

HAPPY  
TO  
SEE  
A  
CAT  
IN  
THE  
FOREST



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# CASE SCENARIO

This 12 years old developmentally normal boy, who presented to our ER with sudden onset of weakness of Left upper and lower limbs.

He woke up with headache on the left side which continued to persist throughout the day but in spite of which he was able to go to school and carryout his normal activities.

By around 7:30 PM in the evening, he noticed to have loss of control in the left lower limb while walking to his home from a near by shop, but he was able to reach his home with difficulty.

# HISTORY CONTINUED ...

Mother noted weakness of the left upper and lower limb while he was walking inside his home followed by slurring of speech when he replied to his mother.

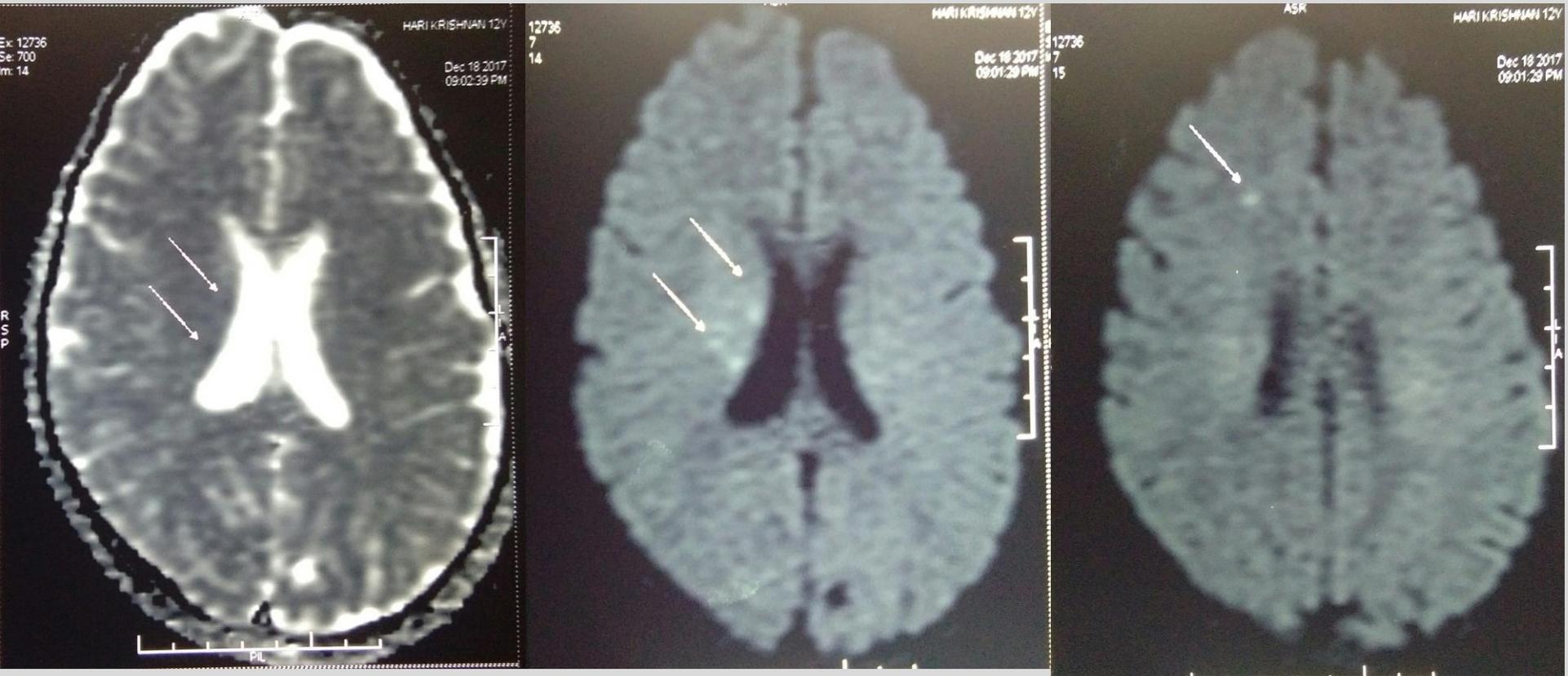
On further evaluation we found out that history of aura preceding headache was present, None of his family members had experienced similar symptoms. But family history of migraine – father and paternal aunt .

No history of trauma/ insect bite/ facial deviation / voice change / seizures / altered level of consciousness / vomiting / loose stools/ bleeding manifestation.

# PHYSICAL EXAMINATION

- MRI brain was done and was referred
- ☐ Child was alert, active, conscious, oriented, afebrile.
- ☐ Vitals- stable, Pulses and Bp checked in all 4 limbs normal.
- ☐ Systemic examination: CVS/ RS/ PA was normal.
- ☐ CNS examination, His higher mental function was normal.
- ☐ Fundus -hyperemic, No cerebellar / meningeal signs.
- ☐ Power - 5/5 on both right upper & lower limb and  
4/5 on both left upper and lower limb.
- ☐ Reflex B/L elicited, B/L plantar flexor, B/L PERL(+).

