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Case Report

Pulmonary Kaposi's sarcoma as the initial presentation of human immunodeficiency virus infection

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ABSTRACT

Kaposi's sarcoma (KS) usually presents in HIV-infected patients with cutaneous lesions that may advance to extensive visceral disease. There have been only a few documented cases in which the initial presentation of Kaposi's sarcoma involved the bronchopulmonary system. We describe a newly diagnosed patient who presented with pulmonary KS as his initial presentation of the disease. Our report is intended to increase clinicians' awareness that pulmonary Kaposi's sarcoma should be considered in HIV-infected patients who present with respiratory symptoms, even if they do not manifest the typical mucocutaneous manifestations of KS or have low CD4 counts. Early diagnosis and therapy are essential in improving outcomes as this condition carries a high mortality.

Introduction

HIV-related Kaposi's sarcoma (KS) is a low grade vascular tumor associated with human herpesvirus 8 (HHV-8), usually seen in patients with low CD4 cell counts. Kaposi's sarcoma (KS) presents with mucocutaneous disease in 80–90% of cases, but may advance to extensive visceral disease [1]. In rare instances, early presentation may manifest with only respiratory signs and symptoms. We describe a patient with bronchopulmonary KS as the initial presentation of HIV infection.

Case presentation

A 29-year-old man with no significant past medical or sexual history other than having sex with men presented to the emergency department with a three-month history of increasing lower extremity edema. The patient was noted to have a warm, erythematous area on his right tibia with slight serous drainage consistent with a cellulitis or early abscess. Cultures of the lesion grew methicillin-susceptible *Staphylococcus aureus*. His HIV antibody test was positive; CD4 count was 325 cells/mm^3 and plasma HIV RNA viral load was 518,645 copies/ml. The patient was treated with a 10-day course of oral trimethoprim-sulfamethoxazole and cephalexin. He returned one month later with complaints of shortness of breath, dry cough, and swelling of his lower extremities, scrotum and penis. On examination, he was febrile and had diffuse adenopathy with palpable anterior and posterior cervical, submental, supraclavicular and axillary lymph nodes and extensive edema involving the bilateral lower extremities. No other mucosal or skin findings were present. Diffuse interstitial infiltrates and basilar alveolar opacities were present on chest radiographs. Computed tomography (CT) scan of the chest, abdomen and pelvis demonstrated diffuse anasarca and ill-defined nodular opacities in both lung bases (Fig. 1).

Antiretroviral therapy (ART) with darunavir, ritonavir and raltegravir was initiated. He was treated empirically with intravenous trimethoprim-sulfamethoxazole for possible pneumocystis pneumonia and azithromycin and ceftriaxone for possible community acquired pneumonia. The following day his respiratory status deteriorated requiring transfer to the intensive care unit. He underwent bronchoscopy with transbronchial biopsy of the right lower lobe and left lower lobe. No gross endobronchial lesions were noted. The bronchial biopsy showed areas of interstitial spindle cell proliferation extending into alveolar septae (Figs. 2 and 3). Immunoperoxidase staining for human herpes

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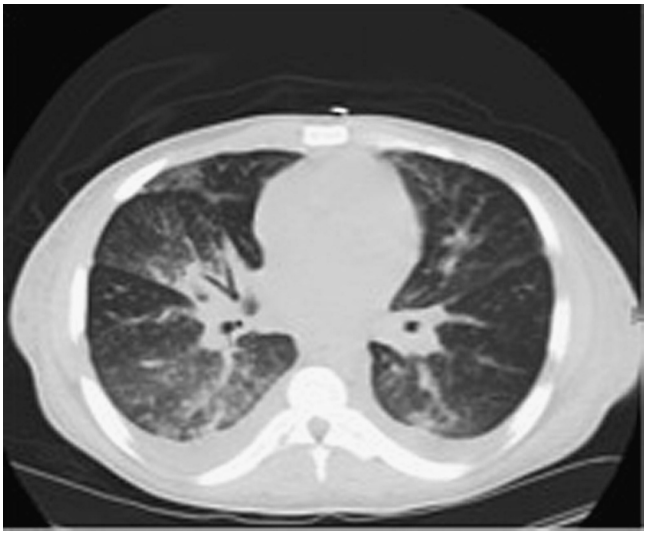

Fig. 1. Computed tomography scan of the chest. CT of the chest showing anasarca, pulmonary edema, small bilateral pleural effusions, and ill-defined nodular opacities in both lung bases.

