

Kaposi sarcoma with long-term disease control on pazopanib in a young human immunodeficiency virus-positive male from Northeast India: A case report

Kakoli Medhi¹, Partha Sarathi Roy², Rajdeep Bose³, Ankur Bhattacharyya¹, Ravreet Pal Kar³

From ¹Assistant Professor, ²Professor and Head, ³DM Resident, Department of Medical Oncology, Dr. B. Borooah Cancer Institute, Guwahati, Assam, India

ABSTRACT

Kaposi sarcoma (KS) is a rare vascular tumor and an acquired immunodeficiency syndrome-defining illness commonly associated with human herpesvirus-8 (HHV-8) infection. It is typically seen in individuals with advanced immunosuppression and low CD4⁺ T-cell counts. We report the case of a 15-year-old male of Naga ethnicity from Nagaland, India, who was diagnosed with human immunodeficiency virus (HIV) infection at birth and was initiated on antiretroviral therapy. In July 2018, he presented with a painless nodular swelling on the left side of the neck and bilateral pedal edema. Clinical examination revealed violaceous skin nodules. A biopsy from the nodular lesion confirmed the diagnosis of KS, with positive immunohistochemical staining for CD31, CD34, and HHV-8. Subsequently, he was initiated on pazopanib, an oral tyrosine kinase inhibitor, in December 2019. The patient achieved a partial response with disease stabilization, which was sustained until the last follow-up in May 2025. This case underscores the importance of considering KS in adolescents with HIV infection, even in low-prevalence regions. It highlights the diagnostic value of immunohistochemistry in confirming the disease and demonstrates the potential utility of pazopanib as a viable treatment option in refractory cases.

Key words: Human immunodeficiency virus, Kaposi sarcoma, Northeast, Viral load

Kaposi sarcoma (KS), first described by Moritz Kaposi in 1872, is a vascular malignancy caused by human herpesvirus-8 (HHV-8), also known as KS-associated herpesvirus [1,2]. It is the most common malignancy associated with acquired immunodeficiency syndrome (AIDS), particularly in patients with CD4 counts below 200 cells/mm³ [3]. KS presents in four forms: Classic, endemic African, human immunodeficiency virus (HIV)-related, and iatrogenic, with the HIV-related form often involving diffuse skin and visceral organ involvement [1]. Stomatognathic manifestations include violaceous macules, papules, or tumors, and visceral involvement, particularly in the lungs and gastrointestinal tract, can be life-threatening [4,5]. The mode of HHV-8 transmission includes sexual contact, organ transplantation, and maternal breastfeeding [6].

This case report describes a case of KS in a young HIV-positive male from Northeast India, highlighting diagnostic and therapeutic challenges in a resource-limited setting.

CASE PRESENTATION

A 15-year-old male from Nagaland, India, with vertically acquired HIV infection diagnosed at birth, presented to Dr. B. Borooah Cancer Institute (BBCI) in July 2018. HIV transmission was presumed to be mother-to-child (vertical) transmission, and he was started on highly active antiretroviral therapy (HAART) after diagnosis. He was currently on an HAART regimen of tenofovir, lamivudine, and dolutegravir, and presented to the Dr. BBCI in July 2018 with a 2-month history of nodular swelling on the left side of the neck and lower limb (picture attached) and bilateral edema.

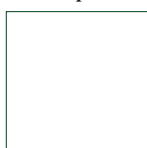
At presentation, his CD4⁺ T-cell count was 33 cells/ μ L and HIV viral load was unavailable. Serological evaluation was negative for hepatitis B, hepatitis C, and syphilis (venereal disease research laboratory), and evaluation for tuberculosis was negative.

An excisional biopsy of the nodular lesion demonstrated effacement of the normal nodal architecture by a diffuse spindle-cell and vasoformative proliferation, accompanied by an inflammatory infiltrate composed predominantly of plasma cells and lymphocytes.

Access this article online

Received - 30 July 2026
Initial Review - 12 August 2026
Accepted - 02 September 2026

Quick Response code



DOI: ***

Correspondence to: Kakoli Medhi, Assistant Professor, Department of Medical Oncology, Dr. B. Borooah Cancer Institute, Gopinath Nagar, Guwahati, Assam, India. E-mail: kakolimedhi@gmail.com

© 2026 Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC-ND 4.0).

Numerous irregular, jagged, slit-like vascular spaces were identified between the spindle cells, with extravasation of red blood cells and formation of intracellular and extracellular neolumina. The endothelial and spindle cells were plump and showed mild-to-moderate cytological atypia. These morphological features were suggestive of KS.

