Common Complaints: Facial Pain & Headaches

By Tina R. Porzukowiak, O.D.

Headache and facial pain are some of the most common complaints presented to the eye care provider. The etiology, however, is often not eye related. This article presents the significant questions to ask of the headache patient, a general guide to clinical examination, headache classification, and a brief discussion of some of the etiologies.

The headache history is the most important factor in differentiating the cause of the headache and ultimately directs the examination and systemic work-up. The history portion of the exam may be delegated to an optometric assistant or technician and further supplemented by the doctor. Table 1 reviews the significant questions to ask the patient during history acquisition. It is important to recognize that some patients manifest multiple types of headaches; therefore, it may be important to clarify this in advance and focus your history on one headache at a time.

Head and facial pain are classified as primary or secondary headaches. Primary headaches have no known etiology; they may be severe but do not cause death or permanent neurologic deficit (see Table 4). Secondary headaches are caused by an underlying intra- or extracranial abnormality the correction of which typically resolves the pain (see Table 5). The more common headaches associated with visual complaints will be discussed briefly, however, the clinician is encouraged to become familiar with other forms of headaches for a more thorough understanding of this topic which is beyond the scope of this article.

**Migraine without aura** is the most common form of migraine. It is a recurrent headache disorder lasting four-72 hours with the following International Headache Society (IHS) criteria:

A. At least five attacks fulfilling B to D.
B. Headache duration four-72 hours and occurring <15 days/month (untreated or unsuccessfully treated),
C. Headache with at least two of the following characteristics:
   a. Unilateral location
   b. Pulsating quality
   c. Moderate or severe pain intensity
   d. Aggravated by routine physical activity (i.e., walking, climbing stairs),
D. During headache, at least one of the following:
   a. Nausea or emesis
   b. Photophobia or Phonophobia, and
E. Not attributable to another disorder.

Patients may experience an ill-defined prodrome period where they may “sense” that a headache may soon occur; mood disorders, gastrointestinal distress, and fatigue are common. Migraine may be exacerbated by menstruation, pregnancy, stress, sleep deprivation, hunger, and certain foods (chocolate, wines, cheeses, nitrate, monosodium glutamate, aspartame, nuts, caffeine, alcohol, and shellfish).

**Migraine with aura** is a recurrent disorder with the features of migraine headache described above where the headache typically follows the aura. The attacks typically develop over five-20 minutes lasting less than 60 minutes. Women tend to be more affected than men. They may occur at any age. A strong family history as well as a childhood history of car sickness is common. There are several recognized subforms of migraine with aura including: 1) typical aura with migraine headache, 2) acephalgic migraine, 3) familial hemiplegic migraine, and 4) basilar type migraine.
Typical aura with migraine headache is characterized by visual and/or sensory and/or speech symptoms satisfying the IHS criteria below:

A. Two or more attacks fulfilling criteria B to E,
B. Reversible visual and/or sensory and/or speech symptoms without motor weakness,
C. Two of the following three criteria
   a. Homonymous visual symptoms of positive features (lines, spots, flickering lights) and/or negative features (loss of vision) and/or unilateral sensory symptoms
   b. At least one symptom develops gradually within five minutes and/or different symptoms occur in succession
   c. Each symptom lasts between five-60 minutes,
D. Headache that meets criteria for B-D for migraine without aura begins during the aura, or follows the aura within 60 minutes, and
E. Not attributed to another disorder.

Visual aura is a binocular phenomenon often described as a zigzag figure (fortification spectra) that appears near central fixation and gradually spreads or marches left or right to assume a crescent shape with an angulated scintillating edge leaving variable areas of absolute or relative scotoma. Other visual phenomenons in migraineurs may include micropsia, macropsia, metamorphopsia, palinopsia, cerebral polyopia, and achronatopia. It is important to recognize, however, that these visual phenomenons may also be associated with such diagnoses as visual seizure, occipital AVM, mass, macular disease, medications, alcohol or illicit drugs, and other forms of brain damage affecting the occipital lobe/s. The aura must be completely reversible; a focal deficit post-aura mandates further investigation, including neuroimaging.

