Penile Squamous Cell Carcinoma- A Case Report

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***Abstract*—The majority of penile carcinoma is squamous cell carcinoma. Although a larger proportion of cancers in the underdeveloped world. Invasive squamous cell carcinoma may arise from precursor lesions or de novo, and has been associated with lack of circumcision infection. A 50-year-old men presented for evaluation of a penile lesion present for nine months. The patient denied any associated pain, bleeding, odor, discharge, or dysuria. There were no recent changes to the lesion. Patient hailing with complains of multiple, painless, fungating and foul smelling ulcer in the distal half of the penis for 9 months. Early diagnosis is imperative as lymphatic spread is associated with a poor prognosis. Radical surgical treatment is no longer the mainstay, and penile sparing treatments now are often used, including urology surgery. Therapeutic decisions should be made with regard to the size and location of the tumor, as well as the functional desires of the patient. It is critical for the dermatologist to be familiar with the evaluation, grading/staging, and treatment advances of penile squamous cell carcinoma. Herein, we present a review of the literature regarding penile squamous cell carcinoma, as well as a case report of invasive squamous cell carcinoma treated withurology surgery. To the best of our knowledge, this is the first reported case of porokeratosis transformed to squamous cell carcinoma on Bangladesh.**

Keywords—Carcinoma, Squamous Cell, Penile Neoplasms, Penis.

I Introduction

Penile carcinoma is rare in the developed world, and most cases (98%) correspond to squamous cell carcinoma (SCC). Penile cancer is a rare diagnosis in the Asia and other developed nations. In the United States in 2015, the American Cancer Society predicted 1,820 new cases with 310 penile cancer deaths [1]. However, the disease is more common in developing countries, where it may represent up to 10% of cancers in males [3, 4, 5]. The majority of penile cancer is squamous cell carcinoma (SCC) [5]. The pathogenesis of penile cancer is not entirely known. The most important advances in penile SCC in recent years have been the identification of risk factors, improved knowledge of the molecular pathways involved in the development of this tumor, and updating of staging criteria. Penile SCC has been associated with high-risk HPV infections, most commonly strains 16 and 18. This discordance between the presences of HPV-DNA in SCC versus PIN suggests an HPV independent and dependent etiology for the development of SCC [5]. The prevalence of genital HPV-DNA in men is 1.3% to 72.9%, with a mean of >20% reported by most studies [17]. The development of the quadrivalent HPV vaccine to high-risk strains 6, 11, 16, and 18, has been shown to significantly reduce HPV-associated genital disease in men, including genital warts, with an efficacy of 89.4% [9]. The use of the HPV vaccine in males has the potential to significantly reduce the incidence of penile cancer, among other disfiguring genital lesions such as condylomas and genital warts. Penile SCC occurs almost exclusively in uncircumcised men [4]. Progress has also been made in the area of treatment, with an increasing tendency towards conservative surgery, whose aim is to minimize the risk of recurrence while preserving sexual and urinary function. In Europe, penile SCC is most common between the sixth and eighth decades of life, with two-thirds of cases occurring in patients aged over 65 years [1]. The global incidence is 0.1 to 0.7 cases per 100 000 males. It is estimated that approximately 4000 new cases are diagnosed each year; this accounts for less than 0.5% of all cancers [1]. In Spain, penile SCC accounts for approximately 0.7% of all malignant tumors in men, with an annual incidence of between 0.7 and 1.5 cases per 100 000 males. Rates are similar in other parts of Western Europe, but in some parts of the world, such as Uganda and Brazil, they are up to 4 times higher [1, 2]. This considerable geographic variation in incidence is probably due to socioeconomic and cultural differences.

