

How to Identify Migraine with Aura

Kathleen B. Digre MD, FAHS



Migraine is very common—affecting 20% of women and almost 8% of men. Migraine with aura occurs in about one-third of those with migraine. Visual symptoms such as photophobia, blurred vision, sparkles and flickering are all reported in individuals with migraine. But how do you know if what a patient is experiencing is aura?

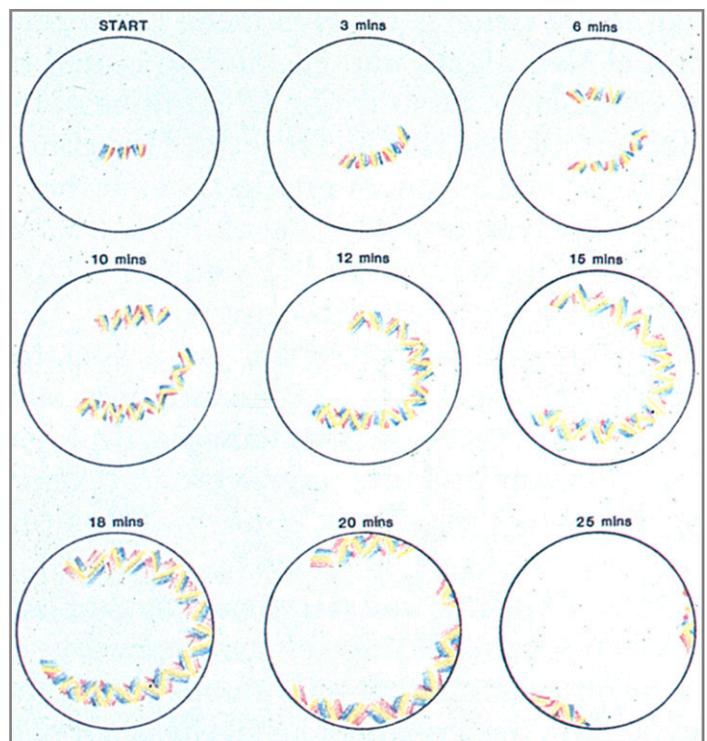
The International Classification of Headache Disorders (ICHD 3) suggests that auras may be visual (most common—90% of all auras), sensory, speech and or language, motor, brainstem or retinal. The typical aura starts out gradually over 5 minutes and lasts 5-60 minutes, is usually unilateral and may be followed by a headache within 60 minutes.

To identify aura, we rely on the patient's description of the phenomena. One helpful question to ask patients to determine if they are experiencing visual aura is: Was this in one eye or both eyes? Many patients will report it in ONE eye but if they haven't covered each eye when they have the phenomena and try to read text, they may be misled. If you can have them draw their aura (typical zig-zag lines) with scintillations (movement, like a kaleidoscope) across their vision, you know it is an aura. The aura starts centrally and moves out, or starts peripherally and moves in, and often leaves a negative scotoma in the wake of the scintillations (positive phenomena).

Remember, visual aura comes from the occipital lobe, and it represents what we think is spreading depression. Some may have spots/dots in a visual field, macropsia, micropsia, heat waves or colored lights in a particular field. (Viana et al). Other visual phenomena are not migraine aura but can occur in individuals with migraine, for example visual snow

(continuous dots that are present all of the time but do not obscure vision and appear like a faulty analog television set), (Schankin et al), visual blurring and short visual phenomena (Friedman). Migraine visual auras are usually stereotypic for an individual.

Figure: Typical aura drawn by a primary care resident:



Sometimes visual auras can occur with only a very little headache or no headache at all. We call these aura without headache. This occurs more frequently in individuals with a history of migraine with aura. These occur in almost 40% of those who have migraine with aura. (Shah et al). Often as individuals age, migraine aura without headache may be more frequent.

Can auras last a long time—like over an hour? In rare circumstances, auras can last hours. These are termed “persistent migraine aura.” While they are infrequent, these sometimes deserve imaging, since persistent aura can go on for days. The concern, of course, is for migraine infarction, or migrainous stroke, with persistent aura.

The sensory aura is the next most common type of aura and is usually positive. It is described as a pins-and-needles feeling that begins in one part of the body and can move to the face, mouth, tongue and one side of the body. This is often followed by headache.