Acephalgic migraine (a.k.a. typical aura without headache) commonly occurs in patients previously diagnosed with migraine. The differential between transient ischemic attack (TIA) and migraine aura must be determined as this is frequently encountered in the elderly patient. Later-life migraine auras appear gradually and spread or intensify over minutes. Positive visual symptoms such as scintillating scotoma, photopsia, and shimmering with duration of 15-25 minutes are typical, but less than one hour. There is frequently a history of two or more identical spells. Patients with atypical presentations (as in shorter duration, lack of build-up intensity, or additional neurologic symptoms) warrant TIA work-up.

A retinal (ocular) migraine is a monocular episode of aura followed by headache consistent with the migraine criterion presented previously. Patients typically have a strong history of migraine. Its etiology is thought to be due to temporary vasospasm of ocular circulation; temporary retinal opacification and retinal arteriole narrowing may be seen during symptomatic episodes. The visual phenomena may include scintillations, scotomata, or blindness. It is imperative to distinguish retinal migraine from transient monocular visual loss or amaurosis fugax. Patients should be asked if they covered one eye at a time to ascertain if the visual phenomenon presented in one or both eyes. While the presence of positive visual phenomena is more suggestive of migraine, such symptoms have also been reported in carotid occlusive disease. A short duration of one-10 minutes with a sudden rather than gradual onset of symptoms would suggest a thrombo-embolic event rather than a migraineous etiology; therefore, an appropriate cardiovascular work-up is warranted. Additionally, patients with no migraine history must be worked up for embolic and vasculopathic disease.

The most common type of primary headache is tension-type headache (TTH) which is further classified as episodic or chronic. Episodic TTH involves frequent episodes of headache pain pressing or tightening (like a band around the head or “vice-like”) in quality. The head pain is typically bilateral of mild to moderate intensity. Photophobia or phonophobia (but not both) may be present; there is no nausea. Headaches occur fewer than 15 days per month for at least 3 months. Chronic TTH occurs more than 15 days per month for at least 3 months. The headaches occur daily or very frequently lasting minutes to days. The patient may experience no more than one of the following symptoms: photophobia, phonophobia, or mild nausea. If the patient is on analgesics >10 days per month, the headache is classified as medication overuse headache (MOH). Tension headaches are typically worse at the end of the day and are often precipitated by stress.

Cluster headache involves recurrent episodes of severe, unilateral temporal or orbital pain where the patients are typically restless and agitated (versus that of migraineurs who prefer to be still). The pain is so severe that there have been reported cases of suicide; the pain often awakens the patient from sleep. There is a male predominance which is more common in the third and fourth decades. The episodic form occurs when the patient experiences one or two attack
phases per year which may range from four-16 weeks; this is then followed by a period of remission for six months to two years. Patients with the chronic form experience attacks for greater than one year with remission lasting less than one month. Up to two-thirds of patients may experience a Horner’s Syndrome with recurrent attacks that may become permanent in about 10 percent of patients. The following outline details the criteria for diagnosis:

A. At least 5 attacks fulfilling B to D,
B. Severe, unilateral, orbital, supraorbital, and / or temporal pain lasting 15-180 minutes, untreated for more than half the period,
C. Headache accompanied by at least one of the following symptoms which must be ipsilateral to the pain:
   a. Conjunctival injection,
   b. Nasal congestion, rhinorrhea, or both,
   c. Eyelid edema,
   d. Forehead and facial sweating.
   e. Miosis, ptosis, or both, or
   f. Restlessness or agitation.
D. Frequency of attacks: one every other day to eight/day for more than half the period or time if chronic, and
E. Not attributable to another disorder.

The sudden onset of a “first and worst headache” should heighten the clinician’s concern for a headache attributable to a vascular etiology, particularly subarachnoid hemorrhage (SAH). SAH is the most common cause of severe, incapacitating, sudden onset, abruptly explosive headache which radiates into the occipital or cervical region; it is associated with a high morbidity and mortality rate. The onset may also be accompanied with nausea and emesis. If the headache resolves, patients may not seek medical attention; this is referred to as the sentinel headache or “warning leak” headache. A vitreous hemorrhage associated with SAH, epidural or subdural hematoma secondary to ruptured aneurysm is named Terson’s syndrome.

The headache onset of ischemic stroke is usually sudden and of moderate intensity; it is often unilateral and may last for more than 24 hours. A patient with a homonymous hemianopic visual field defect and ipsilateral eye pain may have experienced an occipital lobe cerebrovascular accident (CVA).

Transient ischemic attacks (TIAs) rarely cause headache.

