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Highlighting the Importance of Sexually Transmitted Disease Testing Upon Diagnosis of Penile Cancer: A Case Report

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Abstract

There is a well-known association between Human Papillomavirus and Human Immunodeficiency Virus with penile cancer. Yet, it is not the standard of care to screen for either of these sexually transmitted diseases upon diagnosis of primary penile cancer. We present a 50 year old male who had a confirmed diagnosis of penile cancer for 2 years prior to his presentation to our clinic in Dakar, Senegal. Outside institutions repeatedly failed to screen the patient for sexually transmitted diseases, namely HPV and HIV. We share this case to emphasize the importance of sexually transmitted disease screening upon diagnosis of penile cancer with hopes to increase awareness in both developed and developing nations. We call for consensus in sexually transmitted disease screening guidelines upon penile cancer diagnoses.

Keywords: Penile cancer; HPV; HIV; STD screening

Introduction

Primary penile cancer is a rare malignant overgrowth of cells, typically located on the glans or the internal prepuce of the penis. It has a worldwide incidence of 1/100,000 and most commonly affects males between the ages of 50 years to 70 years. Delayed diagnosis often yields significant morbidity and mortality [1,2]. While penile cancer is uncommon in Europe and North America, the developing world has much higher rates of incidence up to 8 cases per 100,000 in some countries [3]. Variations in incidence worldwide are hypothesized to be affected by socioeconomic status, healthcare accessibility, cultural tradition, and psychological factors of the patient populations [1,4].

Over 95% of penile carcinomas are Squamous Cell in Carcinoma (SCC) [1]. Additionally, there are a wide variety of other histological variants, such as basaloid, verrucous, and sarcomatoid [3]. The majority of lesions are found on the glans (48%), with the remainder located on the prepuce (21%), both glans and prepuce (15%), coronal sulcus (6%), and shaft (<2%) [4]. Diagnosis is often clinical, though clinical presentation is variable and commonly asymptomatic initially. Lesions can present as indurated nodules, ulcers, or funnelling masses. With progression, symptoms such as itching, bleeding, discharge, or pain may occur. Advanced disease can present with palpable lymphadenopathy, weight loss and fatigue [5].

Certain biological pathologies have been tied to increased incidence. Poor hygiene, uncircumcised males, urethral stricture, tobacco use, and even psoralen ultraviolet A photochemotherapy have all been associated with increased penile cancer incidence in prior studies [6]. Chronic inflammation may also be a critical component of tumor development, as many penile cancers arise from sites of infection, chronic irritation or injury [1]. Further, penile cancer is best known to have a strong association with carcinogenic strains of Human Papillomavirus (HPV). For example, HPV infection is found in 45% to 80% [5] of penile SCC cases. This association is even higher in other histological types such as verrucous, basaloid and sarcomatoid [7]. The most commonly accepted explanation for the association is HPV’s ability to produce the oncogenic proteins E6 and E7, which interfere with the p53 and Retinoblastoma tumor suppressor genes, respectively [8]. This carcinogenic mechanism is especially important in populations with high HPV infection rates, such as Sub-Saharan Africa. HPV incidence was found to be around 61% of the male population in Sub-Saharan Africa in 2012 [13]. Human Immunodeficiency Virus (HIV) may also play a role in SCC pathogenesis. Though a
causal link between immunosuppression and penile oncogenesis has not yet been made, men who are HIV+ carry up to an 8X greater risk of penile SCC [5,9].

Despite HPV and HIV’s well known association with penile cancer, there is a serious lack of attention to the preventive health component of this condition. For example, the European Urological Association’s (EUA) guidelines for penile cancer address diagnostic standards, staging, and possible treatment avenues that individual cases may necessitate. However, there is little acknowledgement of the public health risks that penile cancer may pose with an underlying HPV and HIV infection. Additionally, there seems to be no recommendation for penile cancer management specifically in developing nations, including Sub-Saharan Africa, which may have unique socioeconomic roadblocks. Consequently, this case report aims to emphasize the critical importance of screening for HIV/HPV upon a diagnosis of penile cancer, such that it should be included in official penile cancer guidelines. Prompt evaluation of a patient’s STD status can not only decrease morbidity and mortality for the patient, but also provide preventative measures against future HPV-related cancers, as well as HIV complications in the community.

