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Case Report

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Isolated Nodular Kaposi Sarcoma of the Finger Pulp: A Case Report

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Abstract

Introduction

Kaposi Sarcoma (KS) is a malignant vascular tumor linked to Human Herpes Virus 8 (HHV-8) infection, characterized by the proliferation of spindle-shaped mesenchymal cells and dilated capillaries. KS commonly affects mucocutaneous sites, particularly in the lower extremities, with rare extracutaneous involvement.

Case

We report a case of a 78-year-old male with multiple chronic diseases who presented with a 2-month history of a rapidly enlarging dome-shaped nodule on his left index finger. Surgical excision and histopathological analysis confirmed the diagnosis of Kaposi sarcoma, with the lesion showing characteristic spindle cells and positive immunohistochemical staining for HHV8.

Discussion

This case highlights the importance of recognizing and considering KS in the differential diagnosis of tumors, such as the hand. The unusual presentation and the critical role of histopathology and immunohistochemistry in confirming the diagnosis underscore the need for careful differential diagnosis and thorough surgical management to reduce the risk of recurrence.

1. Introduction

Kaposi Sarcoma (KS) is a malignant vascular tumor characterized by the proliferation of spindle-shaped mesenchymal cells and dilated capillaries, which requires infection by the Human Herpes Virus 8 (HHV-8) [1]. KS is divided into four types: classic, iatrogenic, endemic, and epidemic [2].

The most common presentation of KS includes purple or dark brown lesions (macules, papules, nodules) that occur at mucocutaneous sites, especially on the lower extremities, and are often associated with lymphedema [2].

Extracutaneous involvement, such as bone involvement, is rare and occurs in only 4.5% of cases, while a solitary KS lesion on the hand is even rarer [3,4]. While classic KS is typically slow-growing, localized, and indolent, it can occasionally become disseminated, proliferate, and cause significant morbidity and mortality [5]. Diagnosis of classic KS requires a biopsy, and radiographic evaluation is generally unnecessary [2].

Previous literature has documented only two cases of primary Kaposi sarcoma affecting the hand: one in a patient with a history of HIV and another in a woman who tested negative for HIV, with the lesion initially resembling squamous cell carcinoma [6,7].

We present the case of a 78-year-old male who presented with swelling in his left index finger and, following resection and histopathological analysis, was subsequently diagnosed with primary Kaposi sarcoma.

2. Case

A 78-year-old male with a history of hypertension, diabetes, hypercholesterolemia, and acute coronary syndrome presented with a progressively enlarging dome-shaped nodule on his left index finger (Figure 1). The patient noticed the lesion two months prior, which increased significantly in size. The initial evaluation by a dermatologist led to a referral for surgical excision due to concerns about the nodule's rapid growth.

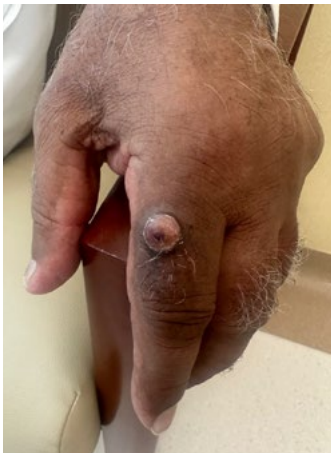

Figure 1: Dome-Shaped Purple Nodule on the Left Index Finger

A full excision was performed, and the specimen was sent for histopathological analysis. The excised tissue consisted of a non-oriented ellipse of skin measuring 1.8 x 0.9 x 0.2 cm, with a prominent white, hypopigmented dome-shaped nodule measuring approximately 1 cm in diameter and a central red elevated area 4 mm in diameter. Upon sectioning, the nodule revealed a gritty, hemorrhagic, solid-cut surface with a slightly firm texture (Figure 2).

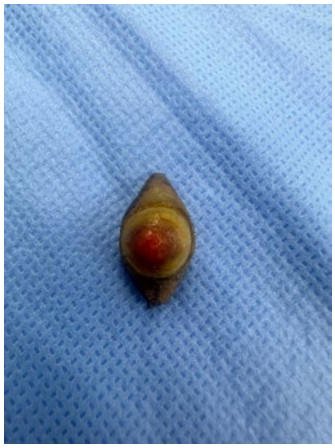

Figure 2: Gritty, Hemorrhagic, Solid-Cut Surface with a Slightly Firm Texture

Histopathological examination revealed a dome-shaped cellular dermal lesion with a multinodular growth pattern. The nodules were composed of relatively uniform, mildly atypical large spindle cells arranged in intersecting short fascicles. Interspersed among these spindle cells were poorly formed slit-like vascular channels, some filled with extravasated red blood cells. The lesion also demonstrated abundant lymphoplasmacytic infiltrates (Figure 3). Notably, the surface of the lesion exhibited ulceration with trans epidermal necrosis, replaced by a thick layer of fibrin and degenerated neutrophils. The surrounding epidermis showed signs of acanthosis with irregularly elongated re-epithelialization forming collarettes around the neoplasm and a surface of compact hyperkeratosis.

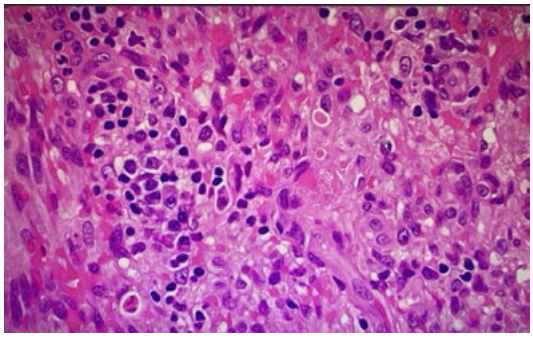

Figure 3: Atypical Large Spindle Cells Arranged in Intersecting Short Fascicles. Interspersed Among these Spindle Cells were Poorly Formed Slit-Like Vascular Channels (Hematoxylin and Eosin Stain, Original Magnification 400).

