

Urodynamic Findings & Outcomes in Men Undergoing Artificial Urinary Sphincter Placement With and Without Prior Radiation

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Conclusions:

- No major differences in demographics, clinical or UDS parameters between XRT and non-XRT patients
- Similar outcomes between groups (continence, complications)
- Limited value of preop UDS

Background and Objective:

The impact of pelvic radiation therapy (XRT) on urodynamic (UDS) parameters and artificial urinary sphincter (AUS) outcomes in post-radical prostatectomy (RP) stress incontinence remains controversial.

Objective: Compare baseline clinical, bladder diary, UDS variables, and surgical outcomes between post-RP patients with and without prior XRT.

Methods:

Retrospective review of 96 post-RP patients undergoing primary AUS implantation:

Group 1 (+ XRT): 50 patients (52%) with prior pelvic XRT

Group 2 (No XRT): 46 patients (48%) without radiation
Mean Follow-up 544 days

Patient Demographics & History:

	Group 1 (+ XRT) (N=50)	Group 2 (no XRT) (N=46)	P value
Age at AUS Placement (yr)	67.43 (7.83)	68.24 (7.87)	0.846
Obesity (BMI ≥ 30 kg/m ²)	29/50 (58%)	24/44 (55%)	0.836
Diabetes	15 (30%)	10 (22%)	0.486
Androgen Deprivation Therapy	25 (51%)	3 (6.5%)	<0.001
Any vascular disease	37 (74%)	30 (65%)	0.381
Hypertension	36 (72%)	27 (59%)	0.201
Any neuropathy	7 (14%)	5 (11%)	0.762
Any prior continence procedure	13 (26%)	16 (35%)	0.381
Urethral dilation	6 (12%)	4 (8.7%)	0.743
DVIU	2 (4.0%)	1 (2.2%)	>0.999
TUIBN	5 (10%)	4 (8.7%)	>0.999
Urethroplasty	1 (2.0%)	1 (2.2%)	>0.999
Years From Prostatectomy to AUS (range)	5.4 (0.9-20)	2.5 (0.6-19)	0.018
Years From XRT to AUS (range)	6 (0.4-16)	NA	

Preop Diary, Pad Usage and UDS:

	Group 1 (+ XRT)	Group 2 (no XRT)	P value
Max Voided Vol (mL)	282	479	0.008
Avg Voided Vol (mL)	137	145	>0.999
Pads/day	6	5.4	0.723
Uroflow Qmax (mL/s)	21	18	0.448
Presence of DO (%)	29	26	0.811
Pdetmax with DO (cmH2O)	44.6	36.6	0.620
End-Fill Pdet (cmH2O)	7.3	5.1	0.213
Pdetqmax (cmH2O)	28.6	29.7	0.899

Urethra/Cuff Size:

	Group 1 (+ XRT)	Group 2 (no XRT)	P value
Urethral Circumference (cm)	4.2	4.5	0.048
Cuff Size (%)			
3.5cm	19	10	
4.0cm	51	38	
≥ 4.5 cm	30	52	

Postop Continence:

	Group 1 (+ XRT)	Group 2 (no XRT)	P value
Pads/day	1.6	1.3	0.639
Social Continence (0-1ppd) (%)	69	70	>0.999

Complications:

	Group 1 (+ XRT)	Group 2 (no XRT)	P value
Erosion (%)	14	6.5	0.321
Infection	8	0	0.118
Device Failure (%)	0	11	0.022

Time to Any Complication

