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Abstract 100

Augmented reality-guided transperineal prostate biopsy: Shifting the paradigm

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Introduction: Transrectal ultrasound guided (TRUS) prostate biopsies are the gold standard for diagnosis of prostate cancer, the most common cancer among men in the United States; however, discomfort associated with the transrectal probe can lead to patient reluctance to follow through with prostate biopsies. Augmented reality (AR) has emerged as a paradigm-shifting technology in surgery by superimposing digital information (i.e., 3D volumetric renderings of patient scans) on top of the physical world (i.e., the respective patient's body). In this proof of concept, we explore the feasibility of an AR-guided non-TRUS transperineal prostate biopsy.

Methods: Computerized tomography (CT) imaging of two supine male cadaveric torsos was uploaded to the SurgicalAR system (Medivis, New York, NY) and a 3D volumetric hologram was projected through the see-through visor of the HoloLens 2 (Microsoft, Seattle, WA). The hologram was registered to the cadaver using a point-to-point framework relying on pre-identified cadaveric landmarks matched to virtual counterparts. While wearing the HoloLens and using SurgicalAR, virtual trajectories towards the pre-selected prostate targets were planned by first selecting a prostate target and subsequently selecting a superficial entry point. The trajectories were then projected through the visor. A needle was inserted following the virtual plans and 1cc of radiopaque dye was injected. The cadavers were rescanned to highlight dye tract and target.

Results: Three trajectories were planned using the AR system. In two of the trajectories, the target and entry points were both planned with the senior author positioned caudally; in the other trajectory, the senior author planned the target while positioned rostrally and the entry point while positioned caudally. Following the latter trajectory, the prostate target was hit successfully without damage to local structures.

Conclusions: To the best of our knowledge, we present the first cadaveric study of non-TRUS guided transperineal prostate biopsy using AR guidance. This feasibility study paves the way for future studies and clinical trials using AR in place of TRUS to guide transperineal prostate biopsy.

Funding: N/A

Abstract 101

Identification of motivating factors influencing the choice of urology as a specialty by female medical students

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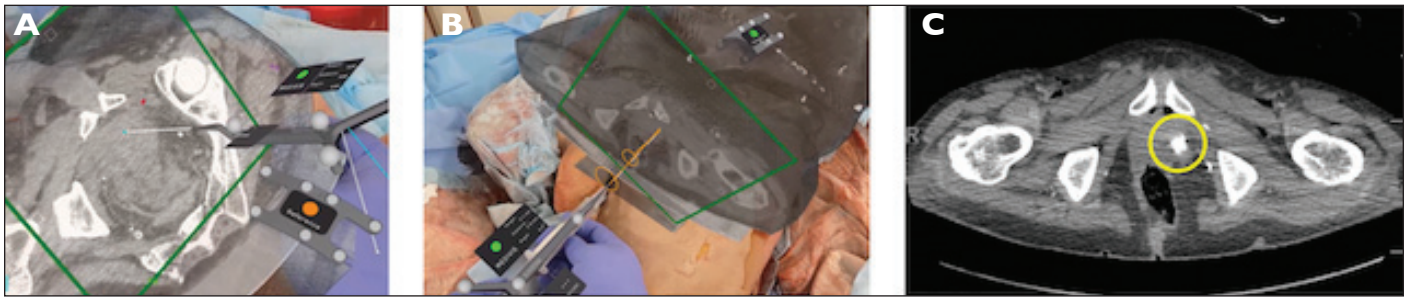
Introduction: In the last two decades, women have represented an increasing proportion of medical applicants in urology and have similar match rates to their male counterparts. Despite this trend, as of 2019, women only represented 11% of the urology workforce in Canada. Current research suggests that lack of female role models, quality of life, and gender discrimination may be important deterrent factors to female applicants entering surgical specialties. Early exposure and medical rotation experiences also appear to be critical to surgical specialty selection; however, limited research exists on which factors are important in female applicants' choice of urology as a specialty. The objective of our study was to determine incentivizing and deterrent factors in choosing urology as a specialty by medical school applicants.

Methods: From November 2022 to January 2023, an electronic survey was diffused to medical students enrolled in all 17 Canadian medical schools. The survey was validated and translated in both official languages by a small cohort of Canadian medical students and urologists. The questionnaire included components to ascertain medical students' understanding of urology as a specialty and 23 factors that may affect specialty choice. A 5-point Likert scale from strongly positive to strongly negative was used to assess each factor's influence on the student's interest in urology. Pearson-Chi square test was used to compare response rates between genders.

Results: A total of 430 students from the 17 Canadian medical faculties answered our survey. Of this total, 51.4% identified as women and 48.1% identified as men. Most applicants (67.9%) found they had adequate exposure to urology in their medical curriculum. Amongst women, 90% considered urology to be a male-dominated specialty, which negatively influenced their interest in 60.6% of cases. Only 20.4% of women considered that there were enough female role models in urology, which negatively influenced their interest in 49% of cases. Finally, while 56.5% of men considered they had enough shadowing opportunities, only 30% of women thought the same; however, these opportunities positively influenced their interest in 46.2% of cases.



Abstract 100. Figure 1. Non-TRUS guided transperineal prostate biopsy using AR guidance. (A) Placing a virtual trajectory targeting left lobe of prostate; (B) Injecting dye from perineal entry point following AR-guided trajectory; (C) CT imaging of the cadaver after dye was successfully injected into prostate target. AR: augmented reality; CT: computerized tomography; TRUS: transrectal ultrasound.

Conclusions: Female medical students consider urology to be a male-dominated specialty and describe a lack of shadowing opportunities and female role models. Considering the positive impact of shadowing on interest in the specialty, it could be interesting to encourage such opportunities.
Funding: N/A

Abstract 102

Change in vasectomy practice patterns post-Dobbs: A multi-institutional study

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Introduction: Public interest in vasectomies significantly increased after the Dobbs decision overruled Roe vs. Wade. We wanted to observe the change in number of vasectomies nationally, regardless of individual statewide abortion legality. We conducted a multi-institutional study to quantify the change in vasectomy practice volume between the pre-Dobbs and post-Dobbs eras.