On immunohistochemistry, the lesional cells showed positivity for the endothelial markers CD31 and CD34, along with nuclear positivity for HHV-8, confirming the diagnosis of KS. Baseline 18F-fluorodeoxyglucose (FDG) positron emission tomography/computed tomography (PET-CT) demonstrated metabolically active cervical lymphadenopathy and multiple FDG-avid cutaneous/subcutaneous nodular lesions involving the left lower limb, consistent with multifocal KS.

The patient was initiated on liposomal doxorubicin (40 mg/m² every 3 weeks for six cycles), with the last dose administered in February 2019. A post-chemotherapy PET scan showed complete metabolic resolution of the disease. However, after a short disease-free interval of 6 months, he developed nodular swellings on the left leg. A repeat biopsy confirmed KS recurrence. He was then treated with gemcitabine (1000 mg/m² on days 1 and 8) and docetaxel (75 mg/m² on day 1) every 3 weeks for six cycles. A follow-up PET-CT scan indicated disease progression.

In December 2019, the patient was started on pazopanib (800 mg daily). A PET-CT scan after 4 months showed an interval reduction in metabolic activity and size, indicating a partial response. After 2 years of pazopanib, the patient developed significant proteinuria of 3+ along with hypertension, and he was continued on pazopanib with consultation from a fellow nephrologist.

Pazopanib was continued, but after 5 years, the patient developed bloody diarrhea, which resolved after a temporary dose reduction to 400 mg daily. The dose was later increased to 600 mg daily, which he tolerated well. Other notable toxicity was the development of Grade 2 hand-foot syndrome during the first 12 months of pazopanib therapy, which resolved with local care.

At the last follow-up in June 2026, the patient was on Pazopanib and HAART, clinically asymptomatic, with an undetectable HIV viral load, a CD4 count of 600 cells/ μ L, and urinary protein of 3.7 g/24 h. A PET-CT scan showed stable disease, with low FDG-avid cervical lymph nodes and a lytic lesion in the 1st Lumbar vertebra. Timeline of events during the course of disease in the patient is shown in Table 1.

DISCUSSION

In contrast to sub-Saharan Africa and parts of Europe where the disease is more prevalent, KS remains exceedingly rare in India. The low incidence of KS in India is largely attributed to the relatively low seroprevalence of HHV-8, the causative agent of the disease. Indian studies have reported HHV-8 seroprevalence rates ranging from 0%

to 4% in the general population, compared to endemic African region prevalence of 30–50% [7,8].

The HIV/AIDS burden has been substantial in India, especially during the early 2000s; however, KS has not emerged as a common AIDS-associated malignancy. The more frequently encountered HIV-associated cancers in the Indian setting are non-Hodgkin lymphoma and cervical cancer [9]. Consistently low reporting of KS cases in the National Cancer Registry Programme and several institutional series across decades suggest either a true rarity or substantial underreporting of cases [10,11].

Most reported Indian cases have been isolated and documented as case reports. These often describe HIV-associated KS with cutaneous involvement and less commonly visceral disease, typically diagnosed at a later time due to low clinical suspicion and limited access to HHV-8 testing [12,13]. Furthermore, routine immunohistochemistry for HHV-8 is not available in many pathology labs in India, contributing to potential underdiagnosis or misclassification.

In 1993, the first report of AIDS-associated KS in India was described; since then, there have been very few case reports of AIDS-associated KS in Indian literature [12,14]. In 1993, Shroff *et al.* reported a case of AIDS-associated KS, and intralesional injection of vincristine and sublingual alpha-interferon were used with modest responses in skin lesions [12]. In 1996, Kumarasamy *et al.* published a case of cutaneous KS in an Indian drug user [14]. Chandan *et al.* reported a case of an Indian heterosexual male with AIDS-associated KS in 2002 [15]. There have been a few cases of KS associated with thrombocytopenia [14].

In Northeast India, where our patient is a native, HIV prevalence has been historically higher than the national average, especially among injectable drug abusers and in states such as Nagaland, Manipur, and Mizoram [16]. However, even in these high-prevalence states, reported cases of KS are sparse, making this case a unique contribution to the understanding of KS epidemiology in this region.

Over the years, India's HIV care programs have improved, and longer life expectancy is now seen in people living with HIV. Clinicians may encounter more cases of KS in the future. Awareness of the clinical spectrum of KS, access to diagnostic immunohistochemistry, and familiarity with emerging treatments, including targeted therapies such as pazopanib, will be critical for timely diagnosis and effective management.

The treatment landscape for KS has evolved significantly since the AIDS epidemic of the 1980s. Initially, KS was managed with local therapies such as radiation, cryotherapy, or surgical excision for localized lesions, especially in classic or indolent forms. However, the emergence of AIDS-related KS, characterized by multifocal and aggressive disease, necessitated systemic therapies.

