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Beyond Challenges, Towards Healthier Kidney

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Successful treatment of progressive multifocal leukoencephalopathy in a kidney transplant recipient

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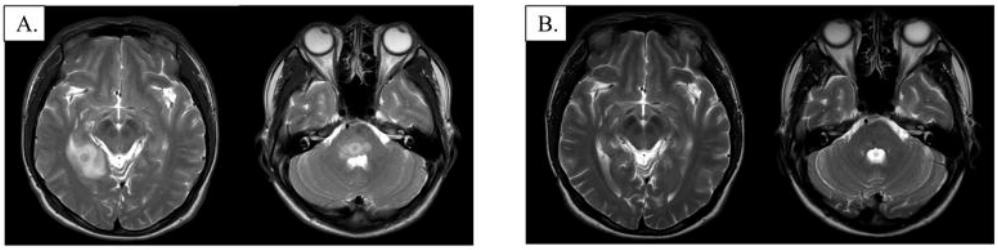
Case Study : PML is a rare, but fatal CNS demyelinating disease induced by opportunistic infection with the JK virus. Here, we report a case of PML in a kidney transplant recipient. A 30-year old male KTR, 13 years post-transplant, presented to emergency room with diplopia. His renal function was stable with tacrolimus (trough level of 3 to 6 ng/mL), mycophenolate mofetil (1440mg/day), and deflazacort (3mg/day). Brain MRI showed two rim-enhancing nodular lesions in the right temporo-occipital lobe and pons, highly suggestive of lymphoma. The number of leukocytes in the CSF was 15/ul. The CSF protein was high (236.3 mg/dL), and neither JC virus PCR nor malignant cells were detected. A stereotactic brain biopsy was performed, and histopathologic analysis showed a negative result for in situ JC virus PCR. Luxol fast blue staining revealed myelin breakdown. The patient was finally diagnosed to PML. Immunosuppressants reduced by converting tacrolimus to cyclosporine and stopping MMF. However, his symptoms worsened, and the disease progressed in a follow-up imaging. Next, pembrolizumab was started. After 3 cycles of pembrolizumab, a follow-up imaging showed a marked improvement, and his diplopia gradually improved. During pembrolizumab treatment, renal function abruptly decreased due to acute T -cell mediated rejection. Cyclosporine was increased, and anti-thymocyte globulin therapy was initiated. Since then, his renal function has been stable without any further deterioration. PML is difficult to distinguish from CNS lymphoma in imaging, and the result of JC virus is often negative. Therefore, suspecting PML in KTRs with neurological symptoms is crucial. Managing it is also challenging, as restoring the host's immune function must be balanced with the risk of rejection. Recently, pembrolizumab, has been shown to increase T cell activity against the JC virus. The presented case shows successful treatment of PML with pembrolizumab and no graft loss, with simultaneous treatment of rejection.

MRI Imaging A, B.png



MRI Imaging A, B.png

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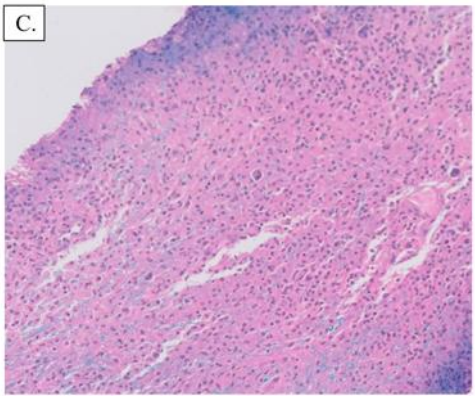

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