An unusual case of pyogenic granuloma-like Kaposi sarcoma

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Abstract

Kaposi sarcoma (KS) is not typically included in the differential diagnosis of lesions with clinical characteristics of pyogenic granuloma. However, cases of pyogenic granuloma-like Kaposi sarcoma have been reported in the literature. This variant is extremely rare and possesses clinical and histological findings consistent with both conditions. We report an elderly, immunocompetent man with pyogenic granuloma-like Kaposi sarcoma, which was clinically consistent with a pyogenic granuloma and possessed histological findings consistent with Kaposi sarcoma and pyogenic granuloma.

Keywords: Kaposi sarcoma, pyogenic granuloma, human herpesvirus-8, immunohistochemistry, vascular

Introduction

Kaposi sarcoma is a rare, low-grade vascular tumor that classically presents as patches and macules, which may mature into nodules and plaques. Pyogenic granuloma-like Kaposi sarcoma is a rare variant that possesses clinical and histological findings of both pyogenic granuloma and Kaposi sarcoma. In this report, we describe a case of pyogenic granuloma-like Kaposi sarcoma that presented clinically as a pyogenic granuloma. Histologically, the lesion possessed classic findings of Kaposi sarcoma with minimal findings of pyogenic granuloma as well.

Case Synopsis

A 91-year-old man of Eastern European origin presented with a 2-month history of an irritated growth on his left middle finger. He denied any history of antecedent injury or previous lesion at the site. Past medical history was positive for basal cell carcinoma. He was not tested for HIV under our care. His presentation was consistent with classic Kaposi sarcoma, unrelated to HIV. He also denied a history of immunosuppressive therapy, including chemotherapy. The patient failed to report a personal history of Kaposi sarcoma which had been diagnosed and managed by a dermatologist 5 years earlier, the details of which the patient could not recall.

Physical examination revealed a red-purple, friable, exophytic nodule with an epidermal collarette on the left lateral aspect of the left middle finger (**Figure 1**). The mass was round and regular with a diameter of one centimeter. These clinical findings were consistent with a pyogenic granuloma and a shave biopsy was performed.

Histological examination revealed a neoplastic process characterized by nodular aggregates of spindle cells with vascular differentiation and extravasated erythrocytes (**Figure 2**). Siderophages and plasma cells were also noted. The specimen stained strongly for human herpesvirus-8 (**Figure 3**). Immunohistochemistry was also positive for CD31 and CD34 and negative for Pancytokeratin, S-100, EMA, and CD10 (not shown). A pedunculated outline was noted on histology as well. Based on the histology, immunohistochemistry, and clinical

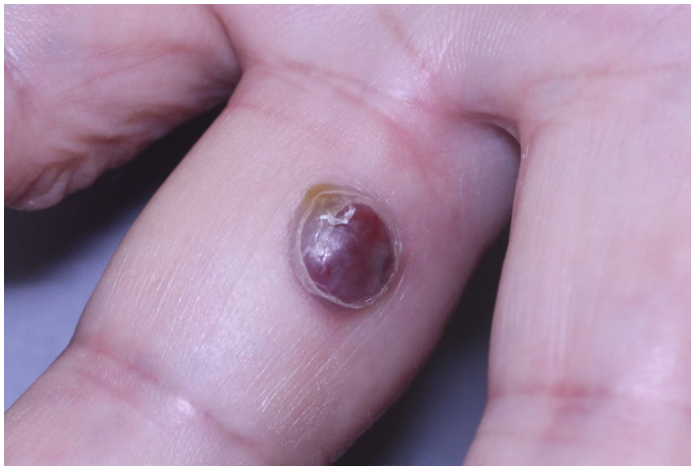

Figure 1. *Clinical photograph of the red-purple, friable, exophytic papule with an epidermal collarette on the left lateral aspect of the left middle finger of the patient.*

findings, a diagnosis of pyogenic granuloma-like Kaposi sarcoma was made and the patient was referred to oncology for management.

Case Discussion

Kaposi sarcoma and pyogenic granuloma generally do not resemble one another clinically. Pyogenic granulomas classically present as fast-growing, exophytic nodules with epidermal collarettes [1]. These lesions can be erythematous or blue and tend to grow on the head, neck, and upper extremities. Histologically, pyogenic granulomas are characterized by well-circumscribed dermal lobules of small capillaries [1].

Kaposi sarcoma, an uncommon cancer which is linked to human herpesvirus-8 (HHV-8), can involve the skin, mucosa, and viscera [2]. Kaposi sarcoma lesions initially appear as macules and patches and may go on to develop into plaques and nodules thereafter [3]. Lesions at varying stages of development can present at the same time [3]. Histologically, KS is characterized by a proliferation of spindle cells with an inflammatory infiltrate and immunohistochemistry that is positive for HHV-8 [1].

Four clinical subtypes of KS are recognized in the U.S.: classic, endemic, iatrogenic, and epidemic. Classic KS tends to occur on the hands and feet of elderly men of Eastern European and Mediterranean origin [4]. Endemic KS predominantly affects men of African origin, aged 25 to 40 [2]. Iatrogenic KS occurs in patients undergoing immunosuppressive treatment, such as those who have undergone chemotherapy or organ transplantation [4]. Epidemic KS is seen in patients with HIV/AIDS [4]. The four subtypes are related by their collective HHV-8 etiology.

