Case Study #1

HPI

A 62-year-old female presented with a chief complaint of new, recent-onset light flashes in both eyes. She described very intense, sun-shaped flashes with edges that moved. They progressed across her vision and then stopped after 10 minutes. There was no pain or headache following the visual symptoms. She noted a history of visual flashes in the past, but they were always prior to a headache.

Patient’s Ocular, Medical History (POH, PMH)

Cataracts OU

Migraines with visual aura

Medications

Cholecalciferol (vitamin D3) 500unit/5mL

VA With Correction

20/20 OD, 20/20 OS

Pupils, EOM, Confrontation VFs

Normal OD, OS

IOP

14mm Hg OD, 15mm Hg OS

Slit Lamp Examination

1+ nuclear sclerotic cataract OU

Vitreous syneresis OU

No posterior vitreous detachment OU

All other structures normal

Dilated Fundus Examination

Cup-to-disc: 0.2 OD, 0.15 OS

All other structures normal

Discussion

The patient was diagnosed with typical aura without headache.5 This case features the classic description of the migraine-associated visual aura known as scintillating scotoma: a zigzag or angulated figure, usually with shimmering (scintillating) colored, black or silver edges, that appears near the point of fixation and surrounds an area not well seen. There is gradual enlargement or spread to the right or left side that leaves a total or relative scotoma in its wake until breaking up and completely resolving over 15 to 30 minutes. Typical aura can also include sensory or speech/language symptoms, but these are less common.

Also reassuring was the patient’s prior history of migraine with aura. It’s not uncommon for migraines to change over a person’s lifetime. Many migraine sufferers report improvement of headache symptoms around age 50, with only the aura remaining thereafter.27 However, if the presentation is new, i.e., the visual aura presents for the first time in a patient over age 40, or if atypical features of the aura are described, further evaluation is warranted to rule out other causes (Table 9).

Case Study #2

HPI

A 58-year-old female presented due to vision changes and headache. She woke up with decreased vision in her left eye that persisted for two to three days, describing it as “looking through Vaseline.” She had associated left side facial numbness and weakness lasting several hours, followed by a left-sided headache that resolved with sleep. The facial numbness returned a second day, prompting her to present to the local ED.

ED exam notes reporteded mild left side facial numbness and loss of sensation with mild slack in smile. Her left arm and leg demonstrated muscle weakness. Differentials of concern included transient ischemic attack, cerebrovascular accident (CVA), retinal migraine and migraine with atypical aura.

POH, PMH

Dry eye, sick sinus syndrome s/p pacemaker, hypertension, type two diabetes, osteoarthritis, stress

Family History

Negative for neurological problems

Medications

Lexapro, metformin, vitamin B12, escitalopram oxalate, lorazepam, omeprazole

Vitals

Heart rate: 77bpm

BP: 151/88mm Hg

VA With Correction

20/30 and no improvement with pinhole OD, 20/25 OS

Pupils, EOM, Confrontation VFs

Normal OD, OS

Manifest Refraction (subjective)

No improvement in vision OU

IOP

14mm Hg OD, 13mm Hg OS

Slit Lamp Examination

Lens, trace nuclear sclerosis OU

All other structures normal

Dilated Fundus Examination

Slight arteriolar narrowing OS

Cup-to-disc: 0.60 OD, 0.55 OS

All other structures normal

Additional Testing

Complete blood count, partial thromboplastin time, international normalized ratio, transesophageal echocardiogram: normal

CT: no acute intracranial abnormality

CTA head and neck: mild atherosclerotic disease with 0% stenosis, no occlusion or aneurysm

OCT: mild RNFL loss OD>OS, GCL loss OU (Figure 2)

Goldmann VF: normal VF with I2e and I4e isopter OU (Figure 3)

Discussion

The patient was diagnosed with probable ischemic CVA, unable to confirm with MRI because of the pacemaker. She was placed on daily aspirin 81mg, counseled on BP and blood glucose control and scheduled for follow-up with neurology and her PCP for a formal sleep study.

Case Study #3

HPI

A 38-year-old male presented to the ED with a chief complaint of very severe headache for the past three to four weeks. He described an excruciating, throbbing, right-sided headache that radiated to the right eye, teeth and jaw, with associated rhinorrhea. “It’s as if a boxer was jabbing me over and over.” The pain was rated up to 10/10 severity, lasted about two hours or less each time and had occured several times a day, every day, for the past month. The patient could not find relief—rest or any attempt to remain made it worse. His wife reported that she could tell when he was having an episode because his right eye looked “sunken and droopy,” and his face got red prior to and during the episode.

POH, PMH

No ocular history, hypothyroidism, headache as described earlier for the past two years, chronic smoker (cigars, cigarettes) for 20 years

Family History

Negative

Medications

Synthroid 125mcg

VA Without Correction

20/20 OD, 20/20 OS

Pupils, EOM, Confrontation VFs

Normal OD, OS

IOP

14mm Hg OD, 15mm Hg OS

Slit Lamp Examination and

Dilated Fundus Examination

Lid ptosis OD

All other structures normal

Additional Testing

ESR, MRI, MRA: normal

Diagnosis

Cluster headache

Case Study #4

HPI

A 36-year-old female presented with new headaches and decreased vision, worse OS. She also noted a change in the appearance of her left eye. “It looks hazy.” She described a unilateral, left-sided headache that started two weeks ago, lasted a few days and was accompanied by vomiting and nausea. She had left eye aching, tenderness and pain with movement. After a few days, the headache resolved, but her hazy vision and aching eye persisted. She was diagnosed with migraine and told to follow up with her eye doctor about the complaints of vision loss.