Immunohistochemical staining further supported the diagnosis of Kaposi sarcoma. The tumor cells were positive for human herpesvirus 8 (HHV8) and CD34, while CD31 was negative (Figure 4). These findings confirmed the diagnosis of Kaposi sarcoma in the nodular stage. The patient will not require any additional surgeries at this time and will be referred to oncology for further testing and evaluation.HIV serology, complete blood count (CBC), and basic metabolic panel are normal, and PET CT shows no metastatic spread.

The management plan includes regular follow-up every 6 months for observation, Coordinated with the surgical and oncology teams. This will involve detailed history and physical examinations, paying special attention to any additional immunosuppressive therapies such as recent transplants or glucocorticoid use. Surveillance will include CBC, differential, and comprehensive metabolic panel tests. Monitoring will also involve photographing oral, conjunctival, and cutaneous lesions with precise reference units to document disease progression or regression. If any signs of visceral involvement develop, appropriate imaging will be performed. Stool hemoccult tests will be considered if there's significant cutaneous, oral, visceral, or nodal involvement. Given that KSHV remains present despite treatment, ongoing vigilance is crucial for early detection of any future Kaposi Sarcoma manifestations.

This case underscores the importance of histopathological evaluation and immunohistochemistry in accurately diagnosing and managing atypical vascular neoplasms, particularly when dealing with suspected Kaposi sarcoma.

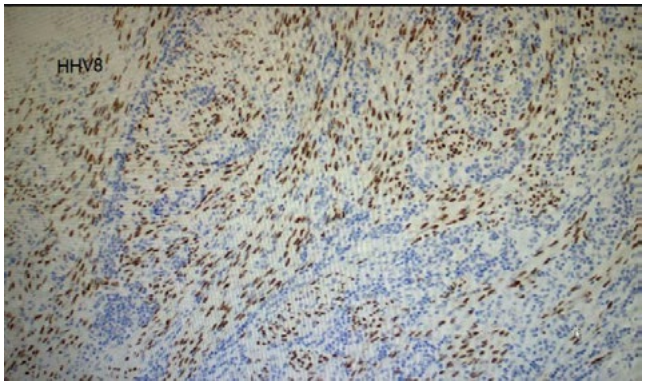

Figure 4: Immunohistochemical Staining for HHV-8 was Positive (HHV-8 stain, ×100)

3. Discussion

Kaposi Sarcoma (KS) is a malignant vascular tumor associated with Human Herpesvirus 8 (HHV-8) infection [8]. While KS typically manifests as purple or dark brown lesions on mucocutaneous sites like the lower extremities, it can present in atypical locations, as demonstrated in this case.

This 78-year-old male patient presented with a rapidly enlarging dome-shaped nodule on his left index finger—a rare location for KS. Historically, primary KS of the hand is exceedingly rare, with only a few cases documented in the literature, often in association with other comorbid conditions [6,7]. The unusual presentation in this case underscores the importance of considering KS in the differential diagnosis when faced with rapidly growing, atypical lesions on the hand.

The initial clinical presentation of the rapidly enlarging nodule raised concerns about more common malignancies, such as squamous cell carcinoma. However, histopathological analysis confirmed KS, showing the characteristic features of spindle-shaped cells and slit-like vascular channels filled with extravasated red blood cells. Immunohistochemistry further supported the diagnosis with positive staining for HHV-8 and CD34, which are hallmark features of KS. This case highlights the critical role of histopathology and immunohistochemistry in diagnosing KS, especially when it presents in non-typical sites where it could be mistaken for other differentials [7].

In conclusion, this case contributes to the existing literature by emphasizing the diverse presentations of KS. Additionally, it illustrates the importance of recognizing and considering KS in the differential diagnosis of tumors, regardless of the location or patient demographics. Clinicians must remain vigilant in their differential diagnoses and ensure thorough surgical management to minimize the risk of recurrence and optimize patient outcomes.

78-year-old male K/C of hypertension, diabetes, high cholesterol, and ACS - ve family history Complaining of swelling in the left index finger for 2 months and getting bigger Seen by a dermatologist and referred to surgery for excision. O/E: nodule 1cm

Full Excision was Done and the Sample was Sent to Histopathology Results:

- Atypical vascular neoplasm with surface ulceration. Focally abutting on the deep margin.
- Conclusion: Kaposi sarcoma (nodular stage)
- HHV8 +ve
- CD34 diffusely positive - CD31 negative

Literature Review:

Kaposi sarcoma is a multifocal malignant vascular tumor composed of a proliferation of spindle-shaped mesenchymal cells and dilated capillaries induced by growth factors such as interleukin-6

Common in the Lower Extremities

Kaposi sarcoma with bone involvement is very rare, affecting only 4.5% of patients (Ritz-Quillac et al., 1999). The isolated presence of a Kaposi sarcoma lesion on the hand is even rarer.

Previous Case Reports:

- Kaposi's sarcoma of the hand mimicking squamous cell carcinoma in a woman with no evidence of HIV infection: A case report 2008
- Isolated Kaposi sarcoma of the finger pulp in an AIDS patient 2012

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