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MP32-03 THE IMPACT OF SOCIAL DEPRIVATION ON ANTERIOR URETHRAL STRICTURE RECURRENCE AFTER URETHROPLASTY—A TRAUMA AND UROLOGIC RECONSTRUCTIVE NETWORK OF SURGEONS (TURNS) ANALYSIS

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Reconstruction: Urethral Reconstruction (Including Stricture) II

Moderated Poster 32

Saturday, May 4, 2024 **9:30 AM-11:30 AM**

MP32-01

FUNCTIONAL AND PATIENT REPORTED OUTCOMES IN NON-TRANSECTING EXCISION-ANASTOMOSIS URETHROPLASTY FOR LENGTHY (≥2CM) URETHRAL STRICTURES

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INTRODUCTION AND OBJECTIVE: For lengthy bulbar strictures (≥2cm), many advocate for oral mucosa substitution urethroplasty due to the concern of penile shortening or other erectile function related side effects. Although effective, substitution bulbar urethroplasty is associated with graft harvest morbidity and may have lower success rates relative to non-substitution non-transecting techniques. We describe outcomes of an extended non-transecting excision-anastomosis urethroplasty for lengthy urethral strictures without the use of graft augmentation.

METHODS: A tertiary center's urethroplasty database was queried for patients that underwent non-transecting bulbar urethroplasty from 2017-2023. Stretch penile length (SPL) was assessed pre- and post- operatively and at 3-6 months follow-up. Urethral stricture recurrence was defined as the need for repeat intervention. A survey comprised of urethral stricture surgery patient reported outcome measure (USS-PROM), urinary symptom interference (USI), penile complications (PC), international index of erectile function (IIEF-5) and overall patient satisfaction (OPS) was collected(N = 39). Association between groups was assessed with Fischer's exact test and Mann Whitney U test.

RESULTS: A final cohort of 90 patients with a median urethral stricture length of 1.5cm (range 0.5-6cm) were identified. When stratified by stricture length ≥2cm (N = 41) and <2cm (N = 49) median length of urethrotomy was 3cm (2.6-4.0) vs 2 cm (2.0-3.0; $p<0.001$). At a median follow up of 13 months (IQR 4-18), stricture recurrence was noted in 3(7%) and 2(4%) patients ($p=0.89$). The overall median change in SPL was 3.5% and 0% ($p=0.002$). There were no significant differences in relative improvement of Qmax, PVR, 30d complications (15% vs 14%) or urinary extravasation on VCUG (2% vs 4%) (all $p>0.05$). When assessing for PC, there was no significant difference in patient perceived glans firmness, angulation, ejaculation, sensation, or penile length (all $p>0.05$). When erectile function was assessed with IIEF-5, there was no significant difference in total score between groups (23 vs 23, $p=0.83$). USS-PROM (12 vs 8) and USI (1 vs. 2) was not significantly different between groups ($p=0.08$ and $p=0.09$, respectively). OPS was higher in patients with shorter repairs (median 4 vs 3, $p=.03$).

CONCLUSIONS: Spongiosal sparing non-transecting urethroplasty is an effective surgical option for patients with lengthy urethral strictures. It offers comparable improvement in functional outcomes including Qmax, PVR, stricture recurrence, as well as subjective patient reported outcomes all while avoiding the morbidity of graft harvesting.

Source of Funding: N/A

MP32-02

PERFORMING A VOIDING CYSTOURETHROGRAPHY DOES NOT IMPACT SURGICAL OUTCOMES AFTER BULBAR URETHRAL RECONSTRUCTION AND MAY NOT BE ROUTINELY NEEDED

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INTRODUCTION AND OBJECTIVE: Contrast imaging is commonly performed after urethroplasty prior to catheter removal. The goal of imaging, either in the form of voiding cystourethrogram or peri-catheter urethrogram, is to detect extravasation which could prompt postponement of catheter removal. However, the need for routine imaging is controverted due to a generally low incidence of extravasation, lack of standardized definition of how much extravasation is clinically significant and unclear impact on clinical outcomes. Our objective is to assess whether omitting post-operative imaging has an impact on the clinical outcomes (complications and recurrence rate) after bulbar urethroplasty.

METHODS: We performed a matched, case-control analysis comparing patients undergoing voiding cystourethrogram at the time of catheter removal compared to patients without imaging after bulbar urethroplasty. Patients were matched with respect to age, stricture etiology, length and urethroplasty technique. Follow-up consisted of clinical assessment 3 weeks post-operatively with follow-up cystoscopy at 3-4 months and annually thereafter to monitor for symptom recurrence. Primary outcome measures were 90-day complications (Clavien≥2) and stricture recurrence defined as failure to pass a 16Fr flexible videocystoscope. Case matching, Chi-square analysis and Cox regression were conducted with statistical software SPSS v.26.

