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Non-Surgical Management of Giant Condyloma Acuminatum (Buschke-Löwenstein Tumor) in a Hepatitis B Positive Patient: A Comprehensive Case Report and Clinical Review

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Abstract:

Buschke-Löwenstein tumor (BLT), or giant condyloma acuminatum, is a rare, locally aggressive, but histologically benign fibroepithelial tumor caused by the human papillomavirus (HPV) [1]. While surgical excision remains the gold standard, it can be invasive and carries risks of recurrence. We present the case of a 28-year-old unmarried female with an extensive anogenital BLT and a history of Hepatitis B. Due to the patient's young age, unmarried status, and significant cosmetic concerns, a non-surgical approach was preferred. She was treated with a combination of weekly topical 20% podophyllin and oral isotretinoin. Complete clinical clearance was achieved over six months.

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Introduction

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First documented in 1925 by Abraham Buschke and Ludwig Löwenstein, the Buschke-Löwenstein Tumor (BLT) remains a significant clinical challenge [1]. Often referred to as giant condyloma acuminatum (GCA), this rare condition affects roughly 0.1% of the population [1, 2]. It is generally considered an intermediate phase between a standard genital wart and squamous cell carcinoma [1, 2, 6].

While typically linked to low-risk HPV types 6 and 11, high-risk strains like HPV 16 and 18 can also drive the disease. These high-risk types utilize viral oncoproteins E6 and E7 to disable the host's p53 and Rb tumor suppressors, which triggers malignant transformation [1, 5]. Despite being histopathologically benign, these tumors are notoriously aggressive, frequently growing beyond 10 cm and destroying surrounding tissue. They expand both outward and inward, creating a distinct "cauliflower-like" appearance often riddled with deep, complex fistulas [3].

The stakes in managing these lesions are high, as malignant transformation occurs in up to 56% of cases, and the tumors recur post-surgically in approximately 66% of instances [1]. Statistically, the disease is three times more prevalent in men, particularly those under the age of 50 [1, 2].

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Factors such as a weakened immune system, smoking, obesity, and early age of sexual activity are all known to increase the risk of developing GCA [2].

Case Report

A 28-year-old female presented to the dermatology department with a large, progressively enlarging mass in the anogenital region. The patient reported that the growth had first appeared approximately one year prior, initially manifesting as small, discrete papules on the mons pubis. Over the course of twelve months, these lesions coalesced and expanded rapidly, extending inferiorly to involve the bilateral labia majora and minora, and subsequently progressing posteriorly to encompass the perianal area.

She had a history of chronic Hepatitis B infection, for which she had been under active medical treatment for the previous six months. She was a thin-built individual, weighing 40 kg, unmarried, and nulliparous with a history of sexual contact with an unknown partner. The patient complained of persistent itching, localized pain, and mild mechanical difficulty during urination; however, she denied any overt urinary retention or dysuria. There were no difficulties in defecation despite the perianal involvement. She had no history of spontaneous bleeding, purulent discharge, or ulceration within the tumor mass, which are sometimes clinical indicators of malignant transformation into squamous cell carcinoma.

On local examination, a massive, cauliflower-like, verrucous, and exophytic growth occupying the entire vulvar and perianal region, measuring approximately 15 cm in size, was observed. It was non-tender upon palpation **(Figure 1)**. The rectal mucosa appeared uninvolved upon digital examination. There was no evidence of inguinal lymphadenopathy.

On investigation, all routine blood and urine tests were within normal limits. Serology was positive for HBsAg, while HIV and HCV were negative. A Pap smear was also negative. Biopsy findings revealed hyperplastic squamous epithelial cells with hyperkeratosis, parakeratosis, papillomatosis, and koilocytic atypia, strongly suggesting a diagnosis of BLT **(Figures 4 and 5)**.