Cancer penile cancer staging			
Anatomic Stage/Prognostic Groups			
Stage 0	Tis	N0	M0
	Ta	N0	M0
Stage I	T1a	N0	M0
Stage II	T1b	N0	M0
	T2	N0	M0
	T3	N0	M0
Stage IIIa	T1-3	N1	M0
Stage IIIb	T1-3	N2	M0
Stage IV	T4	Any N	M0
	Any T	N3	M0
	Any T	Any N	M1
Source Google			

Medical Care: The treatment of penile SCC varies according to the clinical stage. It includes radiation therapy, medical therapy, and surgery, alone or incombination [18].

1. **Radiation therapy:** Radiation therapy with external beams or mould techniques may be an option to treat small, superficial, exophytic lesions in young individuals, allowing for the preservation of sexual function with a high cure rate. In case of relapse, salvage surgery may be required. Circumcision before therapy is recommended. Major complications, such as urethral stenosis, fistulas, and penile necrosis, may occur [19].
2. **Medical treatment:** local and systemic chemotherapy. Early premalignant and in situ changes can be treated with topical chemotherapy (5-FU) [20], Systemic chemotherapy may be used according to the stage of the disease [22].
3. **Surgical Care:** Surgical procedures consist of local excision, circumcision, glansectomy, partial penectomy, total penectomy, and demasculinization. Whereas partial penectomy is the procedure of choice for tumors at a low stage (stage I, T1-T2) that involves most of the glans or the distal third of the penis. Total penectomy is necessary when the lesion is in the proximal portion of the penis or when the tumor is at an advanced stage (stages II-III,T3-T4) [21]. Lymph node dissection: Because of the significant morbidity of inguinal and pelvic node dissection and because of the high incidence of reactive nodes, surgical dissection of the lymph nodes is necessary only if they are enlarged and do not regress after adequate antibiotic therapy [21].

Prevention: Circumcision in infancy and a good standard of sexual hygiene are recognized as good prophylactic measures.

Prognosis: In the absence of inguinal metastases, patients with invasive SCC of the penis involving the glans or the distal part of the shaft who undergo adequate partial amputation have a long-term survival rate of 70-80%. Of patients with involved lymph nodes, 40-50% can be cured with lymph node dissection, whereas untreated patients usually die within 2-3 years [21].

II Case Report

A 50-year-old men presented for evaluation of a penile lesion present for nine months. The patient denied any associated pain, bleeding, odor, discharge, or dysuria. There were no recent changes to the lesion. Patient hailing with complains of multiple,

painless, fungating and foul smelling ulcer in the distal half of the penis for 9 months. Initially the ulcer was small and single, but gradually increases in size and number with involvement of the glans penis and distal half of the shaft of penis. The patient was poor family. Physical exam was significant for a 1.5 x 1.5 cm erythematous ulcerated plaque on the inner foreskin 3 cm from the urethral tip and 1 cm from the coronal sulcus (Figure 1). Inguinal lymphadenopathy was not appreciated on palpation, however exam was limited due to the presence of bilateral inguinal hernias. A shave biopsy was obtained and revealed invasive squamous cell carcinoma, moderately differentiated (Figure 2). The decision was made to proceed surgery (MMS) and to refer the patient to urology for evaluation of inguinal nodes following MMS. Imaging to determine if enlarged nodes were present was not performed preoperatively.The tumor bulk was excised, followed by one stage of MMS with excision of the borders as a horizontal layer, 2-3 mm in thickness. The tissue was mapped, frozen, cut, and stained with toluidine blue. Microscopic evaluation confirmed the tumor was completely excised with no further disease in the deep outer borders. The lesion invaded into the deep dermis with no invasion into adjacent structures. The defect was repaired in the office using linear closure (Figure 3). The consultant urologist concluded that the patient inguinal hernias limited nodal evaluation and recommended hernia repair prior to further assessment. The patient was seen by general surgery for evaluation, however he refused further interventions. The patient was followed for over nine months with no evidence of recurrence of the lesion and no functional concerns. Squamous cell carcinoma of the penis is a rare diagnosis. Therapeutic decisions should be made with regard to the size and location of the tumor, as well as with consideration to the functional desires of the patient. Surgery is an excellent alternative for patients with tumors of low grade and stage.

