lymph node dissected, the odds of lymphocele development increased by [2%; 95%CI (1 - 3); p<0.01]. Nevertheless, postoperative drain placement was not associated with lymphocele development. Similar predictors were found for lymphocele requiring intervention or reoperation (**Table 2**).

Conclusions: We identified patient- and operative level factors associated with lymphocele development after RALP. Postoperative prolonged fasting emerged as the strongest predictor of lymphocele development and intervention, while drain placement was not protective. While we could only capture 30-day outcomes, the lymphoceles captured in this cohort were likely symptomatic or detected incidentally. Our findings provide valuable real-world data using a diverse patient population and a mix of surgeons with varying levels of expertise.

Table 1: Comparison of baseline patient characteristics and operative data between men who developed postoperative lymphocele and patients who did not within 30-days of RALP

	No Lymphocele N=14,394	Lymphocele N=303	Total N=14,697	p-value
Age				0.09
≤ 60	4,602 (32.0%)	79 (26.1%)	4,681 (31.9%)	
61-69	7,095 (49.3%)	162 (53.5%)	7,257 (49.4%)	
≥ 70	2,697 (18.7%)	62 (20.5%)	2,759 (18.8%)	
Race and Ethnicity				0.67
Non-Hispanic White	10,008 (69.5%)	212 (70.0%)	10,220 (69.5%)	
Non-Hispanic Black	1,875 (13.0%)	44 (14.5%)	1,919 (13.1%)	
Hispanic	692 (4.8%)	15 (5.0%)	707 (4.8%)	
Other	1,819 (12.6%)	32 (10.6%)	1,851 (12.6%)	
Body Mass Index				< 0.01
Underweight and Normal	2,595 (18.0%)	41 (13.5%)	2,636 (17.9%)	
Overweight	6,405 (44.5%)	121 (39.9%)	6,526 (44.4%)	
Obesity	5,338 (37.1%)	139 (45.9%)	5,477 (37.3%)	
Missing	56 (0.4%)	2 (0.7%)	58 (0.4%)	
5-item Frailty Index				0.05
0	6,289 (43.7%)	118 (38.9%)	6,407 (43.6%)	
1	6,251 (43.4%)	134 (44.2%)	6,385 (43.4%)	
≥ 2	1,404 (9.8%)	41 (13.5%)	1,445 (9.8%)	
Missing	450 (3.1%)	10 (3.3%)	460 (3.1%)	
Bleeding Diathesis				0.01
No	14,246 (99.0%)	295 (97.4%)	14,541 (98.9%)	
Yes	148 (1.0%)	8 (2.6%)	156 (1.1%)	
Prior Pelvic Operations				<0.01
No	12,019 (83.5%)	224 (73.9%)	12,243 (83.3%)	
Yes	2,375 (16.5%)	79 (26.1%)	2,454 (16.7%)	
Prior Pelvic Radiotherapy				0.58
No	14,291 (99.3%)	300 (99.0%)	14,591 (99.3%)	
Yes	103 (0.7%)	3 (1.0%)	106 (0.7%)	
Clinical T				0.39
T1 or T2	7,781 (54.1%)	155 (51.2%)	7,936 (54.0%)	
T3 or T4	6,566 (45.6%)	146 (48.2%)	6,712 (45.7%)	
Unknown	47 (0.3%)	2 (0.7%)	49 (0.3%)	
Prolonged Postoperative NPO or NGT Use				<0.01
No	14,265 (99.1%)	278 (91.7%)	14,543 (99.0%)	
Yes	129 (0.9%)	25 (8.3%)	154 (1.0%)	
Operative time				<0.01
< 3 hours	4,786 (33.2%)	69 (22.8%)	4,855 (33.0%)	
3-4 hours	5,169 (35.9%)	123 (40.6%)	5,292 (36.0%)	
≥ 4 hours	4,438 (30.8%)	111 (36.6%)	4,549 (31.0%)	
Median Number of Lymph Nodes	1 (0.0%)	0 (0.0%)	1 (0.0%)	
Postoperative Drain Placement	7.0 (4.0-12.0)	8.0 (4.0-15.0)	7.0 (4.0-12.0)	<0.01
No				0.70
Yes	9,699 (67.4%)	201 (66.3%)	9,900 (67.4%)	

Table 2: Multivariate logistic regression assessing the patient- and operative-level factors associated with lymphocele development

	Lymphocele (n=14,178)	Lymphocele Requiring Intervention (n=14,178)		
	Odds Ratio (95%CI)	p-value	Odds Ratio (95%CI)	p-value
Age				
≤ 60	Reference		Reference	
61-69	1.38 (1.04-1.84)	0.03	1.29 (0.82-2.04)	0.27
≥ 70	1.33 (0.93-1.90)	0.12	1.74 (1.02-2.98)	0.04
Body Mass Index				
Underweight or normal	Reference		Reference	
Overweight	1.19 (0.83-1.71)	0.35	1.82 (0.94-3.53)	0.07
Obese	1.50 (1.04-2.16)	0.03	2.57 (1.32-4.99)	0.01
Race and Ethnicity				
Non-Hispanic White	Reference		Reference	
Non-Hispanic Black	1.00 (0.70-1.43)	0.99	0.60 (0.30-1.17)	0.13
Hispanic	1.06 (0.62-1.82)	0.83	0.82 (0.33-2.03)	0.67
Other	0.84 (0.57-1.24)	0.38	0.53 (0.25-1.09)	0.09
5-item Frailty Index				
0	Reference		Reference	
1	1.00 (0.77-1.30)	0.98	0.80 (0.54-1.19)	0.27
≥ 2	1.25 (0.85-1.82)	0.26	0.81 (0.42-1.56)	0.53
Bleeding Diathesis				
No	Reference		Reference	
Yes	2.05 (0.89-4.74)	0.09	1.70 (0.41-7.04)	0.46
Prior Pelvic Operations				
No	Reference		Reference	
Yes	1.56 (1.18-2.05)	< 0.01	1.19 (0.75-1.88)	0.19
Prior Pelvic Radiotherapy				
No	Reference		Reference	
Yes	1.07 (0.33-3.51)	0.91	0.83 (0.11-6.29)	0.86
Clinical T				
T1 or T2	Reference		Reference	
T3 or T4	1.05 (0.83-1.33)	0.71	0.85 (0.58-1.24)	0.40
Unknown	2.53 (0.60-10.59)	0.20	5.76 (1.35-24.7)	0.02
Prolonged Postoperative NPO or NGT use				
No	Reference		Reference	
Yes	8.69 (5.43-13.92)	< 0.01	8.67 (4.22-17.8)	< 0.01
Operative Time				
< 3 hours	Reference		Reference	
3-4 hours	1.58 (1.16-2.16)	< 0.01	1.75 (1.07-2.87)	0.03
≥ 4 hours	1.52 (1.10-2.11)	0.01	1.63 (0.97-2.74)	0.06
Number of Lymph Nodes	1.02 (1.01-1.04)	< 0.01	1.03 (1.01-1.04)	< 0.01
Postoperative Drain Placement				
No	Reference		Reference	
Yes	0.99 (0.77-1.27)	0.94	0.89 (0.59-1.32)	0.56

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How Does Surgical Volume of Surgeons Affect Surgical Outcomes in Partial Nephrectomy?

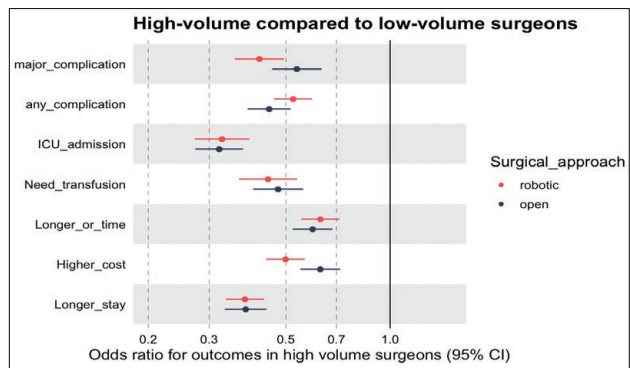
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Background: Partial nephrectomy (PN) is an advanced surgical technique that treats renal tumors with optimal renal function preservation. Previous studies have shown that high volume surgeons are associated with better outcomes in advanced surgeries treating colon cancer and lung cancer. However, evidence with large sample size on the association between surgeon volume and outcome in partial nephrectomy is still lacking. We test the hypothesis that higher surgical volume is associated with better post operative outcomes.

Methods: Patients receiving PN were captured from Premier Healthcare Database (PHD) using both ICD-9 55.4 and CPT code 50543 retrospectively from 2011 to 2020. High volume and low volume surgeons are defined as surgeons with amount of annual PNs above 75th percentile and below 25th percentile of all surgeons in the PHD. The primary outcome is Clavien-Dindo classification 3 or above (major complication). For the secondary outcomes we studied any complication, need for transfusion, admission to ICU, operation time, length of stay and total cost equivalent to dollars in 2020. We categorized operation time, length of stay and total costs into two categories: above and below annual median in the PHD. The analysis is done in 2 different groups within all PNs: open PN and robotic PN. Laparoscopic approach was excluded due to low numbers. Propensity score with inverse probability weighting was used to balance various baseline characteristics and we reported weighted odds ratio (OR) and 95% confidence interval. Since PHD is insurance claim-based database we cannot control for baseline tumor characteristics.

Results: Due to changing annual surgical volume, the criterion for low volume surgeon is either 1 or 2 cases per year and for high-volume surgeon is more than 8 to 10 cases per year. High volume surgeon has roughly half the odds of developing major and any complication, around one-third the odds of admission to ICU, and less than half the odds of needing transfusion. Other outcomes such as operation time, length of stay and total cost are also significantly lower (table 1). By analyzing open and robotic PN, we can see the protective effect of high-volume surgeon on major complication and total cost is greater in the robotic approach (figure 1).

Conclusions: Partial nephrectomies by high-volume surgeons are associated with better outcomes. To further improve outcome, centralization to high-volume surgeons might be considered.



Outcomes	Surgical_approach	Odds_ratio	p_value
<fctr>	<chr>	<chr>	<chr>
major_complication	open	0.54 [0.46-0.63]	<0.001
major_complication	robotic	0.42 [0.36-0.49]	<0.001
any_complication	open	0.45 [0.39-0.52]	<0.001
any_complication	robotic	0.52 [0.46-0.60]	<0.001
ICU_admission	open	0.32 [0.27-0.38]	<0.001
ICU_admission	robotic	0.33 [0.27-0.39]	<0.001
Need_transfusion	open	0.47 [0.40-0.56]	<0.001
Need_transfusion	robotic	0.44 [0.37-0.54]	<0.001
Longer_or_time	open	0.60 [0.52-0.68]	<0.001
Longer_or_time	robotic	0.63 [0.55-0.71]	<0.001
Longer_stay	open	0.38 [0.33-0.44]	<0.001
Longer_stay	robotic	0.38 [0.38-0.43]	<0.001
Higher_cost	open	0.63 [0.55-0.72]	<0.001
Higher_cost	robotic	0.50 [0.44-0.57]	<0.001

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An Examination of Patient Satisfaction According to Diagnosis between Urology Physicians and Advanced Practice Providers

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Background: There is a projected national shortage of urologists in the coming decade. The American Urological Association supports the incorporation of advanced practice providers (APPs) into urologic practices. However, there is limited research addressing the effect of increased utilization of APPs in the urologic setting. There has been research to suggest the use of APPs in the urologic setting is not associated with diminished patient satisfaction. However, it remains unclear if this holds true across the entire spectrum of urologic diagnoses. Given the wide variety of possible diagnoses new patients are assessed for, we hypothesized that there would be measurable and meaningful differences in patient satisfaction.

Methods: We performed a retrospective assessment of patient satisfaction surveys administered over a 2 year period at a single high-volume urology practice in Maine. Patients were queried shortly after an encounter with one of 13 APPs or 11 physicians. Patient satisfaction was assessed by the Consumer Assessment of Healthcare Providers and Systems Clinician & Group Survey (CG-CAHPS). Responses were analyzed across specific diagnoses between provider category (APP vs. physician). The independent effect of provider type on patient satisfaction for 17 different diagnoses was assessed with multivariable analysis, controlling for available patient characteristics (age, race, gender, marital status).

Results: We reviewed 8639 new patient visits from July 2020 to June 2022. The final study cohort included 2831 patients who responded to the survey and had a diagnosis of interest. Patients seeing APPs (vs a physician) were more likely female (31.4% of APP patient encounters were with female patients while 22.7% of physician encounters were with females) and non-white (4.7% v 3.7%). Multivariable analyses for each diagnosis population, controlling for covariates, found there were no significant differences in patient satisfaction between APP and physician excluding the cancer population. This is demonstrated in the Table.

Conclusions: Despite the subspecialty nature of urologic practice, previous research shows use of APPs is not associated with diminished patient satisfaction. However, when analyzed by specific diagnosis patient satisfaction is diminished when being seen by an APP for a cancer diagnosis. In our patient cohort, patients with a cancer diagnosis are predominantly seen by a physician. In the rare instances that a patient has an initial visit with an APP for cancer there was decreased satisfaction. Therefore, all efforts should be made to schedule these patients with a physician. All other diagnosis analyzed there was not diminished satisfaction. Our findings suggest that with the exception of cancer patient satisfaction will not be reduced by increased utilization of APPs. More broadly our study does not assess clinically relevant patient outcomes, and more research needs to be done to examine the safety and efficacy of APP integration. Further, it is important to examine our study's findings in a more broadly representative population as our patient population does not reflect the national averages. Nonetheless, given the impending national shortage of urologic physicians, our findings support the notion that APPs can be thoughtfully integrated into urologic care without decreasing overall patient satisfaction.

Quantifying Discrepancies in Research Efforts in Women’s & Men’s Sexual Health

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Background: Recent media attention highlights disparities in knowledge and treatment options between women’s and men’s sexual health. We sought to quantify the purported discrepancy by examining the number of studies, amount of funding, and public opinion for both women’s (WSH) and men’s sexual health (MSH) conditions.

Methods: Publicly available data from the NIH RePORTER and Patient-Centered Outcomes Research Institute (PCORI) database were used to explore three dimensions: project count, amount of funding per project, and phase/duration of study. Publication numbers were gathered from NIH RePORTER. As a metric of public opinion, we queried GuideStar for foundations dedicated to the conditions of interest. Two sets of search phrases were used in each database (Table I). Included projects listed sexual function among their primary outcomes. Projects based outside the US were excluded.

