Giant Perianal Tumour Arising from Condyloma Acuminatum in a Patient Living with HIV-1

Xiang Liu  
First Affiliated Hospital Zhejiang University

Xueling Zhu  
First Affiliated Hospital Zhejiang University

Zhikai Wan  
First Affiliated Hospital Zhejiang University

Guanjing Lang  
First Affiliated Hospital Zhejiang University

Ying Huang  
First Affiliated Hospital Zhejiang University

Biao Zhu (✉ zhubiao1207@zju.edu.cn)  
First Affiliated Hospital Zhejiang University

Case Report

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Abstract

Background

Perianal cancer is a relatively rare disease, but it is prevalent in men who have sex with men and in patients who are positive for human immunodeficiency virus (HIV). Here, we report a case of a massive anal squamous cell carcinoma that measured 19 cm in length and 10 cm in diameter in a male patient living with HIV.

Case presentation

A 28-year-old man with a 5-year history of peri-anal condyloma acuminatum developed a rapidly enlarging mass in the anal region since the past few months. He had both HIV and syphilis infection, but never sought further treatment. Pathological analysis and immunohistochemistry confirmed squamous cell carcinoma with high-risk HPV infection. After multi-disciplinary treatment, albumin-paclitaxel combined with anti-programmed cell death protein 1 therapy and simultaneous antiretroviral therapy was initiated. The mass began to shrink after chemotherapy, but this did not prevent tumor progression. He eventually died from tumor-cachexia.

Conclusion

Early screening and treatment of perianal disease can help prevent progression to invasive anal carcinoma in high-risk groups such as men who have sex with men and immunosuppressed patients.

Background

Malignant perianal lesions account for only < 3% of all gastrointestinal tumors and are therefore considered quite rare[1]. Its most common histologic variant is squamous cell carcinoma (SCC). The most important causative factor for anal SCC (aSCC) is human papillomavirus (HPV) infection. Other high-risk factors include human immunodeficiency virus (HIV) infection and men who have sex with men (MSM)[2, 3]. The incidence of anal cancer is higher in HIV-infected than non-HIV-infected patients[4]. Studies have demonstrated that the larger the tumor, the worse the prognosis of aSCC[5]. Tumors > 5 cm in size were classified as T3. To our knowledge, no relevant literature has reported aSCC with a tumor size > 15 cm. Here, we report a case of a giant 19-cm-long aSCC in a male patient who had both HIV and syphilis infection but never received any anti-infective treatment.

Case Presentation

A 28-year-old homosexual man sought medical attention for a 5-year history of peri-anal condyloma acuminatum that had been rapidly increasing in size for the last several months. He had a 3-year history
of HIV infection and syphilis but did not receive combination antiretroviral therapy (cART) and the treatment for syphilis.

The patient appeared emaciated and had low-grade fever with fatigue at the time of presentation. Physical examination revealed a large, irregular, cauliflower-like, ulcerated mass (19 cm × 10 cm) and foul-smelling exudate; the mass covered almost the entire perineum (Fig. 1A). Given the exceptionally large size of the tumor and the associated bleeding risk, the patient was unable to maintain a sitting or supine position. Moreover, rectal examination and proctoscopy could not be carried out. Laboratory examination revealed CD4\(^+\) T-cell count was 84 cells/mm\(^3\), and hemoglobin was 61 g/L. The patient also showed hypoalbuminemia (20 g/L) and hypocholesterolemia (1.92 mmol/L); however, there was no evidence that he was involved in opportunistic infections. Positron-emission tomography–computed tomography showed that the lesion had invaded and destroyed the surrounding structures of the anorectum and pelvis, and multiple enlarged lymph nodes were found in the groin region (Fig. 2).

Pathological analysis and immunohistochemistry indicated SCC with diffuse P16 and Ki-67 expression, and P53 (10%), P40 (+), and P63 (+) (Fig. 3). HPV 31-DNA was detected in the tumor tissue. Chemotherapy combined with radiation therapy was identified as the final treatment scheme after multidisciplinary treatment (MDT). Albumin-paclitaxel combined with anti-programmed cell death protein 1 (PD-1) therapy and simultaneous antiretroviral therapy was initiated. The lesion began to shrink after the first cycle of chemotherapy (Fig. 1B). After the fifth cycle, local necrosis and hemorrhage of lesions were relieved, and the tumor size finally decreased to 9 cm (length) by 5 cm (base diameter) (Fig. 1C). The tumor was temporally controlled by our therapy. Unfortunately, the growth of cancer cells have lost control once again 10 months after diagnosis, and he eventually died from tumor-cachexia at the time of writing this report. Despite the ultimate outcome of this patient would be expected, we believed our treatment successfully extended his lifespan.

**Discussion And Conclusion**

We report a case of SSC from perianal condyloma in a patient who had both HIV and syphilis infection but had never received any anti-infective treatment. We believe that this is the largest perianal mass reported to date. As the tumor was extensively invasive at the time of the patient's presentation, it could not be surgically resected and could only be palliatively treated with chemotherapy combined with radiotherapy. With our treatment, the patient's condition gradually improved, as evidenced by a significant reduction in tumor size, significant relief from hypothermia and fatigue, gradual progress in clinical indicators, and significant enhancement in the quality of life. However, it can be presumed that the patient's overall prognosis is poor.

