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A Rare Case Report of Progressive Multifocal Leukoencephalopathy in HIV Positive Patient

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Abstract
Progressive multifocal leukoencephalopathy (PML) is a severe demyelinating disease of the central nervous system that is caused by reactivation of the polyomavirus JC (JC virus)1-3 . In most individuals, JC virus remains latent in kidneys and lymphoid organs, but, in the context of profound cellular immunosuppression, JC virus can reactivate, spread to the brain, and induce a lytic infection of oligodendrocytes, which are the CNS myelin-producing cells. since the widespread use of combined ART started ,the incidence of PML in patients with HIV has decreased4,5.so high index of suspicion is needed. We present a case of 45 yr male diagnosed to have pml.

Case Presentation

A 45 year old Indian male was admitted in the ER with history of weakness of left upper limb and lower limb for one month which was insidious in onset and the weakness was progressive. Patient was diagnosed to be retro positive in 2001 and was on ART treatment with T. Atazor-r [Atazanavir 300mg and Ritonavir 100mg] plus T. Duovir [T. Lamivudin and T. Zidovudin]. for past 16 years but was on irregular treatment. Recent outside hospital evaluation was done in view of his complaints and MRI done showed multiple space occupying lesions and which patient was started on AKT4 in view of disseminated TB, but the weakness was progressive and sensorium was not improving inspite of treatment. Serology for Toxoplasma was negative and cryptococcal antigen was negative. MRI brain done in our hospital showed T2 hyperintensity in right frontal lobe white matter, anterior limb and genu of internal capsue. MR spectroscopy showed decreased NAA and creatine with elevated choline which was indicative of increased metabolic activity (Fig 1&2). Features were suggestive of progressive multifocal leucoencephalopathy. Patient was intubated on 20-2-17 in view of worseing acidosis and tracheostomy was done on 28-2-17.CSF analysis was done for JC-virus RT-PCR and was found to be positive.

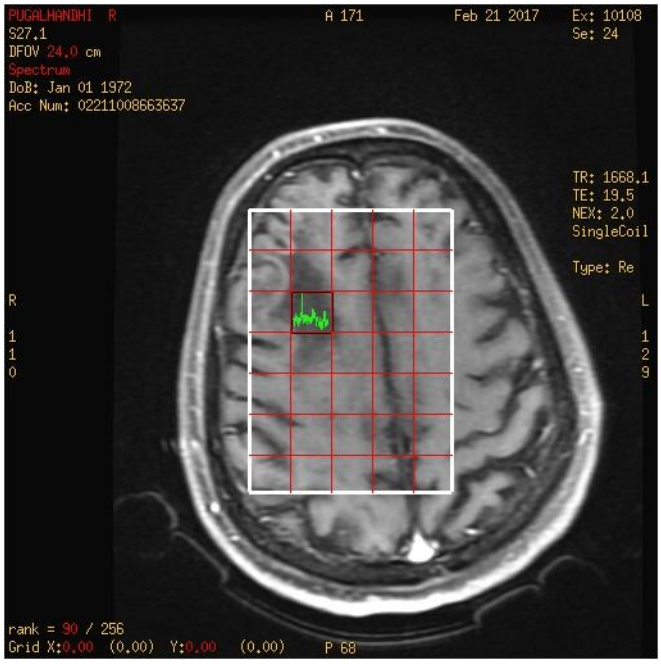

Fig 1

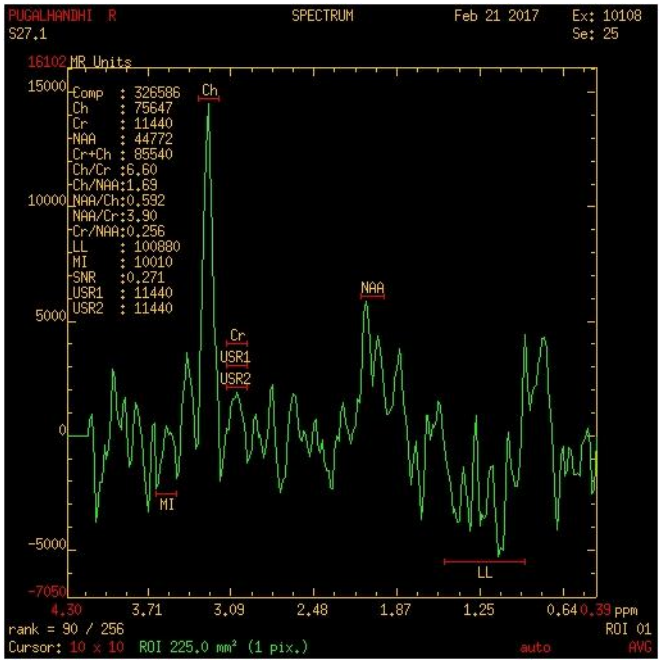

Fig 2

Discussion

Progressive multifocal leukoencephalopathy (PML) is a deadly demyelinating disease of the central nervous system caused by a reactivation of the JC virus that occurs almost exclusively in immunosuppressed individuals.

it can be diagnosed by analysis of pcr for jc virus in csf

JC virus PCR for the diagnosis of PML had a sensitivity of 72 to 92 percent and specificity of 92 to 100 percent before the combined antiretroviral therapy (ART) era. They also have been found in patients without HIV infection, including some with natalizumab-associated PML. Most PML patients have a severe deficit in cellular immunity. studies have previously demonstrated that the cellular immune response, mediated by $CD4^+$ and $CD8^+$ T lymphocytes, plays a crucial role in the containment of JCV. However, transient or discrete failure in cellular immunity might be enough to promote JCV reactivation. Chronic disease such as hepatic cirrhosis, caused either by alcohol, hepatitis C infection or malnutrition, as well as kidney failure may cause immunosuppression.

Clinicians should be aware that PML can occur in patients with minimal or occult immunosuppr-ession. In those patients, JCV CSF PCR is warranted if they have a progressive neurological disorder associated with non-enhancing brain lesions that do not respect vascular territories. If JCV PCR is negative, a brain biopsy should be performed to establish the diagnosis.

There is no specific treatment for PML. Therefore, the most important therapeutic intervention is to identify, and if possible correct, the underlying cause of immunosuppression.

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