Epididymal-Sparing Simple Orchiectomy in Stage IV Prostate Cancer

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Introduction:

- Permanent androgen deprivation therapy (ADT) through medical or surgical castration is fundamental for treating metastatic prostate cancer (mPCa).
- This study aimed at evaluating clinical features and demographic data impacting patient decisions.

Methods:

- Retrospective review of patients undergoing surgical castration for mPCa between 2011-2022.
- Patients were divided into cohorts by location: Safety Net and Oncology Group practices

Table 1: Pre and Post Op TT and PSA based on location and procedure

	Cohort N=101	Hospital Location		p-value	Orchiectomy type		p-value
		Safety net N=40	Group N=61		Standard (n=81)	ESO (n=20)	
Pre-Op Total T Available	61 (60.4%)	16 (36%)	46 (75%)	0.0006	46 (56.8%)	15 (75%)	
Median Pre-Op T (IQR)	206 (20, 332.5)	32 (9, 269)	225 (27, 373)	0.02	207 (20, 331.5)	172 (12, 339)	0.99
Castrate prior to orchiectomy among those on ADT (N=49) (%)	17/49 (34.7%)	8/23 (34.8%)	9/26 (34.6%)	0.99	15/43 (35%)	2/6 (33%)	0.84
Median Pre-Op PSA (n=101)	58.4 (8, 378)	124.2 (10.5, 1115.5)	34.2 (7.2, 141.3)	0.04	73.4 (8, 378)	28.9)9.4, 466)	0.6
Post-Op T Available (%)	81 (80.2%)	32/40 (80%)	49/61 (80%)	0.96	67 (82.7%)	14 (70%)	0.2
Median Post-Op T (n=79)	10 (9,19)	9 (9, 22.5)	12 (9, 19)	0.84	12 (9, 19)	9 (9,11.5)	0.9
Median Post-Op PSA (n=77)	2.45 (0.3, 17.2)	6.4 (0.4, 107.15)	1.7 (0.3, 6.1)	0.05	2.45 (0.2, 17.2)	2.65 (0.98, 32.6)	0.4
Median days to post op labs (IQR)	57 (30, 123)	43.5 (23, 78)	70 (40, 177)	0.0003	65 (32, 125)	45 (26, 80)	0.36

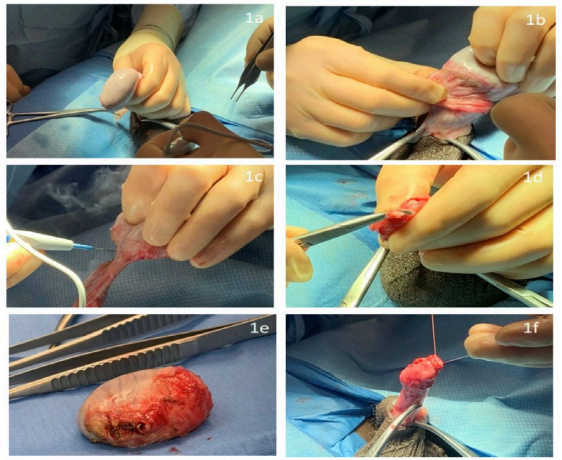

Figure 1: Epididymal-Sparing Orchiectomy Technique
1a: The testicle is delivered through a small scrotal incision. 1b: The parietal layer of the tunica vaginalis is peeled back. 1c: The head and tail of the epididymis with efferent ductules are dissected off the tunica albuginea using cautery.1d-e: Perforating branches of the testicular artery are either tied or taken with electrocautery. 1f: The tail of the epididymis is approximated to the head (shown). Then placed back in the tunica vaginalis, which is sutured, and the incision is closed.

Table 2: Clinical Features of men undergoing orchiectomy for surgical castration at a Safety Net and Group Practice facility.

		Safety Net N=40 (39.6%)	Group N=61 (60.4%)	p-value
Median Age in years (IQR)	70 (63.5, 79.5)	66 (61, 72)	74 (64, 82)	0.0015
Inpatient/Outpatient				
Inpatient	15 (14.9%)	10 (25%)	5 (8.2%)	0.025
Outpatient	86 (85.2%)			
Orchiectomy Type				<0.0001
Standard	81 (81%)	39 (97.5%)	42 (68.85%)	
Epididymal Sparing	20 (19%)	1 (2.25%)	19 (31.15%)	
Race				
Black	50 (49.5%)	32 (80%)	18 (29.5%)	<0.0001
White/Other	51 (50.5%)	8 (20%)	43 (70.5%)	
Marital Status				
Married	49 (46.7%)	12 (30%)	35 (61.4%)	0.0023
All Other	52 (49.5%)	28 (79%)	22 (38.6%)	
Median distance from facility (IQR) miles	23.8 (15, 62)	15.1 (4.3, 66.7)	25.9 (17, 57)	0.08
Median Income per household in $ (zip code) (IQR)	56167 (41046, 65229)	52775 (40019, 60595)	56361 (43627, 65501)	0.14
Stage IV at diagnosis	72 (71.3%)	29 (72.5%)	43 (70.5%)	1.0
Prior Definitive Local Therapy	27 (26.7%)	10 (25%)	17 (27.9%)	0.8
Prior ADT	49 (48.5%)	23 (57.5%)	26 (42.6%)	0.14
Prior Medication Non-compliance (of those previously on ADT)	9/49 (18.4%)	1 (11%)	8 (89%)	0.0001
Concomitant Procedure	26 (25%)	7 (17.5%)	19 (31.7%)	0.11
Prostate biopsy	14	3	11	
Relief UT obstruction	8	2	6	
Complication	3 (3.0%)	2	1	
Clavien II (Wound infection)	2	2	0	
Clavien IIIb (return to OR for bleeding)	1	0	1	

Results:

- 101 patients underwent orchiectomy; 85 SO (81%) and 20 (19%) ES
- All men had castrate levels of TT (median 10; IQR 9, 19) with no difference between types of procedure (p=0.9)
- Overall, 52 (52%) were ADT naïve and 66 (63%) had presented with de-novo stage IV disease.
- 9 of 49(18.4%) had medication adherence issues previously interrupting ADT

Conclusions:

- ES orchiectomy is safe and effective for surgical castration.
- When considering ADT options for treatment of mPCA, ES orchiectomy may be offered as an alternative to medical therapy.
- Patient counseling on pros and cons of all treatment options