POH, PMH

Leber’s congenital amaurosis OU, headaches, no history of migraine, depression

Medications

Venlafaxine

VA With Correction

5/160 OD, hand motion at 2ft OS

Previous VA (four months earlier)

20/160 OD, 20/160 OS

Pupils

4mm dark, 3mm light, no RAPD OD

4mm dark, 4mm light, fixed OS

EOM

Full OD, OS

Nystagmus

Confrontation VFs

Unable OD, OS

IOP

15mm Hg OD, 55mm Hg OS

Slit Lamp Examination

Cornea: central haze, edema OS

Anterior chamber: diffusely shallow with narrow angle OD, angle closure OS

Iris: anteriorly displaced OD, temporal irido-corneal touch, fixed pupil OS

1+ nuclear sclerosis

All other structures normal

Dilated Fundus Examination

Cup-to-disc: 0.55 OD, 0.65 OS

Retina: diffuse atrophy of RPE OU

All other structures normal

Additional Testing

Gonioscopy: no structures visible OU

Anterior segment ultrasound: shallow anterior chamber, narrow angle, lens displaced forward, ciliary body rotated anteriorly (Figure 4)

Diagnosis

Acute ACG associated with SSRI use

Case Study #5

HPI

A 17-year-old female presented for an eye exam due to new, persistent headaches and vision changes. For the past month, she had been aggravated by several low-grade headaches occurring almost daily. She also reported associated blurred vision which made it difficult for her to focus for seconds to minutes.

POH, PMH

No ocular history

Migraine since age 13

Medications

Minocycline 100mg

Vitals

BP: 126/69mm Hg

BMI: 25.63

VA Without Correction

OD 20/20 OD, 20/20 OS

Manifest Refraction

+0.25 sph, VA 20/20 OD

+0.75 sph, VA 20/20 OS

Pupils, EOM, Confrontation VFs

Normal

IOP

15mm Hg OD, 14mm Hg OS

Slit Lamp Examination

All structures normal

Dilated Fundus Examination

Disc: diffuse edema OU, small disc hemorrhage OD

Cup-to-disc: 0.10 OD, 0.10 OS

All other structures normal

Additional Testing

Color photos: grade two to three disc edema with small disc hemorrhage OD, grade two disc edema OS

Humphrey VF 24-2: enlarged blind spot OU

OCT: significant increased RNFL OD>OS

B-scan: marked elevation with signs of increased subarachnoid fluid in retrobulbar optic nerve, no evidence of disc drusen OU

MRI: no mass

MRV: moderate narrowing of bilateral transverse sinus

LP: opening pressure 261mm H2O

Diagnosis

IIH of unclear etiology vs. intracranial hypertension secondary to metabolic, toxic or hormonal cause; in this case, minocycline

Case Study #6

HPI

The patient in case study #5 presented three years later in the ED for new, progressively worsening headaches for the past two days. The headaches were very severe, pounding and generalized to the entire head with progressive worsening, rated 9/10. She was tearful from the pain. Any type of movement exacerbated it. She could not find relief with medication, rest, massage or ice or warm compress.

She also noted severe neck pain and stiffness. Her mother said she had a fever of 103°F one night. In addition, the patient reported nasal congestion, sore throat and nausea.

PMH

Migraine since age 13, drug-induced IIH and papilledema at age 17

Medications

Sertraline, tretinoin 0.025% cream

Vitals

BP: 112/75mm Hg

Temperature: 99.7°F

Additional Testing

LP: opening pressure was normal but analysis of CSF was positive for enterovirus PCR

Diagnosis

Aseptic (viral) meningitis without encephalitis

Case Study #7

HPI

An 84-year-old male present for eye pain, headache and vision loss OS. He had an ongoing headache for the past two months with pain behind his left eye. He noted that the lower half of his vision in the left eye was “cloudy.” He denied floaters, flashes, diplopia, jaw claudication, fever and weight loss. He recalled scalp pain when combing his hair.

POH, PMH

Cataract surgery OU, POAG, type 2 diabetes, hypertension, hyperlipidemia, OSA, polymyalgia rheumatica, seronegative rheumatoid arthritis

Medications

Hydroxychloroquine 400mg, amlodipine, losartan

VA With Correction

20/20 OD, 20/60 and no improvement with pinhole OS

Pupils

(+) APD OS

EOM

Normal, (-) diplopia

Confrontation VFs

Inferior defect OS

IOP

18mm Hg OD, 19mm Hg OS

Slit Lamp Examination

PC IOL in OU, clear and centered

All other structures normal

Dilated Fundus Examination

Disc edema at superior rim OS

Cup-to-disc: 0.30 OD, 0.15 OS

Macula: several small hard drusen in both eyes

All other structures normal

Additional Testing

Humphrey VF 24-2 (grey scale): superior arcuate defect OD, inferior altitudinal defect OS (Figure 5)

OCT: significantly increased RNFL and neuroretinal rim thickness in superior and nasal disc OS (Figure 6)

ESR: 48mm/hour

CRP: 0.52mg/dL

Temporal artery biopsy: positive

Diagnosis

Arteritic anterior ischemic optic neuropathy OS