No Difference in Local Recurrence Rates for Surgical vs. Non-surgical Treatment of Penile Squamous Cell Carcinoma In Situ

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Background

- Patients with penile symptoms often delay seeking care due to a myriad of reasons including embarrassment, guilt, and fear[1,2]
- Historically, genital dermatologic lesions are an area of particular diagnostic difficulty with additional challenges in management[3]
- Penile Squamous Cell Carcinoma in situ (PSCCis) management has only been assessed in small series
- NCCN guidelines recommend topical therapy, wide local excision, laser therapy, glansectomy, or Mohs Micrographic surgery (MMS) as treatment
- There is no consensus on which therapy is preferred
- Currently, excision and topical therapy are most commonly used

Objective

- To evaluate treatment outcomes of PSCCis and compare surgical versus non-surgical management

Methods

- All records between 1/1/96 and 10/31/20 at BWH, MGH, and MSKCC Hospital were searched for patients with a confirmed histologic diagnosis of malignant neoplasm of the penis
- Tumors with insufficient primary tumor information or a diagnosis other than cutaneous squamous cell carcinoma in situ or high-grade penile intraepithelial neoplasia (PeIN III) were excluded, duplicate records were also excluded
- Medical records were examined for patient characteristics, tumor characteristics, and outcomes of interest including local recurrence, nodal metastasis, distant metastasis, and disease-specific death

Results

Patient Characteristics	Total	Surgical	Non-Surgical	P-Value
All patients	143	108	35	
Race, n (%)				
White	128 (89.5)	96 (88.9)	32 (91.4)	
Nonwhite	15 (10.5)	12 (11.1)	3 (8.6)	0.48
HPV Infection, n (%)				
No	14 (9.8)	10 (9.3)	4 (11.4)	
Yes	24 (16.8)	16 (14.8)	8 (22.9)	
Unknown	105 (73.4)	82 (75.9)	23 (65.7)	0.45
Documented History of STI, n (%)				
No	23 (16.1)	15 (13.9)	8 (22.9)	
Yes	19 (13.3)	15 (13.9)	4 (11.4)	
Unknown	101 (70.6)	78 (72.2)	23 (65.7)	0.48
Circumcision Status, n (%)				
No	54 (37.8)	43 (39.8)	11 (31.4)	
Yes	55 (38.4)	37 (34.3)	18 (51.4)	
Neonatal	36 (65.5)	26 (70.3)	10 (55.6)	
Adult	6 (10.9)	3 (8.1)	3 (16.7)	
Unknown	13 (23.6)	8 (21.6)	5 (27.8)	
Unknown	34 (23.8)	28 (25.9)	6 (17.1)	0.19
Documented History of Penile Disease, n (%)				
No	95 (66.4)	76 (70.4)	19 (54.3)	
Yes	48 (33.6)	32 (29.6)	16 (45.7)	
Phimosis	11 (7.7)	7 (6.5)	4 (11.4)	
Balanitis/posthitis	20 (13.7)	11 (10.1)	9 (24.3)	
Psoriasis	8 (5.6)	5 (4.6)	3 (8.6)	
Urethral stricture	3 (2.1)	1 (0.9)	2 (5.7)	
Lichen Planus	4 (2.8)	3 (2.8)	1 (2.9)	0.080
Documented History of Genital Warts, n (%)				
No	118 (80.3)	89 (80.9)	27 (78.4)	
Yes	29 (19.7)	21 (19.1)	8 (21.6)	0.74

Tumor Characteristics	Total	Surgical	Non-Surgical	P-Value
All Primary Tumors, n (%)	147	110 (74.8)	37 (25.2)	
Age at Diagnosis, years (median, SD)	59.2 (15.2)	56.7 (15.5)	65.2 (13.4)	0.058
Overall Follow-up Time, months (median, IQR)	53.7 (102)	57.8 (119.4)	50.0 (75.2)	0.063
Tumor Diameter, cm (mean, SD)	1.2 (0.8)	1.2 (0.9)	1.1 (0.7)	0.75
Tumor Location				
Glans	40 (27.2)	25 (22.7)	15 (40.5)	
Foreskin	15 (10.2)	12 (10.9)	3 (8.1)	
Shaft	76 (51.7)	61 (55.5)	15 (40.5)	
Overlapping	16 (10.9)	12 (10.9)	4 (10.8)	0.21
Multiple Treatments for Primary Tumor				
No	123 (83.7)	95 (86.4)	28 (75.7)	
Yes	24 (16.3)	15 (13.6)	9 (24.3)	0.13

Tumor Treatments	Initial Treatment N (%)	Local Recurrence N (%)	P-Value
Surgical*	110	12 (10.9)	
Mohs Micrographic Surgery	23 (15.7)		
Circumcision	21 (14.3)		
Excision	62 (42.2)	2 (9.5)	
Penectomy	4 (2.7)	10 (16.1)	
Non-Surgical	37	8 (21.6)	
Topical Therapy	25 (17.0)	4 (16.0)	
Imiquimod	9 (36.0)		
Fluorouracil	16 (64.0)		
Laser Ablation	9 (6.1)	4 (44.4)	
ED&C	2 (1.3)		
Cryotherapy	1 (0.7)		0.100

Conclusion

- Patients with HPV and chronic inflammatory disease of the penis and genital region should be followed closely for development of PSCCis
- Topical therapy is a valuable, non-invasive first-line option for those with PSCCis
  - 5-Fluorouracil and Imiquimod may be considered as off-label therapy in PSCCis
- Not all patients will receive a complete response (CR), however in those who obtain a PR, a subsequent surgery may be limited to a smaller field
- Although risk of recurrence is 16% for topical treatment compared to 11% for surgical treatment, all patients treated topically were successfully salvaged
- MMS is a useful option for patients who do not obtain a CR with topical therapy, as it spares patients multiple surgeries/treatment
- A small number of tumors will be refractory to treatment and require multiple treatment modalities to achieve a complete response
- When evaluating patients with PSCCis, consider the least invasive option for first-line treatment

References

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