RESULTS: 100 patients undergoing bulbar urethral reconstruction with subsequent voiding cystourethrogram prior catheter removal were compared to 100 matched case controls who did not undergo imaging. The entire cohort (n = 200) had a mean age of 42.9 years, mean stricture length of 3.9 cm, 89.0% failed prior endoscopic treatment and most common etiology was idiopathic (62.0%). Apart from the matched variables, groups did not differ with respect to number of failed endoscopic treatment ($p=0.82$), prior urethroplasty ($p=0.09$), comorbidities ($p=0.54$), smoking ($p=0.42$) or pre-operative bacteriuria ($p=1.00$). The incidence of extravasation in the VCUG group was 2.0%. Overall 90-day complication rate (Clavien≥2) was 9.5% and stricture recurrence was 7.5% at a median follow-up of 174 months. On Chi-square analysis, the rate of complications did not differ between patients undergoing VCUG and those without imaging (12.0% vs. 7.0%; $p=0.34$). On log-rank analysis, stricture recurrence did not differ between groups (9.0% vs. 6.0%; $p=0.44$).

CONCLUSIONS: Routine imaging with VCUG after performing a bulbar urethroplasty, does not impact the rate of post-operative complications or stricture recurrence. Surgeons should consider avoiding this potentially unnecessary examination in routine clinical practice.

Source of Funding: Not applicable

MP32-03

THE IMPACT OF SOCIAL DEPRIVATION ON ANTERIOR URETHRAL STRICTURE RECURRENCE AFTER URETHROPLASTY—A TRAUMA AND UROLOGIC RECONSTRUCTIVE NETWORK OF SURGEONS (TURNS) ANALYSIS

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INTRODUCTION AND OBJECTIVE: Several factors influence recurrence after urethral stricture repair. The impact of socioeconomic factors on stricture recurrence after urethroplasty is not well understood.

RIGHTSLINK

This study aims to assess the impact social deprivation has on urethral stricture recurrence after urethroplasty.

METHODS: A retrospective review of patients undergoing urethral reconstruction in the TURNS database was performed. Home zip code was used to calculate Social Deprivation Indices (SDI; 0-100), which quantifies level of disadvantage across several sociodemographic domains collected in the American Community Survey. Patients without zip code, functional or anatomic recurrence data were excluded from the analysis. Cox Proportional Hazards model was used to study the association between SDI and hazard of functional recurrence, adjusting for stricture characteristics.

RESULTS: Median age was 46.0 years with a median follow up of 367 days for the 1,452 men included in the study. Patients in the 4th SDI quartile (worse social deprivation) were more likely to be active smokers with traumatic and infectious strictures compared to the 1st SDI quartile (Table 1). Patients in the 4th SDI quartile had a significantly higher risk of functional stricture recurrence over 5 years compared to the patients in the 1st SDI quartile (p=0.029; Figure 1). Rate of functional recurrence increased by 1.07 per 10-point increase in SDI (p=0.027). Patients with S1b urethral disease had 1.82 times the rate (95% CI 1.1-3.0; p=0.017) of functional recurrence than those with S1a urethral disease. The rate of functional recurrence in strictures from lichen sclerosis was 2.73 times as high as in strictures from external trauma (95% CI 1.02-7.3; p=0.045).

CONCLUSIONS: Patient social deprivation identifies those at higher risk for functional recurrence after anterior urethral stricture repair, offering an opportunity for preoperative counseling and postoperative surveillance.

Figure 1: Cumulative incidence of functional recurrence for patients in 1st and 4th SDI Quartile.

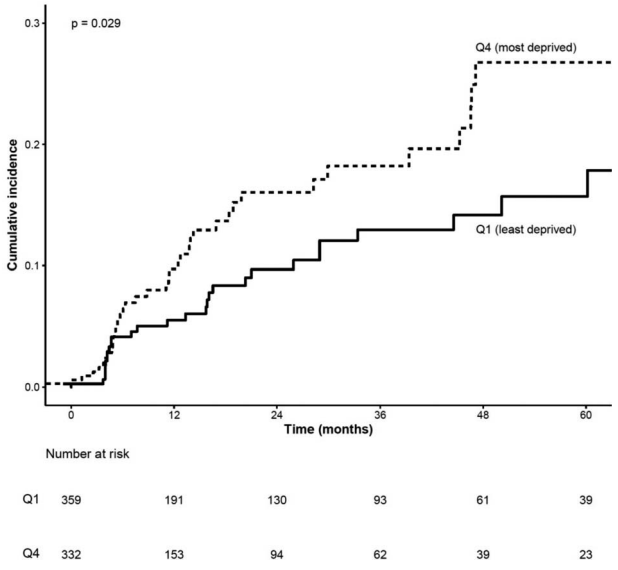

Table 1: Patient characteristics based on Social Deprivation Index quartiles.

