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Anoperineal Buschke–Löwenstein Tumor: A Rare Case Report and Review of the Literature

Ayoub MAMAD[1*], Youssef MAACHI[1], Mohammed Amine ZAKI[1], Mohammed Amine ELAFARI[1], Pr Amine SLAOUI[1], Pr Tarik KARMOUNI[1], Pr Abdelatif KOUTANI[1], Pr. Khalid ELKHADER[1]

[1]Urology B Department, Ibn Sina Hospital, University Hospital Center IBN SINA, University Mohammed V, Rabat, Morocco

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***Corresponding author:** Ayoub MAMAD
Urology B Department, Ibn Sina Hospital, University Hospital Center IBN SINA, University Mohammed V, Rabat, Morocco

Abstract **Case Report**

Buschke–Löwenstein tumor [BLT], also known as giant condyloma acuminatum, is a rare sexually transmitted lesion associated with human papillomavirus [HPV] infection, most commonly low-risk genotypes 6 and 11. Although histologically benign, it is characterized by locally aggressive behavior, a high risk of recurrence, and possible malignant transformation into squamous cell carcinoma. We report the case of a 48-year-old man with chronic hepatitis C on direct-acting antiviral therapy, who presented with a slowly enlarging anoperineal mass evolving over two years. Clinical examination revealed a large exophytic verrucous cauliflower-like lesion measuring 9 × 7 cm, extending to the anal margin, associated with chronic maceration, malodorous discharge, and minimal contact bleeding. No inguinal lymphadenopathy or obvious anal canal involvement was noted on examination. The clinical presentation was highly suggestive of Buschke–Löwenstein tumor. Through this case, we highlight the clinicopathological features, diagnostic challenges, therapeutic principles, and prognostic implications of this uncommon entity.

Keywords: Buschke–Löwenstein tumor; giant condyloma acuminatum; anoperineal lesion; HPV; verrucous carcinoma.

INTRODUCTION

Buschke–Löwenstein tumor [BLT], also known as giant condyloma acuminatum, is a rare sexually transmitted anogenital lesion associated mainly with human papillomavirus infection, particularly types 6 and 11 [1–3]. Although histologically benign, it is characterized by slow growth, marked local aggressiveness, a high risk of recurrence, and possible malignant transformation into squamous cell carcinoma [4,5,8,9]. Because of its rarity and therapeutic challenges, early recognition and appropriate management are essential. We report a case of an extensive anoperineal BLT in a 48-year-old man.

CASE REPORT

A 48-year-old man was followed for chronic hepatitis C and was receiving direct-acting antiviral therapy with good treatment adherence. He was a chronic smoker with an estimated consumption of 20 pack-years. He had no history of diabetes mellitus, known immunodeficiency, or immunosuppressive therapy.

The patient consulted for an anogenital lesion that had been progressively increasing in size over approximately two years. According to the clinical history, the lesion initially appeared as a small perineal growth and gradually enlarged over time. Its progression was associated with local functional discomfort, chronic maceration, foul-smelling discharge, and minimal contact bleeding. He reported no significant pain, no bowel habit disturbances, and no constitutional symptoms such as fever, weight loss, or general deterioration.

Physical examination revealed extensive multifocal papillomatous and verrucous lesions involving the anogenital region. The lesions affected the suprapubic area, bilateral inguinal folds, penoscrotal region, perineum, anal margin, and medial aspects of the upper thighs. In the perineal-anogenital region, the lesions formed a bulky exophytic multilobulated cauliflower-like mass, with an irregular papillomatous surface and areas of maceration, superficial erosion, and fissuring. The lesions were firm and non-tender on palpation. No obvious clinical signs of deep tissue infiltration were noted. Proctologic examination,

although limited by the tumor bulk, did not reveal any palpable endoanal mass. No inguinal lymphadenopathy was present. The remainder of the physical examination was unremarkable.

Based on the clinical findings, the leading diagnostic hypothesis was Buschke–Löwenstein tumor, given the extensive, multifocal, cauliflower-like verrucous involvement of the anogenital region; however, histopathological confirmation was not available.