Results: WSH conditions yielded 22 results: 18 in NIH RePORTER, 3 in PCORI, and 1 foundation listed by GuideStar. In total, queries for MSH conditions yielded 56 results: 47, 3, and 6, for each respective database. Funding for MSH totaled \$57.6 million, while WSH reached \$21.9 million. GuideStar data showed that foundations with missions related to MSH outnumbered those dedicated to WSH 6 to 1 (Table II).

Conclusions: A discrepancy exists between funding for MSH and WSH, even when controlling for number of projects related to each. The total number of hypotheses for sexual health conditions, represented by the number of projects and publications is low overall and skewed in favor of MSH - highlighting a generalized lack of attention on sexual health and especially WSH. Sexual function is almost always a patient reported experience, yet even PCORI yielded few results and revealed projects related to men’s sexual health to be in more robust stages of exploration than that of women’s (RCTs vs. systematic review). Strikingly, urology continues to favor projects related MSH with no projects on WSH originating from urology departments in NIH RePORTER.

Table 1: Search terms

Men’s Sexual Function	Women’s Sexual Function
Core Search Terms	
"Erectile dysfunction"	"Sexual desire disorder"
"Penile fracture"	"Hypoactive sexual desire disorder"
"Peyronie's"	"Sexual arousal disorder"
"Peyronie's disease"	"Orgasmic disorder"
"Penile fibrosis"	"Sexual pain disorder"
"Penile plaque"	"Dyspareunia"
"Priapism"	"Vaginismus"
"Hypogonadism"	"Sexual aversion disorder"
"Premature ejaculation"	"Pelvic pain"
"Delayed ejaculation"	"Pelvic floor disorders"
"Absent ejaculation"	
"Anorgasmia"	
Expanded Search Terms (used in PCORI)	
"Sexual function"	"Sexual function"
"Sexual dysfunction"	"Sexual desire"
"Ejaculation"	"Orgasm"
"Penis"	"Sexual arousal"
"Penile"	"Vagina"

Table II – Search results from NIH RePORTER, PCORI, and GuideStar Queries

	Female	Male
NIH RePORTER		
Total Title Count	52	106
Distinct Title Count*	18	47
Project Types	Basic science (6) Cohort study (3) Preclinical drug study (1) Randomized control trial (RCT) (2) Society meeting (1)	Basic science (20) Career Development Award (1) Case control study (1) Cohort study (8) Genome-wide association study (1) Preclinical drug study (6) RCT (6) Medical device (2)
Average Project Duration	5 years	5 years
Total Cost I/C	\$16,374,820	\$33,868,312
Total related publications	74	357
Average publications/project	4	8
Projects initiated by urology departments	0	39
PCORI		
Distinct Title Count	3	3
Total Funding	\$3,685,804	\$15,160,521
Avg Funding per Project	\$1,228,601	\$5,053,507
Project Types	Cohort study (1) Stakeholder conference (1) Systematic review (1)	Cohort study (2) RCT (1)
Average Project Duration	3.5 years	7.0 years
GuideStar		
Distinct Number of Foundations**	1	6
Total Reported Assets	\$1,854,517	\$8,609,837
Avg Assets per Foundation***	\$1,854,517	\$1,721,967
*Distinct Title Count does not reflect renewals (competing or non-competing) and thus differs from the total project count		
**Determined by distinct EIN – Federal Taxpayer ID Number		
***Avg of foundations with any assets. One foundation had no gross receipts or assets		

Concurrent Scientific Session V: Infertility, Sexual Dysfunction and Men's Health

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Penile Prosthesis Placement during Admission for Ischemic Priapism
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Background: Penile prosthesis placement (PPP) is utilized as surgical therapy for patients with erectile dysfunction secondary to prolonged ischemic priapism (IP). However, PPP may also be used for immediate treatment of refractory IP to prevent progressive fibrosis of corpora cavernosa and penile shortening/narrowing. AUA/SMSNA guidelines for diagnosis and management of priapism recommend consideration of PPP in patients with IP lasting >36 hours or refractory to shunting with or without tunneling. There is a need to understand long term outcomes of immediate PPP and patient factors associated with immediate PPP for IP.

Methods: We retrospectively gathered electronic billing record data from Premier database, a large, U.S. hospital-based, service-level, all-payer database. Utilizing ICD-10 codes specific to priapism and CPT codes specific to penile prosthesis, we identified 3,655 unique individuals who were admitted with a diagnosis of priapism from the last quarter of 2015 to 2020. Within this group, we collected demographic data, Charlson comorbidity status, number of presentations to care for IP, and assessed for predictors of prosthesis placement. Lastly, we evaluated the proportion of patients who had minor or major complications, and the nature of those complications.

Results: Of 3,655 patients diagnosed with priapism in the 5-year study period, 976 patients had multiple presentations for priapism, while 2,679 presented only once. Of this patient population, 58 patients underwent immediate penile prosthesis placement during admission. These 58 patients were matched with 147 patients seen for IP in the same hospitals who did not undergo PPP. Multivariate analysis showed predictors of prostheses placement were multiple prior episodes of priapism (OR 4.12, p=<0.0001) and presentation to a non-teaching hospital (OR 2.35, p=0.012). A non-statistically-significant trend was observed in Medicaid insured patients (compared to Medicare patients, OR 0.43, p=0.069). 55.18% (15/58) of these patients experienced minor complications, while 18.97% (11/58) of these patients experienced major complications.

Conclusions: Patients undergoing immediate PPP for IP are more likely to have had previous hospital encounters for IP. Complications from immediate PPP are high. Further research is needed to examine outcomes in immediate vs delayed PPP for IP.

Quality and Accessibility of Consumer Information for Commercially Available At-Home and Mail-In Semen Analysis Products

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Background: At-home and mail-in semen analysis (SA) services obviate barriers that deter men from clinic testing and have made recent strides in providing higher quality data. However, the American Urological Association (AUA) and the American Society of Reproductive Medicine (ASRM) have not made formal recommendations on these services. Herein, we investigate the quality and accessibility of consumer information on these products.

Methods: Using Google search terms "at-home sperm test" and "mail-in sperm test", we identified commercially available SA products, excluding those only offered to providers, providing only genetic information, or designed for use after vasectomy. We determined which semen parameters each service offered; if the service was validated in subfertile men and against an established SA method; and if the service provided guidance to consumers in accordance with AUA/ASRM guidelines. The accountability and aesthetic appearance of online content for each SA were assessed using the Silber accountability score and modified Abbott's criteria, respectively. The readability of information was assessed using the Flesch-Kincaid score. Descriptive statistics and two-tailed t-tests were used to compare SA characteristics, with p < 0.05 as statistically significant.

Results: We identified 17 commercially available at-home (n = 15) and mail-in (n = 2) SA services with an online, consumer-facing presence (Table 1). At-home tests varied in their method of SA, including colorimetric (n = 7), microscopic/microfluidic (n = 7), and centrifugation systems (n = 1). 89% of tests reported sperm concentration, with the majority reporting concentration qualitatively. An additional 53% and 11% of tests reported motility and morphology, respectively. While a majority of tests recommend consumers to abstain from sexual activity before testing (63%), fewer than half recommend men perform more than one test (47%) and none highlight the need for partner evaluation for >6-12 months of difficulty conceiving. While two-thirds of tests are validated against a gold standard, only 26% were validated among subfertile men (Table 1). The median Silber accountability score was 4 (interquartile range (IQR) 1-5), with most websites lacking information on their credentials, sponsors, and disclosures, though most were aesthetically pleasing. Consumer-facing information on product indications and use had a Flesch-Kincaid score of 50 ± 14, suggesting that high-school-level comprehension is required. Readability did not differ significantly by method of SA (Table 2).

Conclusions: At-home and mail-in SA products most commonly report sperm motility and concentration, however, inconsistently provide clinical recommendations around testing in accordance with guidelines. Additionally, while consumer-facing online content for commercially available SAs is on average aesthetically appealing, it may lack accountability and require a higher level of education for comprehension. Formal recommendations on the content and use of home SA products may improve the quality and accessibility on these products.

Table 1. Quality of commercially available at-home and mail-in semen analysis products.

	% of tests with information provided
Semen Analysis Parameters	
Concentration	89
Quantitative	68
Qualitative	32
Motility	53
Morphology	11
Count	32
Motile only	50
Total only	33
Both	13
Viability	0
Volume	21
pH	0
Forward progression	0
Agglutination	0
Viscosity	0
Clinical Recommendations	
Abstinence before testing	63
Utility of repeated testing*	47
Follow-up with a specialist if abnormal results	58
Partner evaluation if difficulty conceiving for > 6-12 months	0
Quality of Test and Results	
Validated among subfertile men	26
Compared to manual/laboratory method**	65
FDA/CE approved/cleared and/or CLIA-certified	63

*Did the test inform consumers that at least a second SA is recommended?

**Is the test validated against a laboratory gold-standard (e.g., CASA, hemocytometer, etc.)? Mail-in tests which rely on a central laboratory for SA were excluded from this.

Table 2. Accessibility, readability, and aesthetic appearance of consumer-facing online content for commercially available at-home and mail-in semen analysis products.

	All tests (n = 17)†	Mail-in tests (n = 2)	Colorimetric tests (n = 7)	Microscopic and microfluidic tests (n = 7)	Centrifugation tests (n = 1)
Silber accountability score*	4 (1, 5)	6	1 (0.25, 3.25)	4 (2, 5)	4
Abbott's aesthetic criteria**	5 (4, 6)	6	3 (1, 5.75)	5 (5, 6)	6
Flesch-Kincaid reading ease score***	50 ± 14	43 ± 24	49 ± 18	52 ± 11	49.6

†Median and IQR, or mean and standard deviation.

**Score out of 9, with 1 point assigned for each of the following: author's name listed, author's credentials clarified, author's affiliations identified, references cited, disclosure of website ownership, disclosure of sponsorship, disclosure of conflicts of interest, indication of date of site creation, indication of last update

***Score out of 6, with 1 point assigned for each of the following: clear headings, use of relevant graphics and sounds, minimal layering, relevant links to external sites, no outside advertisements, and contact information provided

****Scored 0 to 100, with a higher score indicating an increased ease of readability. No significant difference between categories.

High Capability of ChatGPT to Answer Patient Questions on Male Infertility Reviewed by Reproductive Urologists

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Background: Novel technologies utilizing artificial intelligence (AI) have shown their potential to reduce provider workload and improve task efficiency in certain clinical settings. ChatGPT is an AI-powered chatbot developed by OpenAI which utilizes natural language processing (NLP) technology to provide human-like responses to open-ended questions posed by users. Recent studies have shown ChatGPT's ability to effectively provide diabetes counseling in lieu of trained educators, and develop a differential diagnosis when posed with standardized clinical vignettes. Within urology, male infertility is one subspecialty with a significant lack of high-quality online sources of information. The objective of this preliminary study was to evaluate the ability of ChatGPT to respond to common patient questions encountered by male infertility specialists.

Methods: We composed a list of 15 questions commonly asked by patients pertaining to topics in male infertility. The questions were submitted to ChatGPT Plus with the prompt: "Answer the following questions in 50 words or less". 3 fellowship-trained andrologists then rated the accuracy of ChatGPT's responses on a scale from 1-5 (1 representing a completely inaccurate response and 5 representing a response in line with what they would recommend to patients). Scores were tabulated and summarized (Table 1). Descriptive statistics were calculated.

Results: Median score across all 15 responses from 3 raters was 4.5 (IQR 1.0). The most common rating was 5, indicating a high level of agreement between ChatGPT's responses and those of andrologists. The lowest score assigned was 3 (indicating partial accuracy), and was only received by 4 responses. Overall, ChatGPT was able to provide relatively accurate and concise responses to these common questions.

Conclusions: Our results demonstrate the capability of using ChatGPT as a potentially reliable source of information for patients on male infertility. Given the limited access to male infertility specialists, ChatGPT could possibly improve patient satisfaction and reduce provider burden. Similar to the revolution brought upon by Google and other search engines, ChatGPT and similar technologies may be the next stage for delivery of patient-focused medical advice. Further collection of real-world data is needed to better assess the accuracy and reliability of ChatGPT's responses. Urologists should be aware of the strengths and limitations of emerging NLP technologies as a medium for providing accurate health information to patients.

Question	ChatGPT Response	Aggregate Rating
What supplements work for male infertility?	Coenzyme Q10 and L-carnitine have been shown to improve sperm quality in some studies.	3.5
Should the male be evaluated in couples where there is recurrent miscarriage?	Yes, male evaluation is recommended in cases of recurrent miscarriage.	5
Should the male be evaluated in couples where they have failed in vitro fertilization due to poor fertilization or embryo arrest?	Yes, male evaluation is recommended in cases of poor fertilization or embryo arrest during in vitro fertilization.	5
What blood test should be ordered in men who have no sperm in their ejaculate?	A blood test to measure follicle stimulating hormone (FSH), luteinizing hormone (LH), and testosterone levels is recommended for men with no sperm in their ejaculate.	3
Should a varicocele identified on ultrasound be fixed in men who have male infertility?	Fixing a varicocele may improve sperm quality and could be considered in men with male infertility, but it is not always necessary.	4
What is the effect of testosterone on male sperm production?	Testosterone replacement therapy can decrease sperm production and should be avoided in men trying to conceive.	5
Are there health conditions associated with male infertility?	Yes, conditions such as diabetes, obesity, and hypertension have been associated with male infertility.	4
When should a male be evaluating for fertility problems?	Men should be evaluated if they have been trying to conceive for one year or if they have known risk factors for infertility.	5
Are there lifestyle changes that have been shown to improve male infertility?	Lifestyle changes such as quitting smoking, reducing alcohol intake, and exercising regularly have been shown to improve sperm quality.	4.5
How long should a male wait after a therapy before trying to have a baby after chemotherapy?	The recommended waiting period after chemotherapy varies depending on the type of chemotherapy and should be discussed with a healthcare provider.	4.5
What are the options to having a child in patients who have had a prior vasectomy?	Options for having a child after vasectomy include vasectomy reversal, sperm retrieval for in vitro fertilization, or using donor sperm.	5
What is the best surgical option for treatment of nonobstructive azoospermia?	The best surgical option for nonobstructive azoospermia depends on the underlying cause and should be discussed with a healthcare provider.	4
Should I have my varicocele fixed if I have no sperm in my ejaculate?	Fixing a varicocele may improve sperm quality, but it may not always lead to the return of sperm in the ejaculate.	4
What are the success rates in improving sperm quality after a varicocele repair?	Success rates for improving sperm quality after a varicocele repair vary but can be as high as 60-70%.	5
Is there a higher risk of birth defects in fathers over 40 for men or in men over 50?	There is a higher risk of birth defects in fathers over 40, and the risk continues to increase as men get older.	4

Table 1. Common Male Infertility Questions, ChatGPT Responses, and Aggregate Ratings

Sexual Health Implications Associated with Psychotropic Medication Usage in Adolescents during the COVID-19 Pandemic: Analysis of a Federated Research Network

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Background: Psychotropic medications have a significant impact on sexual health. Long-term usage is strongly associated with dyspareunia, decreased libido, hypogonadism and erectile dysfunction. We hypothesized that the prescription rates for psychotropic medications increased in adolescent patients during the COVID-19 pandemic because of the unprecedented stress levels on youth in isolation. Therefore, we evaluated the prescription rates of psychotropic medications as well as concurrent use of PDE5i in adolescent patients during the COVID-19 pandemic compared to the pre-pandemic era.

