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Case Report

HIV Related Primary Central Nervous System Lymphoma: A Case Report

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Abstract

Cranial imaging is vital in patients with complaints of sudden speech disorder, deterioration in performance status, urinary and fecal incontinence, and numbness in hands and feet. It provides an investigation of etiology and clarification of diagnosis. Hematological malignancies sometimes present with these symptoms and imaging may be the first method for diagnosis. In this case, we will present a patient diagnosed with primary central nervous system lymphoma, who was found to be HIV-positive during follow-up, and who progressed early and died despite treatment.

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Introduction

Primary central nervous system (CNS) lymphoma is a rare variant of extranodal lymphoma with an isolated brain, leptomeningeal, eye, or spinal cord involvement. Iatrogenic immunosuppression, X-dependent immunodeficiency (Wiskott-Aldrich syndrome), and especially HIV are the main risk factors for immunosuppression. In this case report, we will present a patient diagnosed with primary central nervous system lymphoma, who was found to be HIV-positive during follow-up, and who progressed early and died despite treatment.[1]

Case Report

A 28-year-old male patient presented with complaints of sudden onset of speech disorder, urinary and fecal incontinence. On physical examination, he was conscious, oriented, and cooperative. The pupils were isochoric, direct/indirect light reflexes were bilaterally positive and there were no significant signs of lateralization. There was paresthesia at the level of L1-T12. The anal tone was normal. Deep tendon reflexes were normoactive, and no pathological reflex was observed. Scattered mass lesions in the right thalamus, right middle cerebral peduncle, and posterior fossa were observed on cranial MRI. These mass lesions created significant compression in bilateral caudate nuclei and frontal horns. The stereotactic biopsy was performed by the Neurosurgery. The biopsy result was found to be consistent with non-Hodgkin diffuse large B-cell lymphoma-CNS involvement. The patient was admitted to the clinic with a plan of high dose methotrexate (MTX) chemotherapy. In

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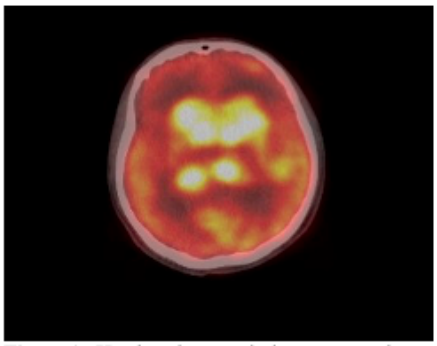

Figure 1. Head positron emission tomography (PET) before chemotherapy.

Figure 2. Head computed tomography (CT), hemorrhage findings in basal ganglia.

PET/CT, multiple hypermetabolic mass lesions (SUVmax: 15) were observed in the 4th ventricle of the brain, caudate nuclei, and right cerebellum. No involvement was observed in other parts of the body (Figure 1). The patient's hepatitis markers were negative, and HIV antigens and antibodies were found to be positive (CD4 count: 6 cells/mm3). Further questioning the patient's history, he was found to be a methamphetamine addict. The patient was started on bictagravir + emtricitabine + tenofovir alafenamide treatment. HIV-RNA was found to be positive (HIV-RNA: 66,576). After starting high dose MTX, the patient had an epileptic seizure on the second day of chemotherapy. On the second cycle of high dose MTX, Glasgow coma score dropped to three, and a CT scan of the brain showed a six cm mass lesion and hemorrhage into the ventricles (Figure 2). An external ventricular drainage system (EVDS) catheter was inserted. He was started to be followed intubated under mechanical ventilator support. The patient died on the 31st day of chemotherapy with signs of intracranial bleeding and sepsis.

Discussion

Although primary CNS lymphomas are rare malignancies, their incidence has increased due to the frequent use of diagnostic and immunosuppressive treatment methods. Its relationship with HIV is strong, and differential diagnosis can be made with lymphoma in HIV-positive individuals according to the CD4 count. In HIV-related cases, initial treatment with high dose MTX is recommended instead of radiotherapy alone or antiretroviral therapy (ART). Diagnosis should be made by stereotactic biopsy. In addition to tumor-directed therapy, ART should also be given to patients. Five factors that affect the prognosis of the disease have been reported: age, ECOG score, LDH level, CSF protein amount, and deep brain regions involvement.[2] 2-year survival rates are higher in patients who received high-dose MTX with or without radiation therapy.[3]

As a result, primary CNS lymphoma may present itself with focal or non-focal symptoms (lethargy, aphasia, confusion, etc.) due to edema or mass compression.[4] Especially white matter and deep regions are affected in the brain. Lower CD4 counts are related to a poor prognosis. The CD4 count of our patient was found to be low, consistent with the literature.[5] The prognosis is poor, and survival is shorter than one year in primary CNS lymphoma cases, especially in HIV-related groups. Improvement in survival can be observed with combined treatments.

Conflict of Interests

Authors declare that there are none.

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References

1. Hoffman S, Propp JM, McCarthy BJ. Temporal trends in incidence of primary brain tumors in the United States, 1985-1999. Neuro Oncol. 2006 Jan;8(1):27-37. doi: 10.1215/S1522851705000323.
2. Ferreri AJ, Reni M, Pasini F, Calderoni A, Tirelli U, Pivnik A, Aondio GM, Ferrarese F, Gomez H, Ponzoni M, Borisch B, Berger F, Chassagne C, Iuzzolino P, Carbone A, Weis J, Pedrinis E, Motta T, Jouvet A, Barbui T, Cavalli F, Blay JY. A multicenter study of treatment of primary CNS lymphoma. Neurology. 2002 May 28;58(10):1513-20. doi: 10.1212/wnl.58.10.1513.
3. Kurt M, Çetintas SK, Kartal C, Canki N, Cebelli GB, Kayısogulları U, Engin K. Primer sinir sistemi lenfoması: üç olgu sunumu. Uludag Üniversitesi Tıp Fakültesi Dergisi. 2004;30(3):227-31 (in Turkish).
4. Thurnher MM, Thurnher SA, Schindler E. CNS involvement in AIDS: spectrum of CT and MR findings. Eur Radiol. 1997;7(7):1091-7. doi: 10.1007/s003300050260.
5. Yarchoan R, Venzon DJ, Pluda JM, Lietzau J, Wyvill KM, Tsiatis AA, Steinberg SM, Broder S. CD4 count and the risk for death in patients infected with HIV receiving antiretroviral therapy. Ann Intern Med. 1991 Aug 1;115(3):184-9. doi: 10.7326/0003-4819-115-3-184.