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Case Report Open Access

# Is It Complicated Migraine or Complicated Case of Migraine?

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**Abstract**

Migraine with aura usually presents with scintillating scotomas and lines in visual fields. Motor manifestations in the form of hemiplegia can occur as an aura in migraine patients (classical migraine) and considered as hemiplegic migraine (a complicated migraine) which is usually seen in childhood. Combination of classical and common migraine is quite rare and association with hemiplegic migraine is further an uncommon entity. We report a case of common migraine with classical migraine associated with episodes of hemiplegic migraine in an adult patient.

**Keywords**: Hemiplegic migraine; Scintillating scotoma; Cerebral perfusion; Ophthalmoplegic migraine; Cranial neuropathy; Neuralgia

## Introduction

Migraine is a common cause of headache and about 28% of patients with headache are due to migraine [1]. Nearly 10% of the population is affected by migraine [2]. Migraine can be with aura (classical) or without aura (common). Common migraine is characterized by headaches associated with nausea, vomiting, photophobia and phonophobia without any preceding aura [3] while classical migraine is characteristically has aura in the form of visualization of lines, lights, fortification spectra prior to the headache [4,5]. Up to 13 % of the patients can have both classical and common types of migraine [6]. Migraine accompanied by prolonged visual or sensorimotor neurological deficits, disturbances of mood, affect and complex psychic phenomena is described as complicated migraine [7]. Hemiplegic migraine is a type of migraine with aura classified under complicated migraine [8]. However, occurrence of common migraine along with classical migraine and complicated migraine with hemiplegia in a single patient is not a common association. We report such a case of complicated migraine with attacks of common and classical migraine as well.

## Case Report

A 22 year old female presented with complaints of acute onset, hemi cranial, throbbing headache associated with left sided weakness of 3 days duration.

To begin with the patient had right sided hemi cranial throbbing headache of moderate to severe intensity. Headache was preceded by aura in the form of lines in the visual field. Headache was associated with photophobia, phonophobia, nausea and she had two episodes of vomiting. On the second day of headache she noticed numbness in the left hand followed by mild difficulty in buttoning and unbuttoning as well holding objects.Weakness progressed eventually leading to left sided weakness involving both left upper limb and lower limb. She was just able to lift the limbs from the bed but was unable to walk without support. There was no history of slurring of speech or facial deviation. There was no history of swallowing difficulty, double vision, loss of consciousness or facial numbness.She had history of similar bouts of headache for last 5 to 6 years which were throbbing in nature, moderate to severe in intensity, hemi cranial (right>left) in location, preceded by visualization of lines and sometimes lights in front of her eyes suggestive of classical migraine. But many episodes did not have any aura in the form of lines or fortification spectra and were characterized by throbbing hemi cranial headaches with nausea, photophobia and phonophobia only to suggest common migraine.

But one sided weakness associated with headache was seen twice in the past two years and both the episodes were characterized by left sided weakness suggestive of hemiplegic migraine (complicated migraine). Both the episodes of hemiplegic migraine had hemiparesis preceding the headache constituting the aura. There was no history to suggest opthalmoplegia or seizures .There was no family history of migraine. During both these episodes her plain CT scan Head was done at a local hospital which was normal.During the present episode patient was evaluated. Her routine blood investigations were normal. Her MRI brain with contrast including diffusion weighted images showed normal study without evidence of any infarcts. Perfusion scan could not be done due to lack of facility. MR Venogram and angiogram of brain and neck vessels were normal. MRI screening of the whole spine was also normal. Her blood routine investigations were normal, vasculitic work up, HIV, HBSag were all negative. On the basis of her clinical presentation and a negative extensive workup to rule out other causes, she was diagnosed as hemiplegic migraine, a type of complicated migraine. She was treated with intravenous fluids and parenteral analgesics (diclofenac) with antiemetic agents. She was also simultaneously started on prophylactic migraine medications like propranalol (20mg BID) and flunarizine (10mg HS). Her headache subsided in 4 to 5 hours after admission and weakness subsided gradually over the next 2 days. She became ambulatory without support on day 3. She was discharged in a stable condition. Her frequency and intensity of headache has reduced significantly after 2 months of follow -up.

## Discussion

Complicated migraine, of which hemiplegic migraine is a variety, refers to the association of neurologic deficits, such as sensory, motor, or speech disturbances, with migraine headache [4,9]. Cranial nerve

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deficits, motor, sensory and speech deficits have been described during migraine attacks [7,10]. Migraine with ophthalmoplegia or ophthalmoplegic migraine (OM) is a rare presentation with incidence of 0.7 per million [11]. OM is usually associated with third nerve palsy followed in frequency by sixth and fourth nerve involvement; involvement of fifth nerve has also been rarely described [10,12]. Hemiplegic migraine (HM) is classified under migraine with aura by the International Headache Society [8]. In OM deficits due to ocular motor nerve involvement usually occur during the peak intensity (crescendo) of migraine headache, whereas in hemiplegic migraine, hemiplegia can manifest as an aura preceding the headache [4,9,10]. Our patient had total three episodes of HM out which two episodes had hemiplegia as an aura where as one episode had hemiplegia eventually during the course of headache. HM can occur in two forms, familial hemiplegic migraine (FHM) and sporadic hemiplegic migraine (SHM) [13-15]. Our patient did not have any family history so can be considered as SHM. HM usually occurs in childhood and attacks cease by adult age [13,14]. But adult onset HM has also been reported. Cha et al. [16] reported a case of adult onset HM with cortical enhancement and edema. Our patient had episodes of HM at the age of 20 years. FHM is the only migraine subtype where monogenic mode of inheritance has been established. It is known to be caused by mutations in certain gene loci like- CACNA1A, ATP1A2 and SCN 1A [13-15]. Sporadic cases are more difficult to diagnose and require investigations to rule out other possibilities. SHM has been reviewed by Thomsen and Olesen. It is unclear whether pathophysiology of SHM reflects severe attack of typical migraine with aura including motor symptoms like that of visual, sensory and speech or it represents a separate type of migraine with aura [15,17]. Changes in cerebral blood flow have been mentioned in classical migraine attacks [18]. Hence evaluation of cerebral perfusion during migraine attacks has been done to study its pathogenesis [19]. It is postulated that aura is due to cerebral vasoconstriction and subsequent headache is attributed to the vasodialation of scalp arteries due to hyperperfusion of extracranial vessels [20]. In HM perfusion MR imaging studies have shown unilateral dilatation of middle and posterior cerebral arteries and hyperperfusion of cerebral hemisphere [19]. Since calcium channels are involved in HM, calcium channel blockers have been used in treatment of both FHM and SHM including IV verapamil as abortive therapy [21].

To conclude, this patient is a rare case of migraine in which episodes of common, classical and complicated migraine were manifested in the same individual. The presentation of complicated migraine in adulthood rather than childhood was also a rarity.

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