A rare variant of KS called pyogenic granuloma-like Kaposi sarcoma (PG-like KS) has been identified in patients both with and without underlying immunodeficiency [5]. In PG-like KS, lesions possess clinical and histological features of both pyogenic granuloma and Kaposi sarcoma [5]. These lesions may have histologic findings more consistent with pyogenic granulomas, with sparse histological evidence of KS, making PG-like KS difficult to diagnose. Immunostaining for HHV-8 DNA has been found to be both sensitive and specific for KS and is an essential tool in identifying this variant. Most PG-like KS cases identified in the literature have been found in men over the age of 60 [6].

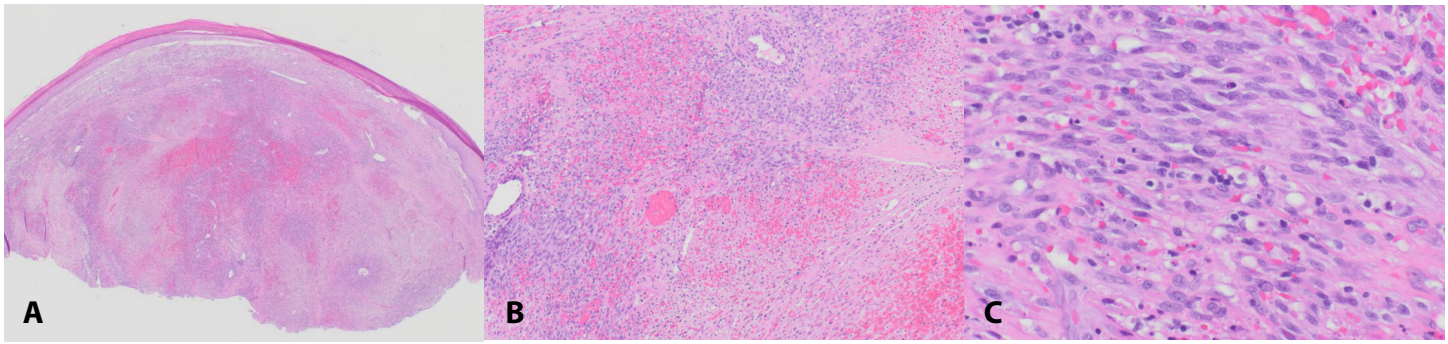

Figure 2. ***A)*** *H&E histopathology. The lesion is a nodular proliferation of vascular spaces with increased cellularity and extensive erythrocyte extravasation, 10×.* ***B)*** *Irregular vascular spaces are associated with a proliferation of enlarged endothelial cells with large nuclei. Erythrocytes are present within vascular spaces and freely in the stroma, 100×.* ***C)*** *The enlarged endothelial cells have large irregular nuclei with scattered nucleoli. There is focal spindling of nuclei and small slit-like vascular spaces, 400×.*

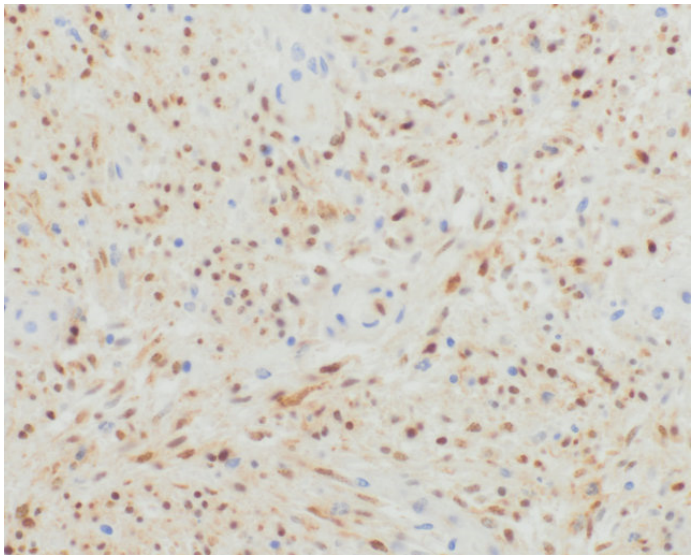

Figure 3. *The nuclei stain strongly with HHV-8, 400×.*

The case presented represents a situation where a lesion appeared to be a classic pyogenic granuloma but was revealed to have predominant features of KS based on histology and immunochemistry. Clinically, the nodule was red-purple, exophytic, and possessed an epidermal collarette. These features made the clinical diagnosis of pyogenic granuloma an obvious one. However, the nodular aggregates of spindle cells, inflammatory infiltrate, and positive HHV-8 immunohistochemistry all pointed to a diagnosis of KS. The pedunculated outline seen on histology was the only histological feature of pyogenic granuloma noted. A diagnosis of PG-like KS was made based on these clinical and histological findings. It was concluded that this case fell under the "classic" subtype of KS owing to the patient's Eastern European origin, the previously undisclosed history of classic KS of the lower extremities, and the lack of immunodeficiency or iatrogenic immunosuppression.

Conclusion

This case of PG-like KS is atypical in that it appeared clinically as a pyogenic granuloma on the finger of a 91-year-old immunocompetent patient, while having histologic findings indicating a diagnosis of KS. Although PG-like KS generally has scant histologic findings consistent with KS, the histology in this case had prominent features of KS and only one feature of PG. In conclusion, an increased index of suspicion for KS and its PG-like variant should be adopted when assessing lesions that appear to be pyogenic granulomas.

Potential conflicts of interest

The authors declare no conflicts of interests.

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