Successfully Treated Disseminated AIDS-Related Kaposi Sarcoma: A Case Report

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Abstract. AIDS-related Kaposi sarcoma (KS) progresses rapidly with early mucosal and systemic involvement. Early diagnosis and treatment are crucial as they significantly impact the outcome. This is a case of disseminated cutaneous and gastrointestinal KS in a 24-year-old Filipino male living with HIV, presenting with hyperpigmented violaceous subcutaneous nodules, odynophagia, progressive dysphagia, and symptomatic anemia. Capsule endoscopy demonstrated utility in diagnosing gastrointestinal KS lesions, highlighting its crucial role when conventional upper endoscopy was challenging due to oropharyngeal involvement. Diagnostic limitations, mainly the unavailability of human herpesvirus-8 (HHV-8) immunohistochemical stain, were addressed through high clinical suspicion. Multidisciplinary approach including chemotherapy with liposomal doxorubicin, radiotherapy, and supportive care eventually yielded good clinical response. This case emphasizes the importance of early diagnosis, timely intervention, and long-term surveillance in achieving favorable outcomes for patients with KS despite some diagnostic limitations.

Keywords. *Kaposi sarcoma, HIV, AIDS, Antiretroviral therapy, Liposomal doxorubicin, Case report*

Introduction

Kaposi sarcoma (KS) is a vasoformative tumor and an AIDS-defining illness characterized by rapid progression and early mucosal and systemic involvement. Although the incidence of KS has decreased significantly with the advent of highly active antiretroviral therapy (HAART), disseminated presentations with unique clinical features remain challenging.[1] This case report highlights an uncommon presentation of disseminated AIDS-related KS in a young Filipino patient, particularly emphasizing the crucial diagnostic role of capsule endoscopy, which proved invaluable when conventional upper endoscopy was rendered unfeasible due to extensive oropharyngeal involvement. Additionally, despite the unavailability of human herpesvirus-8 (HHV-8) immunostaining, a critical component for definitive diagnosis, clinical suspicion and ancillary markers (ie, CD31/CD34) facilitated prompt diagnosis.

This report aims to underscore the distinctiveness of this patient's clinical presentation and the multidisciplinary management approach, demonstrating how such uniqueness can significantly influence therapeutic decisions and improve patient outcomes, even within the context of established chemoradiotherapeutic regimens.[2]

Case

A 24-year-old Filipino man with HIV presented with 1-month history of generalized body weakness, 15% weight loss, odynophagia, dysphagia, hematochezia, and emergence of hyperpigmented subcutaneous nodules on his extremities, trunk, and neck. He was on dolutegravir/lamivudine/tenofovir 50/300/300 mg one tablet once daily, with a CD4 count of 110 cells/mm^3 from 20 cells/mm^3 5 months ago in February 2022. He had no other known medical conditions, and his family history

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was unremarkable. Pertinent in his social history was intravenous methamphetamine use 1 year prior to his HIV diagnosis, and pertinent in his sexual history was the practice of men having sex with men (MSM).

In July 2022, during his first hospitalization at our institution, seen on physical examination were approximately 3.0 x 4.0 x 3.0 cm ulcerating nodular masses at the base of his tongue and retromolar areas. Initial laboratory results revealed a microcytic hypochromic anemia with a hemoglobin of 49 g/L and transferrin saturation of 3.1%. Platelets, white blood cells, and bleeding parameters were normal. Coomb's test was negative. *Treponema pallidum* particle agglutination test for syphilis and cytomegalovirus antigenemia were negative. Biopsy of oropharyngeal mass was positive for CD31 and CD34, suggesting a vascular neoplasm likely KS (Figure 1). Positron emission tomography (PET) scan showed widespread cutaneous, subcutaneous, and

lymph node involvements. Esophagogastroduodenoscopy (EGD) and colonoscopy were done, but EGD was aborted due to difficult scope insertion, because of the oropharyngeal involvement. Colonoscopy revealed sigmoid ulcers and benign colonic mucosal tissues with chronic active inflammation and mucosal erosions on biopsy. Capsule endoscopy was done, which revealed multiple ulcerations in the tongue, buccal areas, pharynx, stomach, and jejunum, with pooling of blood observed until the battery was depleted (Figure 2). Unavailability of HHV-8 immunohistochemical staining at the time of admission was addressed through high clinical suspicion. The patient was managed as a case of disseminated gastrointestinal and cutaneous AIDS-related KS and iron deficiency anemia from upper gastrointestinal bleeding.

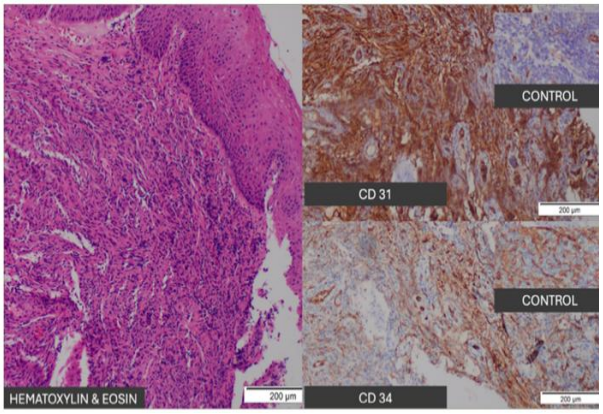

Figure 1. Histopathology and immunohistochemistry of the base of the tongue and retromolar mass. Immunomorphological findings are compatible with a vascular neoplasm. CD31 positive with strong, diffuse cytoplasmic membrane expression in the neoplastic cells. CD34 positive with strong, patchy-to-diffuse cytoplasmic membrane expression in the neoplastic cells.