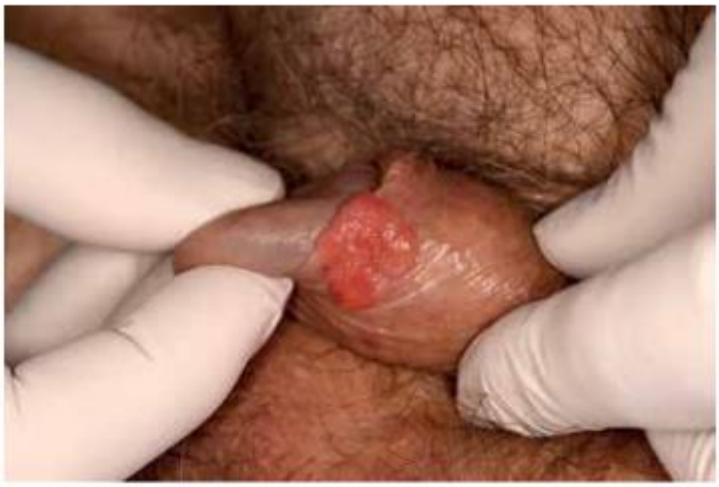

Figure 1: 1.5 cm x 1.5 cm ulcerated and erythematous lesion on the penis.

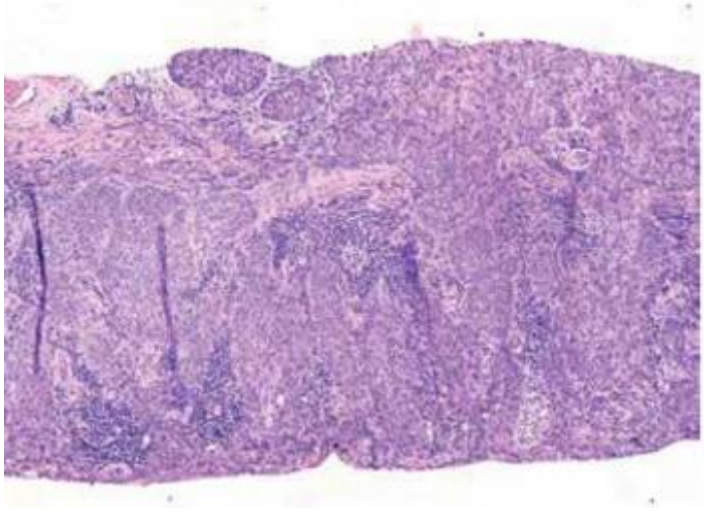

Figure 2: Squamous cell carcinoma, moderately differentiated. Atypical cells extend into the deep dermis. (Hematoxylin& eosin x10).

Figure 3: Linear closure of the defect, immediately postoperative.