Such a large tumor is reminiscent of Buschke–Löwenstein tumor or giant condyloma acuminatum, which presents as a large verrucous tumor in the genital area with expansive and destructive growth[6]. Only 40–45% of reported cases are diagnosed as simple condyloma acuminatum without invasion, whereas 50–55% cases show malignant transformation to SCC (verrucous carcinoma variant)[7]. It is possible that there is a pathological transformation of the condyloma acuminatum to a malignant invasive
squamous carcinoma in the presence of high-risk HPV and other risk factors [8]. A local pathological biopsy suggested SCC and high-risk HPV infection (P16+) in our patient with history of condyloma acuminatum, which appears to reveal this pathological transformation.

Anal SCC accounts for 90% of all anal tumors, and the incidence of anal margin SCC is 4–5 times lower than that of anal canal SCC[8, 9]. The incidence of anal cancer is increasing in certain specific populations such as HIV-infected patients, MSM, women with genital tumors, and patients with condyloma acuminatum or inflammatory bowel disease[10]. A long-term follow-up study in France confirmed that the risk of anal cancer was highest in HIV-positive and MSM populations, but the risk of anal cancer decreased in the cART era, suggesting the importance of cART in reducing the incidence of non-AIDS-defining tumors[11]. HPV infection is the most important risk factor for the development of aSCC. Numerous serotypes of HPV are known, with serotypes 16, 18, 31, 33, and 35 being the most associated with tumors, and serotypes 6 and 11 being the most associated with condyloma acuminata[12]. Our patient had many risk factors for cancer, such as MSM, untreated HIV infection, untreated condyloma acuminata, and HPV 31 positivity.

According to the NCCN Clinical Practice Guidelines in Oncology, version 1.2022, the main treatment for aSCC is chemoradiotherapy (CRT), and the first-line treatment is 5-fluorouracil (5-FU) and mitomycin C (MMC) combined with radiotherapy[13]. When multiple metastases are present in the tumor, platinum combined with paclitaxel is recommended for chemotherapy and, if necessary, anti-PD-1/programmed death ligand 1 (PD-L1) immunotherapy[1]. HIV-positive aSCC patients with adequate immune reconstitution and virologic suppression can receive a standard CRT regimen, but patients who have uncontrolled HIV-related complications before the diagnosis of aSCC should receive a reduced dose of CRT[13, 14]. Studies suggest that survival in HIV-positive aSCC patients in the cART era is similar to that of HIV-negative aSCC patients, but there is no evidence to suggest that cART improves survival in HIV-positive aSCC patients[15]. In addition, stage T1N0M0 aSCC < 2 cm in size without lymph node metastases and distant metastases can be surgically resected[13]. Compared to aSCC, there are no guidelines for the optimal treatment of rectal squamous cell carcinoma (rSCC). Many reports currently support the use of the same CRT approach for rSCC as for aSCC[16]. In this case, the patient's perianal mass was extremely large and had invaded the rectal and surrounding tissues. After MDT discussion, the patient was treated with albumin paclitaxel combined with anti-PD-1 immunotherapy, and the perianal mass shrank significantly and the clinical indices gradually improved, suggesting that the treatment was effective.

The overall 5-year survival rate was approximately 69% for aSCC and 49% for rSCC[16]. However, tumor size has an important impact on disease prognosis[17]. The larger the tumor, the higher the risk of recurrence and death for patients with aSCC. The patient, in this case, had a giant tumor measuring 19 cm at the time of diagnosis, which to our knowledge, is the largest perianal mass reported thus far. Although the size of the mass decreased after treatment, it can be presumed that the patient's prognosis is poor. This case emphasizes the importance of early detection and early treatment of the disease.
List Of Abbreviations

HIV Human immunodeficiency virus
aSCC anal squamous cell carcinoma
HPV human papillomavirus
MSM men who have sex with men
cART combination antiretroviral therapy
MDT Multi-Disciplinary Treatment
rSCC rectal squamous cell carcinoma
CRT chemoradiotherapy

Declarations

Ethics approval and consent to participate

This study protocol was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of The First Affiliated Hospital, Zhejiang University School of Medicine.

Consent for publication

Consent for publication was obtained from the patient according to our institutional consent form.

Availability of data and materials

All data generated or analyzed during this study are included in this published article.

Competing interests

The authors declare that they have no competing interests to disclose.

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Authors' contributions
XL and GJL provided clinical specimens and information. XL and XLZ performed the data analysis and drafted the manuscript. BZ and XL designed the study. ZKW and YH participated in the study design and coordinated the drafting of the manuscript. All the authors read and approved the final manuscript.

References


**Figures**

**Figure 1**

Changes in treatment of the perianal neoplasm. A. Perianal neoplasm as seen at the initial visit (19×10 cm); B. The neoplasm shrank after the first cycle of chemotherapy; C Perianal neoplasm after three cycles of chemotherapy.
Figure 2

PET-CT examination of the perianal neoplasms

Figure 3
Histopathological examination of the perianal neoplasm. A. hematoxylin-eosin stain, ×200; B. P16 positive, ×200.