A Stroke or Not a Stroke? A Case of Chronic Hemiplegic Migraines

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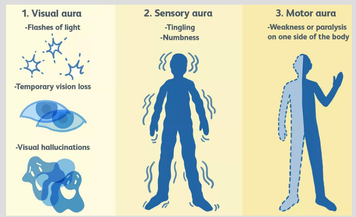
Introduction

Hemiplegic migraine (HM) is a rare subtype of migraine with both familial and sporadic patterns. These migraines present episodically with reversible attacks of unilateral motor weakness. Patients may experience visual changes, sensory loss, impaired level of consciousness, ataxia, and speech changes. Symptoms can last from hours to days and can mimic an acute stroke. This rare condition has a prevalence of .01% with females having higher prevalence than males with the ratio of 2.5:1. The genetic tie with the familial cause has been associated with mutations in CACNA1A, ATP1A2, and SCN1A genes which are transmitted in an autosomal dominant pattern. The sporadic form can have different genetic variations or ones associated with familial type.

Case

The patient is a 45-year-old male with a past medical history of hypertension, possible cerebral vascular accident, alcohol use disorder, tobacco use disorder, and cannabis use who presents to the emergency department complaining of left extremity numbness and weakness. The patient is afebrile with a blood pressure of 148/104 mm Hg. He shows loss of motor and sensory functions in the left extremities with slurred speech and left-sided facial droop. Initial labs were only notable for a Urine Drug Screen positive for cannabis. CT head showed no acute findings and CT angiogram showed no large vessel occlusion. Tenecteplase was administered and the patient was admitted to the neurologic intensive care unit due to high suspicion of stroke by neurology. High intensity statin was started and an MRI of the brain without contrast was ordered which showed no pertinent findings. NIH stroke score was 6 with diminished motor functions in the left arm loss of sensation to pin prick, moderate aphasia, and dysarthria.



https://www.verywellhealth.com/hemiplegic-migraines-3862389

Case continued

On the following day, another unremarkable CT head result downgraded the patient to telemetry. The patient reports a return to baseline without any neurologic deficits, ataxia, dysarthria, or paresthesia. The patient elaborates that similar episodes occur approximately 10 times a month that are usually milder in intensity. The episodes begin as a sharp headache just above the occiput on the left side and radiate down to his left hand before going down the left side of the legs. Preceding the episodes, he reports seeing “white speckles" and experiencing both phono and photosensitivity. Paresthesia is then experienced with diminished motor functions and dysarthria. The symptoms generally persist for about two hours and resolve spontaneously. He states that stress can increase the frequency and intensity of episodes with some alleviation of symptoms with the use of marijuana. The patient also mentioned that his first onset was 10 years ago within the year of a motor vehicle accident. A similar severity of symptoms led to his hospitalization 5 years ago with a stroke diagnosis. Recent imaging showed no evidence of prior cerebrovascular accident and the patient has no residual deficits.

Intervention

The patient was provided education on migraines. Atorvastatin, lisinopril, and propranolol were prescribed to control his hypertension that can decrease frequency of migraine and prevent ischemic strokes. Lifestyle management including sleep hygiene, stress reduction, hydration, and avoiding triggers was discussed. While the patient expressed his interest in leaving the hospital against medical advice, he was encouraged to return if the symptoms worsened.

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Discussion

The diagnosis of HM is clinical and genetic testing is not necessary for all patients. The patient’s symptoms fulfilled the key diagnostic criteria of episodic, reversible motor weakness starting with migraine aura with at least one other aura (visual, sensory, aphasic). Starting with visual auras, the patient experienced motor weakness along with dysarthria, phonophobia, and photophobia. In addition, these symptoms were fully reversible leaving no residual deficits.

We describe a patient with symptoms of HM after a motor vehicle accident. Hemiplegic migraine after minor head injuries have been seen in previous cases by Curtain et al. In addition, functional studies have shown to suggest that neuronal hyperexcitability can play a factor in the pathogenesis of HM. Although previous cases showed spontaneous forms more likely after traumas, we do not know which type our patient has.

There are currently no randomized controlled trials of therapy for hemiplegic migraines, but a few case reports and small series of multiple medication treatments. Verapamil is shown to be helpful in frequent or prolonged aura. Unlike migraines, vasoconstrictors like triptans are avoided to decrease risk of ischemia in hemiplegic migraines. Our approach to treating this patient was starting with NSAIDs during the time of the episode and controlling hypertension.

Limitation/Conclusion

The patient had no other family in the area and was unsure of his familial history. The patient was rushing to get to work even signing out against medical advice suggesting noncompliance with treatment. It would be difficult to obtain follow up information. Genetic testing options are usually done outpatient and the patient is not interested in maintenance treatment when the symptoms are not present. As motor vehicle accident was over a decade ago some details may vary.

A 45-year-old male patient with PMH of hypertension and possible CVA presented with left sided weakness. The labs and imaging show up negative for a stroke and the patient reports repeated similar episodes with headaches starting 10 years ago after an MVA.