EBV-Associated Smooth Muscle Tumor Mimicking Schwannoma In AIDS Patient: A Case Report

Samasuk Thammachantha1, Sirirat Khunvutthidee2 and Korrapak Wangtanaphat3

1Department of Pathology, Prasat Neurological Institute, Bangkok, Thailand
2Department of Neuroradiology, Prasat Neurological Institute, Bangkok, Thailand
3Department of Neurosurgery, Prasat Neurological Institute, Bangkok, Thailand

Introduction

Epstein–Barr virus (EBV) is one subtype of the human herpes virus. It is the cause of infectious mononucleosis and also associated with other neoplasms, such as Kaposi sarcoma, Burkitt’s lymphoma, nasopharyngeal carcinoma, as well as smooth muscle tumor [1,2]. This virus spread via the droplet of saliva during acute infection and can establishes latent infection in B-cell. Recently, some authors claimed that there is strong supportive evidence between EBV and some tumors, but these tumors arise in cell types which no latency biological equivalent has been found. Examples of these tumors are nasopharyngeal carcinoma, gastric carcinoma, salivary gland carcinoma, and also smooth muscle tumor [3].

Human Immunodeficiency Virus (HIV) is a retrovirus which can spread by blood product, sexual activities, and also feto-maternal transmission. This virus entry into T-lymphocytes and impair the cell-mediated immunity, causing AIDS which is pandemic problem nowadays. Regarding to central nervous system (CNS), many disorder can produce by HIV infection, such as direct effect by HIV, opportunistic infection by other agents, and systemic non-specific manifestations by metabolic derangement [3]. Therefore a differential diagnosis of CNS mass lesions in AIDS patients is clinically difficult.

Case Report

A 26 year-old male, referred to Prasat Neurological Institute, during July 2017 – February 2018, with clinical history of seropositive status, treated with Zidovudine, Lamivudine, Efavirenz for 2 years. The recent CD4 cell count was 138 cells/mm3. Deny of underlying disease, alcoholic drinking, smoking and drug allergy, but presence of history of illicit drug using (Amphetamine, Marijuana). He has presented with paraplegia of lower extremities for 3 months. The motor powers were grade 0 at lower extremities, but grade IV for upper extremities. Urinary sphincter tone was loose. Cranial nerve, eye and other physical examinations were within normal limit. Blood chemistry and chest x-ray were normal. He developed paraplegia of lower extremities for 3 months. The magnetic resonance imaging (MRI) showed intradural-extradural mass at C6 with severe cord compression (Figure 1).

Pathology revealed compact spindle cells with vesicular nuclei and eosinophilic cytoplasm. Mitotic figures were 10/10 High Power Fields, but necrosis was not found. The tumor cells were positive to smooth muscle actin (SMA) but negative to epithelial membrane antigen (EMA), S-100, Desmin, STAT-6, and TLE1. In situ hybridization for EBV-encoded ribonucleic acid (EBER) revealed positive reaction in almost the entire tumor cells (Figure 2).

Ziehl-Neelsen stains showed none of aid-fast bacilli. The patients had mild fever and pain postoperative. Few days later he was sent back home without any complications.
Histopathology of the specimen showing compact spindle cells with S-100. Neurofibroma shows small wavy nuclei with variable prominent nucleoli. They are usually reactive to SMA, but negative wavy palisading nuclei and also are strongly reactive to S-100. While and should be listed in the differential diagnosis. Neural foramen. These finding is compatible with nerve-sheath tumor progressing with hematogenous spread and distant metastasis [1,10]. However, some researchers found that the histologic features of EBV-SMT did not correlate well with the clinical outcome [6]. In summary, EBV-SMT should always be included in the differential diagnosis for a mesenchymal tumor arising in any organs in AIDS patients of all ages.

Acknowledgement

The authors would like to thank Institute of Pathology (IOP) for immunohistochemical tests (Desmin, STAT6, TLE1, In situ hybridization for EBER).

References