Case Presentation

We present a 50 year-old Senegalese male with a history of recurrent urethritis, who presented to our clinic for an evolving ulcerative swelling on his penis for the past 2 years. The patient’s medical history is limited secondary to lack of documentation and resources from outside institutions. The patient had presented to several local clinics before the diagnosis of penile cancer was made; those records were unable to be obtained. The patient received 12 chemotherapy sessions before being referred to our clinic. Of note, the patient was polygamous with 2 wives, though became divorced since the beginning of the disease. He did not report having unprotected intercourse with other women.

CT scans demonstrated local invasion of the cancer into the subcutaneous fat overlying the pubic symphysis. Lymph node metastases with left inguinal necrotic lymphadenopathy of 5 cm were also present. Furthermore, there were bilateral, multiple lung nodules of different sizes, mostly predominant on the left side.

The patient never received an STD screening since his diagnosis. We performed an HIV and HPV test that came back positive for HIV2, previously unknown to the patient. The results also came back HPV (+) for serotype 16. As of May 2020, the patient is currently alive and being treated accordingly.

Discussion

There are no written recommendations for STD screening in patients diagnosed with penile cancer despite overwhelming evidence that there is some association between HIV, HPV and penile cancer [10,11]. Evidenced by our patient remaining undiagnosed with HIV2 after initial presentation 2 years ago, delay in STD diagnosis can have dire consequences. An earlier diagnosis for our patient may have prevented the eventual progression of his penile cancer and further metastatic disease.

We hypothesize that early diagnosis of HPV and HIV infections in patients can have a marked benefit for public health as well. With earlier identification and Highly Active Anti-Retroviral Therapy (HAART), HIV transmission will likely decrease. A case report written by Konan et al. acknowledges a link between HIV and penile cancer and suggests that a diagnosis of HIV may worsen the prognosis of the disease. Additionally, Konan recommends screening HIV+ patients for penile cancer so that tumors can be discovered in earlier stages. Patients would therefore be more likely to be treated conservatively. As for HPV, there is evidence to suggest that good clinical suspicion to screen for the virus in sexually active patients may reduce the risk of subsequent oropharyngeal cancers in the public [12,13]. Hence, it may be extrapolated that early diagnosis of these viruses may prevent their transmission and subsequent complications in the community.

Despite the plethora of information on the internet, there is still not enough consistent information to educate developing nations on the infectious disease management of penile cancer. For example, the EUA never recommends screening for HPV/HIV in penile cancer patients and the American Urologic Association has no specific guidelines for penile cancer whatsoever. Consequently, Teh et al. [2] was right to describe finding consistent information on penile cancer as a “needle in the haystack”. Additionally, they state that there seems to be a discrepancy in the quality of websites in differing languages, with significantly lesser quality available in the developing world. With all of the inconsistencies in literature, the severity of our patient’s case could have been prevented by access to clear, concise STD recommendations.

Necessarily, we call for specific, evidenced-based recommendations for STD testing for penile cancer diagnosis. A clear consensus would address the discrepancies and current confusion across resources. For our future patients and the entire medical community, we seek more thorough guidelines in regards to testing for HIV and HPV upon a diagnosis of penile cancer.

Conclusion

The association between penile cancer, HPV, and HIV has been well established. However, in the developing world, it is not always common practice to properly screen for STDs upon a diagnosis of
penile cancer. Prompt screening of these patients can lead to earlier treatment, better outcomes, increased public health awareness, and potential for more cost effective care. Thus, screening for sexually transmitted diseases should be the standard of care in anyone diagnosed with penile cancer.

References