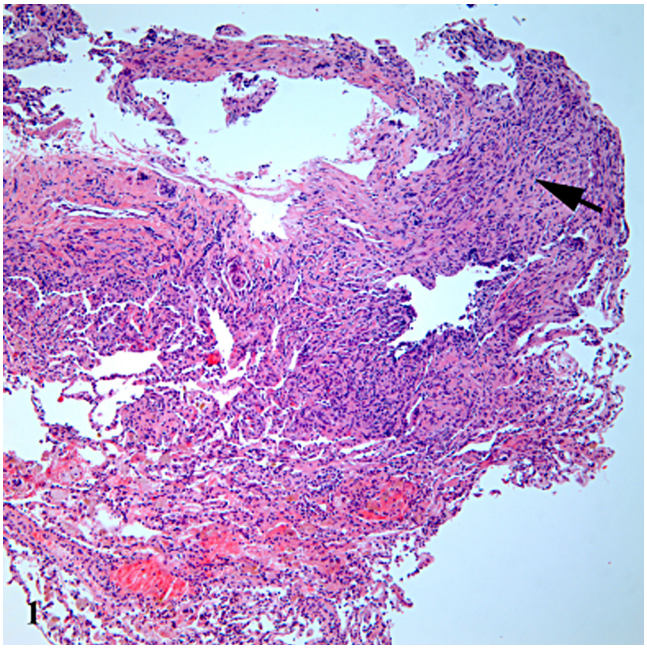

Fig. 2. Histopathology. Scanning power micrograph of the bronchial biopsy showing the pulmonary parenchyma with proliferation of spindle cells (arrow) forming cleft like spaces, widening the interstitium and extending to the alveolar septae (H&E stain, 40× magnification).

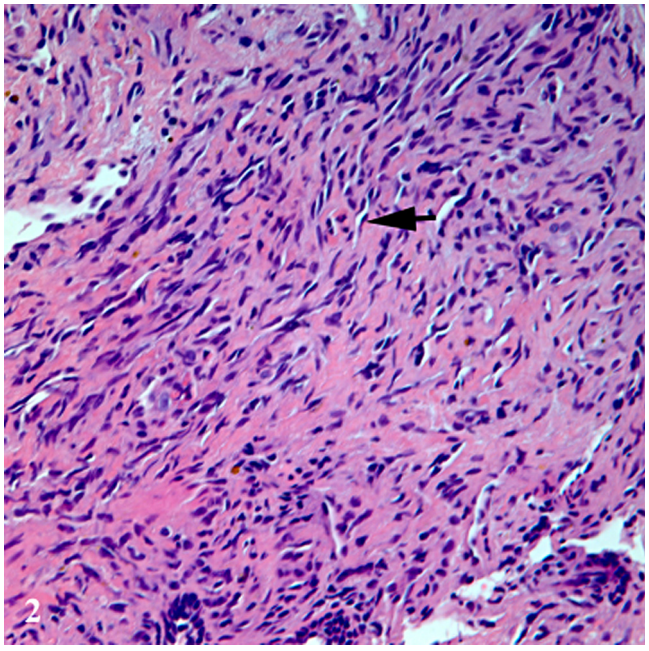

Fig. 3. Intermediate power micrograph showing an area of spindle cell proliferation seen in Fig. 2. The arrow points to a cleft like space lined by spindle cells (H&E stain, 100× magnification).

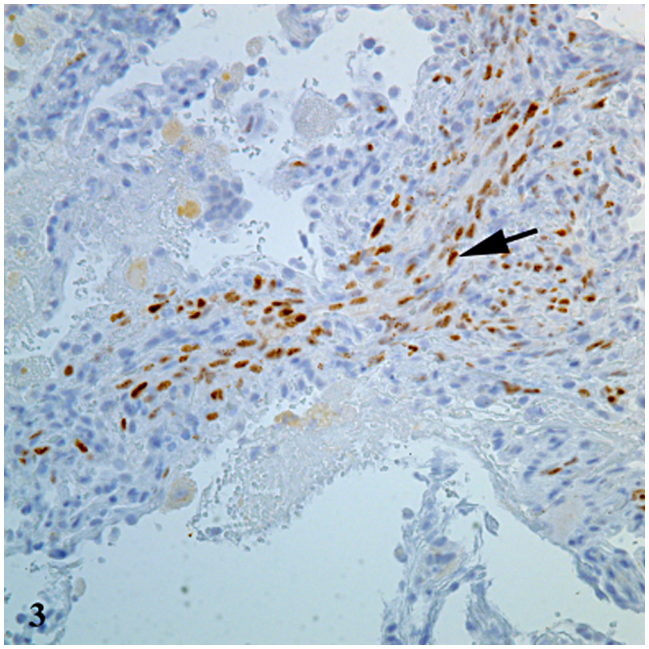

Fig. 4. Intermediate power photomicrograph of the bronchial biopsy stained by the immunoperoxidase method for human herpes virus-8 (HHV8) in an area of spindle cell proliferation. The brown stained nuclei (arrow) represent a positive reaction diagnostic of involvement by Kaposi's sarcoma (HHV-8 immunoperoxidase stain, 100× magnification).

virus-8 (HHV8) showed positive nuclear staining in the proliferating spindle cells, confirming the diagnosis of pulmonary Kaposi's sarcoma (Fig. 4). The patient was evaluated by our oncology service but was considered too ill to tolerate radiation or chemotherapy for treatment of KS. He was continued on ART, but developed progressive symptoms and expired two weeks after diagnosis.

Discussion

Pulmonary KS has been reported to occur in 6–32% of HIV-infected patients with cutaneous disease, with ages ranging from 22 to 71 years; less than 5% present with pulmonary KS as the initial manifestation [13]. KS is more common in men who have sex with men, but cases have been reported in women as well. HIV-infected patients with pulmonary KS may be asymptomatic or present with shortness of breath, fever, cough, chest pain, or hemoptysis. Pulmonary KS can involve the lung parenchyma, pleural spaces, airways and lymph nodes [5]. Initial manifestations include erythematous, violaceous cutaneous lesions (macular, papular or nodular) involving the face, oral mucosa, and upper