Methods: We utilized data generated from TriNetX Research Network to conduct a retrospective matched cohort study. Adolescent patients aged 10-19 presenting for outpatient evaluation were placed into two cohorts: 1) outpatient evaluation before and 2) during the COVID-19 pandemic. Patients with prior psychiatric diagnoses and those with prior use of psychotropic medications were excluded. The outcomes of interest were new prescriptions within 90 days of outpatient evaluation. Propensity score matching was performed using logistic regression to build cohorts of equal size.

Results: A total of 1,612,283 adolescents pre-COVID-19 and 1,008,161 adolescents presenting during the COVID-19 pandemic for outpatient evaluations were identified. After propensity matching, a total of 1,005,408 adolescents were included in each cohort each with an average age of 14.7 ± 2.84 and 52% female and 48% male. Prescribing of antipsychotics and benzodiazepines were more frequent during the pandemic for adolescents (RR: 1.58, 95% CI 1.01-2.2). However, they were less likely to receive antidepressants (Risk Ratio (RR): 0.6, 95% Confidence Interval (CI) 0.57-0.63), anxiolytics (RR: 0.78, 95% CI 0.75-0.81), stimulants (RR: 0.26, 95% CI 0.25-0.27), as well as mood stabilizers (RR: 0.44, 95% CI 0.39-0.49). Erectile dysfunction requiring oral PDE5i in this cohort was more frequent during the pandemic for adolescents (RR: 1.53, 95% CI 1.05-2.01).

Conclusions: The rates of antipsychotic and benzodiazepine prescriptions increased during the COVID-19 global pandemic compared to preceding years. This coincided with a statistically significant increase in the prescription of PDE5i for erectile dysfunction. Clinicians must be cognizant of the fact that adolescents may face an increased risk of medication related sexual dysfunction.

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Partial Component Exchange of a Non-infected IPP is Associated with a Higher Complication Rate

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Background: Management of malfunctioning inflatable penile prostheses (IPPs) is varied. The impact of partial component exchange versus complete device exchange on complications is unknown. We sought to describe the infectious and non-infectious complications in men undergoing IPP revision with partial and complete component exchange for device malfunction.

Methods: We performed a multicenter retrospective cohort study of patients who underwent IPP revision. Men undergoing procedures for implant infection were excluded. Patients were divided into two groups based on whether they had complete exchange of the entire device or partial exchange of only one or two components. Differences between baseline demographics were assessed with two tailed student t-tests and Fisher's exact tests. Multivariable analysis was performed controlling for significant covariates and clinically relevant variables. A descriptive analysis was performed of non-infectious complications.

Results: 453 men underwent IPP revision. 368 had complete exchange of the entire device and 85 had partial component exchange. Men undergoing partial exchange had a significantly higher infection rate (7.1% vs. 2.2%, $p=0.031$). The partial exchange group also was more likely to receive antifungals (51.8 vs. 16.8%, $p<0.001$), have a modified salvage washout (77.4 vs. 60.2%, $p=0.004$), and less likely to receive vancomycin and gentamicin (63.5 vs. 83.7%, $p<0.001$). Time to revision was significantly shorter in the partial exchange group (44.9 vs. 168.2 months, $p<0.001$). In multivariable analysis, partial exchange surgery (OR 2.6, 95%CI 0.7-9.3, $p=0.17$), vancomycin and gentamicin prophylaxis (OR 0.3, 95%CI 0.1-1.2, $p=0.11$), modified salvage washout (OR 1.8, 95%CI 0.3-9.2, $p=0.48$), and antifungal prophylaxis (OR 2.7, 95%CI 0.7-10.3, $p=0.13$) were no longer associated with postoperative infections. The partial exchange group had greater rates of non-infectious complications (21.2% vs. 9.5%, $p=0.005$) such as pump malfunction and tubing breakage.

Conclusions: While patients undergoing partial component revision were more likely to receive non-standard antibiotics, antifungal prophylaxis, and undergo a modified salvage washout, they had more infectious and mechanical/non-infectious complications. These findings suggest that partial component exchange increases risks in men undergoing IPP revision for non-infectious indications.

Multicenter Evaluation of Inflatable Penile Prosthesis (IPP) Placement in Men with a History of Priapism

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Background: Prolonged priapism can result in corporal fibrosis which may make IPP placement more difficult. The current literature on IPP placement in men with a history of priapism is limited to small and often single-center experiences. We sought to evaluate a multicenter experience of IPP placement in men with a history of priapism.

Methods: We performed a multicenter, retrospective cohort study of patients with a history of priapism undergoing IPP placement by 9 experienced implant surgeons. We excluded patients who underwent IPP in the acute priapism event. Demographic, intraoperative, and postoperative variables were collected. Descriptive statistics were performed using mean and standard deviation for continuous variables, whereas frequencies and percentages were used for categorical variables. We evaluated differences in complication rates in those undergoing early or delayed IPP placement. We defined early placement as less than or equal to 4 months from priapism to IPP.

Results: 53 patients underwent IPP placement at a median of 29.5 months following ischemic priapism. The mean duration of priapism was 42.6 ± 14.1 hours. The mean age of the cohort was 51.5 ± 1.4 years with a mean follow-up of 16.4 ± 9.5 mo. Overall, 19 patients (36%) had a prior shunt for priapism and 7 (13%) had penoscrotal decompression. Only 5 (9%) patients underwent early placement (less than or equal to 4 mo) whereas 48 (91%) underwent late placement. No complications occurred in those undergoing early IPP placement. Complications occurred in 19 (39%) of patients undergoing delayed placement. Intraoperative urethral injury and proximal perforation occurred in 1 patient each. Infection occurred in 3 (6%) men. Postoperative complications occurred in 17 (35%). Cylinder related complications accounted for 8 (47%) (3 displacements of a cylinder through the corporotomy, 1 lateral displacement of the distal cylinders requiring revision, 2 proximal cylinder migration, 2 cylinder leaks). Fifteen (22.5%) implants were revised or removed for infectious or non-infectious complications.

Conclusions: IPP placement in men with a history of priapism carries a notable incidence of complications, especially in men undergoing delayed placement. Few IPPs in this series were placed early after the priapism episode, as our surgeons are predominantly tertiary referral centers. Priapism patients should be referred to prosthetic experts early to decrease future morbidity.

How do Sexual Medicine Specialists Handle Patient Counseling and Penile Rehabilitation in Patients Undergoing Robotic Assisted Radical Prostatectomy (RALP): Trends in Pre op and Post Operative Management
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Background: Guidelines for Sexual Health Care for Prostate Cancer Patients: Recommendations of an International Panel has been published in Journal of Sexual Medicine in late 2022. However, evaluation and treatment in this subset of patients appears to be variable and not evidence driven. The objective of our study was to poll sexual medicine specialists regarding their current evaluation and treatment of sexual dysfunction before and after RALP.

Methods: 22 sexual medicine specialists took a questionnaire at the time of the SMSNA/ISSM meeting in the fall of 2022. Queries were made regarding the demographics of the specialists, their pre operative evaluation, guidance and treatments, and the nature of their referral base. Information was also collected regarding pre operative questions about multiple sexual parameters such as ejaculation, penile curvature, erectile function, climacturia and any initiation of pre op therapies. Post operative questionnaire data included timing of initial evaluation, therapeutic recommendations and likelihood and timing of post operative recovery of function.

Results: 23 responses were collected. 100% of respondents were SMSNA members, 8 (34.8%) were ISSM members. 22 (95.7%) had a subspecialty practice in sexual medicine. 100% were located in North America. A majority of respondents (19/23, 82.6%) had between 2-10 prostate surgeons in their practice. 9 (39.1%) reported that those surgeons routinely sent patients for preoperative optimization; 4 (17.4%) reported that none did so. 7 (31.8%) regularly counseled patients preoperatively about the risk of ejaculatory pain, 11 (47.8%) about the risk of climacturia, 16 (69.6%) about the risk of penile length loss, 17 (73.9%) about the risk of significant erectile dysfunction, and 7 (30.4%) about the risk of penile curvature. 22 (95.7%) cautioned patients that they would most likely need medication to assist with erectile function postoperatively. For preoperative optimization, 12 (54.5%) respondents regularly recommend preoperative PDE5is, 7 (30.4%) regularly recommend a vacuum erection device, and 3 (13%) recommend pelvic floor rehabilitation. Postoperatively, 13 (56.5%) recommend a vacuum device postoperatively, another 3 (13%) sometimes do so, and 19 (82.6%) encouraged patients to start PDE5is immediately postoperatively. 19 (82.6%) continued PDE5is after 3 months without spontaneous erections. 17 (73.9%) recommended Tadalafil 5mg daily, others used Sildenafil at varying doses. 15 (65.2%) of respondents believed that penile rehabilitation made a difference in outcomes at 2 years. Another 5 (21.7%) were unsure, but had enough data to continue with their protocol.

Conclusions: Despite new guidelines for evaluation and treatment of patients undergoing RALP, there appears to be diverse counseling, recommendations and treatment both preoperatively and postoperatively. Evidence based and expert opinion guidelines may alter pre operative counseling and treatment in the future.

Pre- and Post-operative RALP Outpatient Sexual Medicine Practices			
	Yes, routinely	Sometimes	No
Pre-operatively			
Counsel about risk of ejaculatory pain	7 (31.8%)	5 (22.7%)	10 (45.5%)
Counsel about risk of climacturia	11 (47.8%)	4 (17.4%)	8 (34.8%)
Counsel about risk of penile length loss	16 (69.6%)	1 (4.3%)	6 (26.1%)
Counsel about risk of significant erectile dysfunction	17 (73.9%)	5 (21.7%)	1 (4.3%)
Counsel about risk of penile curvature	7 (30.4%)	12 (52.2%)	4 (17.4%)
Counsel about likely need for ED medication	22 (95.7%)	0	1 (4.3%)
Start PDE5is	12 (54.5%)	6 (27.3%)	4 (18.2%)
Recommend vacuum erection device	7 (30.4%)	1 (4.3%)	15 (65.2%)
Recommend pelvic floor rehabilitation	3 (13%)	1 (4.3%)	19 (82.6%)
Review risk factors for postoperative outcomes	19 (86.4%)		3 (13.6%)
Post-operatively			
Recommend vacuum erection device	13 (56.5%)	3 (13%)	7 (30.4%)
Encourage PDE5i use	19 (82.6%)	1 (4.3%)	3 (13%)
Recommend penile injection therapy for rehabilitation	19 (82.6%)	0	4 (17.4%)

Self-reported Mental Health Concerns Among Men Presenting to a Men's Health Clinic

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Background: Urologic diseases commonly impact patients' wellbeing, especially considering the sensitive nature of many urologic conditions. Despite the value of mental health screening as part of urologic care, most providers are unfamiliar with screening tools and recognizing individuals with mental health needs. This study is designed to assess rates of self-reported mental health concerns and identify potential risk factors among men presenting to a men's health clinic.

Methods: A retrospective cohort of male patients seeing a urologist in a multidisciplinary men's health clinic between 3/1/19 and 2/29/20 were reviewed. Patients completed a self-reported men's health checklist based on preventative health guidelines in addition to weight and mental health screenings. Demographics, clinical data, and checklist responses were compared between men who indicated they were "struggling with mental health" and those who did not. Wilcoxon ranked sum test, Pearson's chi-squared test, or Fisher's exact tests were used for univariate analysis. A logistic regression predicting mental health struggles (MHS) assessed independence of risk factors. SPSS v26 was used for all statistical analyses with a p<0.05 significance level.

Results: Of 1632 men completing the questionnaire, 157 (9.6%) self-reported MHS. Race and ethnicity were similar between MHS groups. Significant relationships with age, BMI, insurance category, and self-reported struggles with weight were noted in men indicating MHS. Both groups had the same top three primary diagnoses (prostate cancer, benign prostatic hyperplasia, and erectile dysfunction [ED]) but were unevenly represented with ED much more common in those indicating MHS vs. not (Table 1). Age, insurance, and primary diagnosis remained statistically significant in multivariate analysis. Struggles with weight demonstrated a particularly strong predictive value (OR 4.3; 95% CI: 2.8-6.6; p<0.001).

Conclusions: Mental health is an under recognized element of men's health with nearly 10% of patients presenting to a men's health clinic reporting mental health struggles. Younger age, higher BMI, ED, and especially struggles with weight were associated with mental health concerns. Better screening tools are needed in the men's health arena to address these concerns.