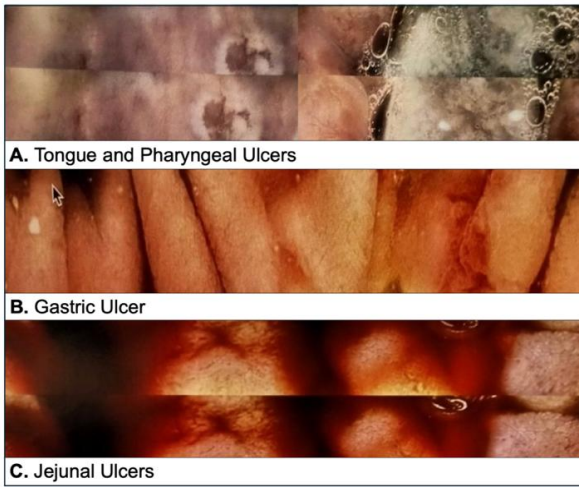

Figure 2. Capsule endoscopy

Liposomal doxorubicin 20 mg/m² per cycle every 3 weeks was started. Supportive blood transfusions and hematinic were administered, accompanied by counseling to improve adherence to HAART, which also addressed the patient's history of substance abuse. The patient remained cooperative with these interventions throughout the course of treatment. After six cycles of liposomal doxorubicin in November 2022, 19 radiotherapy sessions in February 2023, and continuation of HAART, a follow-up PET scan 7 months after treatment completion revealed complete resolution of cutaneous and gastrointestinal lesions. No adverse events were noted during the course of treatment. At 12 months post treatment, he remains symptom-free, in remission, substance abuse-free, and continues antiretroviral therapy adherence.

Discussion

KS, caused by HHV-8, has four variants: classic, African, immunosuppression associated, and AIDS associated.[1,2] Its incidence significantly decreased in the era of HAART, but it remains a significant concern, especially in regions with high HIV prevalence.[2] In Asia, including the Philippines, KS incidence rates among HIV-positive individuals range from 5 to 15 cases per 100,000 persons per year.[3,4]

Diagnosis typically relies on clinical presentation and histopathology. Studies report sensitivity rates of approximately 90% for CD31 and CD34 staining, while HHV-8 detection has sensitivity rates from 83% to 100% and specificity of 100%.[5] While HHV-8 immunohistochemical staining was unavailable, diagnosis in our case was supported by clinical presentation, CD31/CD34 positivity, and patient demographics. The case emphasizes the importance of high clinical suspicion in resource-limited settings,[6] particularly given that HIV-associated KS usually occurs in younger individuals aged 20–50 years, compared to other histopathology differential diagnoses such a

angiosarcoma, which predominantly affects elderly patients with a mean age of 73 years.[7]

When conventional endoscopy is challenging due to oropharyngeal involvement, capsule endoscopy provided valuable diagnostic information.[8] This is particularly important, as gastrointestinal KS represents 15% to 20% of cases globally,[9,10] with higher prevalence among HIV-positive individuals. In AIDS-related KS, gastrointestinal involvement exceeds 50%.[11] Risk factors include MSM status, low CD4 count (<100 cells/μL), high viral load, and no antiretroviral therapy history.[12]

Management requires a multidisciplinary approach. HAART is fundamental, as it improves immune function and suppresses viral replication.[13-15] Liposomal anthracyclines are recommended as first-line chemotherapy due to their efficacy and tolerability.[16,17] Literature supports this approach, with the combination therapy of liposomal doxorubicin (20 mg/m² every 3 weeks) and HAART achieving complete or partial response in 80% of cases, with 5-year survival exceeding 85%.[16-18] Relapses are uncommon (13%) and usually occur within the first year after completing treatment.[19] The response to pegylated liposomal doxorubicin is superior to that of combinations involving bleomycin, vincristine, vinblastine, non-liposomal doxorubicin, and liposomal daunorubicin.[20-22]

The patient's positive response to therapy, including resolution of cutaneous and gastrointestinal lesions, supports the diagnosis of KS rather than other vasoformative tumors, such as angiosarcoma, which typically requires surgery as the only potentially curative treatment.[23,24] Long-term follow-up is crucial. Patients with HIV-associated malignancies, including KS, require comprehensive psychosocial support to address the emotional and psychological impact of their diagnosis and treatment. Counseling and support services play a vital role in improving quality of life.[25]

Conclusion

This case highlights the critical importance of early diagnosis, timely intervention, and comprehensive and multidisciplinary management of patients with disseminated AIDS-related KS. Despite initial diagnostic challenges, particularly the local unavailability of HHV-8 immunostaining at the time of the patient's admission, through high clinical suspicion and appropriate treatment, the patient responded positively to a combination of HAART, chemotherapy, radiotherapy, and supportive care. Long-term follow-up and adherence to treatment protocols are essential to maintaining remission and improving outcomes.