In the 1990s, combination chemotherapy became the mainstay for advanced KS. Regimens such as adriamycin, bleomycin, vincristine were widely used, with higher

Table 1: Timeline of events during the course of disease in the patient

Time	Clinical event	Treatment/outcome
Birth	Vertically acquired HIV diagnosed	ART initiated at (age/date)
July 2018	Neck/lower-limb nodules; Kaposi Sarcoma diagnosed	HHV-8+, CD31+, CD34+
2018-February 2019	First-line therapy	Liposomal doxorubicin×6
February 2019	Response assessment	Complete metabolic response
~6 months later	Recurrent left-leg nodules	Biopsy-confirmed recurrent KS
January 2019	Second-line therapy	Gemcitabine+docetaxel×6
July 2019	PET-CT	Progressive disease
December 2019	Third-line treatment	Pazopanib 800 mg/day
April 2020	PET-CT after 4 months	Partial response

HIV: Human immunodeficiency virus, ART: Antiretroviral therapy, KS: Kaposi sarcoma, PET-CT: Positron emission tomography/computed tomography

rates of toxicity, particularly in immunocompromised individuals [17]. Subsequently, liposomal anthracyclines, such as pegylated liposomal doxorubicin and liposomal daunorubicin, emerged as superior first-line agents, demonstrating higher response rates, reduced toxicity, and improved tolerability in randomized trials [18,19]. These agents remain standard of care for moderate-to-severe disease.

A major turning point in KS treatment occurred with the advent of HAART in the mid-1990s. HAART led to substantial immune restoration, resulting in a marked decline in KS incidence and, in some cases, spontaneous lesion regression without chemotherapy [20]. In early or asymptomatic KS, HAART alone may be sufficient [21].

For refractory or progressive KS, particularly in patients already on HAART, second-line options include taxanes (e.g., paclitaxel), which have shown clinical benefit [22]. In recent years, the recognition of KS as a vascular tumor has prompted the use of angiogenesis inhibitors. Agents such as bevacizumab, a monoclonal antibody against vascular endothelial growth factor (VEGF), have demonstrated activity in phase II trials [23].

More recently, oral tyrosine kinase inhibitors (TKIs), such as pazopanib and sorafenib, which inhibit VEGF receptors and other angiogenic pathways, have been explored as salvage therapies. Case series and early-phase studies suggest modest efficacy and manageable toxicity in patients with relapsed or refractory KS, including those with well-controlled HIV [24,25]. These agents are particularly valuable in resource-limited settings due to ease of administration and oral availability. The role of immunotherapy, including immune checkpoint inhibitors, is also under investigation, particularly in patients with KS and associated immune dysregulation, although data remain preliminary [26].

Thus, the management of KS has shifted from cytotoxic-heavy regimens toward more targeted and individualized therapies, particularly in the context of immune reconstitution through HAART.

CONCLUSION

This case illustrates the management of KS in a young HIV-positive patient, an uncommon demographic for

this malignancy, as KS typically affects older adults or severely immunocompromised individuals. Despite HAART, the patient developed KS, likely due to persistent HHV-8 infection, which is strongly associated with HIV-related KS. The initial response to liposomal doxorubicin, a standard therapy for KS, was promising, achieving complete metabolic resolution. However, recurrence after 6 months highlights the aggressive nature of HIV-related KS, even in patients on HAART.

ACKNOWLEDGMENTS

Special thanks to the Department of medical oncology and Department of Onco-pathology at Dr. B Borooah Cancer Institute for their permission and contribution for this case report.

REFERENCES

1. Stănescu L, Foarfă C, Georgescu AC, Georgescu I. Kaposi's sarcoma associated with AIDS. *Rom J Morphol Embryol* 2007;48:181-7.
2. Flore O, Rafii S, Ely S, O'Leary JJ, Hyjek EM, Cesarman E. Transformation of primary human endothelial cells by Kaposi's sarcoma-associated herpesvirus. *Nature* 1998;394:588-92.
3. Esser S, Schöfer H, Hoffmann C, Classen J, Kreuter A, Leiter U, *et al.* S1 guidelines for the Kaposi sarcoma. *J Dtsch Dermatol Ges* 2022;20:892-904.
4. Fatahzadeh M. Kaposi sarcoma: Review and medical management update. *Oral Surg Oral Med Oral Pathol Oral Radiol* 2012;113:2-16.
5. Radu O, Pantanowitz L. Kaposi sarcoma. *Arch Pathol Lab Med* 2013;137:289-94.
6. Bègré L, Rohner E, Mbulaiteye SM, Egger M, Bohlius J. Is human herpesvirus 8 infection more common in men than in women? Systematic review and meta-analysis. *Int J Cancer* 2016;139:776-83.
7. Dedicoat M, Newton R. Review of the distribution of Kaposi's sarcoma-associated herpesvirus (KSHV) in Africa in relation to the incidence of Kaposi's sarcoma. *Br J Cancer* 2003;88:1-3.
8. Manfredi R, Calza L, Chiodo F. Kaposi's sarcoma in HIV-infected patients: An overview. *J Chemother* 2003;15:13-20.
9. Dhir AA, Sawant S, Dikshit RP, Parikh P, Srivastava S, Badwe R, *et al.* Spectrum of HIV/AIDS related cancers in India. *Cancer Causes Control* 2008;19:147-53.
10. National Centre for Disease Informatics and Research. Three-Year Report of Population Based Cancer Registries: 2012-2014. Bengaluru: Indian Council of Medical Research; 2016.
11. Noronha V, Dikshit R, Raut N. Epidemiology of AIDS-related cancers in India. *J Glob Oncol* 2019;5:1-8.
12. Shroff HJ, Dashatwar DR, Deshpande RP, Waigmann HR. AIDS-associated Kaposi's sarcoma in an Indian female. *J Assoc Physicians India* 1993;41:241-2.