Table 1: Men presenting to a men's health clinic compared by presence or absence of self-reported mental health struggles

Variable	Struggling with Mental Health		p-value
	Yes	No	
Age (median, IQR)	59.7 (47.1, 68.3)	65.1 (54.7, 72.5)	<0.001
BMI (kg/m ²) (median, IQR)	28.9 (25.8, 33.5)	27.4 (25.1, 30.3)	<0.001
Race			0.76
Asian	1 (0.7%)	17 (1.2%)	
Black	13 (8.7%)	97 (7.1%)	
Caucasian	123 (82.0%)	1157 (84.3%)	
Other	13 (8.7%)	101 (7.4%)	
Ethnicity			0.28
Latino/Hispanic	12 (7.6%)	80 (5.4%)	
Not Latino/Hispanic	136 (86.6%)	1286 (87.2%)	
Insurance Type			0.03
Private	80 (51.0%)	703 (47.7%)	
Medicare	61 (38.9%)	698 (47.3%)	
Medicaid	12 (7.6%)	55 (0.4%)	
None	3 (1.9%)	15 (2.0%)	
Struggling with weight	71 (45.8%)	226 (15.6%)	<0.001
Primary diagnosis			<0.001
Erectile dysfunction	41 (26.1%)	168 (11.4%)	
Benign prostatic hyperplasia	20 (12.7%)	226 (15.3%)	
Prostate cancer	33 (21.0%)	485 (32.9%)	
Total	157 (9.6%)	1475 (90.4%)	--

Note: IQR = interquartile range; BMI = body mass index

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Congenital Bilateral Absence of the Vas Deferens: Genetic Etiologies and Treatment Options

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Background: Congenital bilateral absence of the vas deferens (CBAVD) is a rare cause of obstructive azoospermia among male infertility patients. While CBAVD is most often associated with mutations in the *CFTR* gene, other etiologies of CBAVD exist including abnormal development of the mesonephric ducts during embryogenesis or, rarely, mutations in *ADGRG2* -- an X-linked gene encoding a G-coupled protein receptor expressed in the efferent ducts. Understanding the etiology of this disease is important with regard to work up for the patient and his siblings, the couple, and the offspring. This study aims to characterize a large series of patients with CBAVD presenting to a single infertility practice highlighting the etiology and management.

Methods: This is a retrospective analysis of new patients presenting to an infertility specialist between January 2015 and March 2023 who were diagnosed with CBAVD. The medical record was reviewed to obtain demographic and medical information, including physical exam, test results, and operative notes.

Results: Eighty patients with a mean age of 34 years old (SD = 6) at presentation were identified. Most patients were referred by reproductive endocrinologists (55%) or urologists (17%) with the indication being azoospermia (59%) or previously diagnosed CBAVD (20%) or known Cystic Fibrosis (CF; 10%). Of the patients without previously diagnosed clinical CF, 21% (n = 15/70) had history of respiratory symptoms. Nearly all patients underwent *CFTR* testing (98%) with the most commonly identified mutations being p.Phe508del (45%), 5T (25%), and p.Arg117His (9%). Six patients (8%) were diagnosed with unilateral renal agenesis. None of the patients with renal agenesis that underwent *CFTR* testing had mutations identified (n = 0/4). On exam, 4/6 (67%) of patients with renal agenesis had bilaterally absent vasa. One patient with a negative *CFTR* analysis and normal renal anatomy was found to have a mutation in the gene *ADGRG2*. Sperm extraction was performed in 81% (n = 58/65) of patients with 89% of patients undergoing microsurgical epididymal sperm aspiration in the operating room with cryopreservation of the harvested sample at the IVF group the couple was working with.

Conclusions: This series demonstrates that the majority of CBAVD cases were on the biallelic *CFTR* mutation spectrum, although other etiologies do exist. Patients who test negative for *CFTR* mutations on full gene sequencing should have upper tract evaluation. Additionally, *ADGRG2* sequencing may reveal a genetic cause for patients with an otherwise negative workup, though this test is not always readily available and may require a genetics referral. CBAVD patients can undergo successful sperm extraction, most commonly with MESA in this practice.

A Comparison of Open versus Robotic Assisted Radical Cystectomy: A 10 Year Surgical Site Infection Analysis

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Background: Radical cystectomy is associated with a high peri-operative complication rate. Specifically, surgical site infection (SSI) is a significant cause of morbidity in patients. The purpose of this study was to investigate the difference in SSI between open versus robotic-assisted radical cystectomy.

Methods: We retrospectively analyzed peri-operative characteristics and surgical site infections as defined by the National Surgical Quality Improvement Program, for patients undergoing a radical cystectomy from 2007 to 2017. Patients were stratified by surgical approach (robotic vs. open) and differences in cohorts were assessed using Students t-test for continuous variables and Pearson chi-square analysis for categorical variables. Univariate and multivariate logistic regressions were performed to identify predictors of surgical site infection. P-values were two sided and considered statistically significant if <0.05.

Results: We identified 237 patients who underwent radical cystectomy, of which 163 were open and 74 were robotic. The two cohorts were similar with regards to age, gender, BMI, Charlson Comorbidity Index (CCI), history of diabetes, type of diversion, operative time, blood loss and length of stay (Table 1). On univariate analysis, surgical approach (OR 0.46, 95% CI: 0.22 - 0.99, p = 0.047), blood loss (OR 1.06, 95% CI: 1.00 - 1.12, p = 0.03), and length of stay (OR 1.06, 95% CI: 1.01 - 1.11, p = 0.01). On multivariate analysis, surgical approach predicts surgical site infection (OR: 0.34, 95% CI: 0.12 - 0.91, p = 0.031) when controlling for age, gender, BMI, history of diabetes, CCI, operative duration, length of stay and type of urinary diversion however did not predict surgical site infection (OR: 0.46, 95% CI: 0.20 - 1.05, p = 0.066) when adjusting for blood loss.

Conclusions: Patients who underwent robotic cystectomy had significantly lower surgical site infections, less blood loss, and length of stay compared to those who underwent open cystectomy, however surgical site infection was not significant after adjusting for blood loss. Randomized controlled trials are needed to validate these results.

*Max K. Willscher Award Eligible

Table 1: Baseline characteristics of patients undergoing a robotic vs. open radical cystectomy

	All Patients	Open Approach	Robotic Approach	p-value
Number	237	163	74	
Age (years)	68.9 ± 10.0	67.6 ± 9.5	71.2 ± 10.6	0.820
Male Gender (%)	188 (79.3%)	126 (77.3%)	62 (83.8%)	0.253
History of Diabetes (%)	59 (24.9%)	43 (26.4%)	16 (21.6%)	0.432
Body Mass Index (kg/m²)	28.0 ± 5.1	28.0 ± 5.1	28.2 ± 5.3	0.981
Urinary Diversion				0.510
Incontinent	167 (70.5%)	117 (71.8%)	50 (67.6%)	
Continent	70 (29.5%)	46 (28.2%)	24 (32.4%)	
Charlson Comorbidity Index	5.7 ± 2.1	5.3 ± 1.7	6.4 ± 2.6	0.721
Operative Time (mins)	420.9 ± 145.8	365.6 ± 123.9	542.8 ± 113.0	0.375
Estimated Blood Loss (mL)	748.8 ± 509.0	855.0 ± 526.6	514.9 ± 376.6	0.680
Length of Stay (days)	9.8 ± 6.0	9.4 ± 5.5	10.7 ± 7.0	0.891
Blood Transfusion (units)	0.6 ± 1.3	0.7 ± 1.4	0.2 ± 0.7	0.815
Surgical Site Infections	51 (21.5%)	41 (25.2%)	10 (13.5%)	0.043

Table 2: Univariate logistic regression on predictors of post-operative surgical site infection in patients undergoing radical cystectomy

	Odds Ratio	95% Confidence Interval	p-value
Surgical Approach			
Open	1.00		
Robotic	0.46	0.22 - 0.99	0.047
Age	0.98	0.95 - 1.01	0.185
Gender			0.323
Male	1.00		
Female	1.51	0.66 - 3.49	
Body Mass Index	1.05	0.99 - 1.11	0.088
Charlson Comorbidity Index	0.89	0.76 - 1.04	0.132
History of Diabetes Mellitus	1.04	0.51 - 2.12	0.912
Operative Time (mins)	0.99	0.99 - 1.00	0.619
Estimated Blood Loss (100 mL)	1.06	1.00 - 1.12	0.030
Length of Stay (days)	1.06	1.01 - 1.11	0.010
Urinary Diversion			0.746
Incontinent	1.00		
Continent	1.12	0.57 - 2.19	
Blood Transfusion (units)	1.11	0.89 - 1.39	0.369

Neoadjuvant Chemotherapy Use for Muscle Invasive Bladder Cancer in an Elderly Population

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Background: Radical Cystectomy (RC) is standard of care for Muscle Invasive Bladder Cancer (MIBC). For eligible patients, Neoadjuvant Chemotherapy (NAC) adds a small but significant survival benefit. Our group provides >80% of all RC care in the state. We examined the impact of NAC on overall survival amongst our patient population as well as a sub-population of patients 75 and older.

Methods: A prospectively maintained RC database was reviewed. 195 MIBC patients with complete follow-up were identified from 2015-2022. NAC chemotherapy regimens were administered in accordance with guidelines. Patients who completed a full course of NAC were compared to those with either no NAC or an incomplete NAC. 65 patients were identified who were ≥75. Survival analysis of the entire cohort was compared, followed by analysis of the elderly cohort. Overall survival and disease specific survival (DSS) were compared by Kaplan-Meier analysis. Predictions of OS were compared with cox regression, covariates included BMI>30, sex, current tobacco use, Charleston Comorbidity index (CCI)>2, age, and high-grade complication.

Results: 125 of 195 (74.1%) patients received a full course of NAC, 43 (34.4%) achieved complete response (CR). NAC patients were younger with a higher BMI, more likely smokers and had lower stage on final pathology (Table 1a). NAC was associated with an OS advantage, with median survival 80.3 mo vs 28.3 mo. After adjusting for covariates, NAC was significantly associated with OS, HR=(.554, 0.313-0.982). CR was associated with improved OS (Figure 1b). There was no difference in DSS for the entire cohort. For patients ≥75, 22 of 65 (33.8%) received a full course of NAC. There was a striking difference in localized cancer on final pathology (66% vs 33%, p<0.001) (Table 1b). There was a separation of OS with the receipt of NAC but it was not statistically significant (p=0.06, Figure 1c). Curves also show separation based on final pathology (Figure 1d, p=0.065).

Conclusions: We noted an overall survival advantage for patients who received NAC and a clear trend for improved survival based on final pathology. Most series have reported low rates of NAC administration (~30-50%) and in younger cohorts (mean age <70). We have an older population with the majority receiving a full course of NAC. Here we show patients ≥75 who receive NAC have significantly less advanced disease. We conclude that NAC should be given in accordance with guidelines for whomever is eligible, regardless of age.

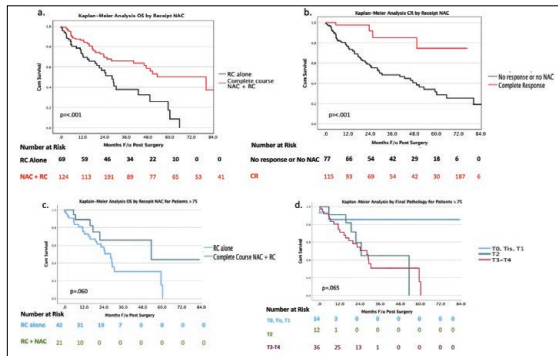


Figure 1. Kaplan-Meier Analysis of A) OS by receipt NAC for all pts B) CR by receipt NAC for all pts C) OS by receipt NAC for pts ≥75 D) OS by final tumor pathology after NAC for pts ≥75

Table 1a: Characteristics of all patients by receipt of NAC.		Table 1b: Characteristics of patients ≥75 by receipt of NAC.	
Received Full Course NAC		No NAC or Incomplete NAC	
Table 1a: Characteristics of all patients			
N = 195	125 (64.1%)	70 (35.9)	
Mean Age	66.8 +/- 8.4	75.4 +/- 8.6	p<.001
Mean BMI	29.0 +/- 5.9	25.9 +/- 4.8	p<.001
Charleston Comorbidity Index >2	90 (72.0%)	56 (80%)	p=.217
Current Smoking Status	38 (30.4%)	8 (11.4%)	p=.003
Median Months Follow-up	18 mo	15 mo	p=.182
Final Pathology T0, T1, T2	79 (87.8%)	11 (12.2%)	p<.001
Final Pathology T3-T4	15 (6.6%)	12 (44.4%)	p<.001
Final Pathology T3-T4	31 (39.7%)	47 (66.3%)	p<.001
Table 1b: Characteristics of Patients ≥ Age 75			
N = 65	22 (33.8%)	43 (66.2%)	
Mean Age	77.7 +/- 2	81.3 +/- 3.2	p<.001
Mean BMI	27.7 +/- 4.7	25.3 +/- 3.8	p=.025
Charleston Comorbidity Index >2	17 (83.3%)	34 (66.7%)	p=.068
Current Smoking Status	3 (7.0%)	1 (2.0%)	p=.073
Median Months Follow-up	18.4 mo	19.9 mo	p=.983
Final Pathology T0, T1, T2	10 (66.7%)	5 (33.3%)	p=.001
Final Pathology T3-T4	6 (46.2%)	7 (53.8%)	p=.001
Final Pathology T3-T4	6 (16.2%)	31 (83.8%)	p=.001

Comprehensive Characterization of the Real-World Perioperative Morbidity of Radical Cystectomy in Older Adults

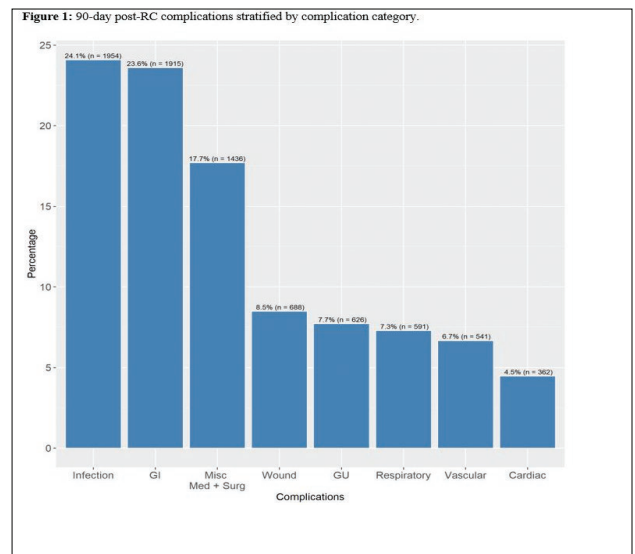
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Background: The perioperative morbidity of radical cystectomy (RC) is a critical factor for optimal decision-making in older adults with bladder cancer (BC). However, existing literature on the morbidity of RC is dated, does not focus on older adults, and predominantly reflects the experience of academic medical centers. Herein, we examine the real-world, perioperative morbidity of RC in a national, contemporary cohort of older adults with BC.

