Treatment of Kaposi sarcoma with intralesional cidofovir in an HIV-negative man

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INTRODUCTION

Kaposi sarcoma (KS) is rare angioproliferative disease that originates from the endothelial cells of blood vessels and lymphatic vessels, often presenting as cutaneous lesions. KS is associated with human herpesvirus-8 (HHV-8) infection.[1] The 4 well-documented histologically indistinguishable KS variants are as follows: (1) classic, (2) African (endemic), (3) AIDS-associated (epidemic), and (4) iatrogenic.[1] Although KS is commonly observed in immunocompromised individuals, more recently, a fifth variant has been described, ie, KS in men having sex with men (MSM) without HIV infection.[2,3] Herein, we describe the successful use of intralesional cidofovir injection for treatment of a localized KS lesion in a patient with the fifth variant of KS.

Abbreviations used:

HHV-8: human herpesvirus-8
KS: Kaposi sarcoma

CASE PRESENTATION

A 62-year-old African American MSM with previously diagnosed HIV-negative Kaposi's sarcoma, also known as the fifth variant of KS, presented for follow-up. At his visit 1 month prior, the patient presented with confluent purple papules and violaceous nodules distributed on the left medial plantar midfoot, left medial dorsal foot, and left plantar surface. Prior management of KS lesions included topical tretinoin and imiquimod cream; however, the lesion on his medial foot persisted without resolution. Previous HIV-1 and HIV-2 enzyme-linked immunosorbent assays and polymerase chain reaction test were negative. Biopsy specimens from 2 lesions on the left foot showed numerous extravasated erythrocytes between fascicles of spindled cells within the dermis, and immunohistochemistry for HHV-8 was positive, confirming the diagnosis of KS. At the visit 1 month prior, an injection of 0.2 mL of cidofovir 375 mg was administered to the lesion on the left medial foot (Fig 1). On follow-up, the KS lesion treated with cidofovir was noted to be completely resolved (Fig 2).

DISCUSSION

KS is typically associated with immunosuppression, particularly in HIV-infected individuals. However, non-HIV–associated KS cases have been documented, including our patient. Such cases often pose diagnostic and therapeutic challenges owing to their rarity.[4,5] Treatment of isolated lesions of KS can include local destruction with cryotherapy, superficial radiotherapy, alitretinoin gel, or local excision.[1] Our case highlights the efficacy of intralesional cidofovir injection as a therapeutic approach for a localized KS lesion in an HIV-negative patient.

Cidofovir is a nucleotide analog that selectively inhibits the viral DNA polymerase, leading to the termination of DNA chain elongation and thereby inhibiting viral DNA replication. Cidofovir as a treatment for KS is based on the recognition of HHV8 as a factor in the development of KS lesions and its potential to suppress viral replication within

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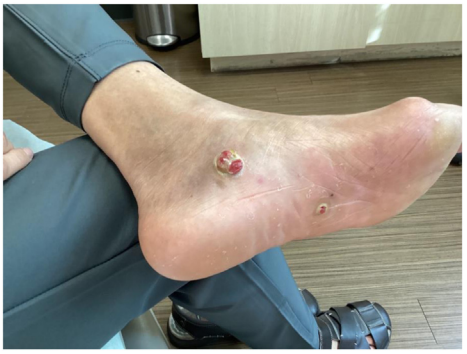

Fig 1. Kaposi sarcoma lesions on the left foot.

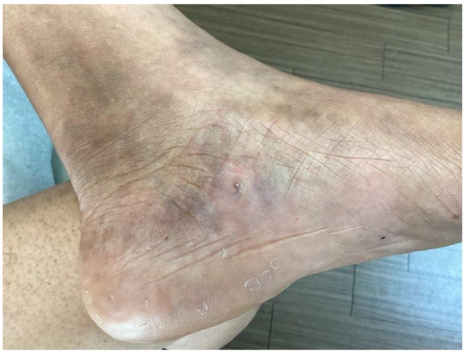

Fig 2. Resolution of localized Kaposi sarcoma lesion on the left medial foot after intralesional cidofovir injection.

the lesion. Intralesional cidofovir is administered directly into the lesion, providing a localized effect. This method minimizes systemic exposure to the drug, thus reducing the potential for systemic side effects.

Typically, HHV8 tumors consist of latent virus, with a small percentage of the cells undergoing lytic replication.[6,7] Cidofovir inhibits the lytic phase of the virus and therefore may inhibit the expression of lytic viral genes contributing to tumor survival.[2,6] Although a few cases have been reported in the literature on intralesional cidofovir injection, not all reports have yielded successful results. Simonart et al[8] described a case in which intralesional injections of cidofovir did not clinically improve the cutaneous lesions in an HIV-negative patient. The reason for inconsistent response is unclear but could be due to the amount of lytic-phase virus within the lesions among other factors. The number of viral copies and virus-positive cells varies among KS-associated herpesvirus diseases, suggesting different mechanisms of viral pathogenesis.[8] Although intralesional cidofovir can offer benefit, its use might be influenced by factors such as lesion size and location, patient's overall health and immune status, cidofovir concentration, and presence of combination treatments. Moreover, variations in drug penetration and vascularity among different anatomic sites could affect treatment response. Immunocompromised patients with AIDS-associated or immunosuppression-related KS might exhibit a different response to treatment than immunocompetent patients with KS. Additionally, the optimal dosage for intralesional cidofovir in KS treatment is not well defined, which in turn could contribute to the differences in treatment outcomes.

CONCLUSION

This case documents the successful resolution of a KS lesion in a high-risk HIV-negative patient after a single intralesional cidofovir injection. This approach led to complete resolution of the localized lesion, suggesting the therapeutic potential of cidofovir in cases of non-HIV–associated KS, also recognized as the fifth variant of KS. However, further research is needed to better understand the factors influencing treatment response and to optimize the use of intralesional cidofovir as a therapeutic option for KS.

Conflicts of interest

None disclosed.

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