



Sporadic Hemiplegic Migraine: A Case Report

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Abstract

The complaint of headaches is a frequent application to the emergency department. Most of the patients have a benign primary headache. Thus, fast and effective treatment is sufficient. A 24-year-old patient was admitted to the emergency department with symptoms of headache, slowing down in speech, numbness and weakness on the left side. After the examinations, the patient was diagnosed with a hemiplegic migraine attack. During follow-up, the patient's muscular weakness and symptoms totally improved, and migraine prophylaxis was started. Hemiplegic migraine, a rare subtype of migraine that characterized by recurrent focal weakness and headache episodes, was reviewed on this case.

Keywords: Hemiplegia; hemiplegic migraine; migraine; sporadic hemiplegic migraine

Hemiplegic migraine, a migraine subtype, is characterized by headaches associated with unilateral weakness. During the attack, severe headache, photopsia, visual field defect, numbness, paresthesia, unilateral weakness, aphasia, fever, drowsiness, coma and seizures may occur. Symptoms may continue for hours to days or rarely weeks, but most symptoms will resolve completely. This form of migraine with aura may occur either in the family (familial) or only in an individual (sporadic). Clinical symptoms of sporadic hemiplegic migraine cannot be distinguished from symptoms of familial hemiplegic migraine. It usually begins in childhood and early adulthood [1]. It is three times more common in women than in men [2].

Although headache is a common complaint in the emergency department, migraine accompanied by hemiplegia is not very common. We aim to remind the management of this important subtype of migraine through our 24-year old patient and to draw attention to its management.

Case Report

A 24 years old female patient was aggravated then collapsed at work while changing her clothes in the dressing room. When the weakness of arm and leg were noticed, the patient was brought to the hospital. When she was brought in, she was conscious, cooperative and oriented. Her speaking and understanding were normal, but she did not have a fluent speech. Blood pressure: 110/70mmHg, pulse: 80 pulses/min and fever 36.8°C. Blood glucose was measured as 110mg/dl from the finger. According to the anamnesis, she had a headache for a few days and today she felt numbness on her body when she started work. She felt worse and collapsed when she was starting to work. She felt weakness in his left arm and leg; there was no vomiting or incontinence. She had not totally fainting and loss of consciousness. She had been hospitalized in another hospital for about five days after minor head trauma that she

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did not experience a complete loss of fainting or consciousness eight years ago, after examinations she was told that she had a hemiplegic migraine. Topiramate and verapamil (Isoptin) were started. However, the patient could not use it regularly due to her incompatibility with the drug. There was not any other migraine patient or a person who had symptoms like that in her family. She was not pregnant, or she had not lactation. She did not use alcohol or cigarettes. On examination, she was conscious; her speech and understanding were normal. Her eyes were spontaneous on the midline, eye movements released in all directions, pupils' isochoric, direct and indirect light reflexes were normal in both eyes. There was no facial asymmetry; uvula was on the midline, retching (gag) reflex was normal. On the motor examination, muscle strength of the left upper and lower extremity was 3/5, the deep tendon reflex was normoactive, and the base skin reflex (TCR) on the left was reckless. On sensory examination, hemihypoesthesia was revealed on the left side. Cerebellar tests were skilled; there was not dysmetria or disidiadokinesis. The patient was trying to walk, but she was wobbling on the left side. There was not involuntary movement or incontinence. Other system examinations were normal and mark related trauma was not detected. Routine tests in the emergency department did not show any abnormal findings. CT and diffusion MRI were normal. The patient was hospitalized in the neurology clinic for further examination and treatment. During follow-up at service, contrast-enhanced brain tomography, cervical MRI, MR angio and other examinations for other differential diagnoses were performed, but no positive findings were detected. Lamotrigine 25 mg was initiated for headache prophylaxis. During follow-up, the patient's motor weakness improved and returned to normal, and she was discharged on the 7th day.

Discussion

Migraine is a disease associated with headache and neurological symptoms that influence a large population and may cause serious costs. The typical migraine headache is characterized by onset with aura or without aura. It has a throbbing or pulsatile character. The organic factors of migraine pathogenesis include genetic causes, neurogenic inflammation and neuropeptides, neurophysiological changes, brainstem activation and spreading depression. Cortical spreading depression activates the trigeminal nucleus caudalis [3]. Trigeminal and parasympathetic system cause headache in the extracerebral circulation which causes dilatation especially in the meningeal artery [3].

Hemiplegic migraine is a rare aura migraine subtype, which

is characterized by recurrent focal weakness and headache episodes. It was first described by Clark in 1910 [4]. Hemiplegic migraine is divided into two groups as follows: familial or sporadic. The familial form shows an autosomal dominant transition. Mutations in CACNA1A, ATP1A2 and SCN1A genes are considered to be responsible [5].

Genetic mutations have been identified in a sporadic form, and it has been emphasized that there can be asymptomatic family members, which suggests that it is a sporadic hemiplegic migraine in which there is no such attack in other family members except the patient. The diagnostic criteria of the international headache association of hemiplegic migraine according to the ICHD-3 beta classification; to answer the diagnostic criteria of migraine headache with aura, at least two attacks, accompanied by reversible motor weakness, accompanied by at least one of visual, positive, sensory or speech disorders, each symptom of aura lasts longer than five minutes, less than 24 hours. In family cases, there is at least one, first or second-degree family history.

Hemiplegic migraine attacks may cause fever, confusion, hemianopsia, ataxia, epileptic seizures and symptoms of the sensorial system. When the attack is complete, the neurological deficits may sometimes be permanent, although they mostly resolve [6].

The patient's head trauma that she had before the first hemiplegic migraine attack eight months ago may have triggered the hemiplegic migraine attack.

When the patient was examining at emergency service, the neurology clinic was informed immediately due to the risk of acute ischemic stroke. The presence of a young patient and the development of symptoms within half an hour allowed thrombolytic therapy and interventional thrombectomy. However, haemorrhage and ischemic stroke were ruled out by brain tomography and diffusion MR imaging. On physical examination, the absence of meningeal irritation symptoms and nuchal rigidity, normal follow-up of the fever, and normal infection parameters in blood tests did not suggest encephalitis.

Although there is no definite information about the pathogenesis of epileptic seizures in hemiplegic migraine, migraine and epilepsy can be seen often together. Attacks with aura or without aura may trigger epilepsy seizures. The possibility of having an epileptic seizure after the fall of the patient was emphasized. In the follow-up, acetaminophen was administered for headache in the emergency department, and there was no epileptic seizure as long as she was in the emergency room or in the hospital.

The patient was hospitalized by the neurology clinic after

examinations and evaluations in the emergency department. As a result of the investigations carried out by the neurology clinic, other possible diagnoses were excluded and polyclinic control was recommended by prescribing lamotrigine for migraine prophylaxis.

Conclusion

The complaint of headache is a frequent application to the emergency department. The emergency physician must know and recognize the causes of life-threatening headaches. Migraine patients who admitted to the emergency department have throbbing headaches, nausea and vomiting. However, a hemiplegic migraine, a rare migraine variant, may present with headache, which may be associated with other cerebrovascular disease symptoms, such as motor weakness in the upper and lower extremities, confusion, dysarthria, fever and epileptic seizures. Differential diagnoses should be made with a good physical examination and anamnesis; the patient should be directed to the neurologist for prophylaxis and follow-up.

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