

Buschke Lowenstein tumor in Human Immunodeficiency Virus Patients: A Case Series

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Abstract:

Giant Condyloma Acuminatum (GCA) also recognized as Buschke-Loewenstein Tumor (BLT) is an uncommon condition with an estimated occurrence of 0.1%. It was first described by Buschke in 1896, and then by Buschke and Loewenstein in 1925. GCA has a greater risk of malignant development compared to CCA and has a tendency to infiltrate surrounding soft tissues. It is linked to several risk factors, including immunodeficiencies, multiple sexual partners, poor hygiene, and persistent genital infections in addition to HPV infection. Ninety percent of GCA are correlated with HPV subtypes 6 and 11. It should be considered a differential diagnosis with numerous illnesses as it presents as a cauliflower-like tumor in the genital region with malodour, bleeding, and local infection.

Keywords: Giant condyloma acuminatum, Buschke-Loewenstein tumor (BLT), HPV, sexually transmitted diseases(STD), Antiretroviral therapy (ART), HIV.

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Introduction

The BLT is a large condyloma acuminata that exhibits recurrence following treatment and the potential for degeneration and invasion [1,2]. The HPV (Human Papilloma Virus), which is primarily spread through sexual contact, is linked to it. This mode of transmission accounts for its frequent correlation with STDs, particularly HIV, which supports the need for routine screening [3,4].

HIV infection modifies tissue and local immunity, especially in relation to HPV types 6 & 11, and raises the likelihood of unfavourable development of HPV lesions [5,6]. It also raises the probability of HPV transmission, resulting in large lesions, and encouraging degeneration to dysplasia and malignancy.

Methods

A series of cases attending DVL OPD in a period of one year from Jan 2023 to Dec 2024 with Buschke-Loewenstein Tumors were reported here.

A. Clinical case 1

A 39-year-old male patient on Antiretroviral therapy (HAART) for the last 5 years presented with large

exophytic cauliflower-like growth on the left side of the scrotum for 1 year without any symptoms.



B. Clinical case 2

A 45-year-old woman presented with papillary lesions in the peri-vulvar region, which progressively become more numerous extending to the perianal region since 3yrs. Examination revealed an extensive cauliflower-like mass with irregular borders. Investigations revealed HIV positive serology and HAART was initiated.



C. Clinical case 3

A 38-year-old woman who has been on Antiretroviral therapy (HAART) for 15yrs reported a large multi-lobulated, painless, and odorous lesion on the vulvar region for the past 5 years. Examination showed a 10 × 15 cm lobulated lesion & undersurface showed bloody purulent discharge.



D. Clinical case 4

A 30-year-old woman presented with a fungating growth of the vulva of 5 months duration without any symptoms and she has been on Antiretroviral therapy (HAART) since 6yrs.



E. Clinical case 5

A 42-year-old male presented with growth that started 2 years ago as multiple small warty lesions located in the penoscrotal region and gradually raised in size and some coalesced. He was recently diagnosed with HIV and he was initiated on Antiretroviral therapy (HAART).



Discussion

We report a case series of Buschke-Loewensteintumors with coinfection with HIV which may explain the tumours' widespread lesions. BLT is a sexually transmitted disease that is self-inoculable and caused by the DNA virus and HPV. These are benign tumors on histological examination, but they exhibit malignant clinical characteristics and a strong tendency toward local recurrence and malignant degeneration. It is considered to be a stage in between squamous cell carcinoma and condyloma acuminata, and it might be a variation of verrucous carcinoma.

The genital and perianal areas are the most often affected areas. It grows both endophytically and exophytically, with a predilection for inter-papillary fistulation.

Sometimes HPV 6 and 11 infections go untreated and develop into BLT when there are other diseases such as diabetes, cancer, post-transplantation, pregnancy, and HIV infection. DNA that corresponds to 6 and 11 HPV subtypes has been often found in typical cauliflower-like lesions. This suggests that the virus subtypes play a pathogenic role in the evolution of the tumor.

A good biopsy needs to be deep and wide enough to precisely assess the extent of the tumor's infiltration and the possible existence of squamous cell carcinoma. Because co-infection with HPV and other sexually transmitted illnesses is common and can affect the disease, so screening should be done for HIV and other STDS. Co-infection with HIV and HPV alters tissue and local immunity, which promotes the development of dysplasia and "malignancy" [7].

Dendritic cells are Antigen-Presenting Cells (LCs: Langerhans cells) that are stimulated by HPV infection. They exit the mucosa by lymph drainage by stimulating lymphocytes, which return to the infected epithelial cells once activated. HIV infection" modifies these LCs, which describes the HIV-positive individuals having excessive HPV activity. HIV increases HPV transcription and HPV E7 upregulation, which raises the amount of HPV DNA in tissues that are infected [9]. Lesions in

coinfecting patients are more widespread and worse when the CD4 level is below 200/mm³.

Persistence, recurrence, and worsening of lesions are common occurrences in coinfecting lesions. The coinfecting population appears to typically have numerous infections caused by various phenotypes and primarily by high-risk oncogenic viruses such as HPV 16 and HPV 18 [7]. BLT has a reduced potential for metastatic spread, despite its local aggressiveness.

Usually, a clinical diagnosis is made. The type of HPV infection has to be confirmed by using the Polymerase Chain Reaction for HPV DNA. The purpose of imaging modalities like CT or MRI is to help determine the depth and scope of the invasion. Additionally, it could be used to identify any involvement of key components, like the anal sphincter, particularly in perianal GCA. Verrucous carcinoma is the differential diagnosis for GCA, and some writers argue that the two conditions are part of a continuous spectrum [5]. But whereas anogenital verrucous cancer does not carry HPV, GCA does. The presence of koilocytes on histological examination is a crucial characteristic that separates GCA from verrucous carcinoma.

When treating GCA, a variety of therapies are available, including surgery (local excision or amputation of the anus and rectum), electrocautery, laser, cryotherapy, chemotherapy, radiation, interferon, immunotherapy, and topical medications (5-fluorouracil, ATA, podophyllin). The number of lesions, their size, the level of infiltration, whether the rectum or anal canal is involved, and whether or not malignant transformation is present will all influence the decision [8].

Conclusion

Giant condyloma acuminata, often known as the Buschke-Löwenstein tumor, is a rare tumor associated with HPV infection that is primarily spread through sexual activity. It raises the possibility of immunosuppressive conditions and sexually transmitted infections. HIV-infected individuals have a greater risk of HPV-related anogenital disease with florid manifestation, incidence on unusual anatomical sites, risk of malignant transformation, the tendency to recur, and associated with another human papillomavirus (HPV) type spectrum other than 6 & 11.

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