Methods: Six geographically-distinct US academic medical centers participated in the study. Patients with initial vasectomy consults between January 1, 2021, and December 31, 2022 were screened and those with subsequent vasectomy procedures were included. Patients were categorized based on vasectomy consult taking place pre-Dobbs (January 1, 2021, to June 24, 2022) or post-Dobbs (June 25, 2022, to December 31, 2022). Dates of subsequent vasectomy and demographic information, including race/ethnicity, preferred language, relationship status, insurance payer, number of children, and distance-to-care were analyzed.

Results: Between January 1, 2021, and December 31, 2022, there were 4326 initial vasectomy consults, of which 3691 had subsequent vasectomies (2742 pre-Dobbs, 152 cases per month vs. 949 post-Dobbs, 158 cases per month). Compared to the pre-Dobbs group, men in the post-Dobbs group were more likely to be younger (median age 38 years vs. 39, P<0.001), non-Hispanic White (68% vs. 64%, P=0.009), English-speaking (94% vs. 91%, P=0.005), and have private insurance (92% vs. 89%, P=0.008). Married men in the post-Dobbs group were more likely to be childless (11% vs. 5%, P<0.001), as were single men (40% vs. 23%, P<0.001). The post-Dobbs group also had fewer children (median number 2[1–2] vs. 2[2–3], P<0.001) and had a longer median wait between initial consult and vasectomy (56 days vs. 52 days, P<0.001).

Conclusions: The Dobbs decision has not only affected vasectomy volume nationwide but has also impacted the type of patient seeking a vasectomy. In the post-Dobbs era, men opting for vasectomies are not only younger than before, but also more likely to be childless. Furthermore, the increased volume also increased the wait time between initial consultation and procedure. Urologists may need to adjust practice patterns to accommodate the volume and educate the new prototypical vasectomy candidate.
Funding: N/A

Abstract 102. Table 1. Comparison of characteristics for patients seeking vasectomies between pre-Dobbs (January 1, 2021–June 24, 2022) vs. post-Dobbs (June 25, 2022–December 31, 2022)

	Pre (N=2742)	Post (N=949)	p
Race/ethnicity, n (%)			
Non-Hispanic White	63.6%	68.3%	**0.009**
Non-Hispanic Black	4.1%	5.8%	**0.03**
Hispanic	7.5%	3.6%	**<0.001**
Asian	2.2%	1.9%	0.59
Other	4.2%	3.8%	0.62
Unknown	18.4%	16.6%	0.23
Preferred language, n (%)			
English	91.1%	94.0%	**0.005**
Spanish	1.0%	1.2%	0.65
Other	0.5%	0.3%	0.38
Unknown	7.4%	4.5%	**0.002**
Relationship status, n (%)			
Married	67.3%	66.8%	0.77
Significant other	0.7%	0.3%	0.19
Single	19.5%	22.9%	**0.03**
Divorced/separated	3.2%	2.6%	0.41
Unknown	9.3%	7.4%	0.08
*Married + child status, n (%)			
1+ children	94.7%	88.9%	**<0.001**
0 children	5.3%	11.1%	
*Single + child status, n (%)			
1+ children	77.3%	59.8%	**<0.001**
0 children	22.7%	40.2%	
Payer, n (%)			
Medicaid	5.5%	3.4%	**0.02**
Medicare	0.5%	0.6%	0.81
Private insurance	88.8%	92.0%	**0.008**
Self-pay	2.3%	2.3%	0.96
Other	0.2%	0.3%	0.57
Unknown	2.7%	1.3%	**0.02**

*Data for these variables available only from Albany Medical Center, UCLA, and Weil-Cornell. †Statistical significance calculated using Mann-Whitney U Test. IQR: interquartile range.

Abstract 102. Table 1 (cont'd). Comparison of characteristics for patients seeking vasectomies between pre-Dobbs (January 1, 2021–June 24, 2022) vs. post-Dobbs (June 25, 2022–December 31, 2022)

	Pre (N=2742)	Post (N=949)	p
Consult type, n (%)			**0.009**
Office	86.6%	90.2%	
Virtual	13.4%	9.8%	
Continuous (median [IQR])			
Age (years)	39 [35–44]	38 [34–42]	**<0.001**†
Children (number)	2 [2–3]	2 [1–2]	**<0.001**†
Distance to care (miles)	11.2 [5.2–19.3]	11.2 [5.7–18.3]	0.62†
Time to procedure following consult (days)	52 [31–86]	56 [35–98]	**<0.001**†

*Data for these variables available only from Albany Medical Center, UCLA, and Weil-Cornell. †Statistical significance calculated using Mann-Whitney U Test. IQR: interquartile range.

Abstract 103

A potential role for partial adrenalectomy in primary aldosteronism: Is preoperative imaging concordant with final pathology?

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Introduction: Primary aldosteronism (PA) is a common and underdiagnosed cause of hypertension in up to 10–20% of hypertensive patients. Aldosterone-producing adrenal adenomas (APAs) with a potential for surgical cure may represent up to 50% of these cases. Significant interest has arisen regarding partial adrenalectomy for PA to mitigate the risk of adrenal insufficiency, but the literature remains unclear as to whether APAs are reliably unifocal. Current literature suggests up to 27% of total adrenalectomy specimens for PA have multiple adrenal lesions on pathology. We aim to assess the reliability of preoperative imaging in determining the number of adrenal adenomas in the final pathology specimen with an ultimate goal to identify candidates for partial adrenalectomy.

Methods: We reviewed all patients undergoing adrenal vein sampling (AVS) for primary aldosteronism at a single institution from January 2018 to June 2022. Preoperative imaging, postoperative pathology, and data pertaining to hypertension management were collected. The outcome of each adrenalectomy was determined using Primary Aldosteronism Surgical Outcome (PASO) criteria.

Results: A total of 81 patients underwent AVS, of which 42 had unilateral disease. Thirty patients were treated with unilateral total adrenalectomy (22 right, eight left). Preoperative imaging identified 27 patients with a single nodule (90%), two patients with no nodule, and one patient with hyperplasia. On pathology, all specimens identified adrenocortical adenomas. Of those patients with a discrete nodule on computerized tomography (CT) or magnetic resonance imaging (MRI), 93% (25/27) had a single adenoma on pathology. Improvement or cure of hypertension was achieved in 16 patients (59%).