Characteristic	Q1 N = 369	Q2 N = 378	Q3 N = 351	Q4 N = 354	p-value
Median age at time of surgery (IQR)	46 (32, 58)	47 (33, 60)	45 (34, 59)	45 (32, 60)	0.8
Median BMI (IQR)	28 (25, 32)	30 (26, 34)	29 (25, 34)	28 (24, 33)	0.016
Smoking Status					0.04
Active Smoker	26	40	48	41	
Former Smoker	72	78	76	87	
Never Smoker	271	259	227	226	
Number of prior dilations	1 (0, 2)	1 (0, 2)	0.5 (0, 2)	0 (0, 1)	0.006
Number of prior DVIUs	1 (0, 1)	1 (0, 2)	0 (0, 1)	0 (0, 1)	<0.001
Length					0.2
L1	167	145	144	141	
L2	156	195	165	164	
L3	37	29	32	32	
Unknown	9	9	10	17	
Urethral segment					0.011
S1a	200	215	164	161	
S1b	59	42	44	41	
S2a	19	26	21	34	
S2b	28	33	38	48	
S2c	15	15	23	22	
S2d	12	9	22	19	
S3	16	16	18	11	
Unknown	20	22	21	18	
Etiology					<0.001
External Trauma	79	65	49	52	
Hypospadias Stricture	2	4	12	11	
Iatrogenic - Radiation	4	6	9	5	
Iatrogenic - Recurrent	17	15	26	28	
Iatrogenic - Trauma	58	57	54	70	
Idiopathic	187	205	177	151	
Infectious Stricture	13	5	6	22	
Lichen Sclerosis/BXO	8	17	16	11	
Stricture Repair Type					
Anastomotic ± Excisional	147	143	110	109	
Excisional and Substitution	36	37	37	36	
Meatotomy	0	1	1	0	
Other Only	10	9	23	26	
Substitution Only	132	124	123	131	
TBD	44	64	55	52	
Urethrostomy Only	0	0	2	0	
Functional recurrence at 60 months	15.7%	12.1%	18.1%	26.8%	

Anterior urethral stricture staging based on Erickson et al. *Urology* (2020)

Source of Funding: None

MP32-04

28 YEARS OF EXPERTISE: OPTIMIZING TREATMENT STRATEGIES FOR PELVIC FRACTURES AND COMPLEX URETHRAL INJURIES WITH A COMPREHENSIVE APPROACH

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INTRODUCTION AND OBJECTIVE: The incidence of pelvic fracture urethral injuries (PFUI) is increasing worldwide, currently standing at 10%. PFUIs are categorized as simple or complex; simple cases can often be successfully managed with a single anastomotic procedure. However, complex cases pose significant challenges, leading to lower success rates, necessitating the expertise of experienced professionals. Among complex PFUI patients, re-redo urethroplasty and bulbar urethral necrosis (BUN) present particularly challenging scenarios. Our objective is to elucidate the management of these scenarios, drawing on the lessons learned from our 28 years of experience in treating complex PFUI patients.

METHODS: We are a tertiary referral institute with a maintained database with follow up from 1995-2023. Among the 1339 PFUI cases we have handled, 359 were complex. For this analysis, we focused on patients undergoing re-redo urethroplasty and those with bulbar urethral necrosis. This is a descriptive, retrospective study, a total of 229 patients completed the follow-up and were included in analysis with prior approval from the ethics committee. We define success as the absence of additional procedures or catheter placement.

RESULTS: We included 90 patients who had more than two failed urethroplasties, with a mean follow-up of 26 months. Of these, the majority of patients (55%) needed a step 3B urethroplasty, followed by step 2 in 28% of cases. The overall success rate was of 82.2%. We have operated 139 cases of BUN. The most common surgical technique used was the pedicle preputial tube in 94 patients with a success rate of 82.9%, followed by pedicle prepuce as onlay augmentation with dorsal buccal mucosa graft in 16 patients, with a success rate of 89.1%. In our cohort of patients with BUN, the overall success rate is 76.2% regarding the different techniques.

CONCLUSIONS: Complex PFUI cases present significant challenges to the reconstructive urologists. Our study demonstrates that

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