The patient underwent surgical excision of the lesions, followed by reconstructive coverage using bilateral skin flaps harvested from the medial aspects of both thighs, performed in collaboration with the plastic surgery team. [Figure 2]. Histopathological examination confirmed giant condyloma acuminatum [Buschke–Löwenstein tumor], without evidence of dysplasia or malignancy.

The postoperative course was uneventful, and the patient was discharged on postoperative day 2. At 15-day follow-up, the clinical outcome was favorable.

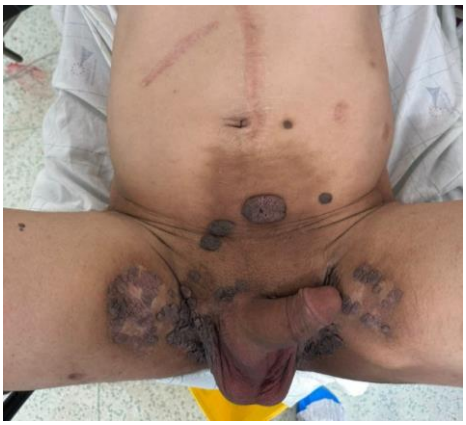

Figure 1: Extensive multifocal verrucous and papillomatous anogenital lesions involving the suprapubic region, inguinal folds, penoscrotal area, perineum, anal margin, and medial upper thighs, with coalescence into a bulky cauliflower-like perineal mass

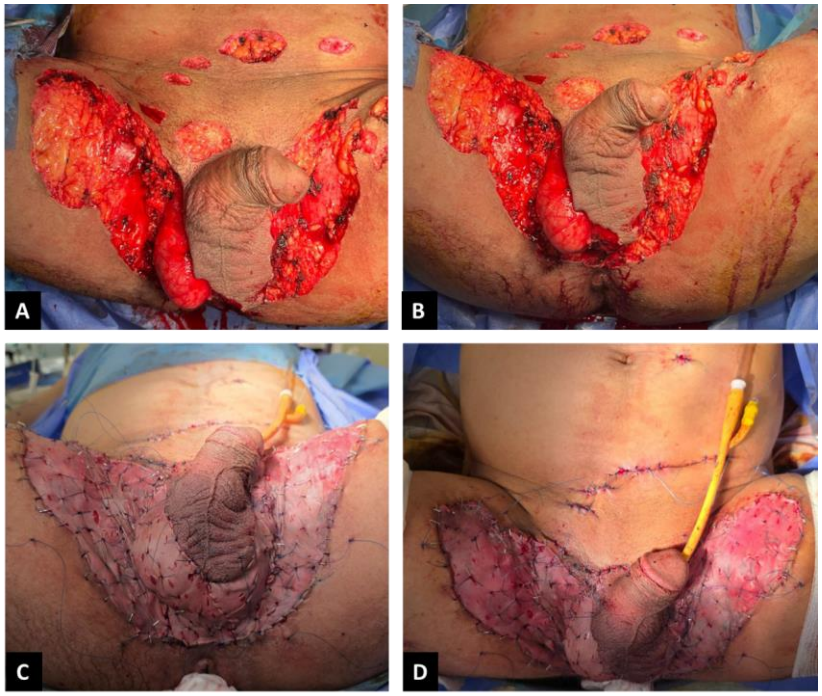

Figure 2: Surgical management of extensive anogenital verrucous lesions: [A, B] post-excisional defect after wide resection; [C, D] reconstruction using bilateral medial thigh flaps

DISCUSSION

Buschke–Löwenstein tumor [BLT], also known as giant condyloma acuminatum, is a rare HPV-related anogenital lesion characterized by slow growth, marked local aggressiveness, and a substantial risk of recurrence and malignant transformation [1–5]. Although it shares several histological features with condyloma acuminatum, BLT differs by its massive exophytic

development, locally destructive behavior, and potential progression to squamous cell carcinoma [4,5,8,9]. This apparent contradiction between benign histological architecture and aggressive clinical evolution makes BLT a distinctive clinicopathological entity.

