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Medical Imagery

Bilateral cerebellar peduncle lesions in JC virus encephalitis

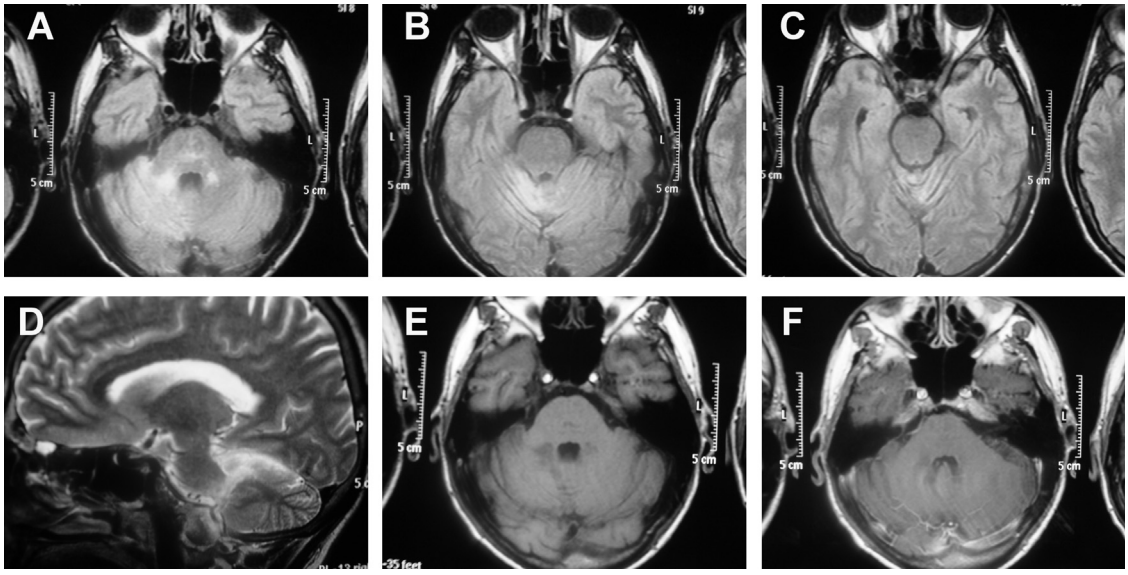

Figure 1. Diffuse lesions of the middle and upper cerebellar peduncles are recognizable on axial FLAIR (A and B) and T1 (E and F) images. Lesions are more extended in the right compared to the left cerebellar peduncle (axial images: A, B, E, and F; sagittal T2-image of the right cerebellar peduncle: D). There is no contrast gadolinium enhancement (image E: T1 pre-contrast; image F: T1 post-contrast). Involvement of the cerebellar vermis is also visible (B and C). Note the smaller concomitant lesions in the pons (A).

A 33-year-old man presented with a vague history of progressive gait unsteadiness and oscillopsia of 3-month duration. His medical history was unremarkable. Physical examination on admission revealed gait and trunk ataxia, gaze evoked nystagmus, severe dysarthria, and mildly impaired finger-to-nose performance. The patient was afebrile and routine blood tests were normal. A head computed tomography scan did not show any lesions. Magnetic resonance imaging revealed marked cerebellar peduncle lesions along with smaller lesions in the cerebellar vermis and within the pons (Figure 1). Of note, the lesions did not show gadolinium enhancement.

We examined the cerebrospinal fluid and found slightly elevated protein without cells. PCR for JC virus was positive in both cerebrospinal fluid and serum. We also obtained a positive HIV-1 antibody test that was subsequently confirmed by Western blot, leading to the diagnosis of AIDS-related progressive multifocal leukoencephalopathy (PML). The CD4 cell count was 128 cells/μl. The patient deteriorated over the next few months despite highly active antiretroviral therapy. He died 6 months later due to PML progression.

A predominant involvement of the cerebellar peduncles is a hallmark of diseases that mainly affect fiber tracts rather than neuronal somata, such as multiple sclerosis,[1] acute disseminated encephalomyelitis, extrapontine myelinolysis, multiple system atrophy, Creutzfeldt–Jakob disease, and the fragile-X syndrome. On the other hand, the white matter of the parietal and occipital lobes is traditionally considered as the most common PML manifestation site.[2] However, recent reports point to the fiber

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systems of the cerebellar peduncles (commonly middle cerebellar peduncles) as a characteristic lesion location of PML.[3–5]

Conflict of interest: No conflict of interest to declare.

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