Conclusions: Preoperative imaging is highly concordant with final pathology when a single adenoma is present. Partial adrenalectomy may be a reasonable alternative to total adrenalectomy in select primary aldosterone patients. Future study of larger patient cohorts is needed.

Funding: N/A

Abstract 103. Table 1. Radiological-pathological correlation of adrenal specimens

Imaging findings (N=30)		Pathological findings (N=27)	
Nodule side		Adrenalectomy side	
Right	18 (60%)	Right	20 (74%)
Left	7 (23%)	Left	7 (26%)
Bilateral	3 (10%)		
None	2 (7%)		
Number of nodules		Number of nodules	
0	2 (7%)	0	1 (3%)
1	27 (90%)	1	25 (93%)
Hyperplasia	1 (3%)	2	1 (3%)

Abstract 104

Evaluating efficacy of percutaneous procedures planned via augmented reality

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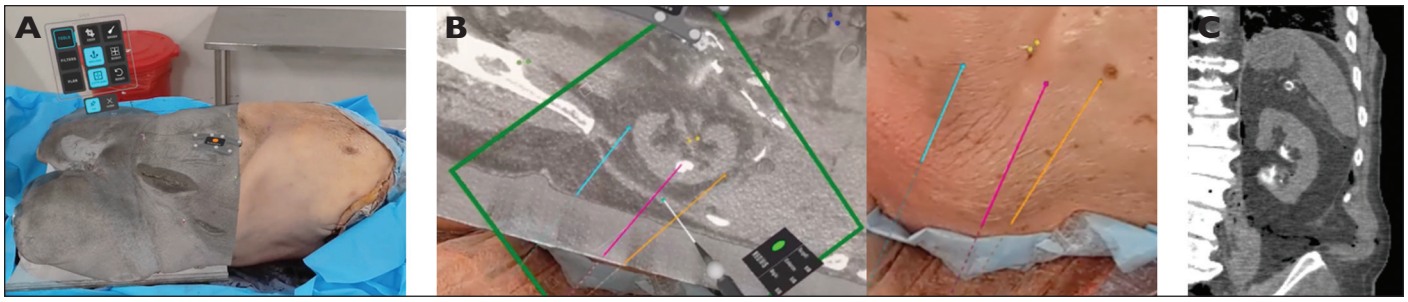
Introduction: In urological procedures with percutaneous approaches, targeting is often cited as the most challenging part due to imaging limitations, difficulties determining puncture site, and issues maintaining an accurate trajectory. Advancements in augmented reality (AR) have allowed for the overlay of digital information, such as a 3D volumetric rendering of patient scans or virtual planned trajectories, over the physical world, such as a patient. In this feasibility study, we explore the usability of AR-guided percutaneous puncture trajectories on renal targets.

Methods: Computerized tomography (CT) imaging of two supine male cadaveric torsos was uploaded to the SurgicalAR system (Medivis, New York, NY). A 3D volumetric hologram was projected through the see-through visor of the HoloLens 2 (Microsoft, Seattle, WA). The hologram was registered to the cadaver using a point-to-point framework relying on pre-verified cadaveric fiducials matched to virtual counterparts. Using SurgicalAR, virtual trajectories towards pre-selected targets were planned with the torsos in supine position. Needle probes were then inserted following the virtual planned trajectory and radiopaque dye was injected. The cadavers were rescanned to highlight needle tracts.

Results: Using the AR system, seven virtual trajectories across two cadavers were planned. Time to register the 3D volumetric imaging over the cadaveric torso was approximately five minutes, 24 seconds. Mean time to plan trajectories was approximately one minute (range: 7 seconds to 4 minutes). Targets were selected with the goal of easier reproduction for future study and included the superior and inferior poles of kidneys and stone in the left kidney of one cadaver. Trajectories were planned similar to those performed for supine percutaneous nephrolithotomy, aiming for the space between the 12th rib and iliac crest. Aided by virtual trajectories planned using 3D volumetric imaging, we were successful in hitting our kidney targets without damaging surrounding colon or other structures.

Conclusions: To the best of our knowledge, we present the first feasibility study examining AR-guided percutaneous procedures using 3D volumetric patient scans. This proof of concept highlights the potential for novel approaches to accessing the kidney beyond the classical landmarks, where percutaneous access can be achieved in unconventional locations with the assistance of AR. Future research with a larger cohort of cadavers and patient trials is warranted.

Funding: N/A



Abstract 104. Figure 1. AR-guided percutaneous puncture trajectories on renal targets. (A) Cadaveric torso with AR scan overlaid, as seen through HoloLens 2; (B) Side-by-side comparison of planned trajectories toward targets (left) vs. the same torso with imaging removed (right); (C) Post-dye CT of left kidney. AR: augmented reality; CT: computerized tomography.

Abstract 105

Success rates of urethroplasty in recent GURS fellowship graduates

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Introduction: Urethral stricture disease is a common urologic problem seen in every reconstructive practice. Urethroplasty is considered the gold standard, with reported success rates of >90% at 12-month followup. Many factors have been hypothesized to contribute to the discrepancy between experienced and junior surgeons' success rates. We conducted a survey of recent genitourinary reconstructive surgery (GURS) graduates to analyze urethroplasty counseling and self-reported outcomes in hopes of understanding discrepancies between real-world practice and current literature and whether published success rates are applicable to recent GURS graduates.

Methods: A voluntary survey was distributed from June 1 to June 30, 2023, to GURS members who graduated from fellowship programs within the last five years. Participants were surveyed on operative volume, outcomes, and quoted success rates for urethroplasty techniques. Data were then analyzed using descriptive statistics, binary logistic regression, and correlative analyses.

Results: We received responses from 49/101 (48.5%) GURS graduates (Table 1). Most respondents pursued academic practice (72.9%). Five-year post-graduates were most represented (44.7%). The majority (52.2%) consider 81–90% of their urethroplasties successful. Over 65% quoted excision and primary anastomosis (EPA) as >90% successful; only 20.8% thought the same for graft substitution urethroplasty [BI1]. Fifteen respondents considered EPA and graft substitution as having equivalent success rates with five quoting >90% for each, and 10 quoting >80% for each. Eleven respondents (22.4%) indicated they have >75% of urethroplasty patients with 12-month followup. Over half of respondents had performed >60 urethroplasties since graduation. Over 30% of respondents reported re-intervention rates of >10%, with a weak but positive correlation between years in practice and need for re-intervention (p 0.01). Nearly 20% of respondents referred patients to an external reconstructionist. Although there was a slight tendency for this with increasing years of experience, it was not statistically significant.

