

Treatment of Penoscrotal Basal Cell Carcinoma – An Institutional Retrospective Review

Jeremy G. Light (✉ jlight2020@gmail.com)

Washington University in St. Louis

Genevieve Muñoz

Washington University in St. Louis

M. Laurin Council

Washington University in St. Louis

Short Report

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Abstract

Basal cell carcinoma (BCC) of the sun-protected genital region is rare. We examined all penoscrotal BCC at a single institution over an 18-year period. A total of 7 cases were identified, 5 scrotal and 2 penile. Four cases (57%) were treated with Mohs micrographic surgery (MMS) and 3 cases (43%) with conventional excision. A prior retrospective review of vulvar BCC at our institution during the same time period showed that MMS was utilized in 4 (11%) of 35 cases. Functional preservation is vital when performing surgery on the genitals and tissue-sparing MMS provides optimal tumor clearance and outcomes for both males and females.

Background

Basal cell carcinoma (BCC) occurring in the genital region is rare, comprising less than 1% of all BCCs [1]. We examined the treatment and recurrence rate of basal cell carcinoma (BCC) of the penis and scrotum at our institution over an 18-year period.

Methods

A retrospective review of all patients who underwent treatment of biopsy-proven BCC of the penis and scrotum at Washington University was performed. A query was submitted to CoPath, our institutional pathology database, between the years 2000–2018 for the search terms “basal cell carcinoma” and “penis, penile shaft, corona, prepuce, foreskin, glans, scrotum, raphe.” All resulting records were reviewed for relevancy based on tumor type and location. Information collected included age, race, histologic subtype, immune status, treatment, and recurrence. Recurrence was determined using documented skin examinations and confirmed by biopsy. This study was approved by the Institutional Review Board at the Washington University School of Medicine in Saint Louis.

Results

A total of 7 cases of BCC of the penis and scrotum were identified between the years 2000 and 2018. The mean age at diagnosis was 70 years, ranging from 55 to 80. Five cases were located on the scrotum (71%) and 2 on the penis. Most patients were Caucasian (86%) and one African American. One patient was a renal transplant recipient and the only case of immunosuppression. (Table 1)

Table 1

Characteristics, Management, and Outcomes of Penoscrotal Basal Cell Carcinoma Between 2000 and 2018. MMS, Mohs micrographic surgery.

Location	Tumor size (cm ²)	Treatment	Recurrence (Y/N)	Immunosuppression (Y/N)
Scrotum	1.20	Excision	N	N
Penis	1.05	Excision	N	N
Scrotum	0.35	Excision	Y	N
Scrotum	0.40	MMS	N	N
Scrotum	0.36	MMS	N	N
Scrotum	1.92	MMS	N	N
Penis	0.63	MMS	N	Y

Four cases (57%) were treated with Mohs micrographic surgery (MMS), the remaining 3 cases were treated with surgical excision (43%). The average tumor size was 0.84 cm². Histological subtypes were not specified for all cases; however, 2 were infiltrative (29%) and 1 pigmented (14%). One conventional excision reported 5 mm margins, the other two did not report surgical margins. Most surgical defects were repaired with linear closures except two cases treated with MMS healed by secondary intention.

One case treated with conventional excision had BCC present at the surgical margin and subsequently treated with repeat excision. There was one case of tumor recurrence following conventional excision on the scrotum (Fig. 1). The average follow up time after treatment was 43 months. Follow up was defined as having a skin examination by a dermatologist or treating physician.

Five cases were identified and treated by dermatology, 4 treated with MMS and 1 excision. Two cases were identified by urology resulting in 2 excisions, one requiring a repeat excision by general surgery.

Discussion

Surgical management of male genital skin cancer has traditionally been conventional excision of the scrotum and total or partial amputation of the penis [2, 3]. This surgical approach has high rates of positive margins (45%) and local recurrence (12.5%) for scrotal cancers [4]. Penectomy has low local recurrence (3–10%) at the expense of disfigurement causing functional and psychosocial impairment [4]. Organ-sparing conventional excision improves function and quality of life but with higher rates of positive margins (19.2%) and local recurrence (6.0–34%) [4]. Mohs micrographic surgery (MMS) for male genital skin cancer is an organ-sparing technique with low local recurrence rates (0.84-11%) and high patient reported satisfaction [4].

