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Non-HIV Kaposi Sarcoma in an Immunocompetent Patient with High-Risk Behavior: Elucidating Subtypes and Risk Factors for Diagnosis

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INTRODUCTION

Kaposi sarcoma (KS) is a rare type of cancer that affects the blood vessels and can present as skin, mucous membrane, or internal organ lesions. It commonly is associated with human immunodeficiency virus (HIV) infection but also can occur in non-HIV infected individuals, especially in those with a history of immunosuppressive therapy, organ transplantation, or chronic lymphedema.[1] Although rare, classic Kaposi sarcoma can present in an individual with no known history of immunosuppression.[2] The diagnosis of KS in non-HIV infected individuals often is delayed due to a lower index of suspicion, which can lead to poor outcomes. Therefore, it is crucial to consider Kaposi sarcoma in the differential diagnosis of patients with suspicious skin lesions, regardless of their risk factors for the disease.[1]

There has been an observed rise in non-HIV-related Kaposi sarcoma cases in the context of declining HIV-associated cases attributed to the success of antiretroviral therapy (ART), as there has been a 75-90% decrease in incidence since the introduction to ART.[3] This has been juxtaposed by non-HIV-related Kaposi sarcoma which has increased from 12.4% to 37.1% between 1991 and 2013, respectively.[4]

Early recognition and diagnosis of KS can lead to prompt treatment and improved outcomes; this is crucial considering one of the best predictors for prognosis is early treatment.[5] KS can present with a wide range of clinical manifestations and may be mistaken for other conditions, such as ecchymoses, hematomas, or purpura. Historically, when these signs occur in an HIV-infected patient, KS is many times the leading differential. However, with the increasing incidence of non-HIV KS cases, there has been a clinical shift to considering KS in non-HIV patients who present with suspicious skin lesions, especially those who have a history of immunocompromised state.[1]

This case report highlights a rare presentation of non-HIV related KS in a high-risk immunocompetent patient and emphasizes the importance of early recognition and accurate diagnosis of this unusual form of the disease in all patients with suspicious skin lesions, regardless of known history of immunosuppression. It is important to increase awareness among clinicians of the importance of considering non-HIV KS in their differential diagnosis when evaluating patients with suspicious skin lesions.

CASE REPORT

A 64-year-old male with diabetes (recent hemoglobin A1c 6.9%), hypogonadism, actinic keratosis, previous history of basal cell carcinoma (definitively treated surgically), previous history of squamous cell carcinoma (definitively treated surgically), and high-risk men-who-have-sex-with-men behavior presented to the clinic for concerns of two, solitary purple growths on his left forearm and left upper arm. He reported that the lesions were new to him, nonpainful, nonpruritic, and had some mild-moderate bleeding. He noted that nothing made them better or worse and have been present for three weeks. His family history was remarkable for non-melanoma skin cancer. He was on metformin, testosterone gel, and Emtricitabine-Tenofovir.

Physical examination was unremarkable except for integumentary lesions. He had purple, pearly, and telangiectatic papules noted on his upper left arm and left forearm (Figure 1). Additionally, he had non-hyperkeratotic, erythematous scaly papules distributed on his ears, face, and trunk which were diagnosed as actinic keratoses by his dermatologist.

Laboratory workup was negative for HIV-1/HIV-2 antibodies, HIV-1 p24 antigen, Chlamydia trachomatis, and Neisseria gonorrhoeae. Further lab results were all normal (Table 1): CD4 count 704 (359-1519 /uL), IgG 938 (603-1613 mg/dL), IgA 364 (61-437 mg/dL), IgM 92 (20-172 mg/dL), and IL-6 3.1 (0.0-13.0 pg/mL). He was positive for Treponema pallidum antibodies and RPR was reactive with a 1:1 quantity.

