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KAPOSI SARCOMA: A CASE OF MISTAKEN IDENTITY IN AN IMMUNOCOMPETENT HEALTHY MALE

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ABSTRACT

Background: Kaposi's sarcoma (KS) is a low-grade vascular neoplasm associated with human herpesvirus-8 (HHV-8), frequently occurring in immunocompromised patients, particularly those with human immunodeficiency virus (HIV)Its clinical presentation varies from innocuous-appearing vascular skin lesions to visceral involvement. There are case reports of a rare type of KS which mimics pyogenic granulomas particularly on the feet though reports of KS in immunocompetent, healthy individuals are rare. In this report we share the case of an immunocompetent, healthy young adult male who presented with a lesion concerning for pyogenic granuloma that was found on pathology to be KS.

Case report: We report the case of an HIV-negative, immunocompetent young adult Latin American male who presented with a painful, rapidly growing lesion between his first and second toe. The lesion was initially diagnosed as a wart. After failing salicylic acid and cryotherapy the lesion had a more vascular appearance, as shown in *Figure 1*. Excisional biopsy was obtained with pathology revealing KS, which was confirmed via latency-associated nuclear antigen (LANA) immunostaining. HIV testing was obtained at three time points, all of which were negative. Patient denied high risk behaviours including sex with men and intravenous drug use. Re-excision for margins was completed with dermatology and pathology again confirmed KS with localized disease. Patient received definitive treatment from dermatology and oncology, emphasizing the multidisciplinary nature of KS management.

Conclusion: KS should be included in the differential diagnosis for vascular lesions particularly involving the feet, even in immunocompetent adults.

KEYWORDS

Kaposi sarcoma, HHV-8, immunocompetent, non-HIV Kaposi sarcoma

LEARNING POINTS

- Kaposi's sarcoma can mimic benign skin lesions, making it essential for providers to maintain a high index of suspicion in cases of atypical, recurrent, or rapidly evolving lesions.
- Atypical features and diagnostic uncertainty should prompt escalation to biopsy and pathology review, even in patients without known immunosuppression.

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INTRODUCTION

Kaposi's sarcoma (KS) is a low-grade, angioproliferative malignancy of vascular and lymphatic origin associated with human herpesvirus-8 (HHV-8). It typically affects immunocompromised individuals, most notably those living with human immunodeficiency virus (HIV)[1]. If left untreated, KS can progress from indolent skin lesions to aggressive, disseminated disease with visceral involvement, leading to significant morbidity and increased mortality. Complications may include ulcerating or painful cutaneous lesions, severe oedema and lymphatic obstruction, gastrointestinal or pulmonary involvement, and a high risk of death, especially in patients with HIV[2].

However, KS can also develop in individuals without HIV or other forms of iatrogenic or congenital immunosuppression. Four distinct epidemiologic variants of KS have been described: classic (primarily affecting elderly men of Mediterranean or Eastern European descent), endemic (seen in children and young adults in sub-Saharan Africa), iatrogenic (occurring in organ transplant recipients on immunosuppressive therapy), and HIV-related KS[3]. Non-HIV-associated KS presents unique diagnostic challenges, especially in primary care settings where rare vascular tumours may initially mimic benign lesions.

KS can present with red to violaceous macules, papules, or nodules that may bleed, ulcerate, or coalesce into plaques. Lesions often begin subtly in the patch stage and progress through plaque and nodular phases, reflecting increasing vascular proliferation and dermal involvement[4]. While typically found on the lower extremities, KS can appear on any cutaneous surface. Several clinicopathologic variants exist including pyogenic granuloma-like, lymphangioma-like, ecchymotic, and hyperkeratotic forms that can mimic benign vascular lesions such as haemangiomas, warts, or pyogenic granulomas[4]. In more advanced disease, KS may involve mucosal sites, lymph nodes, the gastrointestinal tract, or lungs, necessitating further workup with imaging or endoscopy.

In immunocompetent individuals, a diagnosis of KS can be delayed because clinical suspicion for malignancy is often low, especially when the lesion appears in an atypical demographic or setting. This case report highlights a rare presentation of KS in a young, otherwise healthy immunocompetent, HIV-negative male without Mediterranean, Eastern European or sub-Saharan African origins and illustrates the critical role of primary care providers in identifying concerning skin lesions, initiating appropriate diagnostic workup, and coordinating interdisciplinary care.

CASE DESCRIPTION

We present the case of a 32-year-old male with no known history of HIV or other immunodeficiency, who presented with a 1 cm vascular nodule with collarette on the plantar aspect of the right foot. The lesion was initially suspected to be a benign verrucous growth such as a wart or clavus. The patient attempted self-treatment with over-the-counter salicylic acid preparations without improvement. Cryotherapy with liquid nitrogen was performed in the office.

Despite initial management, the lesion rapidly recurred and became painful and prone to bleeding *(Fig. 1)*. At a subsequent visit, the lesion was reassessed and presumed to be a pyogenic granuloma due to its vascular appearance. However, given its rapid recurrence and atypical progression, an excisional skin biopsy was performed. Histopathological examination revealed atypical nodular spindle-cell proliferation with slit-like vascular spaces. Immunohistochemistry showed lesional cells to be positive for HHV-8, CD31, and CD34. Additionally, latency-associated nuclear antigen (LANA) staining was positive, confirming the diagnosis of KS *(Fig. 2)*[5].

