New onset Cervical Dystonia after resolving Posterior Reversible Encephalopathy Syndrome (PRES): A Case Report and Literature Review.

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Introduction

Clinical manifestations of PRES have been typically characterized as headache, altered mental status, visual disturbances, seizures, encephalopathy, and paralysis. PRES induced movement disorders have been reported as rare case reports including opsoclonus-myoclonus, oculogyric crisis associated with cyclosporine, PRES induced permanent damage to BG in the follow up imaging is reported in some studies. We found two reported cases of Cyclosporine A induced dystonia with evidence of BG involvement. First case was described as parkinsonism and dystonia started 19 days after receiving Cyclosporine. MRI showed T2 hyperintensity and restricted diffusion in caudate and putamen nuclei bilaterally consistent with PRES. The second case described on same report presented as parkinsonism and hands dystonia. This patient had findings consistent with PRES along with hyperintensity in basal ganglia and thalamus. There is also dystonia of right arm reported associated with a left side lesion in internal capsule in a PRES case secondary to tacrolimus.

Posterior predominant hyperintensity are commonly seen on FLAIR images in PRES. Majority of PRES cases have edema in the cortical and subcortical white matter with vast majority involving the parietooccipital area. Some studies have shown atypical regions of involvement including posterior frontal, temporal, thalamus, cerebellum, brainstem, and basal ganglia. PRES presentation on the MR images varies not only in terms of distribution region but also in imaging findings. In most patients PRES will appear as hyperintensity on FLAIR, but it also can appear as contrast enhancement, restricted diffusion, and hemorrhage.

Case presentation

We present a case of cervical dystonia in a 32-year-old right-handed African American female with PRES secondary to multiple blood transfusions. The patient had history of severe vaginal bleed s/p D&C and multiple episodes of blood transfusion. The patient presented with RLE twitching, weakness, numbness, headache, N/V, dizziness, and visual disturbances. Later the patient had an episode of tonic-colonic seizure. Patient had no prior history of seizure.

MRI brain found multiple areas of T2 hyperintensity associated with diffusion restriction bilateral posterior frontal and parietal cortex, posterior right occipital lobe suggesting areas of acute infarction consistent with atypical PRES. (see image 1)

The clinical picture was consistent with PRES in the setting of hypervolemia/HTN related to transfusion versus immunologic reaction. Patient was started on amlodipine for blood pressure control and Keppra for seizure prophylaxis.

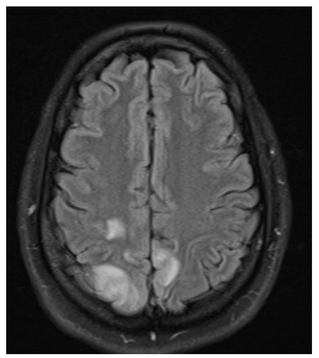

Image 1- PRES (FLAIR)

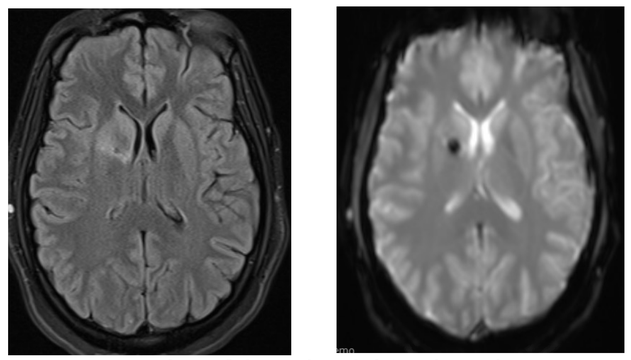

Image 2- hemorrhage in Internal capsule (FLAIR and GRE sequences)

Outcome and follow up

Repeat MRI after 5 days showed complete resolution of the prior patchy subcortical T2/FLAIR hyperintensity and confirmed the PRES diagnosis. There was still residual sequela of small areas of hemorrhage in the right internal capsule (see image 2). Patient's symptoms resolved with exception of slight residual RLE weakness.

Two weeks later the patient developed intermittent No-No head tremor. EEG was unremarkable. The patient was examined and was noted to have a 20% right side tilt and 20% turn in her neck. MRI findings corelated with her exam findings.

Patient was diagnosed as new onset cervical dystonia secondary to hemorrhage in the right internal capsule. Patient was advised to follow up at movement disorder clinic for cervical dystonia.

Conclusions

Clinically PRES is known as presenting with headache, altered mental status, visual disturbances, seizures, encephalopathy, and paralysis. Usually the symptoms are reversible although permanent sequela have been also reported. There are scant reports of movement disorders associated with PRES and dystonia has been reported among these findings. It is important to have insight about possible permanent neurological deficits related to PRES. Here we present an unusual manifestation of PRES.

Due to the permanent underlying damage in the brain, dystonia and other movement disorders could carry significant burden to the patients' health and life style. These findings in cases preceded by PRES have been reported scantly. It would be beneficial to report more cases and enhance clinicians insight into such rare sequela and outcomes of PRES.

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