CLINICAL VIGNETTE

A Rare Case of Disseminated Kaposi's Sarcoma and Primary Effusion Lymphoma in an HIV Positive Patient

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Introduction

We report a 26-year-old HIV positive male with human herpesvirus (HHV-8) related synchronous Kaposi's sarcoma (KS) and Primary Effusion Lymphoma (PEL). HHV-8 is a human gamma herpesvirus [1,2] that infects a variety of human cell types including macrophages and B lymphocytes. HHV-8 is an integral component of tumorigenesis and hampers the host immune system by cytokine and cell cycle dysregulation.[3-8] Additionally, HHV-8 aids cellular neoplastic conversion by virtue its viral oncogenes. This is especially true in the AIDS-defining neoplasms.[9-11] HHV-8 infection cause both KS and PEL.[12]

History of Present Illness

A 28-year-old Hispanic male with a recent diagnosis of untreated HIV and biopsy proven disseminated Kaposi's sarcoma (KS) was admitted to the hospital after a few week history of weakness, 20-pound weight loss and progressive dyspnea. He had KS dissemination with involvement of liver, skin and possibly bowel. At an outside hospital, he was treated with at 3 cycles of Doxil. However, he had remained noncompliant with the antiretroviral therapy (ART) and did not follow-up regularly with his health provider. The progressive dyspnea was relatively new and was not part of his original presentation.

Upon admission, physical examination revealed a cachectic male with distended abdomen and absent breath sounds in bilateral lung bases (L>R). There was anasarca and bilateral pedal edema (2+). The CTs of chest, abdomen and pelvis revealed large bilateral pleural effusions, extensive anasarca, heterogeneous liver with innumerable small hypodensities consistent with infiltrative/neoplastic process. There also was diffuse intra-abdominal stranding and moderate ascites. The laboratory workup revealed a markedly reduced CD4/CD8 ratio of 0.01.

He was started on a combination of antibiotics to include IV trimethoprim/sulfamethoxazole, piperacillin/tazobactam and azithromycin. Superimposed pneumocystis pneumonia was suspected. Both oncology and Infectious disease were consulted. ART was not started but given his progressive dyspnea a workup was initiated to address the pleural effusions.

The patient underwent several therapeutic and diagnostic ultrasound guided thoracenteses. The thoracentesis taps consistently revealed creamy fluids. Further analysis of the pleural fluid revealed mature-appearing atypical lymphoid cells. The malignant lymphocytes expressed HHV-8, CD30, CD45, MUM-1 and CD138 markers. The neoplastic B cells did not express CD20, CD3, CD79a or calretinin. Based on all available data, a diagnosis of Primary Effusion Lymphoma (PEL) was made. The patient declined a bone marrow biopsy but the peripheral smear review suggested the peripheralization of the PEL.

Following the diagnosis of a combination of KS and PEL, oncology recommended CHOP (cyclophosphamide, doxorubicin, vincristine and prednisone) chemotherapy. He received the first cycle of CHOP followed by aggressive growth factor support. Despite CHOP chemotherapy the patient continued to become progressively hypoxemic. Serial therapeutic thoracenteses did not seem to change the clinical course as the patient continued to decline clinically and developed both renal and hepatic failure. The patient remained severely short of breath despite maximal medical care and declined the option of intubation. Palliative care was consulted and after an extensive family meeting, he was placed on comfort care and transitioned to in house hospice. He expired comfortably 16 days after the admission. The family declined autopsy.

Discussion

The synchronous diagnosis of KS and PEL in AIDS patients is rather unusual. The review of the literature suggests paucity of similar cases.[13] Our case is especially intriguing as there was evidence for PEL in its leukemic phase. The common denominators in such cases are the profound HIV related immunosuppression and the unmistakable role of HHV-8.

AIDS-related PEL is a rare lymphoma and accounts for less than 4 percent of AIDS-related lymphomas.[14-16] The PEL is a monoclonal B cell malignancy associated with HHV-8 virus and in many cases with Epstein-Barr virus (EBV).[17,18] However, only the association with HHV-8 is required for the diagnosis of PEL.[17,19] The neoplastic B cells show plasma cell differentiation and markers such as CD45, CD138 and CD30. T cell markers and other B cell markers such as CD20 are usually absent.[20]

Most of the PEL cases arise in young or middle-aged males with severe immunosuppression in the setting of an HIV infection.[13] The usual clinical presentation is effusions in body cavities without a discernable mass. The most common body site is the pleural cavity and involvement of more than one body cavity site is uncommon.[21,22] Our literature search did not reveal reports of PEL in leukemic phase.

The prognosis of PEL is dismal with a median survival of less than 3-6 months. Introduction antiretroviral therapy and chemotherapy may improve the outcome by months. There are no clear guidelines for best therapeutic choices. In a suitable patient, the use of combination chemotherapy is the norm. Potential choices include dose-adjusted EPOCH (etoposide, vincristine, cyclophosphamide and prednisone) or CHOP.[16,23]

AIDS-associated KS, on the other hand, is the most common neoplasm in HIV patients. AIDS-related KS is only one of the 4 subtypes of the disease spectrum (classic, endemic, iatrogenic and AIDS-associated/epidemic).[24] The disease requires coinfection with HHV-8 for its genesis.[25,26] Since the advent of antiretroviral therapy (ART) the incidence of KS has declined but the HHV-8 infection rates have remained constant.[27-29] Additionally, the visceral disease is less frequent with the use of ART.[30] In disseminated disease pegylated liposomal doxorubicin is the recommended first-line therapy [31], with many second line options. Our case had a primary manifestation of disseminated disease and the CT scans confirmed the hepatic involvement.

Conclusions

Both KS and PEL are HHV-8 driven neoplasms. However, the simultaneous diagnosis of both neoplasms in an HIV individual is a rare event. Our patient was profoundly immunosuppressed and had refused ART. Our case may even be rarer as there was evidence for a leukemic transformation of the PEL.

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