Methods: Using SEER-Medicare, we identified patients 66-89 years diagnosed from 2000 to 2017 with Tany Nany cM0 bladder cancer who underwent RC. We examined rates of perioperative blood transfusion, healthy days at home (HDAH) within 90 days post-RC, postoperative complications, emergency room (ER) utilization, and hospital readmission using Medicare claims. The associations between baseline characteristics and 90-day complications and hospital readmission were evaluated using logistic regression.

Results: A total of 5,916 patients were included. Median age was 74 (IQR 70-79) years. The median LOS was 9 days (IQR 8-13), and the median number of HDAH was 78 (IQR 65-82) days. Perioperative blood transfusion occurred in 1,366 (23%) patients, while 90-day complications occurred in 3,786 (64%) patients (Figure 1), with 2,067 (35%) patients experiencing a post-discharge complication requiring care in the ER or hospital. A total of 1,745 (29%) of patients required ER evaluation within 90 days of RC, while 2,598 (44%) were readmitted to the hospital under observation or inpatient status. On multivariable analysis, higher Charlson comorbidity index (CCI), higher census tract poverty level, and lower census tract education level were associated with increased risk of 90-day inpatient readmission, while older age, Black race, higher CCI, current/former smoker status, and lower annual hospital RC volume were associated with increased risk of 90-day complications.

Conclusions: The real-world perioperative morbidity of RC in older adults is substantial and even greater than reported in prior institutional studies, with 44% of patients requiring hospital-based care within 90 days of surgery. These observations should inform the counseling of older adults with bladder cancer considering RC and encourage interventions to reduce morbidity in at-risk patient populations.



Poor Recurrence-Free Survival and High Toxicity in Patients Receiving Pembrolizumab for BCG Refractory Non-Muscle Invasive Bladder Cancer
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Background: High-grade non-muscle-invasive-bladder-cancer (NMIBC) has high recurrence rates and potential resistance to intravesical therapies. Anti-PD-L1 immunotherapy with pembrolizumab was approved in January 2020 for treatment of patients with high-risk, BCG refractory NMIBC with carcinoma in situ (CIS) with or without papillary tumors who received adequate BCG therapy and were ineligible for or opted out of radical cystectomy. In this study we report on our single institutional experience using pembrolizumab in BCG refractory patients.

Methods: Records of patients with NMIBC treated by pembrolizumab from 01/2020-01/2023 at a single institution were retrospectively reviewed for key demographic and clinical information. Kaplan-Meier curves were used to calculate progression free (PFS) and treatment specific survival (TSS), and combined positivity score (CPS) of PD-L1 on immunohistochemistry was assessed.

Results: Out of 250 screened records of NMIBC in this time period, 18 records with median age of 74.1 (IQR=67.8 - 81.4), male to female ratio of 3.5:1, and a median follow-up of 17.5 months (IQR= 8.1 - 22.5) met the inclusion criteria. All patients had CIS and were treated with intravesical chemotherapy after they became BCG refractory. At start of pembrolizumab, 1/18 (5.6%) was cTa, 6/18 (33.3%) had CIS, and 11/18 (61.1%) had cT1. After an average of 8.9 cycles (SD=6.3), 72.2% of patients (13/18) stopped treatment. Only five patients (38.5%) are still undergoing treatment with an average of 12.6 cycles (SD=10.4 cycles). Only one patient out of thirteen who stopped treatment had a sustained complete response at 19 cycles. Reasons for discontinuation included: Grade 2 or higher toxicity in 7/13 (53.8%), disease progression in 4/13 (30.8%), and 1/13 stopped due to disease recurrence. Recurrence-free survival rates at 3-, 6-, and 12-months were 16.7%, 11.1%, and 5.6%, respectively. 6- and 12-month PFS rates were 94% and 77.7%, respectively. Kaplan-Meier methods showed a PFS of 19.5 months (SD=2.4) and a TSS of 26.5months (SD=2.9). Four patients ultimately required radical cystectomy with pathologies showing pTa (n=1), pTis (n=1), pT1 (n=1), and pT4 (n=1). PD-L1 positivity, defined as CPS > 10, was noted for only one patient.

Conclusions: Our institutional experience using pembrolizumab in the treatment of high risk BCG refractory NMIBC suggests high toxicity leading to early withdrawal from treatment. Similarly, our experience did not confirm previously reported high response rates beyond one year. Additional research is warranted to better identify patients who are likely to benefit from this agent. Early discussion on radical surgery remains an important part of our guidelines for treatment of BCG refractory NMIBC.

Table 1: Breakdown of patients receiving pembrolizumab for high-risk NMIBC. Follow-up disease monitoring and side effects are listed. M=male, F=female, AE=Adverse Event.

Patient	Age	Sex	Follow-Up Cystoscopy and Cytology					Terminated Due to	Side Effects
			3 month	6 month	9 month	12 month	18 month		
1	86	M	Persistent	Did not reach				Grade 2 AE	Myalgias and arthropathy
2	77	M	Persistent	Persistent	Did not reach			Grade 2 AE	Hypothyroidism, Adrenal insufficiency
3	69	M	Persistent	Persistent	Persistent	Persistent	Did not reach	Grade 3 AE	Pneumonia, Adrenal insufficiency
4	73	F	Progression	Progression				Progression	Recurrent infections, NOS
5	64	M	Respond	Recurrence	Did not reach			Recurrence	Fatigue
6	66	M	Respond	Respond	Did not reach			Ongoing	None reported
7	85	F	Persistent	Persistent	Progression	Progression		Progression	None reported
8	75	M	Did not reach					Grade 4 AE	Sepsis
9	75	M	Did not reach					Ongoing	Fatigue
10	82	M	Persistent	Persistent	Progression	Progression		Progression	None reported
11	66	M	Respond	Respond	Respond	Respond	Respond	Complete Response	Rash
12	79	F	Persistent	Persistent	Persistent	Persistent	Did not reach	Ongoing	None reported
13	61	M	Persistent	Persistent	Persistent	Respond	Respond	Ongoing	None reported
14	74	M	Persistent	Did not reach				Grade 2 AE	Rash
15	72	M	Did not reach					Grade 2 AE	Rash, Infections, Colitis, Myocarditis, Atrial Fibrillation, Heart Failure
16	81	M	Did not reach					Grade 2 AE	Autoimmune Hepatitis
17	68	M	Did not reach					Ongoing	Rash
18	90	F	Persistent	Persistent	Progression	Progression	Progression	Progression	Pneumonitis

A Contemporary Review of Perioperative Metrics of Retroperitoneal Lymph Node Dissection for Testicular Cancer - the Brigham Experience
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Background: Retroperitoneal lymph node dissection (RPLND) is an essential component of multimodal treatment for testicular cancer. The latest data on the perioperative outcomes of open RPLNDs (O-RPLND) were reported more than a decade ago, and an update is needed. In this study, we report our contemporary institutional perioperative outcomes with O-RPLND.

Methods: We retrospectively identified all patients who underwent O-RPLND between 2013 and 2022 in our institution. Clinical and demographic data were reviewed and recorded. Descriptive statistics and univariate analysis were performed, with patients stratified according to primary RPLND and post-chemotherapy RPLND (PC-RPLND).

Results: Our cohort included a total of 144 men, with 77% of cases being PC-RPLND. The PC-RPLND cohort showed higher pre-operative N and clinical stages (81% vs. 26% above cN1, p <0.001; 41% vs. 1% Stage 3, p<0.001). The pathology in PC-RPLND cases was more likely to be teratoma and necrosis or fibrosis (43% vs. 6% and 39% vs. 33%, p<0.001). The estimated blood loss was significantly higher in the PC-RPLND group (291 vs. 125 cc, p=0.004). The operative time was longer in PC-RPLND (242 vs. 196 minutes, p=0.011). The length of stay and 30-day readmission rate were not significantly different between groups and averaged at 4.3 days and 12%, respectively. Our most common complication was ileus (5%), followed by chyle leak (3%).

Conclusions: Despite the growing weight of PC-RPLND for more advanced diseases, our contemporary cohort saw a decrease in blood loss and length of stay while maintaining other favorable perioperative outcomes. With long-term outcome data needed to appropriately select patients for robotic RPLND, O-RPLND in experienced hands continues to improve its outcomes and remains the standard approach in the modern era.

Accurate Documentation Contributes to Guideline Concordant Surveillance of Non-Muscle Invasive Bladder Cancer: a Multi-site VA Study

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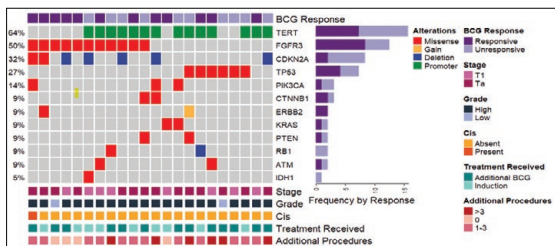
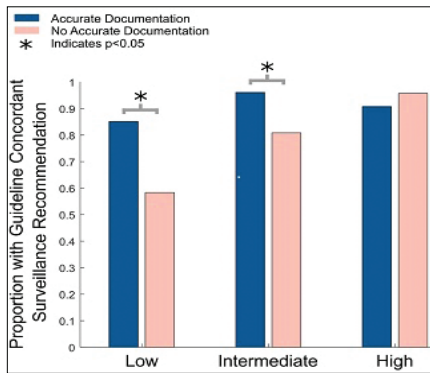
Background: Many patients with non-muscle invasive bladder cancer (NMIBC) do not undergo surveillance cystoscopy that is aligned with their risk for recurrence and progression. Our objective was to determine if accurate documentation of bladder cancer risk was associated with a clinician surveillance recommendation that is concordant with AUA guidelines.

Methods: We prospectively collected data from cystoscopy encounter notes from four Department of Veteran Affairs (VA) sites to ascertain whether they included accurate documentation of bladder cancer risk and a recommendation for a guideline concordant surveillance interval. Pathologic features were abstracted from pathology reports and operative/clinical notes to generate a gold standard NMIBC risk classification for each encounter (low, intermediate, or high risk) based on the AUA guidelines. Accurate documentation was a clinician-recorded risk classification matching the gold standard. Clinician recommendations were guideline concordant if the clinician recorded a surveillance interval that was in line with the AUA guideline.

Results: Among 296 encounters, 75 were for low-, 98 for intermediate-, and 123 for high-risk disease. 52% of encounters had accurate documentation of NMIBC risk. Accurate documentation of risk was less common among encounters for low-risk bladder cancer (36% vs 52% for intermediate- and 62% for high-risk, $p < 0.05$). Guideline concordant surveillance recommendations were also less common in patients with low-risk bladder cancer (67% vs. 89% for intermediate- and 94% for high-risk, $p < 0.05$). Accurate documentation resulted in a 52% and 19% increase in guideline concordant surveillance recommendation for low- and intermediate-risk disease, respectively ($p < 0.05$).

Conclusions: Lack of accurate risk documentation was associated with fewer guideline concordant surveillance recommendations among low- and intermediate-risk patients. These patients undergo more frequent cystoscopy than recommended without a clear, improved oncologic outcome. Implementation strategies facilitating assessment and documentation of risk may be useful to reduce over surveillance in this group that could prevent undue cost, anxiety, and procedural harms.

*Max K. Willscher Award Eligible



Genomic Predictors of BCG Response in High Risk Non Muscle Invasive Bladder Cancer

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Background: Approximately 75% of new bladder cancer patients have non-muscle invasive bladder cancer (NMIBC). Management of high risk NMIBC typically entails resection followed by intravesical BCG and close cystoscopic surveillance. Within five years, half of NMIBC patients experience recurrence; 20-30% progress to muscle invasive disease. High recurrence rates and BCG shortage continue to pose challenges for NMIBC management. Characterizing genomic markers of BCG refractoriness may optimize patient selection for initial and subsequent courses of BCG. **Objectives:** The purpose of this pilot study was to identify differential genomic profiles of bladder cancer tumors among patients demonstrating durable response to BCG compared to those with BCG-unresponsive disease.

Methods: Records of high risk NMIBC patients who received intravesical BCG at our site between 10/1/2017 - 10/1/2022 were reviewed. Pre-treatment samples from 22 patients who were either exceptional responders (n=12; defined as no recurrence >pTa 12 months after BCG completion) or BCG-unresponsive (per AUA criteria¹; n=10) were analyzed. Tissue diagnosis was confirmed by two independent pathologists. DNA was then extracted from paraffin-embedded (FFPE) tissue slides. Next generation sequencing (NGS) was performed using our institution's target-specific probes covering known hotspot mutations on 50 genes. Raw sequencing results were analyzed by two pipelines. Variants were reviewed and confirmed to be of pathologic potential using publicly available data. Statistical analyses were conducted using R4.2.2.

Results: The study population had a mean age of 71.5 years, 86.4% with smoking history, and 72.7% male. All were diagnosed with Ta/T1 papillary urothelial carcinoma, majority with high grade histology. Baseline characteristics were consistent between groups (table 1). NGS revealed alterations with pathogenic potential in every specimen. TP53 mutation testing appeared to be predictive of BCG unresponsiveness with 60% of BCG failures demonstrating inactivating missense mutation in p53 compared to 17% of durable responders, though this trend did not reach statistical significance ($p = 0.07$). 1.FGFR3 and TERT promoter mutations were present in 67% responders vs 40% BCG unresponsive ($p = 0.39$) and 58% responders vs 80% BCG unresponsive patients ($p = 0.38$) respectively. The impact of gene mutations on disease free survival did not reach statistical significance possibly due the limited sample size.

Conclusions: The higher proportion of TP53 mutations within the BCG-unresponsive cohort suggests that the TP53 tumor suppressor may confer resistance to BCG therapy. Our pilot data underscores the feasibility of characterizing NMIBC tumors by NGS and the possibility of using genomic profile has the potential to be a predictive biomarker of BCG response. Future studies to evaluate the interaction between TP53 dysregulation, FGFR and TERT mutations and immune response mediated by BCG are warranted.

