CASE REPORT

Concomitant cancers in AIDS patients: a case report from Iran

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Abstract

Human immunodeficiency virus (HIV) infection and acquired immune deficiency syndrome (AIDS) are worldwide problems that lead to high rates of morbidity and mortality. Malignancies are important causes of death among patients; lymphoma and Kaposi sarcoma are the most common malignancies in HIV-positive and AIDS patients, but concurrence of these cancers in the same patient has rarely been reported.

We present a 33-year-old female patient who had been diagnosed with an AIDS-related high-grade central nervous system lymphoma, based on results of stereotactic biopsy, and had undergone radiotherapy and combined antiretroviral therapy. She was referred to our center with a productive cough, bilateral lung nodules, and skin lesion. Computed tomography-guided biopsies of skin lesion and pulmonary nodules were compatible with Kaposi sarcoma. Patient's pulmonary nodules and skin lesion resolved over the course of therapy, based on imaging findings; her brain lesions did not progress.

These findings suggest that dual malignancies related to HIV infection can occur in patients who are receiving antiretroviral therapy and have virologic suppression.

To our knowledge, concomitant malignancies in HIV-positive or AIDS patients are rare, and the authors would like to advocate the assessment of dual cancers among these patients to optimize therapeutic course and outcome.

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Key words: HIV, AIDS, concomitant malignancies, Kaposi sarcoma, lymphoma.

Introduction

Human immunodeficiency virus (HIV) infection and acquired immune deficiency syndrome (AIDS) are worldwide problems that lead to high rates of morbidity and mortality [1-3]. Malignancies are important causes of death among patients [4, 5]. Although highly active antiretroviral therapy (HAART) has decreased the mortality rates of lymphoma and Kaposi sarcoma, they still remain the leading types of cancer in patients with AIDS and HIV infection [6, 7]. Having said that, the concurrence of these tumors has rarely been reported. Here, a young HIV-positive female patient with a simultaneous presence of Kaposi sarcoma and central nervous system (CNS) lymphoma was presented.

Case presentation

A 33-year-old married female patient without any known past medical history other than AIDS and AIDS-related high-grade CNS lymphoma presented with fever, nausea, productive cough, and a weight loss of approxi-

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mately 20 kg over the course of previous year. One year before her admission, the patient had been evaluated for chronic diarrhea, and colonoscopy had shown active colitis. Two months after that, she was again admitted to hospital due to a seizure. Magnetic resonance imaging (MRI) of the brain displayed multiple periventricular lesions and her HIV test turned out to be positive. Stereotactic biopsy carried out on the brain lesions revealed an extensively necrotic high grade round cell tumor compatible with high-grade large B-cell lymphoma. Subsequently, the patient underwent 30 sessions of radiotherapy with combined antiretroviral therapy (tenofovir, emtricitabine, and efavirenz), and trimethoprim/sulfamethoxazole prophylaxis was initiated. She had no positive family history. She was referred to our hospital with a productive cough, exertional dyspnea, and bilateral lung nodules. Vital signs were stable upon arrival at hospital. On physical examination, all was normal. Complete blood cell count showed anemia. Liver enzymes, lactate dehydrogenase (LDH), and creatinine were within normal range. Erythrocyte sedimentation rate (ESR) was 85 mm/hour. Also, quantitative C-reactive protein (CRP) was 50 mg/l, with reference value of less than 10 in adults. Blood culture was normal in two times, and Koch's bacillus in direct sputum examination was negative. Toxo IgG was within normal range (17.4 g/l). Serum cytomegalovirus (CMV) PCR was negative, CD4+ count was 60, and HIV RNA viral load was negative. Echocardiography was normal. In spiral computed tomography (CT) scan of thorax without IV contrast, there were multiple bilateral metastases, such as pulmonary nodules. There was no evidence of adenopathy or pleural effusion.