Conclusions: Increased length of time in practice may not result in higher reported urethroplasty success rates. Intriguingly, rates of re-intervention/complications and referral may not necessarily decrease with experience. Our survey highlights the need to further elucidate the complexity and variability of urethroplasty outcomes including the need to standardize urethroplasty success criteria.

Funding: N/A

Abstract 106

Open access publishing in urology: A survey of authors', readers', and editorial boards' knowledge, impressions, and satisfaction

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Introduction: This survey aimed to report the level of knowledge, impressions, and attitudes of urology readers, authors, and editorial boards regarding open access (OA) publishing in the field of urology and to determine their satisfaction with the current OA models.

Methods: We developed an online, five-section cross-sectional survey, including 23 questions, after multiple rounds of assessment from various stakeholders including editorial board members, readers, and authors among the urology community. The questions included 22 close-ended questions and one open-ended question. To recruit participants, we used mixed methods to obtain responses based on a simple random sampling (probabilistic sampling method) and a convenience sampling (non-probabilistic sampling method). We collected data using the electronic data capture system REDCap©. Herein we present descriptive outcomes of the responses.

Results: One hundred thirty-four participants (83% urologists, 9% residents, 5% fellows, 2% others) from 21 countries responded to the survey between May 2023 and April 2024. The sample was mostly represented by men (83%) and the majority belonged to the 26–50-year-old age category (68%). The majority of respondents (82%) reported having "acceptable" to "excellent" knowledge regarding OA publishing, and 7% reported having "absent" knowledge about the subject; however, of those that responded that they were familiar with the concepts, only 32%, 21%, 21%, and 22% of them, respectively, knew the definitions of Gold, Green, Diamond, and Hybrid OA publishing models. Of all respondents, 55% reported having a "positive" to "strongly positive" impression of and general attitude toward the concept of OA publishing, whereas 17% had "negative" to "strongly negative" impressions. Although a majority replied that OA publishing can improve scientific research (64%) and generate more exposure for the author's work (77%), 44% thought that the quality of peer review is lower for OA journals compared to traditional publishing models. The vast majority (91%) agreed that articles processing charge (APC) for the Gold OA model can be overly burdensome for authors. The majority of those surveyed have published in an OA journal (70%) and were either "satisfied" or "completely satisfied" with Gold, Diamond, and Hybrid models (58%, 90%, 75% respectively). Almost half of the participants (40%) would not submit their work to an OA journal over a conventional access journal.

Conclusions: Initial results from this anonymous, international survey show high awareness of OA publishing with low knowledge regarding details. Participants are pessimistic regarding the quality of OA journals and peer-review.

Funding: N/A

Abstract 105. Table 1. Urethoplasties performed by recent graduates in GURS

	Total (N=49)
Year since graduating	
1 year	6 (12.7%)
2 years	10 (21.3%)
3 years	7 (14.9%)
4 years	3 (6.4%)
5 years	21 (44.7%)
Practice model	
Academic	35 (72.9%)
Other	7 (14.6%)
Private	6 (12.5%)
Number of urethroplasties performed	
<15	7 (14.3%)
15–29	5 (10.2%)
30–44	5 (10.2%)
45–59	5 (10.2%)
>60	27 (55.1%)
>60 urethroplasties performed	
1 year post fellowship	0 (0%)
2 years post fellowship	0 (0%)
3 years post fellowship	5 (10.2%)
4 years post fellowship	1 (2.2%)
5 years post fellowship	20 (43.5%)
Patients with >12 month followup	
0–24%	12 (25%)
25–49%	11 (22.9%)
50–74%	14 (29.2%)
>75%	11 (22.9%)
Successful urethroplasty	
<70%	1 (2.2%)
71–80%	8 (17.4%)
81–90%	24 (52.2%)
>90%	13 (28.3%)

Abstract 105. Table 1 (cont'd). Urethoplasties performed by recent graduates in GURS

	Total (N=49)
Definition of success	
Other	12 (24.3%)
Cystoscopy	17 (34.7%)
PROM	13 (26.5%)
Uroflow	7 (14.3%)
Patients requiring further intervention	
10% or less	33 (68.7%)
11–20%	13 (27.1%)
21–30%	2 (4.2%)
Quoted success rate for EPA	
70% or less	1 (2.2%)
>70%	1 (2.2%)
>80%	14 (30.4%)
>90%	30 (65.2%)
Quoted success rate for non-transecting	
70% or less	1 (2.2%)
>70%	2 (4.3%)
>80%	20 (43.5%)
>90%	23 (50.0%)
Quoted success rate for buccal graft	
70% or less	2 (4.2%)
>70%	4 (8.3%)
>80%	32 (66.7%)
>90%	10 (20.8%)
Change in quoted success rate	
No	32 (66.7%)
Yes, decreased	6 (12.5%)
Yes, increased	10 (20.8%)
Referred out	
No	40 (83.3%)
Yes	8 (16.7%)

EPA: excision and primary anastomosis; GURS: genitourinary reconstructive surgery; PROM: patient-reported outcome measures.

Abstract 105. Table 2. Data analysis

Years in practice		Fisher's exact test	Cramer's association
	Practice model	p (0.58)	0.06
	Definition of success	p (0.06)	0.13
Years in practice		**Gamma**	**Test of concordance**
	Urethroplasty performed	0.91	p <0.001
	12-month followup	0.81	p <0.001
	Successful urethroplasty	0.02	p 0.45
	Need for further intervention	0.55	p 0.01
	Quoted rate EPA	-0.57	p 0.99
	Quoted rate non-transecting	-0.31	p 0.92
	Quoted rate buccal	-0.15	p 0.76
	Change in quoted rate	0.24	p 0.13
	OR	**95% CI**	
Referral out	1.6	(0.83, 3.1)	

CI: confidence interval; EPA: excision and primary anastomosis; OR: odds ratio.

Abstract 107

History of spinal anesthesia and its use in urology

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Introduction: This review explores the history of spinal anesthesia and its use in urological procedures.

