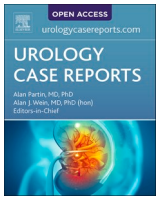
Urology Case Reports 55 (2024) 102758

Contents lists available at ScienceDirect

Urology Case Reports

journal homepage: www.elsevier.com/locate/eucr



Oncology

Penile Buschke-Lowenstein tumor in HCV patient

Marta Labon [a,*], Mateusz Czajkowski [b], Marcin Matuszewski [b]

[a] Student Research Group at the Department of Urology, Medical University of Gdansk, Gdansk, Poland
[b] Department of Urology, Medical University of Gdansk, Gdansk, Poland

ARTICLE INFO

Keywords:
Buschke–Löwenstein tumor
Condyloma acuminatum
Human papillomavirus
Immunodeficiency

ABSTRACT

Buschke–Löwenstein tumor (BLT), also called giant condyloma acuminatum is a rare clinical manifestation caused by human papillomavirus (HPV), usually type 6 or 11 (90 %). The BLT is described as a tumor with localized aggressiveness, rather slow but destructive and invasive growth of surrounding tissues, benign histology, low metastatic potential, and a high tendency of recurrence. We present the case of a 55-year old non-immunocompetent man, with beige, cauliflower-like papillomae presented on glans penis and coronal sulcus which increased in size for a few weeks. The lesions were surgically removed, while maintaining negative surgical margins and good cosmetic outcomes.

1. Introduction

BLT is a rare, locally aggressive, and destructive manifestation of long-lasting human papilloma virus infection. Men are more often affected than women, with a ratio of 2.7:1.[1] There is a high rate of recurrence (up to 60–70 %)[2] and 56 % probability of malignant transformation.[1,2] BLT is observed in patients infected with low-risk types of the virus such as HPV 6 and HPV 11. Other factors include many sexual partners, recurrent genital infections due to anaerobic pathogens, and lack of proper hygiene.[1,2] Patients with immunodeficiency or comorbidities are prone to developing faster progression (growth and malignancy) or a higher rate of recurrence than patients who are not immunocompromised.[1–3] If left untreated, BLT can spread into the pelvis, resulting in a number of bothersome symptoms and complications, such as fistula and abscess formation.[1] We present a case of an immunocompromised male patient co-infected with hepatitis C virus who was affected by penile lesions. The symptoms appeared a few weeks before admission to the urological ward.

2. Case presentation

A 55-year-old, male was admitted to the Department of Urology. The patient did not undergo any prior treatment. The chief complaints were penile lesions and multiple beige papillomae with cauliflower-like paved surfaces on the glans penis and coronal sulcus (Fig. 1 A; B). Patient reported the presence of these symptoms for several weeks. At admission, the patient's weight was 85 kg, height was 166 cm, and BMI (body mass index) was 30.8 kg per square meter. No enlarged lymph nodes were detected in the inguinal area in ultrasound examination. Comorbidities included chronic hepatitis type C virus (HCV) infection complicated by liver cirrhosis and metastatic hepatocellular carcinoma (HCC). Due to these ailments patient underwent hemihepatectomy before the BLT surgery reported in this case. Foreskin and urethral swabs were examined for the presence of Candida and aerobic and anaerobic bacteria. The urethral epithelial swabs were taken on UTM medium (1ml volume) and DNA from clinical samples was isolated using commercial kit GeneProof PathogenFree DNA Isolation PCR kit based on silica column method. The isolated genetic material was amplificated, and examined using Real-Time PCR method on Rotor-Gene Q (Qiagen) for human papillomavirus (HPV) high risk and low risk and LightCycler 480 (Roche) for other pathogens. The 24 types of HPV high risk (types: 16,18, 26, 30, 31, 33, 34, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 67, 68, 69, 70, 73, 82, 97) and HPV low risk (types 6,11) were tested. Other nine sexual transmitted pathogens: *Chlamydia trachomatis, Neisseria gonorrhoeae, Mycoplasma genitalium, Trichomonas vaginalis, Gardnerella vaginalis, Ureaplasma urealyticum, Ureaplasma parvum*, HSV-1/2 were tested using commercial test FTD STD 9 (FastTract Diagnostics). Microbiological examination of urethral swabs revealed the presence of HPV 11 and the pathogens *Streptococcus agalactiae* and coagulase-negative *Staphylococcus*. Total resection of the condylomas (from the glans penis and coronal sulcus) with complete circumcision was performed. After surgery, dressing containing 2 % detreomycin ointment was applied. Histopathological examination of the foreskin revealed a giant condyloma acuminatum. It also confirmed complete removal of the

* Corresponding author. Department of Urology, Medical University of Gdansk, Dębinki 7 Street, Gdansk, 80-001, Poland.
E-mail address: martal@gumed.edu.pl (M. Labon).

https://doi.org/10.1016/j.eucr.2024.102758
Received 17 April 2024; Received in revised form 15 May 2024; Accepted 21 May 2024
Available online 21 May 2024

lesion with 1,5 mm margin. The patient was followed up for 6 months without any evidence of local recurrences (Fig. 2). Ten months after the BLT surgery patient died. The cause of death was ruled as advanced liver cirrhosis and metastatic hepatocellular carcinoma (HCC). The post mortem examination showed no relation of patient's death to BLT or its surgical treatment.

