

## Rare Vulvar Presentation of a Giant Condyloma Acuminatum (Buschke-Löwenstein Tumor): A Diagnostic and Therapeutic Challenge

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### ABSTRACT

**Introduction:** The Buschke-Löwenstein tumor, also known as giant condyloma acuminatum, is a rare sexually transmitted lesion associated with human papillomavirus (HPV), most commonly types 6 and 11. It is characterized by a slow but aggressive local growth that can cause significant tissue destruction while maintaining a benign histological appearance. Due to its rarity and resemblance to malignant lesions, the diagnosis and management of this entity represent a clinical and therapeutic challenge. Early recognition and appropriate treatment are essential to prevent recurrence and malignant transformation.

**Clinical Case:** We present the case of a 63-year-old woman with a history of diabetes and hypertension, who presented with multiple exophytic lesions in the vulvar and perineal regions. Clinical examination revealed a cauliflower-like mass approximately 10 cm in diameter involving the labia majora, clitoris, and perineum. Histopathological biopsy confirmed the diagnosis of Buschke-Löwenstein tumor (giant condyloma acuminatum). The patient underwent surgical management with electrofulguration under regional anesthesia, achieving complete ablation of the lesion and satisfactory hemostasis. Postoperative recovery was uneventful, and follow-up at six months showed adequate healing without recurrence.

**Discussion:** Female presentation of BLT, such as in this case, is exceedingly rare, with vulvar involvement reported only in isolated cases. The clinical course and histopathological findings were consistent with literature descriptions of locally invasive but non-metastatic behavior. Early biopsy and histopathological confirmation are crucial for distinguishing BLT from squamous cell carcinoma and other verrucous lesions. Among treatment options, electrofulguration represents an effective and safe approach for extensive vulvar disease, providing local control with minimal morbidity.

**Conclusion:** This case highlights the importance of considering BLT in the differential diagnosis of large exophytic vulvar lesions. Early diagnosis and prompt surgical intervention are key to preventing recurrence and malignant transformation. Awareness of this rare presentation among gynecologists can improve clinical recognition and optimize multidisciplinary management of HPV-related anogenital disease.

**KEYWORDS:** Giant condyloma acuminatum, Vulvar neoplasms, Human papillomavirus (HPV), Buschke-Löwenstein tumor.

### ARTICLE DETAILS

**Published On:**  
**25 November 2025**

**Available on:**  
<https://ijmscrs.com/>

## INTRODUCTION

The Buschke-Löwenstein tumor (BLT), also known as giant condyloma acuminatum, is a rare exophytic neoplasm caused by the human papillomavirus (HPV), predominantly types 6 and 11, which account for approximately 90% of cases (1,2). It represents an uncommon condition, with an estimated prevalence of 0.1% in the general population (3). Despite its histologically benign nature, BLT exhibits locally aggressive behavior, characterized by a high rate of recurrence and a significant risk of malignant transformation (4). Several studies have reported malignant transformation in up to 56% of cases and an overall mortality rate between 20% and 30%, emphasizing the importance of early diagnosis and timely management (1,4).

It is primarily located in the anogenital region, with the penis being the most frequently affected site, particularly the glans, prepuce, and coronal sulcus. The perianal region represents another common location, frequently reported in several case series (5). Additionally, involvement of the scrotum and perineum has been documented, often resulting from the progressive extension of the lesion (6).

In women, the most frequently reported sites include the vulva, vagina, and anal region, affecting both the anal margin and the perianal skin (7). The typical growth pattern begins as a small keratotic lesion, usually on the prepuce or coronal sulcus, which slowly evolves over the years into an exophytic, verrucous, or cauliflower-like mass, often reaching sizes of 10 to 15 cm (8). In some cases, the tumor exhibits a circumferential growth pattern, extensively involving the entire anogenital area (9).

The differential diagnosis of Buschke-Löwenstein tumor (BLT) includes several benign and malignant entities that can mimic its clinical and histological presentation. Common condyloma acuminatum should always be considered, as well as cutaneous squamous cell carcinoma and its variants, including papillary, verrucous, and cuniculatum subtypes. Other conditions that may resemble BLT include primary rectal adenocarcinoma, bowenoid papulosis, and lymphangiomas (8). Colposcopy has limited value in distinguishing BLT from these entities, making histopathological biopsy the gold standard for diagnosis.

In cervical lesions, cytology can enhance diagnostic accuracy, increasing sensitivity from 51.1% to 63.7% and specificity from 63.5% to 76.6% (10). When combined with histopathology, the correlation rate reaches up to 90.9% (11). Therefore, histopathological confirmation remains essential for establishing the diagnosis of BLT (6), and HPV testing—particularly for types 6, 11, or high-risk strains—plays a critical complementary role (7).