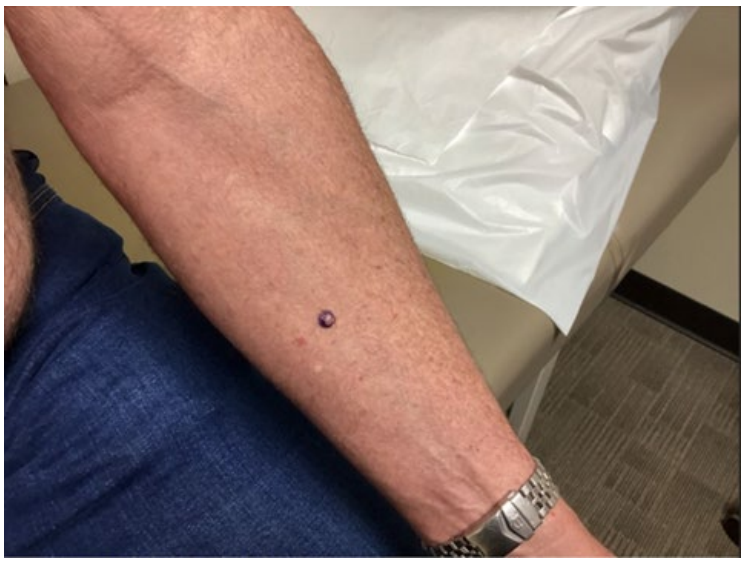

Figure 1. Purple, pearly telangiectatic lesion noted on patient's left forearm.

The lesions were excised, and the specimens were sent for a pathology report. The report revealed that the specimen showed a relatively circumscribed, but unencapsulated intradermal spindle cell neoplasm consisting of fascicles of quite uniform spindle cells with palely eosinophilic cytoplasm. Immunostains showed diffuse positivity for CD34, ERG, and HHV8. The findings suggested the diagnosis of nodular KS. With the confirmed history of no HIV, the diagnosis of non-HIV KS was confirmed.

Table 1. Relevant lab values.

Relevant laboratory tests	Lab values	Normal ranges
HIV-1/HIV-2 antibody	Negative	
HIV-1 p24 antigen	Negative	
Chlamydia trachomatis antibody	Negative	
Neisseria gonorrhoeae antibody	Negative	
Treponema pallidum antibody	Positive	
Rapid Plasma Reagin	Reactive: 1:1	
CD4 count	704/uL	359-1519/uL
IgG	938 mg/dL	603-1613 mg/dL
IgA	364 mg/dL	61-437 mg/dL
IgM	92 mg/dL	20-172 mg/dL
IL-6	3.1 pg/mL	0.0-13.0 pg/mL

DISCUSSION

KS is a rare, multifocal, angioproliferative neoplasm characterized by the development of lesions on the skin, mucous membranes, and occasionally internal organs. The patient was at risk for exposure to a wide range of infectious diseases that complicated the diagnostic process. This difficulty further demonstrates the need to understand all subtypes and risk factors of KS to make accurate diagnosis and choose appropriate management of KS.

There are four distinct clinical subtypes of KS, namely classic Kaposi sarcoma (CKS), endemic African Kaposi sarcoma (EAKS), iatrogenic Kaposi sarcoma (IKS), and epidemic Kaposi sarcoma or HIV-associated Kaposi sarcoma (HIV-KS).[1] The exact cause of KS is not fully understood, but it is thought to be caused by the human herpesvirus 8 (HHV-8), also known as Kaposi sarcoma-associated herpesvirus (KSHV). HHV-8 is found in all types of KS and is necessary for the development of cancer.[6] Understanding all subtypes of Kaposi sarcomas is crucial in providing accurate diagnosis and appropriate management.

CKS predominantly affects elderly men of Mediterranean, Eastern European, or Middle Eastern descent, presenting with indolent, slow-growing cutaneous lesions that primarily involve the lower extremities.[7] It is the least aggressive form of KS, with the lesions generally not progressing to visceral involvement.[1]

EAKS occurs in individuals residing in sub-Saharan Africa, presenting a more aggressive course than CKS. EAKS affects both children and adults, with the pediatric form being particularly aggressive and rapidly progressing to visceral involvement.[8]

IKS is associated with immunosuppression following organ transplantation. IKS typically develops within one to two years after transplantation, often presenting with cutaneous lesions similar to CKS. However, these lesions may rapidly progress to visceral involvement, especially in cases of insufficient immunosuppression reduction.[9]

HIV-KS is the most aggressive form and has become the most prevalent subtype due to the global HIV/AIDS pandemic. HIV-KS primarily affects men who have sex with men and is characterized by rapidly progressing cutaneous and visceral lesions.[10] It is important to maintain a broad diagnosis for diseases, even if the presenting disease does not fall in line with typical co-presenting symptoms or comorbidities.

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