Case Report

A rare case of verrucous carcinoma of penis in an human immunodeficiency virus- infected patient

Tonita Mariola Noronha, Banavasi S. Girisha, Shubha P. Bhat[1], Carol M. Christy, Sripathi Handattu, Michelle S. Fernandes

Departments of Dermatology and [1]Pathology, K. S. Hegde Medical Academy, Deralakatte, Mangalore, Karnataka, India

Address for correspondence:

Dr. Tonita Mariola Noronha, Department of Dermatology, K. S. Hegde Medical Academy, Deralakatte, Mangalore - 575 018, Karnataka, India.

E-mail: tones1980@yahoo.com

Abstract

Cancer is a significant cause of morbidity and mortality in human immunodeficiency virus-infected subjects. Verrucous carcinoma is a peculiarly slow evolving, but relentlessly expanding variant of epidermoid carcinoma that is extremely reluctant to metastasize. A 60-year-old unmarried male patient presented with urethral discharge of 3 weeks duration. Dorsal slit of the prepuce revealed an ulceroproliferative growth measuring 3 cm × 3 cm arising from prepuce and involving glans. Biopsy from the growth in the prepuce showed histopathological features of verrucous carcinoma. Partial amputation of the penis was done. Human papillomavirus DNA by polymerase chain reaction was negative. The patient was started on antiretroviral therapy.

Key words: Human immunodeficiency virus, partial penectomy, verrucous carcinoma

INTRODUCTION

Cancer is a significant cause of morbidity and mortality in human immunodeficiency virus (HIV)-infected subjects.[1] Verrucous carcinoma refers to a clinicopathologic concept implying a locally aggressive, clinically exophytic, low-grade, slow-growing, well-differentiated squamous cell carcinoma (SCC) with minimal metastatic potential.[2] It was first described in 1948 by Lauren V Ackerman in the oral cavity.[3] There are very few cases of verrucous carcinoma of penis in HIV-positive patients reported in the literature. We report a case of verrucous carcinoma of penis in an HIV-positive patient which was treated with partial penectomy.

CASE REPORT

A 60-year-old unmarried male patient presented with complaint of urethral discharge of 3 weeks duration which was yellowish, copious and non-foul smelling. There was no history of burning micturition or fever with chills. He was being treated for multiple pruritic lesions over both upper and lower limbs for 7 months prior to onset of his present complaint. He was an alcoholic and a smoker. He denied history of risk of exposure to sexually transmitted diseases. On local examination there was purulent urethral discharge. Phimosis was present and there was induration of the prepuce. Multiple bilateral inguinal lymph nodes were enlarged, discrete, firm and nontender. The patient was referred to urology where a dorsal slit of the prepuce was done which revealed an ulceroproliferative growth measuring 3 cm × 3 cm arising from prepuce and involving glans [Figure 1]. Carcinoma of penis and condyloma acuminata were considered for differential diagnosis. On investigating, Gram stain

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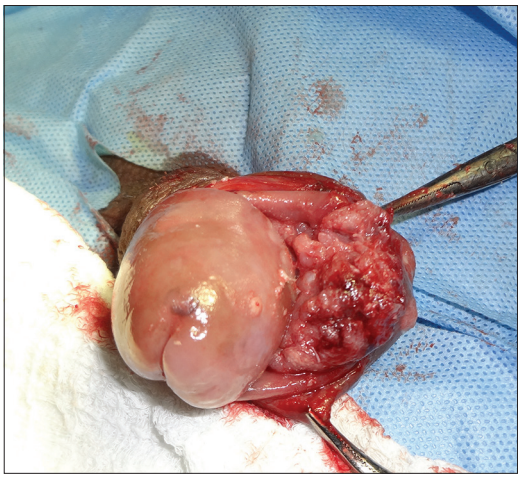

Figure 1: Dorsal slit of the prepuce showing an ulceroproliferative growth arising from prepuce and involving glans

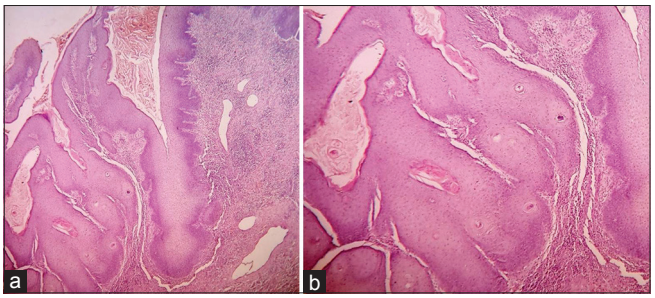

Figure 2: (a) Histopathology of tumor in the prepuce showing dysplastic keratinized stratified squamous epithelium with hyperkeratosis, acanthosis and papillomatosis. Tumor cells are well-differentiated with numerous keratin pearls (H and E, ×100). (b) Higher magnification showing broad tumor base with a pushing border infiltrating the subepithelial stroma (H and E, ×400)