The pathogenesis of BLT is closely linked to human papillomavirus infection, particularly low-risk genotypes 6 and 11, although oncogenic types such as 16 and 18 have also been implicated in some cases, especially when dysplastic or malignant changes are present [2,3]. Several contributing factors have been associated with its development and progression, including poor local hygiene, chronic irritation, immunosuppression, HIV infection, and delayed treatment of pre-existing condylomatous lesions [6,8]. In the present case, although no immunodeficiency was identified, chronic smoking and delayed consultation may have favored the progressive extension of the disease.

Clinically, BLT usually presents as a large papillomatous, verrucous, cauliflower-like mass involving the genital, perineal, perianal, or anorectal region [6–8]. The lesion is often malodorous and may be complicated by chronic maceration, superficial ulceration, bleeding, secondary infection, and progressive local destruction [7,8]. In advanced cases, extension to adjacent tissues may result in necrosis or fistulization. Our patient showed a typical presentation, with extensive multifocal verrucous lesions involving the suprapubic, inguinal, penoscrotal, perineal, and perianal regions, associated with maceration, foul-smelling discharge, and contact bleeding.

Histopathological examination is essential for confirming the diagnosis and excluding invasive carcinoma. Microscopically, Buschke–Löwenstein tumor is characterized by papillomatosis, acanthosis, hyperkeratosis, koilocytosis, and broad epithelial proliferation, usually with minimal atypia and preservation of the basement membrane [2,5]. In our case, histopathological analysis of the excised specimen showed papillomatous and acanthotic epidermal proliferation covered by parakeratotic keratin, with numerous koilocytes and binucleated cells, consistent with giant condyloma acuminatum. No evidence of dysplasia or malignant transformation was identified. These findings support the diagnosis of Buschke–Löwenstein tumor and highlight the importance of adequate histological evaluation, given the reported risk of malignant transformation in a significant proportion of cases [4,5,9].

Surgical excision remains the treatment of choice for BLT and should be as complete as possible to minimize the risk of local recurrence [7,8]. The extent of surgery depends on lesion size, anatomical involvement, and suspicion of malignant degeneration. In extensive lesions, excision may result in major soft-tissue defects requiring reconstructive procedures. In the present case, wide surgical excision was followed by reconstruction using bilateral medial thigh skin flaps in collaboration with the plastic surgery team. This approach allowed adequate defect coverage with a favorable early postoperative outcome. The patient was discharged on postoperative day 2, and follow-up at 15 days showed a favorable clinical evolution.

Alternative treatments including topical agents, cryotherapy, laser ablation, chemotherapy, and radiotherapy have been described, but their efficacy remains inconsistent, and none has replaced surgery as the standard management strategy [8,9]. Radiotherapy in particular remains controversial because of the potential risk of anaplastic transformation [9]. Therefore, surgery, whenever feasible, remains the most reliable therapeutic option.

The prognosis of BLT is mainly determined by the completeness of excision, the occurrence of local recurrence, and the presence or absence of malignant transformation. Even in the absence of histological malignancy, prolonged follow-up is recommended because recurrence may occur after apparently adequate treatment [4,7–9]. This case highlights the typical clinical and histopathological features of BLT and emphasizes the importance of early recognition, histological confirmation, complete surgical management, and close surveillance.

CONCLUSION

Buschke–Löwenstein tumor is a rare HPV-related anogenital lesion with a deceptively benign histological appearance but potentially aggressive local behavior. Its diagnosis relies on clinical suspicion and histopathological confirmation with sufficiently deep biopsy specimens to exclude invasive carcinoma. Complete surgical excision remains the treatment of choice because of the high risk of recurrence and the possibility of malignant transformation. Early diagnosis and long-term follow-up are essential to improve prognosis. This case highlights the importance of recognizing giant condylomatous lesions of the anoperineal region as potentially serious tumors requiring prompt and multidisciplinary management.

DECLARATION

Ethics approval and consent to participate: Ethical approval is not applicable. The case report does not contain any personal information.

Consent for publication: Written informed consent for publication of the clinical details and images was obtained from the patient.

Declaration of interests: The authors declare that they have no known competing financial interests or personal

relationships that could have appeared to influence the work reported in this paper.

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