Unruptured arteriovenous malformation (AVM) may produce a headache mimicking migraine with aura. A moderate-severe, sudden onset of throbbing, unilateral, orbital, periorbital or frontal region headache often associated with neck pain may represent internal carotid artery dissection. Horner’s syndrome and transient monocular visual loss may also present with the headache.

Pituitary apoplexy generally causes a sudden onset, severe, retro-orbital, frontal, or diffuse headache often associated with monocular or binocular visual loss or ophthalmoplegia. This is a life-threatening condition caused by hemorrhagic infarction of the pituitary gland; it may occur postpartum in association with volemia (also known as Sheehan’s Syndrome).

A new headache or dramatic change in a headache of an elderly patient may be a presenting sign of T-cell mediated vasculitis of the medium and large cranial arteries known as giant cell arteritis. The pain is primarily localized over the superficial temporal arteries, and in some cases, over the occipital arteries; palpation for tenderness or ‘ropy’ arteries is appropriate. Ischemia to the muscles of mastication, or jaw claudication, in association with headache is nearly pathognomonic for the disease. Additional constitutional symptoms may include fatigue, weight loss, night sweats, arthralgias, and myalgias. Bilateral anterior ischemic optic neuropathy risk is high if left untreated.

Headaches attributable to intracranial infection are usually very severe. Meningitis may present rapidly with altered consciousness and seizures; nuchal rigidity and scalp tenderness are common.

Positional headaches should raise the concern for elevated or decreased intracranial pressure (ICP). If the headache is worse when erect, low CSF pressure is more likely, and if supine, elevated CSF pressure is more likely. Early morning headache, nausea and emesis suggest elevated ICP caused by intracranial mass. Idiopathic intracranial hypertension (IIH) is a diagnosis of exclusion characterized by headache which may be associated with asymptomatic papilledema; migrainous features such as nausea, emesis and photophobia may also be present. Intracranial hypotension occurs status post lumbar puncture, neurosurgical procedures, and CSF leaks. The headache may be frontal, occipital, or
diffuse; the pain is often severe, dull or throbbing and frequently exacerbated by Valsalva. Less commonly, unilateral or bilateral cranial nerve six palsies may occur.

Eye pain associated with headaches attributable to eye disorders is mediated by the trigeminal nerve. **Angle closure glaucoma** causes acute, severe cloudy vision and eye pain; patients may report colored halos around lights. Nausea and emesis may accompany the headache. Ocular findings may include conjunctival injection, corneal edema, mid-dilated pupil dilation, closed anterior chamber angle, and elevated intraocular pressure. **Uncorrected refractive error**, **heterophoria** or **tropia** may cause asthenopia with a mild, persistent bilateral brow ache which is exacerbated with visual tasks. **Uveitis** also causes headache in or around the eye whereby the patient may report photophobia, blurred vision, ciliary flush conjunctival injection, and pain. Cell and/or flare may be seen on examination of the anterior and posterior chambers. **Optic neuritis** may present with or without pain, blurred vision, and dyschromatopsia. Often pain is exacerbated with eye movement. The optic neuritis may present with visible optic disc edema or retrobulbar edema as seen on neuroimaging. **Scleritis** and **orbital inflammation** may cause a severe, dull, aching pain which may be worse with eye movement which is often accompanied by significant ocular injection and edema.

The headache attributable to **medication overuse** is the most common cause of intractable headache; it is also referred to as analgesic rebound headache. The symptoms are a dull, constant, diffuse headache which varies in location and severity. Withdrawal symptoms are seen when meds are discontinued abruptly.

Cranial neuralgias and central causes of facial pain have the common feature of brief, severe, burning or electric pain. Tic douloureux, or **trigeminal neuralgia**, typically occurs during middle age or later with the majority of cases caused by vascular compression of cranial nerve V (less commonly caused by a demyelinating disease or tumor of the posterior fossa). The pain is typically unilateral and primarily involves \( V_1 \) or \( V_2 \) distributions. Paroxysmal burning or electric shock-like jabs lasting seconds to minutes may be incited by cold wind, chewing, or tooth brushing. Paroxysmal, unilateral, jabbing, burning, or stabbing pain in the distribution of the greater or lesser occipital nerve characterizes **occipital neuralgia**. The pain often radiates to the frontal region, hence the synonym, cervical-ocular-referred pain. Compressive, traumatic, or inflammatory lesions of the greater occipital nerve are common etiologies; however, in many cases, no definitive etiology is identified. Tenderness may be elicited with pressure over the affected nerve.