Methods: A comprehensive literature review was performed; and urological textbooks, PubMed searches, and the Wood Library Museum of Anesthesiology were consulted to identify historic and contemporary medical literature.

Results: Cocaine's anesthetic properties were discovered in 1884 and utilized in 1885 by Corning, Hall, and Halsted, who injected cocaine concentrates in between lower lumbar spinous processes. Spinal anesthesia was further popularized by Bier in 1898. Delaup's paper in 1910 was the first recorded use of spinal anesthesia in urological procedures, reporting favorable outcomes among 585 genitourinary procedures. From the 1910s to the 1930s, pioneer surgeons Dax, Pauchet, Morrison, and Chute published similarly successful outcomes. Notable benefits of spinal anesthesia included decreased hemorrhage, complete abdominal relaxation, and easier enucleation for prostatectomies. Concurrently, the establishment of anesthesiologists as anesthetic providers and Labat's seminal publications on regional anesthesia provided further advances; however, spinal anesthesia fell out of favor in the late 1940s; two patients became paraplegic after undergoing spinal anesthesia, and the fear of paralyzing patients persisted. The popularity of spinal anesthesia resurged only after its safety was reaffirmed in the 1950s. From the 1960s onwards, urologic studies reported decreased hemorrhage and reduced anesthetic side effects with spinal anesthesia. Anesthesiologists also began exploring the baricity of local anesthetics and its effect on the efficacy and duration of intradural spinal anesthesia. Additionally, development of needle tip sizes and designs decreased the side effects of delivering spinal anesthesia, further altering the benefit-risk profile. As the use of spinal anesthesia increased, regional alternatives also rose to prominence with the introduction of the longer-acting bupivacaine. Notably, a 1989 report on 750 caudal blocks performed on pediatric patients demonstrated consistent safety. Currently, FDA warnings on general anesthesia's potential neurotoxic effects on the developing brain have spurred interest in spinal anesthesia for pediatric urology. Although studies have demonstrated safe outcomes associated with spinal anesthesia in pediatric urology procedures, a recent survey revealed that the majority of pediatric urologists still held reservations about spinal anesthesia. The aforementioned caudal epidural blocks, which have recently shown favorable outcomes in pediatric hypospadias repairs, may be an alternative technique for pediatric patients.

Conclusions: Spinal anesthesia was popularized due to its benefits in comparison to general anesthesia. Current research investigates its advantages in urology, particularly its potential to enhance pediatric patient safety.

Funding: N/A

Abstract 108

Judging "fit" in the virtual urology residency match: The applicant's perspective

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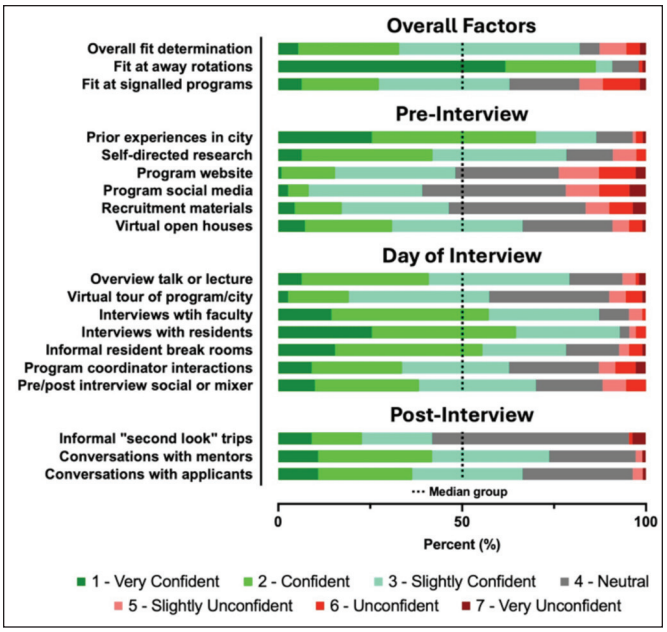
Introduction: Virtual interviews are the new status quo in urology residency applications. An essential aspect of applying and interviewing, whether in-person or virtually, is assessing one's "fit" with potential programs. To date, no study has assessed the applicant's perspective in judging fit during the overall span of the urology residency application and interview cycle.

Methods: Applicants to our residency program for the 2024 AUA Match were sent a 35-item survey. Demographics and application statistics were assessed. Applicants were then asked to rank various factors from the virtual interview cycle using a seven-point Likert scale regarding their confidence in judging fit with programs they interviewed with. "Fit" was defined as "perceived congruence or compatibility with a residency program, including both subjective and objective factors as well as an overall sense or feeling of how well the program's culture and curriculum match your personal values and what you are looking for in a training program."

Results: Response rate was 47% (110/233). Most applicants were white (61%) or Asian (26%), non-Hispanic (90%), and had a home urology residency (80%). They completed a mean of 2.2 urology away rotations, applied to 81 programs, and attended 14 virtual interviews. Overall, 63% preferred virtual interviews over the idea of in-person interviews. Figure 1 illustrates applicants' confidence in judging fit based on various factors, with dotted lines denoting medians. Applicants were confident with nearly all factors, and none had a median score in the range of unconfident responses. Factors ranked as most important for confidently judging fit included prior experiences in the program city (25%), interviews with faculty (18%), and conversations with mentors (16%). Interviews with residents and self-directed research were also commonly cited in the top three most important; however, 65% of applicants said that none of these factors were more important in determining fit than an in-person away rotation.

Conclusions: In the era of virtual residency interviews, urology applicants remain confident overall in judging their "fit" with programs based on a variety of factors throughout the application cycle. Accordingly, nearly 2/3 prefer a virtual interview cycle over in-person. Despite this, a nearly identical proportion still feel that an in-person away rotation is most important in judging fit.

Funding: N/A



Abstract 108. Figure 1. Applicants' confidence in judging "fit" with potential urology programs based on various factors. Medians correspond to groups which intersect with vertical dotted line.

Abstract 109

Robot-assisted vs. open bilateral nephrectomy for autosomal dominant polycystic kidney disease

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Introduction: Bilateral nephrectomy (BN) is indicated in the treatment of autosomal dominant polycystic kidney disease (ADPKD) when the native kidneys result in persistent infection, hematuria, hypertension, produce mass effect which may prevent kidney transplant (KT) or result in compressive symptoms, or where there is a concern for malignancy; however, traditional open BN is a procedure with significant morbidity. We compared 90-day complications of open against robotic-assisted (RA) BN at our institution.

