Recurrent and Multiphasic Disseminated Encephalomyelitis, Case series

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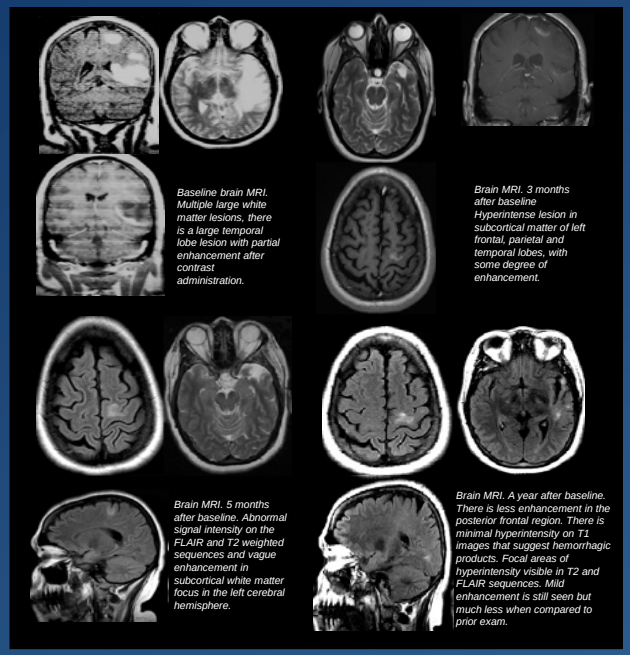
Introduction: Disseminated encephalomyelitis (DEM) is an inflammatory demyelinating disease of the central nervous system with no well accepted diagnostic criteria or biological markers for the diagnosis. The course is usually monophasic. Recurrence and multiphasic presentations are rare.

Objective: To report clinical and radiologic features of patients with recurrent and muliphasic DEM.

Methods: We include 3 patients, 2 with recurrent and 1 with multiphasic DEM. Clinical and radiologic features will be provided.

Results: Case 1: 42 year old woman with distractibility, headaches, dysnomia and dysgraphia. Brain MRI showed a large left temporal lesion. CSF showed 2 oligoclonal bands. Brain MRS was consistent with demyelination. She improved after IV steroids. 3 months later she developed incoordination and dysarthria. Brain MRI showed new enhancing lesions. Brain biopsy was consistent with demyelination.

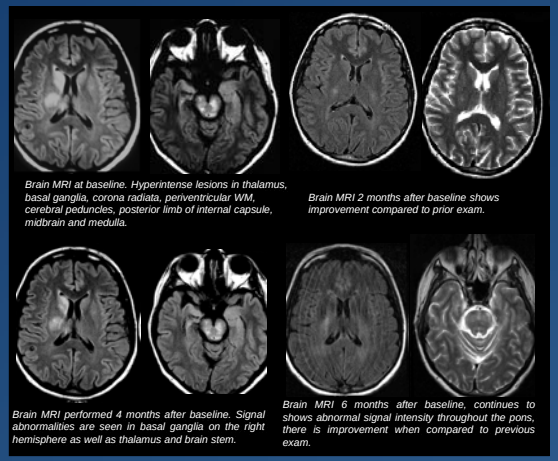


Baseline brain MRI. Multiple large white matter lesions, there is a large temporal lobe lesion with partial enhancement after contrast administration.

Brain MRI. 3 months after baseline Hyperintense lesion in subcortical matter of left frontal, parietal and temporal lobes, with some degree of enhancement.

Brain MRI. 5 months after baseline. Abnormal signal intensity on the FLAIR and T2 weighted sequences and vague enhancement in subcortical white matter focus in the left cerebral hemisphere.

Brain MRI. A year after baseline. There is less enhancement in the posterior frontal region. There is minimal hyperintensity on T1 images that suggest hemorrhagic products. Focal areas of hyperintensity visible in T2 and FLAIR sequences. Mild enhancement is still seen but much less when compared to prior exam.



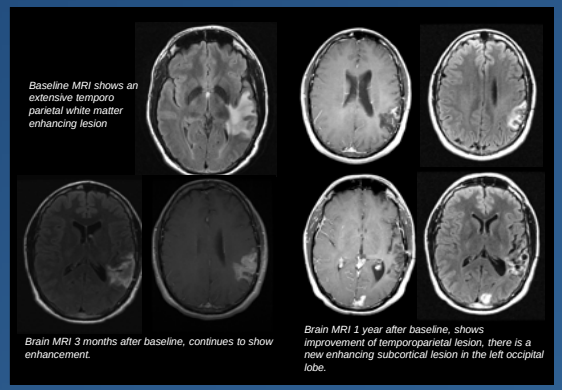
Brain MRI at baseline. Hyperintense lesions in thalamus, basal ganglia, corona radiata, periventricular WM, cerebral peduncles, posterior limb of internal capsule, midbrain and medulla.

Brain MRI 2 months after baseline shows improvement compared to prior exam.

Brain MRI performed 4 months after baseline. Signal abnormalities are seen in basal ganglia on the right hemisphere as well as thalamus and brain stem.

Brain MRI 6 months after baseline, continues to shows abnormal signal intensity throughout the pons, there is improvement when compared to previous exam.

Case 2: 27 year old woman with headaches, vomiting and blurred vision. Brain MRI showed enhancing right basal ganglia lesion, extending to the caudate and cerebral peduncle. Treatment with IV steroids granted clinical and radiographic improvement. 4 months later, she developed seizures and respiratory distress which required intubation. Brain MRI showed involvement of right basal ganglia, thalamus and medulla which increased from previous study. She received IV steroids and recuperated.



Baseline MRI shows an extensive temporo parietal white matter enhancing lesion

Brain MRI 3 months after baseline, continues to show enhancement.

Brain MRI 1 year after baseline, shows improvement of temporoparietal lesion, there is a new enhancing subcortical lesion in the left occipital lobe.

Case 3: 38 year old man with aphasia and tonic clonic seizures. Brain MRI showed a large left temporoparietal cortical-subcortical lesion which partially enhanced. Brain biopsy reveled demyelination and inflammation. Symptoms partially improved after IV steroid treatment. 7 month follow up brain MRI showed improvement with mild enhancement remaining in temporal lesion. 1 year follow up MRI showed a new enhancing subcortical occipital lesion. CSF analysis, evoked potentials and spinal MRI were all normal. Patient received steroid treatment. MRI 5 months later showed improvement of the occipital lesion.

Conclusion: DEM must be considered in the differential diagnosis of multiple sclerosis. Radiologic characteristics can help distinguish the two, including extent of the lesions, involvement of gray matter, and preference of basal ganglia, thalamus and mid brain. Early diagnosis and initial management may improve clinical outcome.

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