**Post-herpetic neuralgia (PHN)** includes the following criteria: 1) pain in the distribution of a nerve or nerve distribution in the head, 2) herpetic eruption in the territory of the nerve, 3) pain precedes herpetic eruption by less than seven days, and 4) pain lasts longer than 3 months. A steady and sustained, severe, burning and aching pain in the distribution of the trigeminal nerve is most often described and may be associated with paresthesias, dysesthesias, and electric shock-like pain. Patients with ophthalmic herpes zoster are more likely to develop PHN; other risk factors include advanced age, immuno-compromised state, and diabetes mellitus.

Despite that the vast majority of headaches and facial pain causes are not eye-related, the eye care provider is in a unique position to provide significant clinical information to the differential diagnosis. The primary role of the eyecare provider in managing the headache / facial pain patient includes identifying and treating ophthalmic etiologies, recognizing life- or health-threatening etiologies, and assisting in the systemic work-up or appropriate, timely referral to obtain the proper diagnosis.
Table 1. Headache / Facial Pain History

**Location** (diffuse, focal, hemicrania, periorbital, temporal, occipital, cervical)

**Side of the pain** (unilateral, alternating, bilateral)

**Type of pain** (dull, aching, lancinating, burning, throbbing, squeezing)

**Pain scale** (1 = mild, 10 = severe)

**Onset date**

**Mode** (sudden, episodic, progressive, permanent, chronic)

**Duration**

**Frequency / temporal profile** (recent worsening / progressive)

**Pattern** (occurs every morning, awakened from sleep, etc.)

**Prodromes** (i.e., early symptoms preceding onset)

**Exacerbating factors**
- Exacerbation with Valsalva (coughing, straining, etc.)
- Exacerbation with postural change
- Exacerbation with certain food / drink

**Relieving factors**

**Treatments / meds / efficacy**

**Hx**
- Migraine
- Allergies / sinusitis
- Childhood car sickness
- Head / neck injury
- Recent trauma / stress

**FHx**
- Migraine
- Aneurysm

**Additional symptoms / associations**

Photopsia (fortification spectra, scintillating scotoma)

Transient visual loss (monocular / binocular, scotoma, tunnel vision)

Visual phenomena (micropsia, macropsia, metamorphopsia, palinopsia, cerebral polyopia, achromatopsia, “heat waves”)

- Photophobia
- Seizures
- Nuchal rigidity

- Phonophobia
- Ptosis
- Fever

- Vertigo
- Lacrimation
- Sleep apnea

- Tinnitus
- Rhinorrhea

- Decreased hearing
- Nasal congestion

- Dysesthesia
- Conjunctival injection

- Ataxia
- Scalp tenderness

- Loss of consciousness
- Jaw claudication

- Diplopia
- Weight loss

- Confusion
- Decreased appetite

- Dysarthria
- Fatigue

- Paresthesia
- Arthalgia

- Weakness
- Myalgia

The clinical evaluation is guided by the history and briefly highlighted in Table 2.
Table 2.
Clinical Evaluation of Headache and Facial Pain

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<td>+/- SVP</td>
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Table 3. Indications for Neuroimaging

First or worst headache of patient’s life, particularly if acute onset
Change in frequency, severity, or clinical features
Neurologic symptoms that do not meet migraine with aura criteria
Hemicrania that is always on the same side and is associated with contralateral neurological symptoms
Positional headache
Headache exacerbated by Valsalva maneuver
Poor response to conventional therapy
New headache in patient with cancer or immunosuppression
New headache in patient > 50 yrs old
Headache with fever, nuchal rigidity, change in mental status, or change in behavior
Localized deficits on neurologic or neuro-ophthalmic exam
Persistent neurologic or neuro-ophthalmic deficits
Headache precedes the aura
Atypical aura (more than 1 aura occurring in a single day, lack of expansion of or change in aura)
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References


Tina R. Porzukowiak OD is a graduate of the University of Missouri-St. Louis, College of Optometry. She completed a residency in ocular disease and low vision rehabilitation at the Jesse Brown VA Medical Center in Chicago, Illinois and the Edward J. Hines, Jr. Central Blind Rehabilitation Center in Hines, Illinois. She is a Fellow of the American Academy of Optometry. She holds board certifications through the American Board of Medical Optometry and the American Board of Clinical Optometry. She currently practices at Cigna Medical Group in Sun City, Arizona and is an adjunct faculty member at Midwestern University, Arizona College of Optometry in Glendale, Arizona.