	BCG Responsive	BCG Unresponsive	p
n	12	10	
Age at tissue diagnosis	71.70 (11.14)	71.19 (10.10)	0.911
Sex			
Male	8 (67.7)	8 (80.0)	0.827
Female	4 (33.3)	2 (20.0)	
Smoking status (%)			
Current	1 (8.3)	2 (20.0)	0.204
Former	8 (66.7)	8 (80.0)	
Never	3 (25.0)	0 (0.0)	
Prior Urothelial Cancer Diagnosis (%)	1 (8.3)	2 (20.0)	0.865
Multifocal disease (%)	4 (33.3)	8 (80.0)	0.079
Tumor size			
>3cm	6 (50.0)	7 (70.0)	0.607
<3cm	6 (50.0)	3 (30.0)	
Perioperative instillation of chemotherapy (%)	2 (16.7)	1 (10.0)	1
T stage			
T1 (%)	5 (41.7)	4 (40.0)	1
Ta (%)	7 (58.3)	6 (60.0)	
Grade			
Low (%)	1 (8.3)	1 (10.0)	1
High (%)	11 (91.7)	9 (90.0)	
Cis			
Present (%)	2 (16.7)	0 (0.0)	0.542
Absent (%)	10 (83.3)	10 (100.0)	
BCG Received			
Induction only (%)	5 (41.7)	3 (30.0)	0.903
Induction and maintenance/reinduction (%)	7 (48.3)	7 (70.0)	
Number of additional OR procedures	1.50 (2.32)	3.40 (1.35)	0.033
Months between diagnosis and BCG initiation	2.24 (1.26)	2.49 (1.29)	0.649
Months of follow-up after BCG initiation	44.23 (12.41)	37.69 (17.52)	0.318

Footnotes¹ US Food and Drug Administration. Guidance document: bacillus Calmette-Guérin-unresponsive nonmuscle invasive bladder cancer: developing drugs and biologics for treatment guidance for industry. <https://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/UCM529600.pdf>

Occult Residual Malignancy Despite Normal Surveillance Cystoscopy in Trimodality Therapy Patients for Bladder Cancer

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Background: Trimodality therapy (TMT) has become a standard treatment option for patients with muscle-invasive bladder cancer. The clinical protocol followed by our institution has been to perform a surveillance biopsy of the resection site, either after consolidation chemotherapy or completion of full-chemoradiation. There is variation in biopsy protocols between centers across the United States and Europe with no evidence to guide providers on if and when surveillance biopsy should be performed. We sought to determine the rate of residual malignancy on initial surveillance biopsy when the cystoscopic visual examination is normal.

Methods: The Massachusetts General Hospital's institutional trimodal therapy database was reviewed to obtain patients who had completed all three components of treatment. The electronic health record was utilized to obtain the operative report from the initial biopsy, either after consolidation chemotherapy and/or completion of chemoradiation. A determination was made from the operative report whether the bladder was visually normal or abnormal. Keywords for a visually abnormal cystoscopy were: papillary tumor, tumor of any kind, erythematous lesion, significant bullous edema, and suspicious for tumor. All other cystoscopies were considered visually normal. The rate of biopsies positive for malignancy was determined. Urine cytology data from the time of biopsy was also collected.

Results: 211 patients underwent induction and consolidation chemotherapy and proceeded with an initial surveillance biopsy at that time. 24 patients completed full-chemoradiation and had a surveillance biopsy at that time. Biopsy after consolidation chemotherapy was performed by cold cup forceps in 147 patients (69.66%) and transurethral resection in 64 patients (30.33%). Biopsy after completion of full-chemoradiation was performed by cold cup forceps in 11 patients (45.83%) and transurethral resection in 13 patients (54.16%). For patients whose initial surveillance biopsy was after consolidation chemotherapy, 166 (78.67%) had a visually normal bladder on cystoscopy. The rate of positive biopsy for bladder cancer was 5.42%. For patients who completed full-chemoradiation and then had a surveillance biopsy, 21 (87.5%) had a visually normal bladder. The rate of positive biopsy for bladder cancer was 4.76%. The sensitivity of urine cytology immediately after completion of chemoradiation was 27%. The specificity was 86%.

Conclusions: After completion of chemoradiation for trimodality therapy, when the bladder is visually normal the risk of underlying malignancy is low but remains clinically significant. Furthermore, cytology data shows low sensitivity early after trimodality therapy. Based on these findings, we recommend routine biopsy at the first cystoscopy after chemoradiation.

	No block (N=37)	Liposomal Bupivacaine (N=20)	Bupivacaine + Steroid (N=84)	P-value
Post-operative pain scores at rest				
0-12 hours	4.50 ± 2.16	4.33 ± 1.95	3.28 ± 1.92	p=0.006
12-24 hours	4.10 ± 2.07	3.15 ± 2.10	3.21 ± 1.88	p=0.088
24-48 hours	3.98 ± 2.35	3.11 ± 2.17	2.96 ± 1.74	p=0.086
Post-operative pain scores with activity				
0-12 hours	5.12 ± 2.36	4.18 ± 2.41	3.63 ± 2.15	p=0.014
12-24 hours	4.52 ± 2.10	3.38 ± 2.22	3.50 ± 1.94	p=0.054
24-48 hours	4.12 ± 2.30	3.31 ± 2.22	3.26 ± 1.95	p=0.206

	No block (N=37)	Liposomal Bupivacaine (N=20)	Bupivacaine + Steroid (N=84)	P-value
Nephrectomy Type				
Partial	19 (51.4%)	8 (40.0%)	50 (59.5%)	p=0.259
Radical	18 (48.6%)	12 (60.0%)	34 (40.5%)	p=0.258
Surgical Time (min)	321 ± 87.8	281 ± 62.4	288 ± 78.8	p=0.078
Length of Stay (hours)	66.3 (24.9)	66.6 (32.3)	58.1 (43.4)	p=0.45
Significant Adverse Events	2 (5.4%)	3 (15%)	5 (6%)	p=0.274

Efficacy of Liposomal Bupivacaine Versus Bupivacaine with Steroids for Postoperative Pain Control in Minimally Invasive Nephrectomies - A Single Center Retrospective Study

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Background: Minimally invasive nephrectomy is one of the most performed surgical procedures in urologic oncology. Perioperative nerve blocks are increasingly adopted with the goal of improving pain control and decreasing opioid use. Liposomal bupivacaine was introduced in 2011 with the goal of improving analgesic duration, however, the results of randomized trials are conflicting. Nonetheless, liposomal bupivacaine for surgical site infiltration continues to be used at an added financial cost. Glucocorticoids have been used off-label in both local infiltration and nerve block multimodal analgesia. The goal of our retrospective study was to assess the post-operative analgesic efficacy of perioperative truncal blocks using liposomal bupivacaine versus plain bupivacaine plus steroids (dexamethasone and methylprednisolone) versus surgical site local anesthetic infiltration (no block) in patients who underwent minimally invasive nephrectomies.

Methods: In this retrospective cohort study, all minimal invasive nephrectomies (partial and radical) in a single academic health system between January 2018 and December 2022 were reviewed. Based on surgical approach, patients received no nerve block or ultrasound guided truncal blocks including transversus abdominus plane (TAP), quadratus lumborum (QL), or rectus sheath blocks with either bupivacaine plus glucocorticoids or liposomal bupivacaine. The primary outcome measured was post-operative opioid use. The secondary outcomes measured were postoperative pain scores, postoperative adverse events, and hospital length of stay.

Results: 141 patients were included. No significant difference was found in demographics, procedure type, or co-morbidities between the liposomal bupivacaine, bupivacaine plus glucocorticoid, and no block groups (Table 1 & 4). No significant difference was found in post-operative opioids use (converted to milligram morphine equivalents), operative time, or length of stay (Table 2 & 3). However, patients who received bupivacaine plus steroids had less pain at rest and with activity when compared to the liposomal bupivacaine and control groups (Table 3). Patients who received steroids with their block were also less likely to require opioids 24-48 hours postoperatively (Table 2).

Conclusions: These findings suggest that plain bupivacaine with steroids can be used as a cost effective and commonly available alternative to liposomal bupivacaine. Additionally, truncal blocks with bupivacaine plus glucocorticoids may decrease the need for opioids after postoperative day one and improve postoperative pain scores in patients undergoing minimally invasive urologic procedures. We aim to use data from this study to inform a future randomized controlled trial at our institution.

	No block (N=37)	Liposomal Bupivacaine (N=20)	Bupivacaine + Steroids (N=84)	P-value
Age (years)	60.9 ± 14.4	63.8 ± 14.9	62.5 ± 13.3	p=0.727
Gender				
Female	15 (40.5%)	8 (40.0%)	34 (40.5%)	p=0.999
Male	22 (59.5%)	12 (60.0%)	50 (59.5%)	p=1
BMI				
Mean (SD)	33.0 (8.52)	30.9 (5.56)	30.1 (6.73)	p=0.122
ASA score				
1	0 (0%)	0 (0%)	0 (0%)	
2	10 (27.0%)	4 (20.0%)	31 (36.9%)	
3	23 (62.2%)	16 (80.0%)	52 (61.9%)	
4	4 (10.8%)	0 (0%)	1 (1.2%)	
Co-morbidities				
Cardiac	25 (67.6%)	12 (60.0%)	57 (67.9%)	p=0.794
Pulmonary	2 (5.4%)	5 (25.0%)	14 (16.7%)	p=0.094
Diabetes	8 (21.6%)	5 (25.0%)	9 (10.7%)	p=0.125

	No block (N=37)	Liposomal Bupivacaine (N=20)	Bupivacaine + Steroid (N=84)	P-value
Postoperative MME				
0-12 hours	14.8 ± 17.1	22.5 ± 20.7	17.1 ± 18.0	p=0.316
12-24 hours	14.9 ± 12.4	15.0 ± 16.8	11.9 ± 12.7	p=0.416
24-48 hours	23.9 ± 24.9	16.0 ± 20.1	15.8 ± 21.9	p=0.18
Cumulative 0-48 hours	53.7 ± 45.8	53.5 ± 47.6	44.9 ± 43.6	p=0.528
Need for postoperative opioids				
0-12 hours	29 (78.4%)	15 (75.0%)	67 (79.8%)	p=0.895
12-24 hours	30 (81.1%)	14 (70.0%)	58 (69.0%)	p=0.382
24-48 hours	31 (86.1%)	14 (70.0%)	50 (59.5%)	p=0.016
Cumulative 0-48 hours	35 (94.6%)	18 (90.0%)	72 (85.7%)	p=0.358

Single Cell RNA-Sequencing Highlights Underlying Cellular and Transcriptomic Differences in Non-Muscle Invasive Bladder Cancers of Identical Stage and Grade

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Background: Clinical decisions in patients with non-muscle invasive bladder cancer (NMIBC) are based primarily on tumor grade and stage. Despite creation of prognostic risk scores using clinical parameters, recurrence (15-61% for Ta and T1) and progression (up to 54% for CIS) remain variable. We hypothesize that underlying molecular and cellular heterogeneity within stage exists and may explain variation in clinical outcome.

Methods: Bladder tumors were obtained from patients via transurethral resection of bladder tumor during routine clinical care. Tissues were obtained fresh or cryopreserved. Samples were dissociated, live cells sorted by FACS, and single cell suspensions used for single cell RNA sequencing (scRNA-seq) library preparation utilizing 10x Chromium Gene Expression Kit. Sequencing was done on Illumina HiSeq and Novaseq platforms and subsequent analysis performed with Scanpy (Python) and consensus non-negative matrix factorization (NMF). Novel molecular signatures derived from scRNA-seq data were mapped to progression data from the UROMOL project, a European multi-center study on NMIBC.

Results: scRNA-seq was performed on tumors from 16 patients with NMIBC. We observed differences in cellular and transcriptomic composition between tumors that would traditionally have been characterized by the same stage and grade (Figure 1). Molecular signatures derived from NMF identified a higher degree of urothelial heterogeneity than previously appreciated in prior studies using bulk tissue. Novel molecular signatures identified by scRNA-seq correlate with progression free survival when mapped onto bulk RNA seq datasets ($r = -0.718, p < 0.001$).

Conclusions: NMIBC tumors of the same stage and grade harbor underlying differences in molecular and cellular composition. Molecular signatures derived from scRNA-seq data correlate with risk of clinical progression. Underlying heterogeneity within NMIBC stage may explain observed variability in clinical outcomes and holds promise for the development personalized treatment approaches.

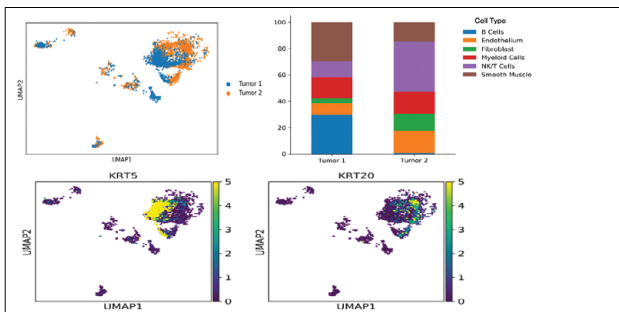


Figure 1. scRNA-seq data demonstrating different cell populations within two grade and stage matched tumors (both high grade, stage T1) *Top left* – cell clusters from Tumor 1 (blue) and tumor 2 (orange). *Top right* – non-urothelial cellular composition within tumor 1 (left) and tumor 2 (right). scRNA-seq data from the same tumors showing increased expression (yellow and green color) of keratin 5 (KRT5 *bottom left*, basal urothelial cell marker) in tumor 1 and increased expression of keratin 20 (KRT 20 *bottom right*, luminal urothelial cell marker) in tumor 2

Urinary Comprehensive Genomic Profiling Predicts Urothelial Carcinoma Recurrence and Risk of Disease Progression: A Multi-Institutional Longitudinal Surveillance Cohort

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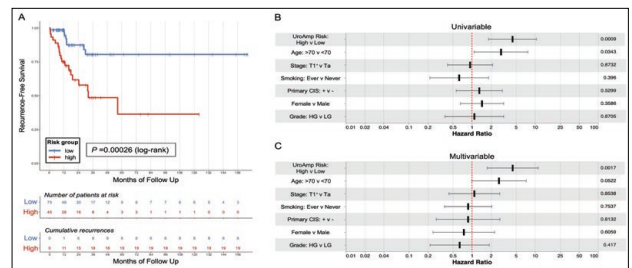
Background: Risk stratification of patients with urothelial carcinoma (UC) remains a clinical challenge, with high rates of recurrence and disease progression. Urinary comprehensive genomic profiling (uCGP) has potential to aid in treatment selection.

