CASE REPORT

24(102), March - April, 2020

ISSN 2321–7359 EISSN 2321–7367

Medical Science

# A rare case report of sporadic hemiplegic migraine

**Deep Hathi**[1]✉, **Ayush Somani**[2], **Sourya Acharya**[3], **Anusha Gupta**[4]

[1]Resident, department of Medicine, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences (Deemed to be University), Sawangi (meghe), Wardha-442001, Maharashtra, India
[2]Resident, department of Medicine, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences (Deemed to be University), Sawangi (meghe), Wardha-442001, Maharashtra, India
[3]Professor, department of Medicine, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences (Deemed to be University), Sawangi (meghe), Wardha-442001, Maharashtra, India
[4]Resident, department of Medicine, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences (Deemed to be University), Sawangi (meghe), Wardha-442001, Maharashtra, India

✉**Corresponding author**
Resident, department of Medicine, Jawaharlal Nehru Medical College,
Datta Meghe Institute of Medical Sciences (Deemed to be University),
Sawangi (meghe), Wardha-442001, Maharashtra
Email: deephathi18@gmail.com

**Article History**
Received: 18 October 2019
Reviewed: 20/October/2019 *to* 28/November/2019
Accepted: 30 November 2019
Prepared: 04 December 2019
Published: March - April 2020

**Citation**
Deep Hathi, Ayush Somani, Sourya Acharya, Anusha Gupta. A rare case report of sporadic hemiplegic migraine. *Medical Science*, 2020, 24(102), 509-512

## ABSTRACT

Hemiplegic migraine is an uncommon presentation of common condition, migraine headaches that can mimic other conditions both radiologically and clinically. Patients typically present with unilateral weakness that accompanies a migraine headache attack. We present a 25 year old male who presented with visual hallucination, headache and left sided hemiparesis. The patient had history of repeated similar episodes in the last 2 years. Magnetic resonance imaging (MRI) brain was normal. Digital subtraction angiography (DSA) was within normal limits. Detailed workup for mitochondrial encephalopathy with lactic acidosis and stroke-like episodes (MELAS) was negative. A diagnosis of sporadic hemiplegic migraine (SHM) was made and was managed conservatively. He was discharged on flunarizine for prophylaxis of migraine and was followed up for 2 months during which he was asymptomatic.


**Keywords:** Hemiplegic migraine, headache, migraine, flunarizine.

## 1. INTRODUCTION

A rare subtype of migraine headache with aura is sporadic hemiplegic migraine which is defined as migraine attacks which are associated with some degree of motor weakness/ hemiparesis during aura phase and where there is no family history in first or second degree relatives of similar attacks (Olesen et al., 2004). The symptoms of hemiplegic migraine includes temporary weakness which can last from range of 5 minutes to several days and is accompanied by sensory symptoms in form of tingling and numbness, speech disturbances and visual symptoms. It was almost associated with severe headache. The earliest description of this condition was given by (Whitty et al., 1953). A case series of 35 patients with hemiplegic migraine was reported by (Bradshaw et al., 1965). Thomsen et al., 2004; carried out population based prevalence study in Denmark where they found out 105 patients with hemiplegic migraine with prevalence rate of 0.05%. Nearly 200 cases of hemiplegic migraine have been reported with sparse data available regarding pathophysiology, treatment and prevention of SHM. We describe here a case report of 25 year old male presented with sporadic hemiplegic migraine.

