

What You Should Know About Migraine

By David J. Browning, MD, PhD

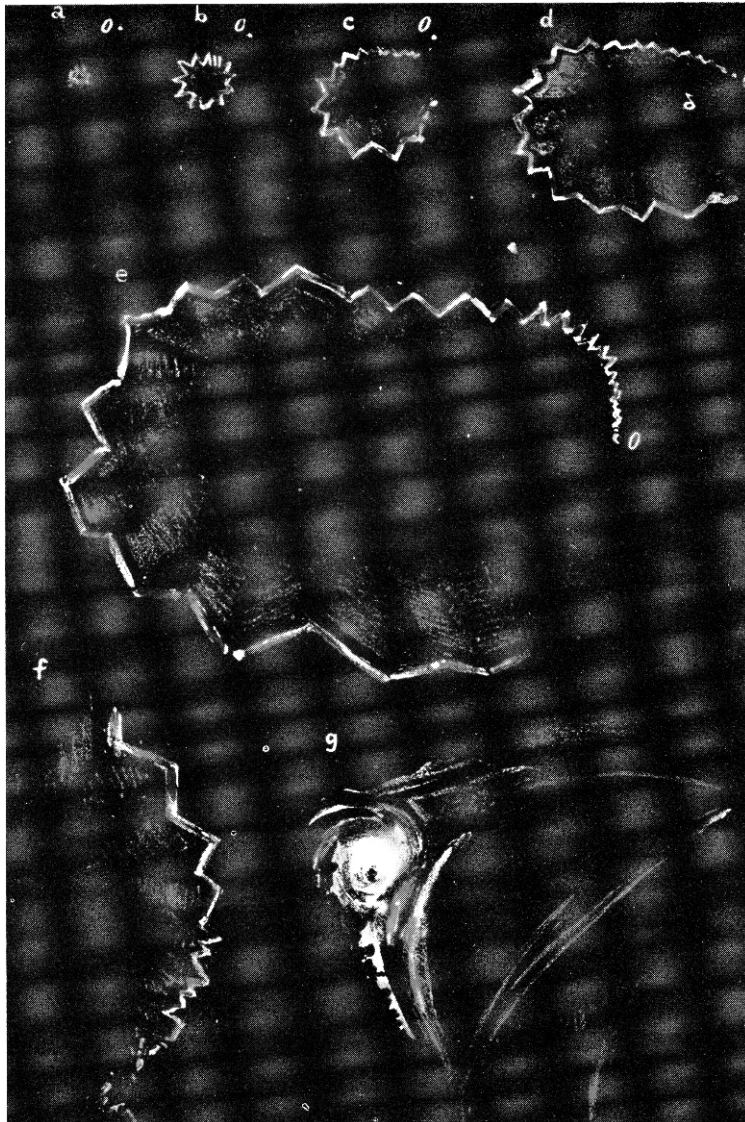
Migraine is a group of disorders affecting the central nervous system and causing many neurological symptoms, including headache, nausea, visual symptoms, and occasionally weakness or numbness of parts of the body. Most people associate the term migraine with headache, but many people with migraine do not have headache, but other neurological symptoms and signs instead. The condition is a frequent cause for patients to be seen by ophthalmologists and retina specialists, since visual symptoms are a prominent part of the migraine syndrome. Patients frequently complain of areas of blurred vision of both eyes, commonly with a jagged or pulsating border. These visual symptoms may last 15-20 minutes and may or may not be followed by headache. Some patients can tell when such an event is about to occur, because they have premonitory symptoms of nausea or lightheadedness.

Migraines are common, affecting approximately 20% of the population at some time. Women are affected three times as often as men. Migraine rarely occurs before puberty, and becomes less frequent in old age, suggesting a hormonal influence. Recurrent attacks affect 15% of those patients who have had a migraine.

What Causes Migraine?

Migraine is caused by an abnormal pattern in the discharge of brain neurons, called 'spreading depression', often but not always associated with a subsequent spasm of blood vessels. In the most common variety, the abnormal firing occurs on one side of the brain. If it occurs on the left side of the brain, the patient may experience an area of pulsating lights and loss of vision on the right side of the visual field. Likewise, if the neuronal discharge occurs on the right side of the brain, visual loss occurs on the left side of the visual field. The appearance of such an event is depicted in figure 1. Much less commonly, a vascular spasm may occur within the retina of one eye. This so-called retinal migraine causes visual loss in one eye, but not both, and if witnessed by an ophthalmologist, is associated with visible constriction of arteries in the retina.

Fig. 1 - Visual Disturbance Progression



The Vocabulary of Migraine

Migraine comprises many clinical syndromes, which have in common the underlying problem of abnormal nerve discharges. Different terms are used for the various types of migraine:

Common Migraine – This is a type of headache caused by an abnormal pattern of nerve discharges with prodromes of nausea and

sometimes, fluid retention. Common migraines often have specific triggers in the environment and may be stimulated by menstrual periods, or certain occupational situations.

Classic Migraines – These are headaches caused by an abnormal neuronal discharge followed by vascular spasm. They are preceded by a sharply defined, transient period of flashing lights, areas of blurred vision, smells, and rarely neuromuscular dysfunction. In many cases, bright lights, head trauma, and certain foods can trigger this type of migraine.

Complicated Migraine – These headaches arise from abnormal neuronal discharges and are associated with vascular spasm. They cause observable neurological deficits, such as muscle weakness, difficulty with speech, or sensory abnormalities occurring at the same time as the headache. Usually, these neurological deficits are temporary, but rarely they can be permanent, if the vascular spasm causes nerve death.

Acephalgic Migraine – This type of migraine involves episodes of visual symptoms, smells, or other neurological signs and symptoms, but does not involve headache. Patients affected by this type are most commonly seen by an ophthalmologist first, since the patients with headaches are often aware that migraine is a possible explanation for their problem, leading them to visit their primary care doctor first.

What Can I Do To Prevent or Treat Migraine?

Prevention may be possible by avoiding known triggers, such as certain foods or wine. For patients with frequent attacks, prevention of migraine may also be attempted with beta-blockers or calcium channel blockers. Women suffering from migraine, who also take oral contraceptives, should probably stop their use, as these can exacerbate migraine. Pregnant women with migraine should probably not receive oxytocin to induce labor, or do so reluctantly and with special monitoring. Migraine headaches can be treated with various medications, such as triptans or ergot alkaloids. These should be prescribed and monitored by a primary care physician or a neurologist.

Final Comments

Patients experiencing visual symptoms of flashing lights often visit a general ophthalmologist or retina specialist for fear of having a retinal tear or detachment. Often, no retinal tear is evident on examination, and the symptoms are ascribed to a type of migraine. I hope this brochure provides you with a better understanding of this frequently confusing condition. After reading this, if you have a specific question, please e-mail Dr. Browning at the link on the home page of this website. If you would like to read more about this and other conditions, there is an excellent resource for peer-

reviewed medical publications on the website of the National Library of Medicine, at www.Pubmed.com. We also invite you to browse the rest of our website, where you will find several other patient education brochures like this one. The site also includes photographs of retinal conditions, and an interactive forum, where patients may share their experiences.