The patient underwent comprehensive testing including an HIV antigen/antibody immunoassay, Rapid Plasma Reagin test (RPR) for syphilis, and a hepatitis panel. All laboratory tests, including three separate HIV tests spaced over 320 days, were negative. The consistent pattern of negative results across nearly one year helped confirm the absence of underlying HIV. Patient also confirmed no high-risk behaviors such as unprotected sexual activity with multiple



Figure 1. Vascular nodule with collarette on the plantar aspect of the right foot initial presentation (left), post biopsy (middle) and post excision (right).

partners, injection drug use, recent blood transfusions, or occupational exposure to bloodborne pathogens, and no conditions associated with immune compromise including HIV infection, long-term corticosteroid therapy, chemotherapy, or organ transplantation.

Brambilla staging, a clinical system developed for classic KS that classifies disease severity based on lesion extent, progression rate, and complications to guide treatment decisions in elderly patients with variable disease courses, was used in our HIV-negative patient and placed him within the early, localized macular-nodular spectrum. The lesion was confined to the skin, with no lymph node or visceral involvement. Management was coordinated through primary care, with referrals made to dermatology and oncology. Due to the localized nature of the lesion, surgical excision was considered an appropriate initial treatment. The patient received counseling regarding disease monitoring, the potential for recurrence, and the need for continued HIV surveillance. Following confirmation of full lesion removal with negative margins, the patient was lost to follow-up.

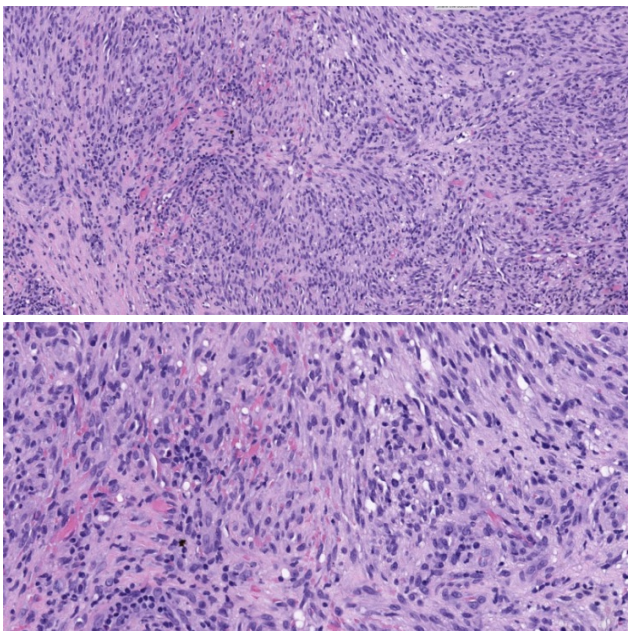


Figure 2. Atypical nodular spindle-cell proliferation with slit-like vascular spaces (haematoxylin and eosin stain).

DISCUSSION

We present a novel case of an uncommon presentation of KS in a patient who does not clearly fall into any of the four established epidemiologic subtypes. The patient was a young, immunocompetent, HIV-negative male with origins from Latin America with no identifiable risk factors or history of immunosuppression. While sporadic cases of KS in immunocompetent individuals have been reported, they remain rare, and this case further broadens the known clinical and demographic spectrum. The lesion's pyogenic granuloma-like appearance and plantar location also reflect less common morphologic variants that can lead to diagnostic uncertainty. The case emphasizes the need for a low threshold to pursue biopsy in persistent or unusual vascular lesions, even in patients without classic KS risk factors.

This case also highlights the importance of vigilance in evaluating skin lesions, even when clinical risk factors for malignancy such as HIV or immunosuppression are absent. KS can mimic benign vascular tumours, and delay in diagnosis may occur if biopsy is not promptly performed. In our patient, early diagnostic clues included the lesion's persistence despite initial treatments, recurrence after cryotherapy, and bleeding. These atypical features ultimately prompted biopsy and histological confirmation of KS.

Furthermore, this case demonstrates the efficacy of LANA in atypical immunocompetent KS presentations. LANA is a nuclear protein expressed during the latent phase of HHV-8 infection and serves as a highly specific and sensitive immunohistochemical marker for KS[4]. Unlike HHV-8 deoxyribonucleic acid, which can vary widely in serum detection, LANA is nearly always positive in true KS lesions and absent in non-KS vascular tumours, providing an essential diagnostic tool when clinical features are ambiguous[6].

Primary care providers are often the first point of contact for patients with dermatologic complaints and play a pivotal role in the early recognition of potentially malignant lesions. In this case, longitudinal care allowed for repeated clinical assessments and the eventual decision to biopsy, which was essential for diagnosis. Primary care guided the coordination of specialist input, including dermatology and oncology, for staging and treatment. Given that KS may necessitate a multidisciplinary approach, this coordination is essential for optimizing outcomes.

The treatment of KS varies depending on the type, location, and extent of disease. Localized cutaneous disease, as seen in our patient, may respond well to surgical excision, cryotherapy, or topical therapies such as imiquimod or intralesional vinblastine. For disseminated or visceral involvement, systemic chemotherapy, or biologic therapies may be indicated[7].

While our patient did not have HIV, the case also underscores the importance of understanding HIV testing windows. HIV antigen/antibody tests may yield false negatives if performed too early. HIV ribonucleic acid polymerase chain reaction testing may detect infections as early as 5 days post-exposure, but p24 antigen peaks at 2 weeks and antibodies generally appear by week 3[8]. For patients with suspected KS, even with negative initial HIV tests, repeat testing at 45 and 90 days is warranted, especially when lesions are highly suggestive of KS.

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