

## Migraine, visual migraine, and retinal migraine

The term 'migraine' is well known and is commonly understood by most people as a very painful one-sided headache accompanied by nausea, disturbance to vision and sensitivity to light and sound. In fact in only a few people, will migraine *always* involve all of these symptoms<sup>1</sup>.

Medical practitioners will have many patients who suffer migraine. Headache disorders are among the most common disorders of the nervous system. Half to three quarters of the adults aged 18–65 years in the world have had headache in the last year and among those individuals, more than 10% reported having migraine<sup>2</sup>.

It is interesting to note that many of those troubled by headache do not seek medical care. For example, in the United States of America and the United Kingdom, only half of those identified with migraine had seen a doctor for headache-related reasons in the previous 12 months, and only two-thirds had been correctly diagnosed. Most were solely reliant on over-the-counter medications.

What is less commonly known is that migraine with aura can present by itself *without* any headache pain. This is often termed a 'visual migraine' and is included as a subtype of migraine with aura in the International Headache Society definitions of 2013.

*migraine with aura can present by itself without any headache pain*

### Visual migraine

Symptoms of 'visual migraine' are short lasting and, while variable, commonly include a positive scotoma (although it can be negative) with jagged or shimmering edges or lights, gradually expanding in size, lasting for between 5 and 60 minutes. The aura is homonymous i.e. in both eyes but on one side of the visual field. (Anatomically the visual pathway from the left side of each retina terminates in the occipital cortex on the right side of the brain).

The Framingham study<sup>3</sup> found late-life-onset transient visual phenomena similar to the visual aura of migraine are not rare and often occur in the absence of headache. The incidence was just over 1% in a general population sample.

If you have never experienced visual aura there is an interesting post to Youtube made by a person who has tried to show others what he or she experiences when having a 'visual migraine'. <http://www.youtube.com/watch?v=fo139jYAFzA>

Visual migraines can interfere with the ability to perform tasks like reading, writing, or driving. Symptoms are temporary and a 'visual migraine' is not considered a serious condition. The

key here is that vision returns to normal. Generally these occurrences last 15-20 minutes and rarely over an hour. If they do last over an hour, then perhaps start worrying about a possible transient ischemic attack (TIA).

### Retinal migraine

Sometimes, visual migraine is used as a synonym for the medical term 'retinal migraine' where the aura presentation is similar but unilateral i.e. in one eye only. Retinal migraine is a rare condition occurring in a person who has experienced other symptoms of migraine and must be differentiated from other unilateral transitory vision disturbances or losses. Examples include: amaurosis fugax i.e. transient ischemic attack (that may be symptomatic of carotid stenosis or dissection) and vitreous traction (caused by vitreous syneresis and tugging on the retina).

### More about visual aura

Visual aura can be considered atypical (and potentially requiring referral for imaging) when the location of the aura is inevitably in same location in visible space, when the headache precedes the aura (while this can sometimes happen it is uncommon and is suspicious for an arteriovenous



malformation) or when a fixed neurological (including visual) deficit is noted following termination of the event<sup>4</sup>.

Other events that may mimic visual aura in addition to those noted above include: vitreous traction at the macula, central serous retinopathy, retinal pigment epithelial detachment at or near the macula and perhaps age related macula degeneration. Nearly all can be ruled out based on time (migrainous visual aura by the International Headache Society definition lasts longer than 5 but less than 60 minutes) or by optical coherence tomography.

The diagnosis of visual aura can be challenging but it is an important diagnosis to make. No more than a quarter of migraine patients will experience aura but aura has been implicated in an increased risk of cardiovascular events even when other risk factors are absent relative to migraine without aura<sup>5</sup>. Moreover migraineurs with aura are likely to be at more than two times the risk of ischemic stroke<sup>6</sup>.

### Migraine Definitions

The International Headache Society (2013)<sup>7</sup> defines migraine as one of four Primary Headache types:

- Migraine
- Cluster headache and other trigeminal autonomic cephalgia's,
- Tension type headache and
- Other primary headaches (e.g. Primary stabbing headache, Primary cough headache or Primary thunderclap headache i.e. headaches not associated with a known causative agent)

Migraine headache can be further subdivided as follows:

- Migraine without aura
- **Migraine with aura – which includes in its subset:**
- **[Typical aura without headache]**
- Childhood periodic syndromes that are commonly precursors of migraine e.g. cyclical vomiting, abdominal migraine
- **Retinal migraine**

- Complications of migraine e.g. chronic migraine (ongoing – longer than expected), persistent aura without infarction
- Probable migraine – a presentation not meeting enough criteria for classification
- **Ophthalmoplegic migraine** – migraine and palsy of one the cranial nerves (III, IV, VI). (The diagnosis will require imaging to rule out other causes of cranial nerve palsy)

Based on one US study the 1-year prevalence of migraine in that county is 13%. Consistent with other studies, the 1-year prevalence is 18.2% in female patients and 6.5% in male patients. Prevalence is highest in the 25–55 age group<sup>8</sup>.

### REFERENCES

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