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(CASE REPORT)

Kaposi sarcoma in an immunocompromised adolescent: A case report from Libreville University Hospital (Gabon)

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Abstract

Introduction: Kaposi sarcoma (KS) is a multifocal vascular tumor driven by human herpesvirus-8 (HHV-8). It is a major opportunistic malignancy in the HIV era in sub-Saharan Africa. In children and adolescents, KS is uncommon but often presents with aggressive, disseminated disease.

Objective: To describe a case of disseminated Kaposi sarcoma in a Gabonese adolescent living with HIV and to highlight key diagnostic and therapeutic challenges.

Case presentation: A 16-year-old girl, diagnosed HIV-positive in 2023 following cerebral toxoplasmosis, had poor adherence to antiretroviral therapy. Both parents had died from AIDS. She was admitted with febrile seizures. Physical examination revealed a temperature of 39 °C; angiomatous nodules on the face (tip of the nose, forehead); violaceous macules on the palate; widespread papules; and bilateral cervical lymphadenopathy. Neurological examination showed no focal deficit. Laboratory tests demonstrated severe pancytopenia with hemoglobin 6.5 g/dL, leukopenia at 900/mm^3 and platelets at 16,000/mm^3. Immunovirological assessment showed a CD4 count of 22 cells/µL and a viral load of 386,000 copies/mL. Skin biopsy confirmed Kaposi sarcoma. Abdominopelvic ultrasound and computed tomography revealed generalized lymphadenopathy, imaging features compatible with pulmonary involvement and suspected ovarian involvement. Management consisted of antiretroviral therapy with tenofovir-lamivudine-dolutegravir (TDF/3TC/DTG), antifungal therapy (fluconazole, miconazole), and transfusions of packed red blood cells and platelet concentrates. Bleomycin chemotherapy was considered but withheld due to profound thrombocytopenia. The clinical course was marked by rapidly progressive diffuse hemorrhagic manifestations (gingival bleeding, epistaxis), diffuse myalgias, facio-limb edema, and dyspnea. Death occurred on day 48 of hospitalization from acute respiratory failure.

Conclusion: This case illustrates the severity and rapid progression of disseminated Kaposi sarcoma in an HIV-infected adolescent with very low CD4 counts and poor adherence to ART. Early diagnosis, prompt optimization of antiretroviral therapy and tailored psychosocial support are essential to reduce mortality in pediatric and adolescent populations.

Keywords: Kaposi Sarcoma; Adolescent; HIV; Immunosuppression; Gabon; Central Africa

1. Introduction

Kaposi sarcoma is a multifocal vascular tumor associated with human herpesvirus-8 (HHV-8) and is a major opportunistic malignancy in the HIV era in sub-Saharan Africa [1,2]. In Gabon, both circulation and genetic variability of HHV-8 have been documented [3]. In children and adolescents, KS is less frequent than in adults but is often more

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aggressive, particularly in the context of severe immunosuppression, delayed diagnosis and poor adherence to antiretroviral therapy [4,5]. Regional series from Central Africa have reported severe pediatric forms, whereas in Gabon KS has been mainly described in adults living with HIV [6,7].

The main objective of this report is to describe a case of disseminated Kaposi sarcoma in an adolescent living with HIV at Libreville University Hospital and to highlight the diagnostic and therapeutic challenges of pediatric KS in the Gabonese context.

2. Case presentation

A 16-year-old adolescent girl was diagnosed HIV-positive in August 2023 during the management of cerebral toxoplasmosis. She was an orphan; both parents had died from AIDS. Since diagnosis, she had shown poor adherence to antiretroviral therapy.

She was admitted to the pediatric department for febrile seizures. On admission, her temperature was 39 °C. Physical examination revealed angiomatous nodules on the face (tip of the nose and forehead), violaceous macules on the palate, and diffuse papular lesions. There was bilateral cervical lymphadenopathy. Neurological examination showed no focal deficits.

Laboratory investigations demonstrated severe pancytopenia with hemoglobin 6.5 g/dL, leukopenia of 900 white blood cells/mm^3 and thrombocytopenia of 16,000 platelets/mm^3.

Immunovirological tests showed a CD4 count of 22 cells/µL and a viral load of 386,000 copies/ml.

Histopathological examination of a skin biopsy confirmed the diagnosis of Kaposi sarcoma.

Abdominopelvic ultrasound and computed tomography demonstrated generalized lymphadenopathy, imaging features compatible with pulmonary involvement and suspected ovarian involvement.

Management consisted of antiretroviral therapy with tenofovir-lamivudine-dolutegravir (TDF/3TC/DTG), antifungal treatment with fluconazole and miconazole, and transfusions of packed red blood cells and platelet concentrates. Bleomycin-based chemotherapy was considered but postponed and ultimately not initiated because of profound thrombocytopenia.

The clinical course was unfavorable. The patient rapidly developed diffuse hemorrhagic manifestations (gingival bleeding, epistaxis), diffuse myalgias, facio-limb edema and progressive dyspnea. Despite supportive care, she died on the 48th day of hospitalization from acute respiratory failure.

3. Discussion

Pediatric Kaposi sarcoma results from the interaction between HHV-8 infection and immunosuppression, most often related to HIV, although juvenile forms have also been described in association with certain primary immunodeficiencies [8]. In Africa, the burden of KS reflects the combined epidemiology of HIV and HHV-8 and remains high despite expanded access to ART [1,2]. In children and adolescents, the disease frequently presents with disseminated skin and visceral involvement, and prognosis is closely linked to the degree of immunosuppression, particularly very low CD4 counts [4,5]. Our observation is consistent with these features, in a context of marked immunodeficiency and poor treatment adherence.

Diagnosis relies on histological confirmation and staging with imaging to assess visceral involvement. However, in resource-limited settings, delays in accessing pathology services and advanced imaging significantly contribute to excess mortality [6,9]. Severe cytopenias, as observed in our patient, are both markers of advanced disease and major limitations to chemotherapy: initiating cytotoxic agents in the presence of profound thrombocytopenia carries a high risk of life-threatening hemorrhagic complications [10,11].

Therapeutic strategies should prioritize viral suppression and immune reconstitution through optimized antiretroviral therapy, with the addition of systemic chemotherapy in cases of extensive, visceral or life-threatening disease [9,12]. Pediatric series from African settings suggest that vincristine, bleomycin and etoposide may be effective, provided that a rigorous benefit–risk assessment is performed and close monitoring is ensured [10,11]. When chemotherapy is

combined with ART, complete remissions have been reported; treatment failure is generally associated with very low CD4 counts, high viral load and delayed initiation of care [13].

In Gabon, KS remains an opportunistic disease observed despite ART, underscoring the need for structured follow-up and reinforced therapeutic education, particularly in adolescents, to improve adherence [7]. Public health priorities include early pediatric HIV diagnosis, uninterrupted access to ART and strengthening of diagnostic capacities for KS, including histopathology and imaging [1,2,12].

4. Conclusion

This case highlights the severity of disseminated Kaposi sarcoma at very low CD4 counts in an adolescent living with HIV. Prognosis depends on early diagnosis, rapid optimization of antiretroviral therapy and adapted psychosocial support to improve adherence and follow-up. Strengthening pediatric HIV programs and oncology capacities is essential to reduce KS-related mortality in this age group.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare no conflicts of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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