Reported outcomes for male genital skin cancer treatments are predominantly from squamous cell carcinoma due to far higher incidence. BCC of the genital region is primarily reported in case reports and

series, limiting the availability of specific local recurrence rates and patient outcomes. A recently published population-based study of genital BCC which included 1,607 cases found a female to male ratio of 5.3 with the most common location being the labia majus and scrotum. [1]. BCC located on the scrotum was 3 times more common than the penis [1].

A retrospective review at our institution of vulvar BCC during the same time period was recently published [5] (Table 2). MMS was less frequently utilized in treating BCC of the vulva (11%) compared to penoscrotal (57%). Most vulvar BCCs were identified and treated by gynecology with either wide local excision (46%) or vulvectomy (37%). Tumors treated with vulvectomy were only slightly larger than those treated with wide local excision (1.54 v. 0.94 cm²) [5]. The tendency for a more radical surgical approach when treating genital BCC in females warrants further investigation. One possibility is that females are more likely to present to gynecology and managed without involvement of dermatology.

Table 2
Location and Treatment of Vulvar Basal Cell Carcinoma Between 2000 and 2018. MMS, Mohs micrographic surgery; EDC, Electrodesiccation and curettage.

Vulvar Basal Cell Carcinoma	
Location (n, 35)	
Labia majus	28 (80%)
Suprapubic	6 (17%)
Clitoris	1 (3%)
Treatment	
Wide local excision	16 (46%)
Vulvectomy	13 (37%)
MMS	4 (11%)
EDC	2 (6%)

National comprehensive cancer network guidelines state that MMS is indicated for the surgical treatment of BCC of the genitals regardless of tumor size or risk stratification [6]. Functional preservation is paramount for patients undergoing surgical treatment of the genitals. Patients with genital BCC often present to a variety of subspecialty clinics including urology, gynecology, surgery, and dermatology. Therefore, a multidisciplinary approach and communication across specialties can increase patient access to tissue-sparing MMS, providing optimal tumor clearance and functional urinary and sexual outcomes for both males and females.

Declarations

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Figures

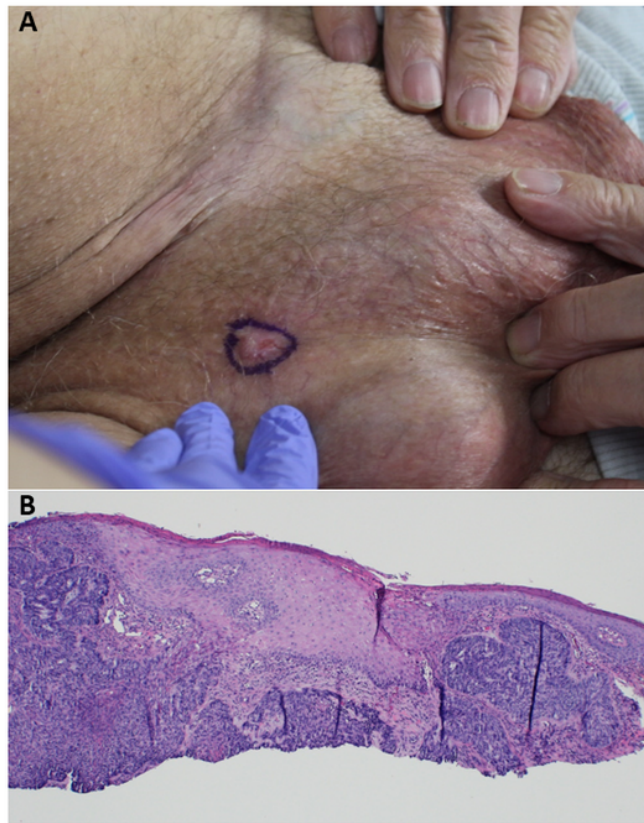


Figure 1

(A) Pink shiny eroded plaque with rolled borders on the scrotum. (B) Histological image demonstrating aggregates of basaloid cells within the dermis with peripheral palisading (H&E, 4X).