Methods: This is a blinded, multicenter case-control study of banked urine specimens collected from UC surveillance patients with long-term followup. Using UroAmp™, uCGP was performed on 120 subjects with a history of UC and negative surveillance cystoscopy at time of collection. Subjects were predicted high- or low-risk of recurrence using a machine learning algorithm. Kaplan-Meier curves were computed to estimate recurrence-free survival in recurrence risk groups. Univariable and multivariable Cox proportional hazards models estimated the association between risk predictions and recurrence-free survival (RFS).

Results: High recurrence risk was predicted in 37% (45/120) of subjects; of these, 19 had a clinical recurrence, 12 of which were high-grade. Of the 75 predicted low-risk patients, 8 (11%) experienced recurrences, only one of these occurred within the first 12 months of surveillance. RFS was significantly worse in high-risk versus low-risk patients (hazard ratio 4.4, $p = 0.0017$). In a multivariable Cox proportional hazards model, UroAmp risk category remained significantly associated with recurrence after adjusting for other clinical and pathologic features (Fig 1).

Conclusions: uCGP can predict future recurrence of high-risk UC with substantial lead time. If validated with further studies, uCGP may provide a powerful way to risk-stratify patients and enable personalized strategies of UC management based on genomic risk.

Figure 1. uCGP Predicted Recurrence Risk. UC surveillance patients with negative cystoscopy and long-term follow-up with outcomes were analyzed for recurrence risk ($n = 120$, validation cohort). (A) Kaplan-Meier curves for recurrence-free survival by UroAmp predicted risk. Significance: $P = 0.00026$ (Log-rank test). (B) Univariable and (C) multivariable Cox proportional-hazard regression analysis of UroAmp recurrence risk groups and clinical risk factors. For stage, T1+ indicates the grouping of patients with T1, T2, and T3 disease.



Hospital-Level Variations in the Utilization of Focal Therapy for Localized Prostate and Kidney Cancer

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Background: Focal therapy or focal ablation is a relatively novel, minimally invasive procedure that uses image guidance to deliver focal energy and achieve local control of kidney and prostate cancer. Little is known about the current institutional landscape of how focal therapies are being used in localized prostate and kidney cancer.

Methods: Adult patients diagnosed with localized prostate and kidney cancer from the National Cancer Database were included. The proportion of patients who received focal therapy was calculated for each facility. A multivariable mixed-effects logistic regression analysis was performed with a hospital-level random effects term to identify factors associated with the receipt of focal therapy. The variability in utilization between hospitals was analyzed using ranked caterpillar plots for both prostate and kidney cancer.

Results: There were 1,559,334 individuals with prostate cancer and 425,753 individuals with kidney cancer; of those, 1.6% received focal therapy for prostate cancer and 6.3% for kidney cancer. The variation between hospitals ranged from 0.13% (95% CI 0.12-0.13) in the bottom decile to 32.17% (95% CI 29.64-34.70) in the top decile for prostate cancer and from 1.16% (95% CI 1.11-1.21) in the bottom decile to 30.48% (95% CI 28.87-32.09) in the top decile for kidney cancer. For both cancers, age and Black race were associated with increased odds of focal therapy (Table 2). The hospital-level odds of focal therapy for prostate and kidney cancer using unadjusted probabilities (observed proportions) were minimally correlated (Spearman's $\rho = 0.21$; $p < 0.001$).

Conclusions: Our analysis revealed a substantial discrepancy in the utilization of focal therapy across hospitals for prostate and kidney cancer. Despite this, there was a limited correlation between the use of focal therapy for these two types of cancer within the same hospital. Our findings emphasize the existence of complex factors affecting the utilization of focal therapy, both at the hospital and healthcare system level.

*Max K. Willscher Award Eligible

The Complex Interaction of Race and Social Determinants of Health in Prostate Cancer Screening

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Background: Despite stronger evidence and clear recommendations for colorectal carcinoma screening (CRC), patients have historically preferred prostate-specific antigen (PSA) screening. Cancer screening choices may be influenced by more complex interactions of known determinants of healthcare utilization and access including race, socioeconomic status, and general health behaviors. In addition to these social determinants of health (SDOH), shared decision-making (SDM) may augment successful screening practices. Also, SDM is required for responsible, guideline-concordant PSA screening. This study aims to assess the influence of SDOH and SDM on patients who meet the eligibility criteria for PSA screening.

Methods: Responses of individuals meeting the eligibility criteria for PSA screening based on current recommendations were extracted from the 2020 Behavioral Risk Factors Surveillance Survey (BRFSS). Records containing definitive history of SDM and PSA testing were included for analysis. Hierarchical classification of records was used to identify similar clusters. Effects of the multivariable interactions were calculated. All results were weighted.

Results: Four distinct clusters were identified within the 30,958 records that met inclusion criteria (Table 1): less diverse, low SES (LD-LS); less diverse, high SES (LD-HS); more diverse, low SES (MD-LS); more diverse, high SES (MD-HS). Rates of SDM were similar between the clusters with 22% in LD-LS, 23.36% in LD-HS, 20.34% in MD-LS, 19.9% in MD-HS. For the four groups, LD-LS, LD-HS, MD-LS, and MD-HS, PSA screening rates were significantly different with 48.6%, 49.5%, 39.59%, and 39.52%, respectively; CRC screening rates were similar with 81.6%, 84.1%, 78.5%, and 77.2%, respectively. SDM was associated increased odds of PSA testing in all groups, MD-LS demonstrated the highest increase (OR=4.64, CI=4.63 - 4.65), followed by MD-HS (OR=3.69, CI=3.68 - 3.69), LD-LS (OR=3.21, CI=3.21 - 3.21), and LD-HS (OR=3.06, CI=3.06 - 3.06).

Conclusions: Naturalistic analysis of the BRFSS data allowed for identification of unique groups with distinct healthcare behaviors representing differences between PSA screening-eligible patients. Social determinants and behavioral choices interact with SDM, which remains low across all groups, and affect cancer screening rates. Importantly, differences in SDM and PSA screening exist within the same racial groups when considering SES and within the same SES level when considering race. Additional investigation into the interplay of SDOH and personal choices can further elucidate on how to improve cancer screening practices in this patient population.

Table 1: Sociodemographic characteristics of clusters identified in BRFSS. All values are weighted. 95% confidence intervals are in brackets.

Trait	Less Diverse, Low SES (LD-LS)	Less Diverse, High SES (LD-HS)	More Diverse, Low SES (MD-LS)	More Diverse, High SES (MD-HS)
Demographic/Socioeconomic				
Age	64 [64-64]	62 [62-62]	62 [61-62]	62 [62-63]
Cost Barrier to Healthcare (%)	7% [7%-7%]	3% [3%-3%]	17% [17%-17%]	10% [10%-10%]
Education (no school, 0%, to college graduate, 100%)	70% [70%-70%]	87% [87%-87%]	47% [47%-47%]	63% [63%-63%]
White Racial Identity (%)	90% [89%-91%]	100% [100%-100%]	1% [0%-2%]	28% [26%-30%]
Black Racial Identity (%)	0% [0%-1%]	0% [0%-0%]	38% [34%-41%]	24% [22%-26%]
American Indian/Pacific Islander Racial Identity (%)	0% [0%-0%]	0% [0%-0%]	9% [7%-12%]	5% [4%-6%]
Asian Racial Identity (%)	6% [5%-6%]	0% [0%-0%]	2% [1%-3%]	10% [8%-11%]
Native Hawaiian Racial Identity (%)	1% [1%-1%]	0% [0%-0%]	1% [0%-2%]	1% [1%-2%]
Other Racial Identity (%)	0% [0%-0%]	0% [0%-0%]	12% [10%-15%]	1% [0%-1%]
Multiracial Racial Identity (%)	0% [0%-0%]	0% [0%-0%]	16% [14%-19%]	8% [6%-9%]
Hispanic Racial Identity (%)	3% [2%-4%]	0% [0%-0%]	21% [18%-24%]	23% [21%-26%]
Married (%)	57% [56%-59%]	77% [76%-78%]	31% [28%-35%]	48% [45%-50%]
Divorced (%)	11% [10%-12%]	21% [20%-22%]	7% [5%-9%]	16% [14%-18%]
Widowed (%)	7% [6%-8%]	0% [0%-0%]	14% [12%-17%]	14% [12%-16%]
Separated (%)	2% [2%-3%]	0% [0%-0%]	12% [10%-15%]	3% [2%-4%]
Single (%)	20% [19%-21%]	2% [2%-2%]	25% [22%-29%]	11% [10%-13%]
Non-Married Couple (%)	2% [1%-2%]	0% [0%-0%]	9% [7%-11%]	7% [6%-8%]
Rent Housing (%)	21% [21%-21%]	6% [6%-6%]	60% [60%-60%]	33% [33%-33%]
Health Behaviors				
Report Regular Exercise (%)	70% [70%-70%]	86% [86%-86%]	60% [56%-64%]	71% [71%-71%]
Report Regular Check Up	92% [92%-92%]	86% [86%-86%]	92% [92%-92%]	91% [91%-91%]
Smoker Status (%)	57% [57%-57%]	38% [38%-38%]	58% [58%-58%]	54% [54%-54%]
Received Flu Vaccine (%)	65% [65%-65%]	48% [48%-48%]	55% [55%-55%]	53% [53%-53%]
Received Pneumonia Vaccine (%)	55% [55%-55%]	31% [31%-31%]	47% [47%-47%]	41% [41%-41%]

Factors Associated With Procedure-Specific Complications from RALP/ PLND in Contemporary NSQIP Data

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Background: Robotic-assisted laparoscopic prostatectomy (RALP) is a gold standard approach for clinically significant localized prostate cancer (csPCa). The National Surgical Quality Improvement Program (NSQIP) database provides information on RALP outcomes and began including procedure-specific information such as pelvic lymph node dissection (PLND) and postoperative lymphocele and urinary/anastomotic leak in 2019. In this study, we evaluated the association between pre- and perioperative variables on procedure-specific postoperative complications in patients undergoing RALP with PLND.

Methods: NSQIP was queried for patients with csPCa undergoing RALP (CPT 55866) from 2019-21. Data were merged on patient identifiers with the RALP-specific NSQIP data file from those years. Multivariate logistic regression was used to evaluate the association between risk factors and RALP and PLND-specific outcomes. Input variables included ASA class, age, operative time, and BMI. From the extended dataset with PLND information, number of nodes evaluated, perioperative antibiotic use, postoperative VTE prophylaxis use, history of prior pelvic surgery, and history of prior radiotherapy were also included. Outcomes included lymphocele, and urinary/anastomotic leak.

Results: 11,811 patients were included in the analysis. All records were found to be complete. After RALP, 2.0% had lymphocele, and 2.5% had urinary/anastomotic leak. Odds of developing lymphocele increased with prior pelvic surgery (OR:1.57, CI:[1.16 - 2.13], p = 0.003), number of nodes evaluated (OR:1.02, CI:[1.01 - 1.03], p = 0.005), and having had PLND (OR:3.05, CI:[1.64 - 5.7], p < 0.001). Perioperative antibiotic use (OR:0.45, CI:[0.29 - 0.71], p = 0.001) was a negative predictor of urinary/anastomotic leaks, but prior radiotherapy (OR:5.52, CI:[2.92 - 10.42], p < 0.001), longer operative time (OR:1.13, CI:[1.04 - 1.24], p = 0.005), BMI (OR:1.04, CI:[1.02 - 1.07], p < 0.001), and prior pelvic surgery (OR:1.4, CI:[1.06 - 1.84], p = 0.017) were positively associated.

Conclusions: History of prior pelvic surgery, PLND, and extent of PLND were found to be associated with lymphocele. urinary/anastomotic leak was associated with prior XRT, pelvic surgery, longer operative time and increased BMI. While risk of these complications is low, they can be highly clinically significant. Attention to risk factors may improve perioperative care and identify patients for efforts at further risk reduction.

Target Acquired: Analysis of Pre-Biopsy MRI and Cancer Detection Rates in a Single Academic Center before and after the Publication of the PRECISION Trial

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Background: Pre-biopsy MRI has become more accepted in prostate cancer diagnosis since, among other factors, the 2018 PRECISION Trial publication. Few studies exist looking at this trial's impact on real-world clinical practice. We sought to evaluate the changes over time in our academic clinical practice with regards to MRI use, patient characteristics and cancer detection rates for biopsy naïve patients before and after publication of this trial.

Methods: Biopsy-naïve patients between 04/2015 and 01/2022 were categorized as either "Pre-" or "Post-" PRECISION Trial publication (Pre-PT and Post-PT, respectively). Baseline characteristics were analyzed. Cancer Detection Rate (CDR), clinically significant cancer (csPCa, defined as >= Grade Group Two disease), and clinically insignificant cancer (ciPCa) rates were calculated. Odds ratios (OR) for CDR in the Pre- vs Post-PT data sets were calculated using logistic regression models, with adjustment for confounding variables.

Results: 1,436 men were included in the analysis, 815 in the Post-PT cohort and 621 in the Pre-PT cohort. More men underwent pre-biopsy MRI after the PRECISION trial (46.2% vs. 16.5%, respectively, P < 0.001). Comparing Post-PT to Pre-PT cohorts, median age was 64.8 vs. 63.3 years (P = 0.001), median PSA was 6.3ng/ml vs. 5.8ng/ml (P = 0.003) and an abnormal digital rectal exam was found in 40.6 vs. 31.9% (P < 0.001) of men. There were no differences in race (P = 0.313) or family history of prostate cancer (P = 0.186). The CDR was higher in the post-PT cohort (65.3% vs. 45.7%, P < 0.001). More clinically significant PCa was found (43.9% vs. 31.8%, P < 0.001) while the CDR of clinically insignificant PCa remained unchanged (32.8% vs. 30.4%, P < 0.488). On multivariate logistic regression, the post-PT period was independently associated with csCDR (OR 1.42, CI 1.10 - 1.83, p = 0.007).