Surgical resection remains the most widely reported and accepted standard approach for the management of Buschke-Löwenstein tumor (BLT) (12). Several treatment modalities

have been explored, including topical, systemic, and ablative therapies.

Topical agents such as podophyllin, 5-fluorouracil, imiquimod, and cidofovir have been used with variable success rates (5). Systemic therapies have been evaluated as adjuvant or neoadjuvant strategies, particularly in cases where extensive lesions limit immediate surgical intervention. Capecitabine and mitomycin have shown a significant reduction in tumor size after approximately five months of treatment (12). Among ablative options, electrofulguration represents a valuable therapeutic alternative, particularly for large, exophytic, or recurrent lesions. It allows precise tissue destruction, reduces intraoperative bleeding, and preserves surrounding structures, making it especially useful in anatomically complex or extensive anogenital cases (13).

## CLINICAL CASE

We present the case of a 63-year-old woman from Tecantó, Yucatán, with a medical history significant for type 2 diabetes mellitus of 20 years' duration and systemic arterial hypertension for 10 years, both under pharmacologic control. Her surgical history included bilateral tubal ligation and cholecystectomy, with no history of transfusions, allergies, or substance use. Gynecologic-obstetric history included menarche at age 10, six term vaginal deliveries, menopause at 50, and initiation of sexual activity at 21 with a single lifetime partner.

The patient sought evaluation due to abnormal cervical cytology results, reporting prior studies showing atrophic changes and genital warts. Gynecologic examination revealed multiple condylomatous lesions on the vulva and perineum, along with an exophytic, verrucous mass measuring approximately 10 cm involving the labia majora and clitoral region, highly suggestive of a giant condyloma acuminatum (Figure 1). Vulvar biopsies were obtained, and histopathologic analysis confirmed Buschke-Löwenstein tumor (giant condylomatosis) and low-grade intraepithelial neoplasia (VIN 1) (Figures 2 and 3).

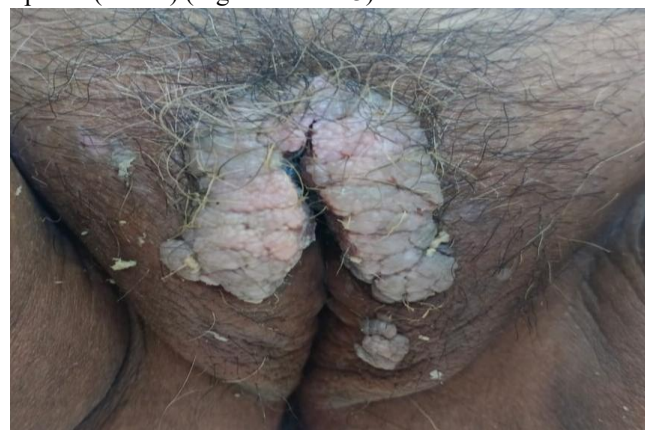
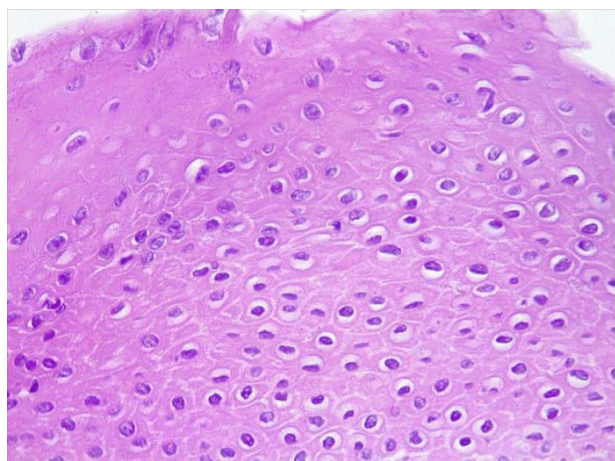
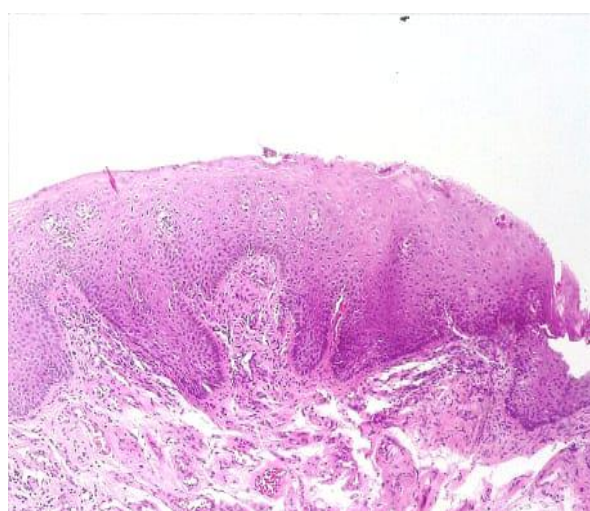


**Figure 1. Initial clinical presentation showing an extensive exophytic, verrucous mass involving the vulvar region, with a cauliflower-like surface and well-defined**



margins, consistent with a giant condyloma acuminatum (Buschke-Löwenstein tumor).