of urethral discharge showed pleomorphic gram negative bacilli. Venereal disease research laboratory was nonreactive and enzyme linked immunosorbent assay for HIV was positive. Absolute $CD4^+$ T helper cell count was 29 cells/mm^3. Biopsy from the growth in the prepuce showed ulcerated dysplastic keratinized stratified squamous epithelium with hyperkeratosis, acanthosis, and papillomatosis. The tumor cells were well differentiated with numerous keratin pearls [Figure 2a]. The base of the tumor was broad and had pushing border infiltrating the subepithelial stroma and showed dense lymphoplasmacytic infiltrate [Figure 2b]. Features were suggestive of verrucous carcinoma of penis (prepuce) infiltrating the subepithelial connective tissue. Fine needle aspiration cytology of the inguinal lymph nodes showed features consistent with reactive lymphadenitis. Partial amputation of penis was done. Corpora cavernosa and spongiosum, urethra and surgical resected margin were free of tumor. Human papillomavirus DNA by polymerase chain reaction test was negative. Patient was started on antiretroviral therapy.

DISCUSSION

SCC of the penis is itself rare and represents 0.3–0.5% of male malignancies in Europe and the United States of America.[3] Verrucous carcinoma is a slow-growing variant of epidermoid carcinoma with low incidence of metastasis.[4] The reported frequency of penile verrucous carcinoma is low and accounts for 3–20% of all penile cancers.[3]

The verrucous carcinoma lesion manifests as a verrucous, exophytic, or endophytic mass that typically develops at sites of chronic irritation and inflammation. It may be locally destructive and can penetrate deeply into the skin, fascia, and even bone.[2] Pai *et al*. reported a case of verrucous carcinoma over the penis presenting as a nail-like cutaneous horn in an immunocompetent patient.[5]

The majority of cancers affecting HIV-infected subjects are those established as acquired immunodeficiency syndrome (AIDS)-defining: Kaposi's sarcoma, non-Hodgkin's lymphoma, and invasive cervical cancer. However, other types of cancer, such as Hodgkin's disease, anal cancer, lung cancer and testicular germ cell tumors appear to be more common among HIV-infected subjects compared to the general population. These malignancies have been referred to as AIDS-associated malignancies. Many HIV-associated malignancies affect sites that are in contact with the outside environment (e.g., cervix, lung, oral cavity, skin, and anus). The increased density of immune cells and coincident elevated concentration of HIV-1 at these sites could lead to local compromised immune defenses and the subsequent development of malignancies at these sites.[1] Risk factors for penile verrucous carcinoma seem to be similar as for penile cancer in general, which are poor hygiene, phimosis and chronic inflammation.[3] There seems to be a striking relationship between lack of circumcision and verrucous carcinoma of the glans penis.[4] Lack of circumcision and poor hygiene along with compromised local immunity could have been the risk factors in our patient.

Guiguet *et al*. investigated the incidence of both AIDS-defining cancers and non-AIDS-defining cancers in 52,278 patients and found that the risk of both AIDS-defining cancers and non-AIDS-defining cancers increased with decreasing CD4 cell counts.[6] Our patient also had low absolute $CD4^+$ T helper cell count (29 cells/mm^3). Absolute lymphocyte count in our patient was 800 cells/mm^3. In a study of the spectrum of mucocutaneous manifestations in HIV-infected patients conducted by Fernandes and

Bhat a case of verrucous carcinoma of penis was noted.[7] CD4 count in this patient was 31 cells/mm^3.

Verrucous carcinoma is generally managed with wide surgical excision and glansectomy for carcinoma limited to the glans, with or without adjunctive chemotherapy, and tissue-sparing options such as Mohs surgery, CO_2 laser surgery, liquid nitrogen cryosurgery for smaller lesions, either alone or in combination with topical 5-FU, and systemic or intralesional interferon-α therapy in combination with surgical shaving. A surgical approach is usually preferred, as it shows excellent treatment outcomes and allows thorough histologic sampling and search for focal SCC.[8]

Théodore *et al*. reported a case of a 37-year-old man who was HIV 1 positive who earlier was treated for condylomatous balanitis and subsequently developed SCC of the glans penis which despite surgical excision metastasized to bilateral inguinal lymph nodes and lungs.[9] Regular follow-up is necessary in all HIV patients treated for penile malignancy.

Our patient was a case of noninvasive verrucous carcinoma (TaN0M0) of penis. Partial penectomy was done. Patient is on regular follow-up with no evidence of local recurrence or inguinal lymph node metastasis 2 years postsurgery. There are very few cases of verrucous carcinoma of penis in HIV-positive patients reported in the literature. Hence this case is being reported.

As the number of HIV-infected patients continues to increase, clinicians may be faced with the management of uncommon malignancies. A high index of suspicion and early biopsy are crucial in the management of penile malignancies.[10] Managing HIV-positive patients with malignancy remains a challenge because of drug interactions, potential effect of chemotherapy on CD4 count and HIV-1 viral load. Moreover, treatment compliance by HIV-infected patients with cancer may be poor, possibly because of the increased responsibility of taking drugs for both diseases with associated increased rate of compounded side effects.[1]

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Conflicts of interest
There are no conflicts of interest.

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