The treatment plan was formulated to prioritize a non-invasive approach, as the patient was young and unmarried, making cosmetic concerns a high priority. Topical 20% podophyllin solution in compound tincture of benzoin was applied precisely to the lesions once weekly. Following each application, the solution was allowed to dry and was washed off by the patient after four hours. Concurrent with the topical therapy, oral isotretinoin (20 mg OD) was initiated and continued for six months. Significant regression was observed at three months **(Figure 2)**, with complete clinical clearance achieved by the end of the six-month course **(Figure 3)**.

Discussion

Diagnosis of BLT is largely established based on clinical examination. Polymerase chain reaction (PCR) testing for HPV DNA may be employed to identify and confirm the HPV subtype. Imaging studies such as CT scans and magnetic resonance imaging (MRI) are useful in evaluating the degree, depth, and local spread of the lesion. In the present case, preoperative radiological assessment was not undertaken, as there were no clinical indicators suggestive of pelvic extension or anal sphincter infiltration [2, 8].

Surgical removal remains a key component in the management of GCA. However, significant postoperative morbidity and mortality may result from factors such as delayed wound healing, contamination of the surgical area by fecal matter, and large-scale soft tissue excision [6, 7]. In this case, the patient's young age and unmarried status led us to explore less invasive options to avoid surgical scarring and potential anatomical distortion.

The combination of podophyllin and isotretinoin proved highly effective. Podophyllin works by binding to the microtubules of infected cells, disrupting the mitotic process, and causing epithelial cell death. While podophyllin is sometimes less effective for massive lesions

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when used alone, the addition of isotretinoin likely provided a synergistic effect. Systemic retinoids like isotretinoin modulate epithelial differentiation and proliferation while potentially inducing apoptosis in HPV-infected cells.

The primary limitation of this non-surgical approach was the requirement for multiple clinic visits and a prolonged treatment duration. Nonetheless, the successful outcome bypasses the need for the "blade," providing a safer and more convenient alternative for select patients.

Other modalities described in the literature include:

Laser surgery: A carbon dioxide (CO_2) laser is utilized to ablate the lesion, enabling accurate excision with minimal damage to the surrounding normal tissue.

Mohs micrographic surgery: This approach is considered for extensive or aggressive lesions, particularly those with deep tissue involvement or cases where complicated reconstructive procedures may be necessary [4, 9].

Medical management: This includes topical chemotherapeutic agents such as 5-fluorouracil or imiquimod, as well as the intralesional administration of bleomycin or interferon [4, 10].

Conclusion

BLT is a benign tumor that has a propensity to undergo malignant transformation, making early detection and treatment crucial. This case highlights that conservative, non-surgical approaches using topical podophyllin and oral isotretinoin can be highly successful, even in massive lesions, thereby preserving genital anatomy and addressing cosmetic concerns. Furthermore, societal awareness regarding healthy sexual practices and hygiene remains an important preventive measure.

Conflicts of Interest: No conflicts to disclose

Patient Consent: The authors obtained written consent from the patient for their photographs and medical information to be published in print and online, with the understanding that this information may be publicly available. Patient consent forms were not provided to the journal but are retained by the authors.

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Figure Legends

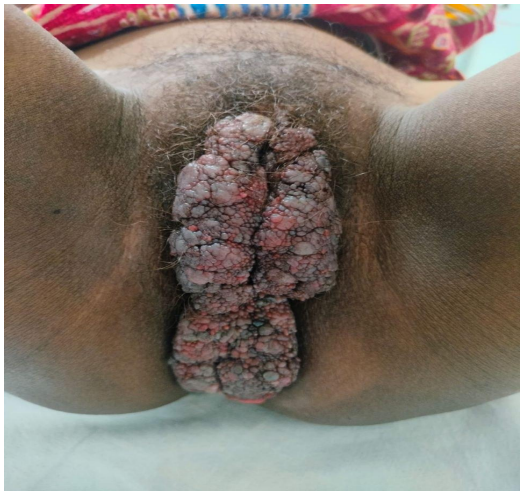

Figure 1. Clinical presentation of a massive, cauliflower-like exophytic growth typical of Buschke-Löwenstein tumor in the anogenital region.