III Discussion

The causes of penile SCC is unclear, factors considered to play a role in the development of the disease include: HPV infections: A role of HPV infections is established but not fully understood. Genital HPV infections mostly affect middle-aged, sexually active individuals [13]. In situ carcinomas: If untreated, in situ carcinomas likely evolve to invasive carcinomas. They include Bowen disease, erythroplasia of Queyrat, and bowenoidpapulosis [14, 15] Leukoplakia, Penile lichen sclerosus, Pseudoepitheliomatous, keratotic, micaceous balanitis and Penile horn. Factors resulting from the lack of circumcision: Epidemiologic data have demonstrated that penile SCC is exceedingly rare in men who are circumcised at birth. The prophylactic effect of circumcision on penile carcinoma is likely related to the lack of retained smegma that has been proven to be carcinogenic in animals. One study also demonstrated an increased risk of HPV infection in uncircumcised men (19.6%) compared with circumcised men (5.5%) [16]. Poor genital hygiene in uncircumcised males, even in the absence of phimosis, may also play a role, leading to the retention of smegma [13]. Penile SCC most commonly presents between the ages of 50 and 70 years [4]. The majority of lesions are found on the glans (48%), followed by the prepuce (21%), both glans and prepuce (15%), cor-onal sulcus (6%), and shaft (<2%) [4]. Clinical presentation is variable. It may present as a small area of induration and erythema or a large ulcerating and infiltrative lesion. As the disease progresses, there may be associated itching, bleeding, discharge, foul odor, and pain [4]. Presentation may be delayed secondary to psychological factors, with an estimated 15 to 60% of patients postponing presentation for at least one year [4, 5]. Despite this, most men (66%) initially present with localized disease [5]. Assessment of lymphatic spread with palpation of inguinal lymph nodes is an essential component of the initial physical exam. Lymphatic spread usually occurs in a predictable course, first to the superficial and deep inguinal nodes, followed by the pelvic, and then periaortic nodes [6]. Distant metastases are generally uncommon (1-10%) and occur late in the disease [4, 6]. Differential diagnostic considerations of penile SCC include premalignant and malignant lesions, infections, and inflammatory conditions. Neoplastic lesions such as erythroplasia of Queyrat, Bowen's disease or Bowenoidpapulosis should be considered [5]. Condylomaacuminata may resemble SCC, especially the verrucous variant. Ulceration and lymphadenopathy may raise concern for the chancre of a primary syphilis infection or the chancroid of Hae-mophilusducreyi. Additionally, the psoriatic scales and plaques of genital psoriasis and violaceous lesions of lichen planus may appear clinically similar to SCC [7]. Penile SCC can be divided into several subtypes. The most common subtypes include usual SCC (48-65%), basaloid carcinoma (4-10%), warty carcinoma (7-10%), verrucous carcinoma (3-8%), pap-illary carcinoma (5-15%), and mixed carcinomas (9-10%) [8]. Each sub-type has distinct histologic features. Surgical decisions should be made with regard to the size and location of the tumor, as well as the functional desires of the patient. For patients with PIN, topical imiquimod or 5-fluoroura-cil, circumcision and local excision, and laser ablative therapy could be used as penile preserving techniques [7]. When treating patients with well- to moderately-differentiated T1 SCC tumors, penile sparing surgery should be utilized [7]. About 28-64% of patients will present with palpable inguinal nodes [9]. However, of these, 47-85% will have metastatic disease, with the remainder of nodal enlargement secondary to inflam-mation [5, 9]. Even in patients without palpable nodes, an estimated 25% will still have micrometastatic disease [7]. Inguinal lymph node dissection is a diagnostic and potentially curative procedure [7, 10]. However, due to potential complications, it is preferred to only perform this procedure in patients at a high risk for metastasis [6, 10]. Techniques such as MRI, PET scan, fine needle aspiration, and dynamic sentinel node biopsy may precede an inguinal lymph node dissection [6]. Minimally invasive techniques such as laparoscopic or robotic-assisted

inguinal lymphadenectomy are evolving [10, 11]. A mul-tidisciplinary treatment team involving medical oncology, radiation oncology, urology, and psychiatry in addition to dermatology may be warranted [6, 12]. Prognosis is good for localized disease. The most import-ant prognostic factor is the extent of nodal metastasis [6, 10]. The 5-year cancer specific survival of a primary SCC with no inguinal metasta-sis is 85-100%, one positive node is 79 to 89%, bilateral or multiple nodal metastasis is 17 to 60%, and metastasis to pelvic nodes is 0 to 17% [9]. Prognosis with extranodal metastasis is poor.

IV Conclusion

Squamous cell carcinoma of the penis is a rare diagnosis. Therapeutic decisions should be made with regard to the size and location of the tumor, as well as with consideration to the functional desires of the patient. Urology surgery is an excellent alternative for patients with tumors of low grade and stage.

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