13. Verma S, Batra P, Saikia UN. HIV-associated Kaposi's sarcoma with visceral involvement: A rare Indian case. *BMJ Case Rep* 2020;13:e235687.
14. Kumarasamy N, Solomon S, Flanigan TP, Hemalatha R, Thyagarajan SP, Mayer KH. Natural history of human immunodeficiency virus disease in southern India. *Clin Infect Dis* 2003;36:79-85.
15. Chandan S, Mohandas KM, Shastri SS, Pingle S. Kaposi's sarcoma in an Indian heterosexual male with AIDS. *Natl Med J India* 2002;15:125-6.
16. National AIDS Control Organisation (NACO). Annual Report 2022–2023. Ministry of Health and Family Welfare, Government of India. Available from: <https://naco.gov.in> [Last accessed on 2026 Sep 10].
17. Gill PS, Wernz J, Scadden DT, Cohen P, Mukwaya GM, Von Roenn JH, *et al.* Randomized phase III trial of liposomal daunorubicin versus doxorubicin, bleomycin, and vincristine in AIDS-related Kaposi's sarcoma. *J Clin Oncol* 1996;14:2353-64.
18. Northfelt DW, Dezube BJ, Thommes JA, Miller BJ, Fischl MA, Friedman-Kien A, *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;16:2445-51.
19. Stewart S, Jablonowski H, Goebel FD, Arasteh K, Spittle M, Rios A, *et al.* Randomized comparative trial of pegylated liposomal doxorubicin versus bleomycin and vincristine in the treatment of AIDS-related Kaposi's sarcoma. International Pegylated liposomal doxorubicin study group. *J Clin Oncol* 1998;16:683-91.
20. Mocroft A, Ledergerber B, Katlama C, Kirk O, Reiss P, D'Arminio Monforte A, *et al.* Decline in the AIDS and death rates in the EuroSIDA study: An observational study. *Lancet* 2003;362:22-9.
21. Bower M, Palmieri C, Dhillon T. AIDS-related malignancies: Changing epidemiology and the impact of highly active antiretroviral therapy. *Curr Opin Infect Dis* 2006;19:14-9.
22. Cianfrocca M, Lee S, Von Roenn J, Tulpule A, Dezube BJ, Aboulafia DM, *et al.* Randomized trial of paclitaxel versus pegylated liposomal doxorubicin for advanced human immunodeficiency virus-associated Kaposi sarcoma: Evidence of symptom palliation from chemotherapy. *Cancer* 2010;116:3969-77.
23. Uldrick TS, Wyvill KM, Kumar P, O'Mahony D, Bernstein W, Aleman K, *et al.* Phase II study of bevacizumab in patients with HIV-associated Kaposi's sarcoma receiving antiretroviral therapy. *J Clin Oncol* 2012;30:1476-83.
24. Aboulafia DM, Pantanowitz L, Thomas CF Jr., Dezube BJ. Kaposi sarcoma: A review and update. *J Natl Compr Canc Netw* 2020;18:574-80.
25. Sahu A, Das P, Khanna N, Gupta S. Use of pazopanib in refractory Kaposi sarcoma: A report of two cases. *BMJ Case Rep* 2021;14:e241311.
26. Hosseinipour MC, Innes C, Quedraogo D. Immunotherapy for Kaposi sarcoma: A new frontier. *Curr Opin HIV AIDS* 2023;18:101-8.

Funding: Nil; Conflicts of interest: Nil.

How to cite this article: Medhi K, Roy PS, Bose R, Bhattacharyya A, Kar RP. Kaposi sarcoma with long-term disease control on pazopanib in a young human immunodeficiency virus-positive male from Northeast India: A case report. *Indian J Case Reports*. 2026; September 10 [Epub ahead of print].