## 2. CASE REPORT

A 25 year old male presented in our medicine outpatient department (OPD) with history of headache and left hemiparesis since 1 day. He also gave a history of experiencing bright flashes of light in both visual fields just prior to onset of headache which was followed by severe throbbing headache accompanied by photophobia, nausea and vomiting. Later patient developed weakness in left upper and lower limbs along with slurring of speech. There was no history of fever, trauma, seizures, preceding the episode. In the past patient gives history of experiencing similar complaints on and off since last 2 years. In all this episodes, the weakness use to recover spontaneously within 6-12 hours. Patient was taken to local hospital with above complaints where he was diagnosed as a case of transient ischemic attack (TIA) and computerised tomography (CT) brain was done immediately which was normal study. There was no history suggestive of syncopal attacks, cardiac disease, coagulation disorder, connective tissue disorder, hypertension, diabetes mellitus. There was no history of substance or any drug abuse in the past. There was no positive family history in first or second degree relatives as ascertained by personal interview and examination. Systemic examination of cardiovascular, respiratory and abdominal systems was normal. On central nervous system examination, patient was conscious oriented to time, place and person. There was left sided hemiparesis with power of 2/5 in left upper and lower limbs. No evidence of cranial nerve palsy. Routine blood investigations like complete blood count, liver function test, kidney function test, random blood sugar which were normal. Patient also underwent lipid profile, serum homocystiene, thyroid function tests, thrombophilia profile and serum lactate which were within normal limits. MRI brain was done which showed no abnormality. Digital subtraction angiography (DSA) was done which did not show any abnormality. Electrocardiogram (ECG) was within normal limits. 2d echocardiography (2d echo) was done to rule out cardiac aetiology. Cerebrospinal fluid (CSF) examination was done which was normal. Electroencephalogram (EEG) revealed generalised intermittent theta slowing without any epileptiform discharges. Genetic analysis for mitochondrial mutations MELAS was negative.

He was managed conservatively and made gradual and complete recovery over 10 days. He was started on flunarizine in dose of 10 mg per day or prophylaxis. Patient was followed up after 2 months and he did not have any further episodes of headache or focal deficit.

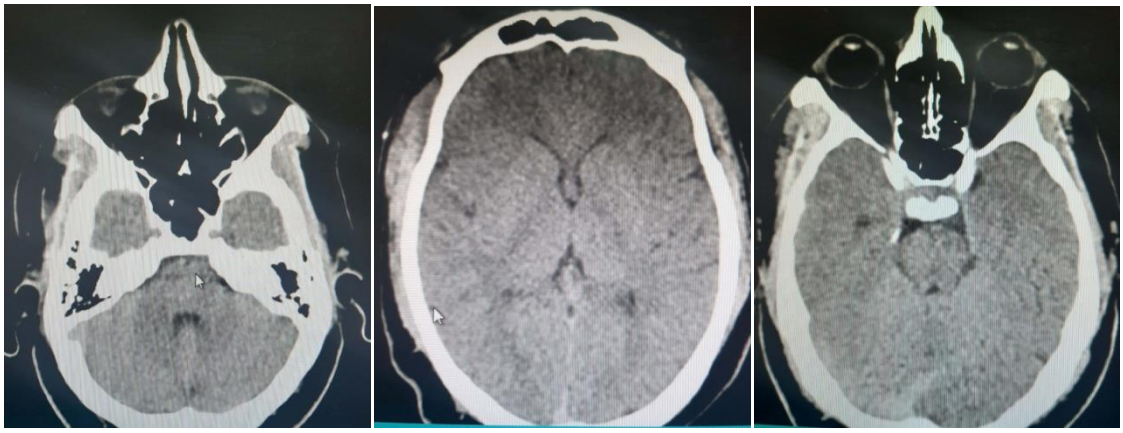

**Figure 1** CT brain showing no obvious abnormality

## 3. DISCUSSION

Our patient had history of visual and sensory symptoms preceding severe throbbing headache and associated hemiparesis. None of his family members had experienced similar symptoms. Various differential diagnosis with presentation of recurrent hemiplegia is shown in table no1.

**Table 1** recurrent hemiplegia

| | Causes of recurrent hemiplegia |
|---|---|
| 1 | Transient ischemic attacks and recurrent strokes |
| 2 | Complex partial seizure with and without secondary generalization (with post-ictal Todd's palsy) |
| 3 | One of the migraine with aura subtypes: |
| | (a) Hemiplegic migraine.(sporadic or familial) |
| | (b) Basilar-type migraine |
| | (c) Migrainous infarction (complication of migraine) |
| 4 | Mitochondrial encephalopathy with lactic acidosis and stroke-like episodes (MELAS) syndrome |
| 5 | Pseudomigraine with lymphocytic pleocytosis with transient neurologic deficits |
| 6 | Alternating hemiplegia of childhood |