**MRI** : Infarct in right corona radiata and frontal region on right side suggestive of ischemia (hyper acute infarct).  
MRA and MRV normal .



# INVESTIGATIONS REVEALED:

- ❑ Complete blood count- within normal limit.
- ❑ ESR 12 mm(at 1 hour), CRP and MPQBC – negative.
- ❑ Coagulation profile: PT - 15 (C-13), aPTT - 30.9 (C-30),INR -1.20.
- ❑ Lipid profile done - within normal limits, Sickling test – negative.
- ❑ Serum Homocysteine-12.3 umol/L(normal 5.46 - 16.2).
- ❑ Peripheral smear was normal.

- ❑ Neurologist opinion obtained advised to do doppler carotid doppler, Serum homocysteine, protein - S, Protein - C, antithrombin III factor, factor V level.
- ❑ ECG and Echo done was normal, Carotid and vertebral doppler study was normal.
- ❑ Protein - S, Protein - C, antithrombin III factor, factor V level was done (normal).
- ❑ Ophthalmology opinion obtained advised Nil ophthalmological intervention.

# COURSE OF THE ILLNESS

- ❑ Child was started on oral aspirin, but neurological weakness improved spontaneously over 12 hours.
- ❑ Child didn't had any residual weakness or deficit during hospital stay.
- ❑ At the time of discharge: CNS examination was normal Child discharged with low dose aspirin.
- ❑ Child on follow up, no new neurological deficit or weakness.
- ❑ Doing good in his day to day activities and scholastic performance with a big smile on his face.

# LITERATURE REVIEW

- ❑ Rohit Bhatia et al, Department of Neurology, AllMS, New Delhi, Sporadic hemiplegic migraine: report of a case with clinical and radiological features, J Headache Pain(2008) 9:385–388.
- ❑ Chakravarty a et al, Department of Neurology, Vivekananda Institute of Medical Sciences, Kolkata, Sporadic hemiplegic migraine in children.
- ❑ Lemka M et al, poland, Sporadic hemiplegic migraine in a 14-year-old boy--a case report, Neurol Neurochir Pol. 2009 Nov-Dec;43(6):579-83.

# DISCUSSION

- ❑ The incidence of migraines infarction is low, accounting for 0.2-0.5% of all cerebral ischemic causes.
- ❑ Neurologic complications of migraine- Migraine can be associated with hemiplegia, ophthalmoplegia, retinal and vertebrobasilar insufficiency, amnesia, confusion, altered perception, stupor and even death.
- ❑ Beta blocker and a calcium channel blocker are well established for this propose.
- ❑ Statins, angiotensin receptor blockers, and angiotensin-converting-enzyme inhibitors have been reported as effective for migraine prophylaxis.
- ❑ There are no recommendations for the use of antithrombotics to reduce the risk of stroke in this population

Hemiplegic migraine may be Familial or sporadic

- ❑ Epidemiological studies have shown that sporadic cases occur with approximately the same prevalence as familial cases. The attacks have the same clinical characteristics as those in familial hemiplegic migraine.
- ❑ Sporadic cases always require neuroimaging and other tests to rule out other cause. A lumbar puncture is also necessary to rule out pseudomigraine with temporary neurological symptoms and lymphocytic pleocytosis. This condition is more prevalent in males and often associated with transient hemiparesis and aphasia.

Reference: The international classification of headache disorders, volume 24, supplement 1, 2004.

- ❑ Familial hemiplegic migraine often presents in the first or second decade of life with severe headache, often unilateral, and is associated with unilateral weakness typically lasting 24 hours or, rarely, several days.
- ❑ Genetic etiology has been linked to a calcium channel mutation (CACNA1A).
- ❑ People with mutations of this gene are more likely to have ataxia and coma, and to be more prone to delayed cerebral edema after minor head injury Mutations in CACNA1A (FHM1) also have been reported in patients with alternating hemiplegia of childhood, which phenotypically has some overlap with hemiplegic migraine and in patients with episodic ataxia type 2.

# A STROKE IN A PERSON WITH MIGRAINE SHOULD BE DIFFERENTIATED INTO:

1. The cerebral infarction of other cause in a person that has migraine (cerebral ischemia associated with migraine).
2. The cerebral infarction of other cause presenting with symptoms resembling migraine with aura.
3. Migraine infarction.

# CAUSES OF MIGRAINE AND STROKE

1. The adverse effect of migraine-specific medication.
2. Genetic associations that cause a predisposition to the hyperactivity of vessels.
3. Endothelial dysfunction - predisposition to atheromatous plaque formation.
4. The prevalence of some conditions, such as arterial dissection; the presence of a patent foramen ovale; and clotting disorders, such as thrombophilia.
5. Migraine also increases the risk of hemorrhagic stroke by still unknown cause.

# WHY THIS CASE WAS PRESENTED?

- ❑ It is not a common entity in practice, but one should think about its etiological role in young patients with headache and a lasting focal deficit.
- ❑ They should be advised to prevent the modifiable risks factors, such as tobacco oral contraceptive use, obesity, a sedentary lifestyle, and to monitor, avoid or treat other comorbidities, such as diabetes, hypertension, and dyslipidemia, to decrease the likelihood of ischemic episodes.

