Mild traumatic brain injury case reports

A case of traumatic medial longitudinal fasciculus (MLF) syndrome diagnosed with brain magnetic resonance imaging (MRI) after a head injury. A 71-year-old male complained of diplopia after he was bruised the back of his head when he was hit by a bicycle and fell down. He showed failure of adduction in the right eye, and mild nystagmus was found in the left eye when looking to the left. Convergence was intact. A low-intensity area was found at the middle right site in the lower part of the midbrain using thin-section MRI with susceptibility-weighted imaging (SWI), which suggested a hemorrhage. From the present history, characteristic abnormality of eye movement, and MRI imaging, he was diagnosed with traumatic MLF syndrome. His symptom was resolved, and the eye movement was improved in 2 weeks. A hemorrhage that occurs in the brainstem may be a cause of traumatic MLF syndrome which could be detected by thin-slice MRI with SWI [1)].

A 40-year-old Whiteman started experiencing symptoms of constant pulsating pixels throughout his entire visual field approximately 3 weeks after a series of mild concussions. In addition, he experienced a persistence of images and photosensitivity. The patient had normal eye examination results, visual fields, and retinal imaging result. Brain MRI, magnetic resonance angiography, electroencephalography, and cerebrospinal fluid analysis were unremarkable. A positron emission tomography scan demonstrated hypometabolism in the posterior parietal lobes and left posterior cingulate gyrus. Pharmacological treatment with antiepileptic and migraine medications was unsuccessful. Tinted lenses were essentially ineffective with a 10% reduction in symptoms reported with the use of a custom blue-tinted lens.Vision rehabilitation aids with optical character recognition were used for prolonged reading needs.

Conclusions: Although rare, visual snow syndrome should be considered in all patients reporting continuous pixelations in their vision for more than 3 months, especially when accompanied by at least two of the following: photosensitivity, palinopsia, enhanced entopic phenomena, or nyctalopia. The pathophysiology is still unclear at this point, with evidence suggesting a link to the secondary visual cortex, specifically the lingual gyrus. More studies are needed to determine the exact cause, especially studies that separate visual snow syndrome patients with and without comorbid migraine. Because the pathophysiology is unclear, the treatment course is also unclear. Anecdotal evidence may suggest that tinted lenses may be of some value [2)].

1)
Ueno Y, Honda S. A Case of Traumatic Medial Longitudinal Fasciculus Syndrome Whose Causal Lesion Was Detected by Thin-Section MRI with Susceptibility-Weighted Imaging. Case Rep Ophthalmol. 2022 May 12;13(2):368-373. doi: 10.1159/000524686. PMID: 35811768; PMCID: PMC9209958.
2)
Werner RN, Gustafson JA. Case Report: Visual Snow Syndrome after Repetitive Mild Traumatic Brain Injury. Optom Vis Sci. 2022 Apr 1;99(4):413-416. doi: 10.1097/OPX.0000000000001862. PMID: 35001065.