However, unlike TIA and seizures, the symptoms do not gradually progress and there is no severe post ictal headache. An extensive work up done in our case rules out stroke or epilepsy. MELAS presents with episodes of migrainous headache and stroke like focal deficits and elevated lactate levels in serum and CSF. Genetic testing for appropriate mitochondrial mutations is virtually diagnostic of this condition which was negative in our case. Another differential diagnosis is pseudo-migraine with lymphocytic pleocytosis with transient neurologic deficits which is rare condition characterised by single or multiple of migraine like headaches, visual auras and sensory symptoms. CSF examination of this patient shows lymphocytic pleocytosis with cells ranging from 10-760 cells/$mm^3$ which is not associated with increased protein or decreased glucose levels. In our case, there was no evidence of lymphocytic pleocytosis nor meningitis. The diagnosis of basilar migraine is excluded in presence of motor weakness which was in our case hence it was ruled out. Migrainous infarction is defined as development of stroke during the course of migraine. It usually involves large vessel territory and corresponds to the side of origin of migrainous auras in the previous attacks. Its diagnosis requires presence of motor weakness for prolonged period and radiological evidence of infarction which was not in our case.

Our patient fulfilled all criteria of migraine with aura and its subtype sporadic hemiplegic migraine (Olesen et al., 2004, Bradshaw et al., 1965).

**Diagnostic criteria**

Attacks fulfilling criteria for *Migraine with aura* and criterion B below

Aura consisting of both of the following:
1. Fully reversible motor weakness
2. Fully reversible visual, sensory and/or speech/language symptoms.

Most patients with sporadic hemiplegic migraine gave typical aura symptoms (visual, sensory and/or aphasic) associated with motor weakness during acute attack (Bradshaw et al., 1965, Thomsen et al., 2004). This aura are said to be more prolonged in SHM as compared to typical migraine with aura. The SHM is almost always associated with headache while migraine with aura may sometimes not be associated with headache also.

Treatment strategy at present involves use of flunarazine, naloxone and verapamil only (Centonze et al., 1983, Yu W et al., 2003, Tobita et al., 1987). Ergot derivatives and triptans are avoided in acute attacks of hemiplegic migraine due to fear of vasospasm leading to permanent sequelae. Similarly due to risk of prolonged aura or migrainous infarction, beta blockers are not used in prophylaxis of hemiplegic or basilar migraine.

## 4. CONCLUSION

It is important to note that SHM is diagnosis of exclusion thus thorough investigations must be done to rule out other conditions before making diagnosis of SHM and also a possibility of SHM must be kept in any patient being evaluated for recurrent epilepsy or TIA who recovered without any permanent sequelae.

**Funding:** This research received no external funding.

**Conflicts of Interest:** The authors declare no conflict of interest.

**Consent**

Patient consent was taken prior to writing case report

**List of Abbreviations**

DSA: Digital subtraction angiography, MRI: Magnetic resonance imaging, MELAS: Mitochondrial encephalopathy acidosis and stroke-like with lactic episodes, TIA: transient ischemic attack, CT: computerised tomography, ECG: electrocardiogram, OPD: Out-patient department, CSF: cerebrospinal fluid, EEG: electroencephalogram, SHM- sporadic hemiplegic migraine.

## REFERENCE

1. Bradshaw P, Parsons M. Hemiplegic migraine, a clinical study. Q J Med. 1965; 34:65–85.
2. Centonze V, Brucoli C, Macinagrossa G, Attolini E, Campanozzi F, Albano O. Non-familial hemiplegic migraine responsive to naloxone. Cephalalgia. Int J Headache. 1983; 3(2):125–7.
3. Olesen J, Steiner TJ. The international classification of headache disorders, 2nd edn (ICDH-II) Journal of Neurology, Neurosurgery & Psychiatry 2004;75:808-811.
4. Thomsen LL, Olesen J. Sporadic hemiplegic migraine. Cephalalgia Int J Headache. 2004; 24(12):1016–23.
5. Tobita M, Hino M, Ichikawa N, Takase S, Ogawa A. A case of hemiplegic migraine treated with flunarizine. Headache. 1987; 27(9):487–8.
6. Whitty CW. Familial hemiplegic migraine. J NeurolNeurosurg Psychiatry. 1953; 16(3):172–7.
7. Yu W, Horowitz SH. Treatment of sporadic hemiplegic migraine with calcium-channel blocker verapamil. Neurology. 2003; 60(1):120–1.