Even less frequent are aphasic auras. The speech may be garbled or aphasic and can be associated with numbness. Aphasic auras are also followed by migrainous headache.

Migraine auras are usually inherited, so asking about a family history is very helpful.

How do I tell the difference between aura and stroke?

Strokes produce visual, sensory and/or speech symptoms almost instantaneously, and most frequently they are “negative” phenomena—that is, a loss of vision, numbness or weakness. Also with strokes, there is no sense of movement of the phenomena to other parts of the body. They don't progress but are maximal at onset. Strokes usually are continuous and do not remit in one hour. A headache may or may not occur with a stroke. In addition, an aura occurring for the first time after the age of 40, with numerous vascular risk factors such as hypertension, diabetes and hyperlipidemia, should be investigated for transient ischemic attacks. If the visual symptom is ONLY negative (that is, a hemianopic scotoma), the person should be further investigated.

How do I tell the difference between amaurosis fugax (transient monocular blindness) and aura?

The most important thing to ask about is if the visual loss occurred in one eye or both eyes. This can sometimes be very difficult for patients to determine, as stated above. Patients should look at a book, for example, and see if they can read the print with the uncovered eye. If not, the phenomenon is occurring in both eyes and is likely an aura. Amaurosis fugax (fleeting blindness) is usually sudden with NO build up or traveling. In other words, the visual loss is sudden and in one eye. Sometimes this blindness is described as a curtain coming down over an eye. There are usually NO positive phenomena, only darkness.

How do I tell the difference between occipital epilepsy and migraine aura?

Occipital epilepsy is very stereotypical—frequently lasting seconds to minutes—and often is described as small lights flashing brightly or sometimes pinwheels, and consciousness may be affected. It is important to know that occasionally a migraine aura can also trigger a seizure. An EEG in these individuals would be helpful and may be abnormal.

How should I evaluate an individual with migraine with aura?

If the history is typical and the neurological examination is normal, no further imaging or work up is necessary. If there are red flags, or the aura is atypical, investigation with MRI is recommended. If ischemia is suspected, then diffusion weighted imaging is helpful.

Should female patients with aura use oral contraceptives?

While many studies have shown an increased risk of stroke in migraine with aura, this is a controversial area with studies done with lower estrogen content. Progestin-only oral contraceptives are probably safe if the person doesn't smoke or have other vascular risk factors. (Charles)

How should I treat migraine with aura?

First, the acute treatment of migraine with aura should be considered. There is some evidence that migraine with aura may not respond to triptans as easily as migraine without aura. Certainly treating the aura itself with a triptan is usually not successful but treating the headache may be. Other medications such as aspirin and non-steroidal anti-inflammatories have been reported as successful. Newer medications such as the gepants (ubrogepant, rimegepant) have been shown to be helpful. Transmagnetic stimulation has been reported as successful at treating the aura. (Fraser et al).

When migraine with aura is too frequent or severe, consider a preventative. Many migraine preventives are successful at preventing migraine with aura. Propranolol, topiramate, amitriptyline have been shown to reduce spreading depression and aura. Lamotrigine has also been reported to be helpful. The newer Calcitonin gene-related peptides also may prevent frequent migraine with aura.

References:

- Friedman DI, Evans RW. Are Blurred Vision and Short-Duration Visual Phenomena Migraine Aura Symptoms? *Headache*. 2017 Apr;57(4):643-647.
- Charles A. The Migraine Aura. *Continuum (Minneapolis)*. 2018 Aug;24(4,Headache):1009-1022.
- Fraser CL, Hepschke JL, Jenkins B, Prasad S. Migraine Aura: Pathophysiology, Mimics, and Treatment Options. *Semin Neurol*. 2019 Dec;39(6):739-748.
- Schankin CJ, Maniyar FH, Digre KB, Goadsby PJ. 'Visual snow' - a disorder distinct from persistent migraine aura. *Brain*. 2014 May;137(Pt 5):1419-28.
- Shah DR, Dilwali S, Friedman DI. Migraine Aura Without Headache [corrected]. *Curr Pain Headache Rep*. 2018 Sep 17;22(11):77. Review. Erratum in: *Curr Pain Headache Rep*. 2018 Oct 20;22(12):85.
- Viana M, Tronvik EA, Do TP, Zecca C, Hougaard A. Clinical features of visual migraine aura: a systematic review. *J Headache Pain*. 2019 May 30;20(1):64.