Furthermore, she also complained of odynophagia and was found to have tachycardia, fever, and a purple plaque on the left side of the abdomen, which was almost 1 cm × 1 cm × 1 cm in size on physical examination. There were multiple bilateral metastases resembling pulmonary nodules observed on non-contrast CT scan of the thorax. In CT scan of thorax with IV contrast, peri-broncho-vascular pulmonary nodules scattered in lung field were shown. Bronchoscopy was performed, and bacteriologic and mycobacterial evaluation yielded negative results. Trans-bronchial lung biopsy showed slightly inflamed respiratory mucus. Due to progressive course of the disease, CT-guided biopsies of the lung nodules and skin lesion were carried out and in both cases, the results were compatible with Kaposi sarcoma. Blood and tissue samples were positive for HHV-8.

Six courses of liposomal doxorubicin were administered as chemotherapy. In addition, endoscopy was performed and revealed an esophageal stricture that was treated with a stent placement. She developed a catheter infection leading to disposition and replacement of the catheter, and also suffered from CMV retinitis in both eyes that was treated with intra-vitreal injections of ganciclovir.

The patient was discharged with combined antiretroviral therapy (tenofovir, emtricitabine, and efavirenz) and trimethoprim/sulfamethoxazole prophylaxis. The patient was again admitted one year after discharge with a diagnosis of aspiration pneumonia. HIV RNA viral load was negative and CD4+ count was 247. Pulmonary nodules and skin lesion had resolved. Brain lesions had not progressed based on imaging findings. Over the course of the illness, the patient developed two trachea-esophageal fistulas and eventually succumbed to sepsis.

These findings suggested that dual malignancies related to HIV infection can occur in patients who are receiving antiretroviral therapy and have virologic suppression.

Discussion

The incidences of sub-types of AIDS-related lymphoma have changed after the introduction of combined antiretroviral therapy, and various diagnostic methods have also changed [8]. In this presentation, a young female patient with a simultaneous presence of Kaposi sarcoma and CNS lymphoma was examined. Saple *et al.* [9] presented three HIV-infected cases with non-Hodgkin's lymphoma, plasmablastic variety, Hodgkin's lymphoma, nodular sclerosis type II, and B-cell lymphoma. However, none of them presented other simultaneous malignancies.

While there is a clear association between EBV and numerous types of immunodeficiency-related lymphomas, the association of EBV infection in AIDS-related lymphoma is unknown [10]. In our study, EBV testing yielded negative results. Oksenhendler *et al.* [11] reported a high incidence of Kaposi sarcoma associated with herpes virus (KSHV) and related to non-Hodgkin lymphoma in patients with HIV infection and multicentric Castleman's disease. However, our reported case suffered from an isolated HIV infection. Boulanger *et al.* [12] reported primary effusion lymphoma as a rare HHV-8-associated high-grade non-Hodgkin's lymphoma of B-cell origin with effusions, which mainly affected HIV-infected homosexual men with severe immunosuppression and other HHV-8-associated diseases, such as Kaposi's sarcoma, as mentioned in the present paper. Deloose *et al.* [13] reported that KSHV-positive lymphomas were preceded by Kaposi sarcoma in 60% of patients, and involved gastrointestinal tract in 80%. However, the time order of developing the cancers in our case was unclear. Yanik *et al.* [14] showed that Kaposi sarcoma and lymphomas occurred at higher CD4+ counts and lower HIV RNA values, and Kaposi sarcoma occurred more frequently after ART initiation; both of these results agree with our findings. Kim *et al.* [15] reported a patient with Burkitt's lymphoma and Kaposi sarcoma, who had died two months after radiation therapy due to multi-organ lymphoma aggravation, but our patient died after a year. Moreover, during the course of treatment, pulmonary nodules and skin lesion had resolved, and brain lesions had not progressed based on imaging findings.

Conclusions

Better understanding of pathogeneses of HIV-associated malignancies is important, and the authors advocate comprehensive assessment of concurrent cancers in HIV-positive and AIDS patients to improve therapeutic course and outcome.

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Conflicts of interest

The authors declare no conflict of interest.

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