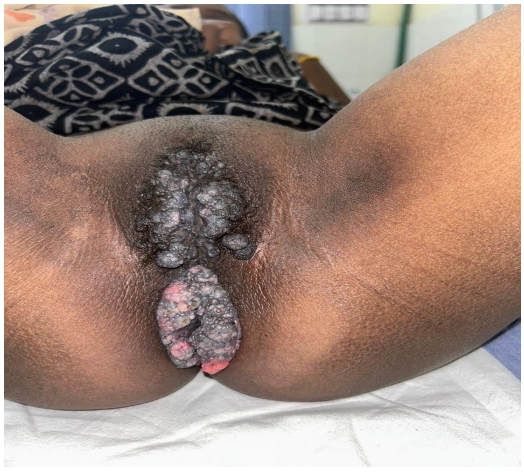

Figure 2. Clinical appearance after 3 months of treatment with topical podophyllin and oral isotretinoin, showing significant regression.

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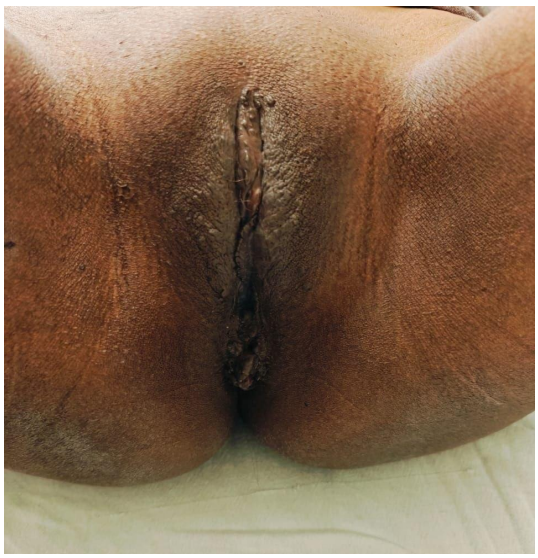

Figure 3. Complete clinical clearance achieved after 6 months of treatment.

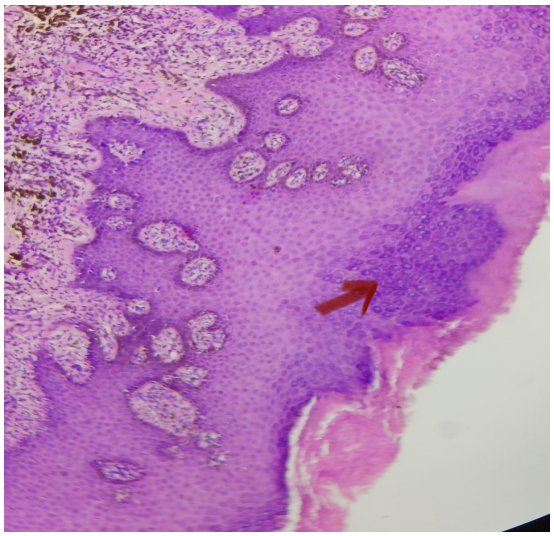

Figure 4. Histopathology (10x magnification) showing massive acanthosis and papillomatosis, with red arrows indicating multiple koilocytic changes and an intact basement membrane.

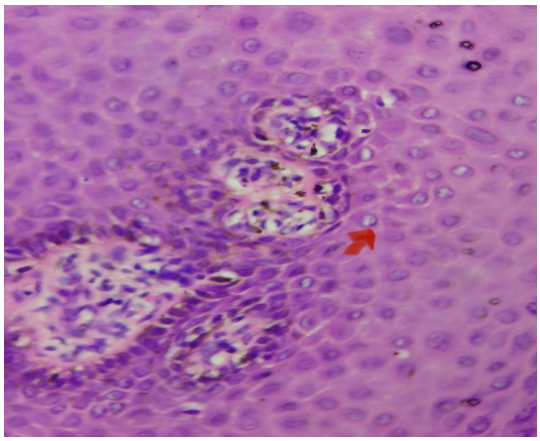

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Figure 5. Histopathology (40x magnification) detailing classical koilocytic atypia (red arrow).