Consent for Publication

Informed consent was obtained from the patient.

References

1. Requena C, et al. Kaposi Sarcoma and Cutaneous Angiosarcoma: Guidelines for Diagnosis and Treatment. Actas Dermosifiliogr (Engl Ed). 2018;109(10):878-887.
2. Parkin DM. The global health burden of infection-associated cancers in the year 2002. Int J Cancer. 2006;118(12):3030-3044.
3. Engels EA, et al. Trends in cancer risk among people with AIDS in the United States 1980-2002. AIDS. 2006;20(12):1645-1654.
4. Sia IG, et al. AIDS-defining malignancies among HIV-infected Filipinos: A single-center experience. Philipp J Intern Med. 2019;57(1):15-21.
5. Radu OG and Pantanowitz L. Kaposi Sarcoma. Arch Pathol Lab Med. 2013;137(2):289-294.
6. Maskew M, et al. Treatment response and mortality among patients starting antiretroviral therapy with and without Kaposi sarcoma: a cohort study. PLoS One. 2013;8(6):e64392.
7. Albores-Saavedra J, et al. Cutaneous angiosarcoma: analysis of 434 cases from the surveillance, epidemiology, and end results program, 1973-2007. Ann Diagn Pathol. 2011;15:93-97.
8. Soll SM, et al. Kaposi's sarcoma: a rare cause of gastrointestinal bleeding diagnosed by capsule endoscopy. ACG Case Rep J. 2015;2(2):102-103.
9. Cesarman E, et al. Kaposi's sarcoma-associated herpesvirus-like DNA sequences in AIDS-related body-cavity-based lymphomas. N Engl J Med. 1995;332(18):1186-1191.
10. Pantanowitz L and Dezube BJ. Kaposi sarcoma in unusual locations. BMC Cancer. 2008;8:190.
11. Carmo J, et al. Clinical and endoscopic features of gastrointestinal Kaposi sarcoma: a single-center Portuguese experience over the last decade. GE Port J Gastroenterol. 2017;24:219-226.
12. Nagata N, et al. Predictive clinical factors in the diagnosis of gastrointestinal Kaposi's sarcoma and its endoscopic severity. PLoS One. 2012;7(11):e46967.
13. Krown SE, et al. More on HIV-associated Kaposi's sarcoma. N Engl J Med. 2008;358(5):535-536.
14. Gantt S and Casper C. Human herpesvirus 8-associated neoplasms: the roles of viral replication and antiviral treatment. Curr Opin Infect Dis. 2011;24(4):295-301.
15. Hentrich M, et al. Highly active antiretroviral therapy (HAART) improves survival in HIV-associated Hodgkin's disease: results of a multicenter study. Ann Oncol. 2006;17(6):914-919.
16. Nasti G, et al. Successful treatment with liposomal doxorubicin for AIDS-related Kaposi's sarcoma with

severe mucocutaneous involvement. Cancer. 2005;103(11):2431-2438.

17. Martin-Carbonero L, et al. Pegylated liposomal doxorubicin plus highly active antiretroviral therapy versus highly active antiretroviral therapy alone in HIV patients with Kaposi's sarcoma. AIDS. 2004;18:1737-1740.
18. Gbabe OF, et al. Treatment of severe or progressive Kaposi's sarcoma in HIV-infected adults. Cochrane Database Syst Rev. 2014:(9):CD003256.
19. Nunez M, et al. Response to liposomal doxorubicin and clinical outcome of HIV-1-infected patients with Kaposi's sarcoma receiving highly active antiretroviral therapy. HIV Clin Trials. 2001;2:429-237.
20. Martin-Carbonero L, et al. Long-term prognosis of HIV-infected patients with Kaposi sarcoma treated with pegylated liposomal doxorubicin. Clin Infect Dis. 2008;47:410-417.
21. Northfelt DW, et al. Pegylated-liposomal doxorubicin versus doxorubicin, bleomycin, and vincristine in the treatment of AIDS-related Kaposi's sarcoma: results of a randomized phase III clinical trial. J Clin Oncol. 1998;16:2445-2451.
22. Cooley T, et al. A randomized, double-blind study of pegylated liposomal doxorubicin for the treatment of AIDS-related Kaposi's sarcoma. Oncologist. 2007;12:114-123.
23. Grundahl JE, et al. Cutaneous angiosarcoma of head and neck: A new predictive score for locoregional metastasis. Transl Oncol. 2015;8:169-175.
24. Dettenborn T, et al. Prognostic features in angiosarcoma of the head and neck: a retrospective monocenter study. J Craniomaxillofac Surg. 2014;42:1623-1628.
25. National Comprehensive Cancer Network. NCCN Clinical Practice Guidelines in Oncology. AIDS-Related Kaposi Sarcoma. Version 1.2022. Accessed January 2024.