Methods: A retrospective review of patients undergoing BN for ADPKD from 2010–2023 was performed. Patient demographics, transplant records, operative features, and pathology reports were reviewed. BN was performed by eight surgeons using a traditional open or RA approach using Da Vinci Si/Xi multiport systems. Ninety-day complications were graded using the Clavien-Dindo classification. Clinical features were compared using two-tailed chi-square or Kruskal-Wallis rank-sum tests.

Results: A total of 35 patients underwent BN from 2010–2023; 20 were done by an open approach and 15 were RA (mean age 54.4±10.0 years), and 44.1% were already on dialysis prior to BN. Mass effect was the most common indication (50%). Open BN had higher median estimated blood loss (EBL; 400 (inter-quartile range (IQR): 200–1000) cc vs. 200 (100–400), p=0.05) and longer median length of stay (LOS; 7.5 (IQR: 5.5–9.0) vs. 3.0 (3.0–6.0) days) compared to RA BN, respectively. Simultaneous KT occurred in 47% of open BN and none in RA BN cases, while 53.3% of RA BN had a prior KT. Ninety-day complications were similar between open and RA BN but Clavien-Dindo IIIA+ complications were higher among open BN (41.6%) compared to RA BN (33.3%, p=0.006).

Conclusions: In our case series, robot-assisted BN resulted in a shorter LOS, had lower EBL, and resulted in fewer 90-day Clavien-Dindo IIIA+ complications compared to open BN. Our data suggests that RABN without prior or simultaneous KT is better tolerated than open BN. Larger, prospective studies are needed to confirm our findings.

Funding: N/A

Abstract 109. Table 1. Complications of open vs. robotic-assisted bilateral nephrectomy

Patient characteristics and clinical features	All patients N=35	Approach Open N=20	Robotic-assisted N=15	p
Age at surgery, mean, SD, years	54.4, 10.0	52.7, 9.4	56.7, 10.6	0.25
Gender, n (%)				0.59
Female	10 (28.6)	5 (25.0)	5 (33.3)	
Male	25 (71.4)	15 (75.0)	10 (66.7)	
Body mass index, mean, SD, kg/m²	27.9 (24.0–31.6)	26.4 (22.6–29.2)	29.6 (24.6–33.4)	0.1
Indication, n (%)				0.62
Mass effect	17 (50.0)	9 (47.4)	9 (53.3)	
Persistent hematuria	5 (14.7)	4 (21.1)	1 (6.7)	
Recurrent infection	5 (14.7)	2 (10.5)	3 (20.0)	
Hypertension	1 (2.9)	1 (5.3)	0 (0)	
Concern for malignancy	6 (17.7)	3 (15.8)	3 (20.0)	
Estimated blood loss, median (IQR), cc	300 (175–500)	400 (200–1000)	200 (100–400)	0.05
Pre-operative Hct, median (IQR)	37 (33–43)	34 (32–43)	40 (36–46)	0.06
Post-operative Hct, median (IQR)	31 (26–35)	27 (24–31)	35 (30–42)	0.002
Length of stay median (IQR), d	6 (3–9)	7.5 (5.5–9.0)	3 (3–6)	0.003
Pre-operative dialysis, n (%)	15 (44.1)	12 (60.0)	3 (21.4)	0.003
Total complications, n (%)	15 (42.8)	12 (60.0)	6 (40.0)	0.24
Clavien-Dindo grade, 90 days				0.006
I	5 (29.4)	1 (8.3)	4 (66.7)	
II	6 (35.3)	6 (50.0)	0 (0)	
IIIA	1 (5.9)	0 (0)	2 (33.3)	
IIIB	4 (23.5)	4 (33.3)	0 (0)	
V	1 (5.9)	1 (8.3)	0 (0)	
Malignancy, n (%)	7 (20.6)	3 (15.8)	4 (26.7)	0.44
Simultaneous kidney transplant, n (%)	9 (28.1)	9 (47.4)	0 (0)	0.003
Prior kidney transplant, n (%)	11 (31.4)	3 (15.0)	8 (53.3)	0.016
Postoperative kidney transplant, n (%)	12 (40.0)	8 (42.1)	4 (36.4)	0.76

IQR: interquartile range; SD: standard deviation.

Abstract 110

Holmium laser enucleation vs. robotic-assisted simple prostatectomy for BPH: A systematic review and meta-analysis of surgical outcomes

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Introduction: Increasing prevalence of benign prostatic hyperplasia (BPH) underscores the urgent need for surgical interventions that not only improve patient outcomes but also minimize complications and recovery times. Among the array of surgical options, holmium laser enucleation of the prostate (HoLEP) and robotic-assisted simple prostatectomy (RASP) have emerged as prominent procedures. In this systematic review and meta-analysis, we aim to rigorously compare the efficacy, efficiency, and safety of HoLEP vs. RASP, providing a foundation for evidence-based surgical decision-making in BPH treatment.

Methods: Conducted in accordance with PRISMA and MOOSE guidelines, we registered our protocol within Prospero (CRD42024509627). A comprehensive search of Medline, Embase, Web of Science, Scopus, and CINAHL databases up to February 1, 2024, was conducted. We aimed to include studies that directly compared HoLEP and RASP outcomes in adult BPH patients, encompassing a range of study designs from randomized controlled trials to observational studies. Our meta-analysis employed random effects modelling to synthesize data on key metrics such as operative time, hospital stay duration, and catheterization length, in addition to assessing complication rates. The quality of evidence was appraised using the Newcastle Ottawa Scale to evaluate the state of the literature comparing both surgical approaches.

Results: The comparative analysis distinctly favored HoLEP over RASP in several critical surgical performance metrics. Specifically, HoLEP reduced operative time by an average of 49.48 minutes, hospitalization duration by 1.5 days, and catheterization period by 3.8 days, demonstrating its superior operational efficiency. Safety profiles also highlighted HoLEP's advantages, with a 75% reduction in blood transfusion risk and a significant decrease in both minor and severe postoperative complications by 44%. Importantly, baseline evaluations showed that HoLEP patients typically presented with smaller prostate sizes and lower prostate-specific antigen (PSA) levels compared to those undergoing RASP. Despite these baseline differences, the analysis of functional outcomes, such as Qmax and post-void residual (PVR) volume, indicated no significant disparity between the procedures, underscoring their comparable efficacy.