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Common Complaints: Headache and Facial Pain

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Select the option that best answers the question.

1. What is the most important factor in differentiating the etiology of a headache?
   a. Clinical examination
   b. History
   c. Systemic work-up
   d. Location

2. All of the following are visual phenomenon that may present in conjunction with headache EXCEPT:
   a. Micropsia
   b. Metamorphopsia
   c. Lacrimation
   d. Cerebral polyopia
3. TRUE or FALSE: A history of childhood car sickness is more common in patients who develop migraine headache with aura?
   a. True
   b. False

4. An 80-year-old white female complains of a dull, aching left temporal headache for two days. She notes difficulty combing her hair on the left side and prolonged mastication causes extreme jaw strain. Based on the clinical presentation, you would be MOST concerned about which etiology for her headache:
   a. Cerebral vascular accident
   b. Subarachnoid hemorrhage
   c. Trigeminal neuralgia
   d. Giant cell arteritis

5. Upon preliminary clinical examination, what additional testing would be MOST appropriate to order:
   a. Humphrey visual field
   b. MRI brain
   c. MRA brain
   d. CBC w/ differential, Westergren ESR, CRP

6. Which of the following is NOT an indication for neuroimaging:
   a. Positional headache
   b. Headache exacerbated by Valsalva maneuver
   c. Classic migraine with aura
   d. Headache precedes the aura

7. Ptosis may be associated with all of the following EXCEPT:
   a. Cluster headache
   b. Raeder’s paratrigeminal neuralgia
   c. Migraine with aura
   d. Horner’s syndrome

8. Which of the following symptoms is MOST commonly associated with migraine?
   a. Nausea
   b. Tinnitus
   c. Macropsia
   d. Ptosis
9. Which of the following is LEAST likely to exacerbate a migraine headache?
   a. Sleep
   b. Sunlight
   c. Pregnancy
   d. Hunger

10. Acephalgic migraine aura is MOST likely to occur for how many minutes?
    a. 5 minutes
    b. 20 minutes
    c. 10 minutes
    d. 70 minutes

11. In elderly patients, a migraine aura without headache must be differentiated from which of
    following MOST likely differential diagnoses:
    a. Retinal (ocular) migraine
    b. Seizure disorder
    c. Cerebral vascular accident
    d. Transient ischemic attack

12. A patient presents with a sudden onset of monocular transient visual loss of one-10 minutes
    duration. What additional testing is MOST likely to be ordered to elucidate the etiology:
    a. Cardiovascular work-up
    b. Temporal artery biopsy
    c. Catheter angiography
    d. Cranial nerve examination

13. The most common type of primary headache is:
    a. Typical aura with migraine headache
    b. Acephalgic migraine
    c. Retinal (ocular migraine)
    d. Tension-type

14. Cluster headache is associated with all of the following symptoms EXCEPT:
    a. Conjunctival injection
    b. Somnolence
    c. Miosis
    d. Nasal congestion
15. A sudden onset of a “first or worst headache” should heighten the clinician’s concern to which MOST likely vascular etiology:
   a. Subdural hemorrhage
   b. Pituitary apoplexy
   c. Unruptured arteriovenous malformation
   d. Subarachnoid hemorrhage

16. Which patient population is LEAST likely to develop post-herpetic neuralgia:
   a. Immunocompromised
   b. Elderly
   c. Migraineurs
   d. Diabetics

17. A 65-year-old Asian female presents with the complaint of sudden onset of blurred vision, colored photopsia, unilateral eye pain, and conjunctival injection. Which of the following is the MOST likely diagnosis:
   a. Angle closure glaucoma
   b. Uveitis
   c. Scleritis
   d. Herpes zoster ophthalmicus

18. A patient presents with the medical history of Sheehan’s Syndrome. This condition is MOST likely associated with which of the following conditions:
   a. Internal carotid artery dissection
   b. Orbital inflammatory disease
   c. Pituitary apoplexy
   d. Subarachnoid hemorrhage