Conclusions: Since the PRECISION trial publication, more men have undergone prebiopsy MRI and more csPCa has been detected with no change in ciPCa in our institution. While there are certainly other contributing factors that may be at play, our study outlines a clinical transition towards more widespread utilization of pre-biopsy MRI, while detailing changes in patient demographics, and demonstrating an improvement in CDR since the PRECISION trial publication.

Table 1 Demographic and clinical data for Pre- and Post- Precision Trial publication cohorts.

	Pre-PT (N=621)	Post-PT (N=815)	Total (N=1436)	p value
Age (yrs)				0.001 ¹
Median	63.3	64.8	64.2	
Q1,Q3	57.5, 68.8	59.3, 69.8	58.4, 69.3	
Race				0.313 ²
Non-White (%)	62 (10.0)	69 (8.5)	131 (9.1)	
White (%)	557 (90.0)	746 (91.5)	1303 (90.9)	
Family history of PCa				0.186 ²
Yes (%)	403 (72.5)	512 (69.1)	915 (70.5)	
No (%)	153 (27.5)	229 (30.9)	382 (29.5)	
PSA (ng/ml)				0.003 ¹
Median	5.8	6.3	6.0	
Q1,Q3	4.3, 8.1	4.7, 8.7	4.5, 8.4	
DRE Results				< 0.001 ²
Normal (%)	363 (59.4)	537 (68.1)	900 (64.3)	
Abnormal (%)	248 (40.6)	251 (31.9)	499 (35.7)	
Pre-Biopsy MRI				< 0.001 ²
No (%)	517 (83.5)	437 (53.8)	954 (66.6)	
Yes (%)	102 (16.5)	376 (46.2)	478 (33.4)	
PCa Diagnosed				< 0.001
No (%)	337 (54.3)	283 (34.7)	620 (43.2%)	
Yes (%)	284 (45.7)	532 (65.3)	816 (56.8%)	
Clinically Significant PCa				< 0.001
No (%)	423 (68.2)	457 (56.1)	880 (61.4)	
Yes (%)	197 (31.8)	357 (43.9)	554 (38.6)	
Clinically Insignificant PCa				0.488
No (%)	197 (69.6)	357 (67.2)	554 (68.1)	
Yes (%)	86 (30.4)	174 (32.8)	260 (31.9)	

¹Kruskal-Wallis rank sum test
²Pearson's Chi-squared test

Lifetime Health and Economic Outcomes of Biparametric MRI as Front-line Screening for Prostate Cancer Early Detection: A Decision Model Analysis
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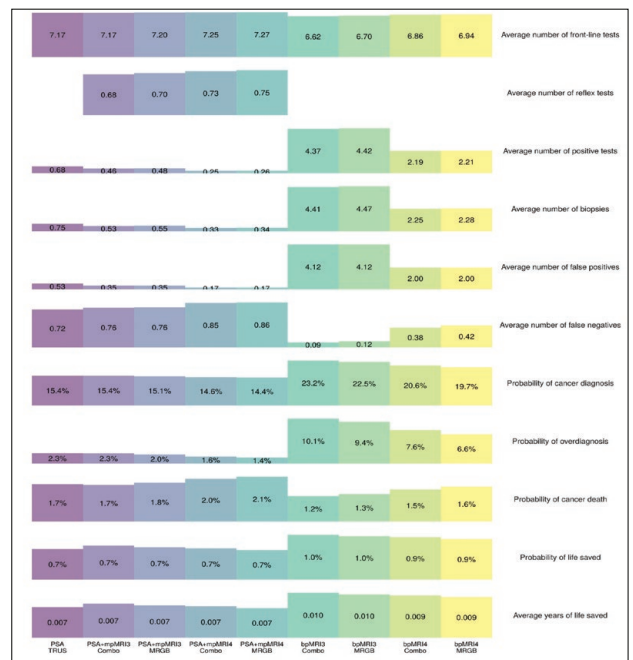
Background: Screening strategies for most cancers employ imaging-based evaluation. However, contemporary screening paradigms for prostate cancer (PCa) are based on front-line biomarker testing with prostate-specific antigen (PSA), which may be followed by reflex multiparametric magnetic resonance imaging (mpMRI) for men with elevated PSA values. Early evidence has suggested that front-line screening with biparametric MRI (bpMRI) may be a viable imaging-based screening strategy. Herein, therefore we evaluated the cost-effectiveness of front-line bpMRI screening for prostate cancer compared to PSA-based approaches with and without mpMRI.

Methods: We conducted a decision analysis of PCa screening strategies by extending an existing microsimulation model of disease natural history, diagnosis, treatment, and survival. We simulated a contemporary population of US men aged 55 years with no prior screening or PCa diagnosis followed until age 100. Interventions included biennial screening up to age 69 using one of 9 strategies involving front-line PSA (with or without reflex mpMR) or front-line bpMRI (followed by MR-guided biopsy [MRGB] or MRGB plus systematic transrectal ultrasound-guided biopsy [TRUS]).

Results: Screening with front-line bpMRI incurs substantially higher numbers of biopsies and prostate cancer diagnoses (Figure 1). Although this strategy leads to fewer PCa deaths compared to front-line PSA-based strategies, it is associated with high rates of overdiagnosis without commensurate increases in lives saved or years of life saved. There was only moderate variation projected when using PI-RADS 3-5 instead of PI-RADS 4-5 for biopsy referral or when using MRGB instead of MRGB+TRUS. None of the strategies using front-line bpMRI were cost-effective compared to a strategy of front-line PSA. At the willingness-to-pay thresholds of \$100,000 and \$150,000 per quality-adjusted years of life saved, front-line PSA with mpMRI as a reflex test followed by MRGB+TRUS (for PI-RADS 3-5 lesions) produced the greatest NMB.

Conclusions: Compared to screening strategies based on front-line PSA, strategies based on front-line bpMRI are not cost-effective.

Figure 1: Projected clinical outcomes. bpMRI = biparametric magnetic resonance imaging; mpMRI = multiparametric magnetic resonance imaging; MRGB = MR-guided biopsy; NMB = net monetary benefit; PSA = prostate specific antigen; TRUS = transrectal ultrasound-guided biopsy; WTP = willingness to pay



A Low-Cost Model for Technical Instruction of Transperineal Ultrasound-Guided Prostate Biopsy (TPPB)

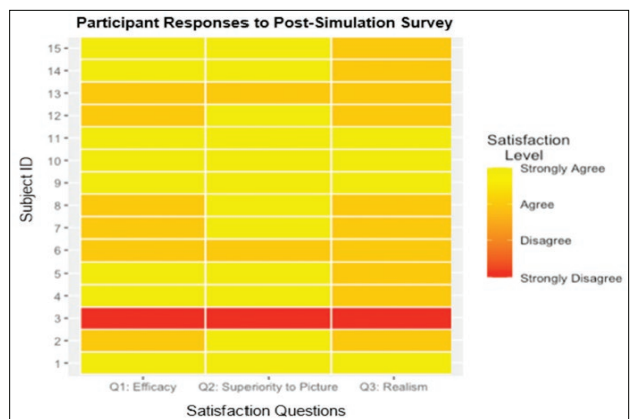
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Background: Transperineal Prostate Biopsy (TPPB) is gaining widespread interest for prostate cancer diagnosis, in part due to its lower rates of infection compared to its transrectal counterpart. Few models exist to assist trainees with acquiring the skills needed for TPPB, and those that do are costly. We have constructed a low-cost, easily replicable TPPB model. Herein we describe the model and assess trainees' experience with respect to model realism and effectiveness.

Methods: We created a low-cost TPPB model using store-bought supplies. A concentration of 0.28% psyllium and 15% gelatin mixture in water was placed in a prostate mold to create a 3-D prostate. Beets were used to represent hyperechoic target "lesions" within the prostate. The perineal soft tissue was simulated using 3.7% psyllium and 15% gelatin mixture in water via a plastic container. A wooden dowel was inserted to create a simulated rectum, and the prostate was suspended in anatomic position in relation to the rectum as the solution cured. Trainees were asked to perform TPPB using the low-cost TPPB model with expert demonstration and supervision. Participant satisfaction was assessed pre and post simulation exercise.

Results: Total cost per individual prostate model was approximately \$11.90. 15 trainees ranging from MS3 to PGY5 participated in the TPPB simulation. 93% of participants "agreed" or "strongly agreed" that the model was effective for technical instruction; 80% of participants "strongly agreed" that the model was superior to verbal or pictorial methods for understanding TPPB. Lastly, 93% of participants "agreed" or "strongly agreed" on model verisimilitude to in situ TPPB.

Conclusions: We describe an inexpensive and reproducible TPPB model. This was found to be an effective and realistic kinesthetic learning tool for trainees based on feedback from our initial simulation. We will continue to improve upon model fidelity; future studies will aim to assess our model's effects on trainee performance and confidence in performing TPPB in situ.



Outcomes of Transperineal MRI-Fusion Targeted Prostate Biopsy Utilizing PrecisionPoint Versus a Grid Template

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Background: Urologists are increasingly performing prostate biopsies (PBx) via a transperineal (TP) approach. The two predominant methods for performing TP PBx employ either a grid template (G) or a more freehand approach, often with devices such as PrecisionPoint® (PP). As existing data are sparse, our objective was to compare the two techniques on rates of clinically significant prostate cancer (csPCa) detection and complications when MRIfusion targeted (MRI) PBx is performed.

Methods: We queried a prospectively maintained prostate biopsy database to identify men ages 18-89 who underwent TP MRI-PBx (including concurrent systematic PBx) between 8/1/20 and 9/30/22. G-MRI-PBx were performed until 4/1/22, and PP-MRI-PBx were performed subsequently. All PBx were performed using UroNav software. The primary outcome was detection of csPCa in the MRI region of interest (ROI). 30 day complications and overall rates of csPCa were examined at the patient level. Subgroup outcomes included csPCa detection in anterior MRI ROIs (as anterior ROIs can be challenging to access due to pubic bone interference) and stratification by prior PBx status. csPCa was defined as Grade Group ≥2.

Results: 551 MRI ROIs in 452 patients were included in the analysis. Prior biopsy status differed between groups (Table 1); however, when stratified by prior biopsy status, there was no difference in csPCa detection found between a grid or PP approach (Table 2). PP-MRI-PBx and G-MRI-PBx had similar overall and ROI csPCa detection rates (Table 2). Complication rates and the ability to detect csPCa in anterior ROIs was similar between the two groups (Table 2).

Conclusions: G-MRI-PBx and PP-MRI-PBx identified similar rates of csPCa, including in anterior MRI lesions and when stratified by prior biopsy status. Complication rates were low and did not differ based on biopsy technique.

Table 1. Baseline demographics of included patients

	G-MRI-PBx	PP-MRI-PBx	p
N	348	104	
Median Age (IQR)	65.0 (60.0-71.0)	68.0 (63.3-71.0)	0.06
Median PSA (IQR)	6.9 (5.1-9.6)	7.8 (5.3-10.5)	0.91
Ethnicity			0.89
Caucasian	298 (87.9%)	86 (86.0%)	
Black	21 (6.2%)	7 (7.0%)	
Hispanic/Latino	10 (2.9%)	4 (4.0%)	
Other	10 (2.9%)	3 (3.0%)	
Prior Biopsy Status			0.02
Active surveillance	170 (48.9%)	37 (35.6%)	
Prior negative biopsy	80 (23.0%)	23 (22.1%)	
Biopsy naïve	98 (28.2%)	44 (42.3%)	
PI-RADS v2.1 ROI			0.07
PI-RADS 3	96 (22.9%)	43 (32.8%)	
PI-RADS 4	214 (51.1%)	59 (45.0%)	
PI-RADS 5	109 (26.0%)	29 (22.1%)	

Note: G = grid; PBx = prostate biopsy; PP = PrecisionPoint®; IQR = inter-quartile range; ROI = region of interest. Chi-square tests of proportion or Fisher's exact were used for all categorical data, Wilcoxon Ranked Sum tests was used for ordinal and continuous variables not meeting assumptions of normality. N=100 for PP ethnicity, the rest were unknown or not given.

Table 2. Cancer detection and complications rates of different transperineal biopsy techniques

	G-MRI-PBx	PP-MRI-PBx	Total	p
N	348	104	452	
Total no. of MRI lesions	420	131	551	
Overall csPCa	170 (48.9%)	50 (48.1%)	220 (48.7%)	0.89
csPCa in ROI	146 (34.8%)	42 (32.1%)	188 (34.1%)	0.57
Grade group in ROI				0.85
No cancer	182 (43.3%)	53 (40.5%)	235 (42.6%)	
1	92 (21.9%)	36 (27.5%)	128 (23.2%)	
2	102 (24.3%)	27 (20.6%)	129 (23.4%)	
3	32 (7.6%)	10 (7.6%)	42 (7.6%)	
4	7 (1.7%)	2 (1.5%)	9 (1.6%)	
5	5 (1.2%)	3 (2.3%)	8 (1.5%)	
No. anterior lesions	110 (26.3%)	32 (24.4%)	142 (25.9%)	0.67
csPCa in anterior lesions	45 (40.9%)	10 (31.3%)	55 (38.7%)	0.32
csPCa in ROI by prior biopsy status				
Active surveillance	74 (35.7%)	15 (31.9%)	89 (35.0%)	0.62
Prior negative biopsy	26 (28.0%)	7 (23.3%)	33 (26.8%)	0.62
Biopsy naïve	46 (38.3%)	20 (37.0%)	66 (37.9%)	0.87
Complications: Any	15 (4.3%)	4 (3.8%)	19 (4.2%)	0.84
Bleeding	2 (0.6%)	1 (1.0%)	3 (0.7%)	0.67
Infection	5 (1.4%)	1 (1.0%)	6 (1.3%)	0.71
Urinary retention	8 (2.3%)	2 (1.9%)	10 (2.2%)	0.82

Note: G = grid; PBx = prostate biopsy; PP = PrecisionPoint®; PCa = prostate cancer; csPCa = clinically significant prostate cancer; ROI = region of interest. Chi-square tests of proportion or Fisher's exact were used for all categorical data, Wilcoxon Ranked Sum test was used for ordinal and continuous variables not meeting assumptions of normality.