Conclusions: Our findings demonstrate HoLEP's superiority in operational efficiency and safety for BPH management when compared to RASP. The study solidifies the position of HoLEP as the preferable surgical technique, suggesting the need for a shift toward its broader implementation in clinical practice. The evidence suggests benefits from targeted efforts to enhance surgical training and increase the accessibility of HoLEP to optimize patient outcomes and healthcare practices in BPH management.

Funding: N/A

Abstract 111

Short-term outcome of Optilume® in vesicourethral anastomotic stenosis

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Introduction: The off-label use of Optilume® for vesicourethral anastomotic stenosis (VUAS) has been rarely studied. This study seeks to evaluate the short-term outcomes of Optilume® in patients who were diagnosed with VUAS.

Methods: We conducted a retrospective chart review on patients who were diagnosed with VUAS and were treated with Optilume® by a single surgeon from April 2023 to March 2024 (still ongoing). We descriptively presented the basic characteristics, frequency of previous treatments (dilations and/or bladder neck incision [BNI]) and their respective recurrence intervals, and Optilume® recurrence-free periods (defined as successful cystoscopy) and recurrence interval.

Results: Among seven males averaging 72.9 years of age treated for VUAS, comorbidities included diabetes (28.5%), hypertension (85.7%), and coronary artery disease (57.1%). Historically, these patients had a mean of three prior urethral dilations and one BNI, with recurrences noted at 22.3 and 55 days on average, respectively. Post-Optilume® intervention, an extended average recurrence-free interval of 256.8 days was achieved in five patients (71.5%), a notable increase compared to previous therapies. Two recurrences at 38 and 51 days were observed; the earlier one was attributed to device-related technical issues. This preliminary data reflects a substantial improvement in managing VUAS with Optilume®, suggesting its effectiveness in prolonging the duration between interventions.

Conclusions: Optilume® shows promise as an effective short-term treatment for VUAS, offering longer recurrence-free periods than conventional methods. While initial results support its role as a transitional therapy before urethroplasty, further research with more participants and longer followup is needed to confirm these findings.

Funding: N/A

Abstract 111. Table 1. Patients' basic characteristics and outcomes of VUAS treatments (dilation, BNI, Optilume®)

ID	Age (years)	DM	HTN	CAD	Dilation (N)	Dilation average of recurrence interval (days)	BNI (N)	BNI average of recurrence interval (days)	Catheter dependency interval (days)	Optilume® recurrence interval (days)	Optilume® recurrence-free interval (days)
1	64	No	Yes	Yes	4	8	2	60	377	38	38
2	72	No	Yes	No	3	8	0	NA	113	No recurrence yet	318
3	83	Yes	Yes	Yes	3	15	0	NA	149	No recurrence yet	268
4	71	Yes	Yes	Yes	5	42	2	50	138	No recurrence yet	215
5	75	No	Yes	No	0	34	0	NA	NA	No recurrence yet	215
6	73	No	No	Yes	5	20	1	30	225	51	51
7	72	No	Yes	No	3	29	2	80	14	No recurrence yet	268
Average	**72.9**				**3.2**	**22.3**	**1**	**55**	**169.5**	**44.5**	**196.2**

BNI: bladder neck incision; CAD: coronary artery disease; DM: diabetes mellitus; HTN: hypertension; VUAS: vesicourethral anastomotic stenosis.

Abstract 112

Analysis of non-perfused surgical phantoms and their impact on surgeon confidence in single-port robotic surgery training

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Introduction: Since its introduction in 2018, Intuitive's Da Vinci single-port (SP) surgical platform has given surgeons new tools to carry out robotically-assisted procedures. Realistic, tissue-like anatomical models provide the opportunity for potential users to learn this platform in a low-risk environment, making them a key component of user training. We sought to understand the accuracy of hydrogel surgical phantoms for common urological procedures carried out on the SP platform. Additionally, we investigated user confidence with the SP platform before and after participating in a training session with the provided hydrogel surgical phantoms.

Methods: A study was conducted at the North American Robotic Urology Symposium with six participants interested in gaining more experience with the Da Vinci SP surgical platform. Participants were tasked with completing a retroperitoneal partial nephrectomy and/or a radical prostatectomy on a non-perfused surgical phantom developed specifically for each procedure. Participants carried out the procedures with guidance from an expert urologist trained on the SP surgical platform. Each participant was asked to complete a survey before and after the session to assess the anatomic realism, accuracy, and clinical value of the provided models as well as the participants' confidence on the SP platform. Participants provided responses on a scale of one to 100, with one constituting strongly negative feedback, 50 being average feedback, and 100 being strongly positive feedback.

Results: The surgical phantoms provided for the training session were deemed above-average with respect to model realism and anatomic accuracy. Model realism and anatomic accuracy received mean scores of 75.86 and 77.33 out of 100 respectively (n=6). When participants were asked about how beneficial the models were for advancing their own surgical skill sets, the mean score given was 79.83 out of 100; however, when asked how beneficial the models would be for residents and fellows, the mean score increased to 97.17 out of 100. Of the six participants, five completed both the pre- and post-survey. Of these five participants, four responded that they felt more confident using the SP surgical platform following their training session.

Conclusions: While this sample size is limited, we have shown that a SP session on surgical phantoms assessed as above-average led to self-reported increases in confidence and advancement of surgical skills while using Intuitive's Da Vinci SP surgical platform.