3. Discussion

The BLT is more common in males than females, especially in patients with immunodeficiency. Altogether, this ailment affects up to 0.1 % of the general population,[2] and early detection and selection of appropriate treatment leads to better prognosis and a lower rate of recurrence.[4] Histological examination showed features such as papillomatosis and acanthosis in the squamous epithelium (Fig. 3 A), koilocytosis, perinuclear, cytoplasmic clearing halo, and irregular nuclei (Fig. 3 B), and a tendency to invade the underlying tissues.[4] Although skin manifestations of HPV infection are common, the mechanism of development of their rare, late manifestation, Buschke-Lowenstein tumor, is unclear. Chronic inflammation and immunodeficiency are suspected to be primary contributing factors.[1,3] Many treatment strategies have been published, based mainly on case reports rather than controlled studies, owing to the rarity of this condition. There are different therapeutic approaches, such as surgical excision with negative surgical margins, applied in our patient, topical agents (e.g., podophyllin, trichloroacetic acid, and imiquimod), cryotherapy, laser CO2 ablation, intralesional injections of interferons or chemotherapeutics using 5-fluorouracil, mitomycin, and radiotherapy.[1,3–5] Despite many available methods of treatment, the results vary, leading to the use of a surgical approach as the method of choice.[1,3–5] The feasibility of surgical approach is limited, combined treatments such as imiquimod, podophyllotoxin, and cryotherapy are said to benefit affected patients in some cases.[1] HPV vaccines are said to lower the risk of genital warts therefore decreasing the risk of BLT.[1,3] In some cases of tumors that are significant in size during the preoperative period, the use of chemotherapy or radiotherapy to reduce the size of the lesion can be useful for making the surgical procedure safer for the patient.[1,5] In this case, the patient did not present with recurrence of the BLT.

Fig. 2. Postoperative appearance of the patient after a follow-up of 6 months.

Fig. 1. A - Preoperative appearance of the patient; B - Cauliflower-like lesions presented on glans penis and coronal sulcus.

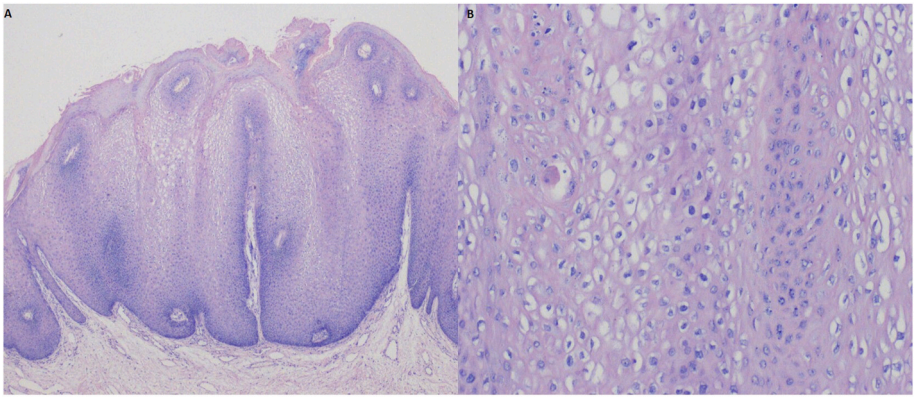


Fig. 3. A - Papilomatosis and acanthosis in squamos epithelium. Hematoxylin and eosin (HE) staining; B - Koilocytosis, perinuclear, cytoplasmic clearing halo, irregular nuclei. Hematoxylin and eosin (HE) staining.

4. Conclusion

As the method of choice, we considered surgery with securing well-defined margins, which in the follow-up led to success of the therapy. Consideration of adding local treatment and assessing management of risk factors such as location and end size of the lesion is also important in the early identification and prevention of recurrence in the future.

Funding sources

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Data availability statement

All data generated or analyzed during this study are included in this article. Further inquiries can be directed to the corresponding author.

Statement of ethics

Informed consent was obtained from patient involved in the study. Written informed consent was obtained from the patient for the publication of this paper.

Declaration of competing interest

Authors have no conflicts of interest to declare.

CRediT authorship contribution statement

Marta Labon: Conceptualization. **Mateusz Czajkowski:** Writing – review & editing, Writing – original draft. **Marcin Matuszewski:** Supervision.

References

1. Mihailov R, Laurentiu Tatu A, Niculet E, et al. Surgical management of perianal giant condyloma acuminatum of Buschke and löwenstein: case presentation. *Life*. 2023;13:1916. https://doi.org/10.3390/life13091916. PubMed PMC free article.
2. Nieves-Condoy Jefferson F, Acuña-Pinzón Camilo L, Chavarría-Chavira José L, Hinojosa-Ugarte Diego, Zúñiga-Vázquez Luis A. Giant condyloma acuminata (Buschke-Lowenstein tumor): review of an unusual disease and difficult to manage. Article ID 9919446, 2021 Jun 30:2021:9919446 *Infect Dis Obstet Gynecol.* 2021;2021. https://doi.org/10.1155/2021/9919446. PubMed PMC free article.
3. Kowo Mathurin, Nzoume Nsope Mengang Jude-Marcel, Simeni Njonnou Sylvain Raoul, Armand Kouotou Emmanuel, Adrien Atangana Paul Jean, Andoulo Firmin Ankouane, et al. Giant anogenital tumor of Buschke–Löwenstein in a patient living with human immunodefciency virus/acquired immunodefciency syndrome: a case report. *J Med Case Rep*. 2022 Mar 18;16(1):116. https://doi.org/10.1186/s13256-022-03339-1. PubMed PMC free article.
4. Jorgaqi E, Jafferany M. Giant condyloma acuminatum (Buschke-Lowenstein tumor): combined treatment with surgery and chemotherapy. *Dermatol Ther*. 2020 Jan;33(1), e13193. https://doi.org/10.1111/dth.13193. Epub 2019 Dec 23. PubMed Wiley full text article.
5. Gholam P, Enk A, Hartschuh W. Successful surgical management of giant condyloma acuminatum (Buschke-Löwenstein tumor) in the genitoanal region: a case report and evaluation of current therapies. *Dermatology*. 2009;218:56–59. https://doi.org/10.1159/000165359. PubMed Full text finder.