Dynamic Chiropractic

HEADACHES & MIGRAINES

Classic Migraine Headaches: Epidemiology and Prodromal Symptoms

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A recent study[2] detailed data relating to migraine impact in the United States. The study sampled 47,711 households, resulting in interviews of 116,929 individuals. According to the study, approximately four persons per 100 were found to suffer from migraine headaches, representing a population of 10,000,000 patients. Migraines were found to be more prevalent in the 25 to 44 years age group, with females affected 2.5 times more frequently than males. Migraines were also more commonly noted in whites (85 percent) and in those with lower household incomes. For women, the frequency of migraines increase with the level of education.

Approximately 10 percent of migrainous children missed at least one day of school over a two-week period due to migraine. One percent missed four days due to migraine. Migraineurs were bedridden for approximately 3,000,000 days per month and had an estimated 74.2 million days per year of restricted activity due to migraine. The potential cost of lost productivity for more than six million migraineurs who worked outside the home was estimated to be as high as 1.4 billion dollars per year. The study also indicated that housewives experienced more than 38 million days of restricted activity due to migraines.

Migraine headaches are among the longest recognized illnesses in the world.[1] Artaeus of Cappadocia (2nd century AD) described a paroxysmal headache often felt on one side of the head, often associated with nausea, and followed by pain-free periods. Galen (130-200 AD) stressed the unilateral nature of the attacks and introduced the term hemicrania (from the Greek hemikranios) to describe the event. Later, the Romans translated the word to the Latin hemicranium which was further corrupted to hemigranea and hence migranea. The current terminology "migraine" is derived from the French translation of the Middle English version of the term and gained acceptance as the preferred terminology in the 18th century.

Classic migraine headaches account for approximately 10 percent of patients with the diagnosis of migraine headache. Classic migraines have a strong familial tendency, currently estimated between 50 percent and 90 percent. Classic migraines may be subdivided into four categories based on frequency of occurrence:

a. Periodic: Headaches occur at constant intervals.

b. Paroxysmal: Headaches occur at any time with no correlation to time.

c: Habitual: Patient may experience up to five migraines per week, which may be experienced at approximately the same time each day.

d. Migraine status: Headaches occur so frequently that they are considered to be constant.

Classic migraines have three distinct phases: a prodromal phase, a headache phase, and a resolution phase. The headache phase, the resolution phase, and available treatments for migraine will be addressed in the next column. Classic migraines usually begin in the morning soon after waking, with a prodromal phase in which the patient experiences an aura. The aura experienced in the prodromal phase of the classic migraine may take the form of transient emotional, visual, sensory or other focal cerebral or brainstem symptoms. The prodromal phase is also referred to as the vasoconstrictive phase of the migraine headache, as the complex neurological symptoms exhibited during this phase are the results of cerebral ischemia.

Patients may experience sensory excitability in the form of euphoria, anxiety, irritability, rage or occasionally panic during an aura phase that has an emotional component. There are a variety of visual symptoms that exhibit themselves variably during the prodromal phase of the classic migraine as well. The most common visual aura is the scintillating scotoma. Scintillating scotoma usually begins as a shimmering arc of white or colored lights in the homonymous portion of the left or right visual field. The arc of light gradually enlarges, becomes more obvious, and may take the form of a definite zig-zag pattern. Additionally, the scintillating scotoma may demonstrate the following features:

a. It may be a single band of light.

b. It may take on a more complex pattern.

c. It may demonstrate a shimmering quality or flickering quality similar to that of a fluorescent light fixture that is close to failure.

d. The scintillating scotoma may gradually move over the course of a few minutes across the visual field to a point of fixation in the visual field.

On occasion, the positive scotoma is preceded or followed by a spreading zone of visual loss (known as a negative scotoma). As a means of differentiating a positive scotoma from a negative scotoma, the positive (bright) scotoma may be seen by the patient with the eyes closed or while in the dark. The negative scotoma disappears with the eyes closed or when the patient is in the dark. Even if there is no identifiable area of visual loss, the disturbance of vision created by the scintillating scotoma may make reading and driving difficult. Scintillating scotoma may also be accompanied by mild feelings of dizziness or vertigo. These subjective visual images, also known as migrainous teichopsia, may take on many forms or variations. The zig-zag appearance may become so pronounced that the term "fortification spectrum" may be applied because of the resemblance to the ground plans of a fort. The scotoma may also be of a less complex nature and may be simply described as a "ball of light" in the center of the visual fields which obscures vision to a great degree.

Metamorphopsia is a term used to describe complex migrainous teichopsia in which complex scenes will be visible to the migraineur. Changes in perception of the shape or form of viewed objects can lead to frightening and bizarre hallucinations. These types of visual changes are attributed to dysfunction in the posterior temporal lobe. Photopsia is a term used to describe unilateral flashes of light in the visual field and is a sign of retinal dysfunction.

In addition to the visual symptoms reported in the prodromal phase of the classic migraine, patients may also report various forms of neurological involvement. Paresthesias may occur as an aura, either alone or in conjunction with any of the previously mentioned visual field anomalies. Numbness and tingling may be felt in almost any distribution in the body, lasting from a few seconds to up to 20-30

minutes. Paresthesias of migraine do seem to demonstrate a predilection for the face and hand. The term cheiro-oral migraine is used to describe a classic migraine involving a sensory disturbance of the fingers, lips, and tongue during the aura phase.

Hemiparesis may result if the migraine's prodromal phase involves ischemia to the primary motor cortex. Aphasia may result if either Wernicke's area (receptive aphasia -- patient can form speech but cannot understand what is being asked or said) or Broca's area (expressive aphasia due to frontal lobe involvement in which the patient has an understanding of what is being said but cannot produce meaningful speech in response). Additionally, the patient may experience photophobia or phonophobia, vertigo, ataxia, dysarthria, tinnitus, increased muscular tension, anorexia, nausea, vomiting, and abdominal bloating. Alterations in fluid balance may also occur in the prodromal phase, with peripheral edema noted. The characteristics of the headache and resolution phase of the classic migraine will be explored in next month's column.

References

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JULY 1993