Funding: N/A

Abstract 113

Perceived challenges in use and adoption of single and multiport robotic platforms

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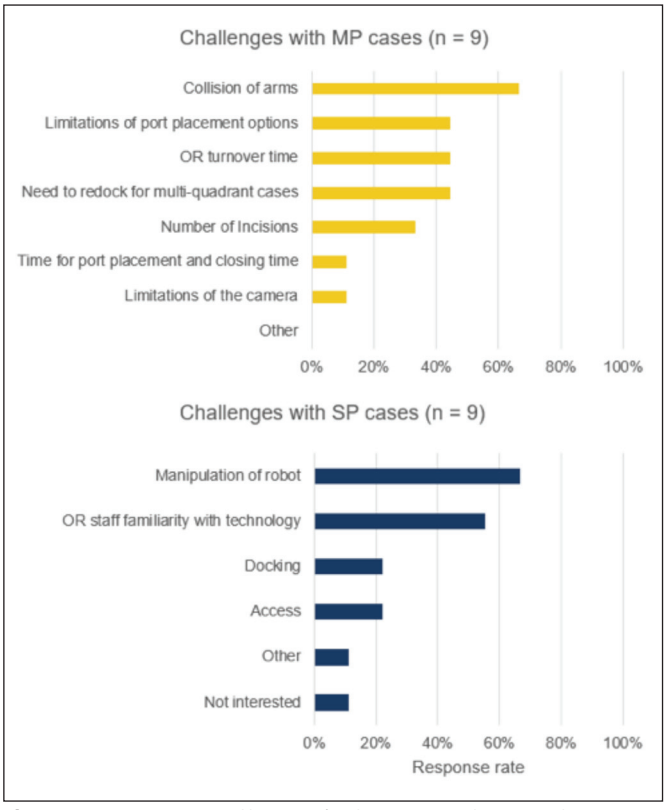
Introduction: We sought to understand the perceived limitations of the Intuitive Da Vinci single-port (SP) vs. multiport (MP) robotic systems since their release in 2014 and 2018, respectively.

Methods: A survey was conducted before an SP hands-on robotic workshop at the North American Robotic Urology Symposium in February 2024. Participants were asked about their familiarity with both SP and MP robotic platforms, their caseload, and their perceived challenges with each system before performing tasks on a surgical phantom model. There were a mix of nine attendings and residents/fellows (trainees) in the workshop who were able to perform a robot-assisted retroperitoneal partial nephrectomy or simple prostatectomy. A total of nine surveys were completed.

Results: Five respondents (55.6%, n=9) had completed >100 MP cases as a trainee and >100 cases as an attending. All the respondents (100%, n=9) had completed <100 SP cases as a trainee and attending. Respondents were asked to select all that apply in two questions regarding their challenges using MP and SP. Figure 1 shows the responses, with each item scaled out of a possible 100% response rate. The one "other" response to challenges of SP cases was "length of cases."

Conclusions: While this study sample size is limited, we have identified a difference in usage and perceived challenges of MP vs. SP surgical robot technology. Respondents use the MP more than SP but have similar challenges with manipulation of the robot, indicating the need for more training resources for teaching both platforms. A key challenge identified with the SP is the lack of operating room (OR) staff familiarity with the technology. Since the SP is a newer platform than the MP, it is expected that surgical teams have not fully adopted the technology yet; however, in the six years since the SP was introduced, the MP has remained the more prominent of the two methods.

Funding: N/A



Abstract 113. Figure 1. Perceived limitations of single-port (SP) vs. multiport (MP) robotic systems. OR: operating room.

Abstract 114

The history of multidisciplinary care in gender-affirming surgery: Where did urology fit?

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Introduction: The history of multidisciplinary gender-affirming surgery (GAS) has always involved varying surgical subspecialties. The objective of this review was to study the historical involvement of urology in GAS.

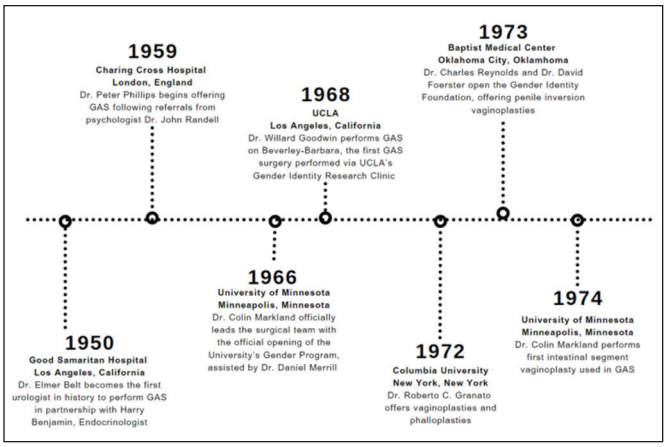
Methods: A literature search on the topics of "transgender surgery" or "GAS" and "history" and "urology" was performed.

Results: The first documented GAS was performed without urological involvement in Berlin, Germany, at Magnus Hirschfield's Institute for Sexual Research. By the early 1950s, US endocrinologist and transgenderism activist Dr. Harry Benjamin sought a surgical partnership with Dr. Elmer Belt, a urologist at UCLA. Belt was the first documented urologist identified that performed gender-affirming surgery. His surgical interventions included penectomy, vaginoplasty using thigh, back, or buttock skin grafts, and abdominal transposition of the testicles.

He preserved the testicles to bypass the mayhem laws in California that prohibited castration. By the late 1950s, British psychiatrist Dr. John Randell joined forces with urologist Dr. Peter Phillips. Dr. Phillips started with orchiectomies and penectomies at the Charing Cross Hospital in London, UK, but by the 1980s he was performing vaginoplasties, leading tabloids to call London the "sex change capital of the world". By 1966, the University of Minnesota opened its gender identity clinic under the surgical direction of urologist Dr. Colin Markland. Dr. Markland was often assisted by urologist Dr. Daniel Merrill prior to Dr. Merrill's departure for the University of California – Davis in 1973. Dr. Markland performed the first intestinal segment vaginoplasties in the US in 1974, a technique that plastic surgeon Dr. Donald Laub later adopted at Stanford University. Dr. Belt's nephew, urologist Dr. Willard Goodwin, performed the first GAS at the University of California, Los Angeles (UCLA) Gender Identity Research Clinic in 1968. In 1972, Columbia University urologist Dr. Roberto Granato began performing vaginoplasties and phalloplasties for the transgender population in the area. In 1973, urologist Dr. Charles Reynold partnered with plastic surgeon Dr. David William Forester and opened the Gender Identity Foundation GAS practice at Baptist Medical Center in Oklahoma City. They mainly offered penile inversion vaginoplasty, remaining under the radar of the local religious political influence until 1977 when GAS was banned at Baptist Medical Center.

Conclusions: Urologic surgeons have transformed the GAS landscape through historical and present-day influence.

Funding: N/A



Abstract 114. Figure 1. Historical timeline of urologist involvement in gender-affirming surgery.