**Figure 2. Hematoxylin and Eosin (H&E) stain at 4× magnification showing Buschke-Löwenstein tumor**



(giant condyloma acuminatum) and low-grade squamous intraepithelial lesion (LSIL / VIN 1).

**Figure 3. Hematoxylin and Eosin (H&E) stain at 10× magnification showing Buschke-Löwenstein tumor (giant condyloma acuminatum) and low-grade squamous intraepithelial lesion (LSIL / VIN 1).**

After preoperative evaluation by internal medicine and anesthesiology, and with no contraindications for surgery, the patient underwent fulguration of the lesions under regional anesthesia (Figures 4 and 5). The procedure was completed without complications, with adequate hemostasis and no immediate adverse events. Postoperative management included antibiotics, analgesics, and local wound care with silver sulfadiazine.

Her postoperative course was favorable, with appropriate vulvar healing and no evidence of recurrence or local complications at the 6-month follow-up. Complementary breast imaging (mammography and breast ultrasound) showed benign findings (BI-RADS 2). The patient remains under periodic surveillance by the gynecology service, with no warning signs at the time of discharge.

**Figure 4. Intraoperative view demonstrating extensive vulvar involvement by a multilobulated verrucous mass.**



**Figure 5. Surgical electrofulguration was performed with careful hemostasis and preservation of adjacent healthy tissue.**

## DISCUSSION

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Buschke-Löwenstein tumor (BLT) remains an uncommon entity, with the majority of reported cases occurring in men, particularly in the penile and perianal regions (5). Female presentation, as in this case, is considerably rarer, and vulvar involvement represents an unusual manifestation that has been reported only in isolated cases.(7). This rarity often contributes to diagnostic delay, as initial lesions may be similar to conditions such as condyloma acuminatum or chronic inflammatory dermatoses. In contrast to the typically slow-growing lesions observed in men, vulvar

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BLT can exhibit a more aggressive local behavior due to the anatomical characteristics of the female genital tract, leading to extensive involvement of adjacent structures and significant functional and psychological implications (8).

The present case aligns with previous descriptions of BLT as a locally invasive but histologically benign neoplasm (4), yet it diverges in terms of location and extension. While most series describe penile or perianal lesions measuring 10–15 cm (8), our patient presented with a massive vulvar tumor requiring surgical management through electrofulguration, an ablative technique highlighted in the literature for its precision and tissue preservation (13). This approach, although less frequently reported than wide surgical excision (12), proved effective in achieving complete ablation while minimizing bleeding and preserving surrounding healthy tissue. Such findings reinforce the therapeutic versatility of electrofulguration in extensive or anatomically complex anogenital cases, particularly when conventional excision may be technically challenging or disfiguring.

From a clinical perspective, the recognition of Buschke-Löwenstein tumor (BLT) in gynecologic practice is essential for ensuring early diagnosis and appropriate management, particularly given its rarity in women and potential for malignant transformation (1,2). Gynecologists should maintain a high index of suspicion when evaluating vulvar lesions that appear exophytic, verrucous, or refractory to conventional treatments for condyloma acuminatum. Early biopsy with histopathological confirmation is essential to distinguish BLT from other lesions. Awareness of options like electrofulguration broadens surgical management, providing effective local control with low morbidity (13). Incorporating these diagnostic and therapeutic insights into daily gynecologic practice can improve patient outcomes, reduce recurrence rates, and optimize multidisciplinary coordination between gynecology, oncology, and pathology services.

## CONCLUSION

Buschke-Löwenstein tumor (BLT) remains a rare but clinically significant entity due to its locally aggressive nature and potential for malignant transformation. Although it predominantly affects males, vulvar involvement in women represents an exceptional finding that underscores the importance of maintaining diagnostic suspicion in atypical anogenital lesions. Early biopsy, histopathological confirmation, and timely surgical management, including options such as electrofulguration, are essential for achieving adequate local control and minimizing recurrence. Continued reporting of such uncommon presentations contributes to improving clinical awareness, refining treatment strategies, and guiding gynecologic practice in the management of extensive HPV-related lesions.

## ACKNOWLEDGMENT

To “Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (ISSSTE)” and the “Facultad de Medicina de la Universidad Autónoma de Yucatán (UADY)”.

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