Case 38

History of Present Illness

An 86-year-old man had a history of migraine with aura as a young man with infrequent headache. He also had an episode of aura without headache every 2–3 months for the last 20 years. However, about 2 weeks prior to being seen, he developed a severe, incapacitating headache—over his left eye. The pain was boring, not throbbing, and he had no light or sound sensitivity. While it is always there, sometimes the pain worsens 2–3 times in the day, and this can last 3–4 h. He is able to ignore it some of the time, especially if he is busy, but at night it keeps him from sleeping. He tried over the counter ibuprofen and acetaminophen/aspirin/caffeine and he even tried some left over cafergot (caffeine and ergotamine) combination with only modest success. His primary care physician ordered an MR scan which was normal and an ESR which was also normal. He had left over hydrocodone from a previous surgery, and this provided temporary relief.

Past medical and ocular history History of a right facial fracture after a fall 5 years ago Sinus infection 6 months prior to being seen Asthma Basal cell cancer on face Osteroporosis Arthritis Dry eyes	*Past surgical history* Appendectomy years ago Bilateral ptosis surgery Cataract surgery Skin biopsy and basal cell removal *Family history* No history of headache or migraine Father had cancer
Medications Aldendronate 70 Vitamin D Diclofenac 75 Omeprazole 20 Sumatriptan 100 prn Hydrocodone prn Tobradex drops prn Tears prn	*Review of systems* Difficulty sleeping Recent onset of fatigue *Social history* Married Physician Non-smoker, non-drinker

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Examination
Acuity with correction Right eye: 20/20 Left eye: 20/25
Pupils 2 mm BE in light, 4 mm BE in darkness, no RAPD
Intraocular pressure Right eye: 12 mmHg Left eye: 12 mmHg
External exam He had raised papules on his forehead over the left brow into the top of the hairline; he had mild ptosis on the left and thickening of the eye lid on the left (Fig. 38.1)
Eye alignment Normal
Slit lamp examination Chemosis of the sclera (mild) Normal without cell or flare Bilateral PCIOL
Visual field Normal
Fundus examination Normal
Neurologic examination Normal; normal corneal reflex

Fig. 38.1 External color photographs show small vesicles in the left V1 frontal nerve distribution and also the mild ptosis on the left

Discussion

Neurologic Perspective—Dr. Digre

The patient really has a new onset of headache over the left eye. While he has been a migraine sufferer in the past, this does not sound like migraine—it has been daily for 3 weeks and sometimes severe and he had no migrainous features (light and sound sensitivity, nausea, or vomiting). A new headache in the elderly of course should makes us think about temporal arteritis. His primary care checked a ESR and CRP and these were normal. Imaging of the brain was appropriate in a new headache in an older person, since he did have a history of sinus infection several months before. The tip off that this was herpes zoster was the rash over the forehead in the distribution of the first division of the trigeminal nerve. The boring pain is typical and the pain is often precedes the rash—leading to an erroneous diagnoses.

Herpes Zoster affects about 30% of the population over a lifetime! This is NOT a rare condition and when it occurs, 10–20% will have Zoster ophthalmicus. The virus is a recurrence of viral particles that live in ganglia throughout the nervous system. The typical headache associated with zoster involving the head includes: pain before the eruption that is completely new for the individual, stabbing pain ipsilateral to the eruption, and the pain interrupts sleep. See the criteria for the acute diagnosis (Table 38.1). Frequently the pain is severe enough, that the individual has visited an emergency room before the diagnosis. The pain is frequently misdiagnosed as migraine, tension-type headache, dry eye, trigeminal neuralgia, and glaucoma.

Risk factors for developing herpes zoster ophthalmicus include age—with older individuals being more susceptible, immune compromise, and pregnancy. An 85-year-old has a 50% chance of having zoster twice in a life time. There is a prodrome before

Table 38.1 ICHD 3 beta criteria: Acute painful trigeminal neuropathy attributed to Herpes Zoster

Diagnostic criteria:
(A) Unilateral head and/or facial pain lasting <3 months and fulfilling criterion C
(B) Either or both of the following:
1. Herpetic eruption has occurred in the territory of a trigeminal nerve branch or branches
2. Varicella zoster virus DNA has been detected in the CSF by polymerase chain reaction
(C) Evidence of causation demonstrated by both of the following:
1. Pain preceded the herpetic eruption by <7 days
2. Pain is located in the distribution of the same trigeminal nerve branch or branches
(D) Not better accounted for by another ICHD-3 diagnosis

Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders: 3rd edition (beta version). *Cephalalgia*. 2013;33:629–808

Table 38.2 ICHD 3 beta: Post-herpetic trigeminal neuropathy

Diagnostic criteria:
(A) Unilateral head and/or facial pain persisting or recurring for <3 months and fulfilling criterion C
(B) History of acute Herpes zoster affecting a trigeminal nerve branch or branches
(C) Evidence of causation demonstrated by both of the following:
1. Pain developed in temporal relation to the acute Herpes zoster
2. Pain is located in the distribution of the same trigeminal nerve branch or branches
(D) Not better accounted for by another ICHD-3 diagnosis

Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders: 3rd edition (beta version). *Cephalalgia*. 2013;33:629–808

the rash appears in many. *In some no rash ever appears*. Herpes Zoster ophthalmicus affects the trigeminal nerve (cranial nerve 5). There are three branches that can be affected. In our patient, the first branch (frontal nerve) was affected. However, when the nasociliary nerve is affected, sinuses, the skin over the nose, both eyelids, conjunctiva, sclera can be affected. The tell-tale rash on the nose, Hutchinson's sign, alerts us to look carefully at the anterior segment and cornea for involvement.

The most frequent complication of herpes zoster ophthalmicus is post-herpetic neuralgia—and this complication occurs in over 50% of older adults such as our patient. Other neurologic complications are less rare, but can be serious including a meningoencephalitis, cranial neuropathy, and even stroke. Systemic complications include pneumonitis (which can be fatal) and hepatitis. Post-herpetic neuralgia is also an unwelcome pain. The acute pain gradually gives way to a deep burning, hypersensitivity, sometimes "crawling" pain with lancinating pains on top of that. The amount of post-herpetic neuralgia can correlate with the severity of involvement. The older the individual, often the worse the neuralgia can be. Suicide risk in the elderly with chronic post-herpetic neuralgia is not rare. See the ICHD 3beta criteria for post-herpetic neuralgia (Table 38.2).

Treatment of acute herpes Zoster ophthalmicus is with valacyclovir (1 g three times daily) or famciclovir (500 mg three times daily) which are similarly effective for 7 days if started within 3 days of the rash. Treatment with the antiviral agents reduces zoster-related pain by half. Famciclovir is often used in individuals with decreased renal clearance. Side effects are few, but can include more headache, nausea, or gastrointestinal side effects.

Gabapentin (slowly escalating doses 300–1200 mg three times daily) given acutely with the antiviral agents may reduce post-herpetic neuralgia. Other treatments such as corticosteroids are not recommended due to side effects (development of diabetes, hypertension, and glaucoma in the older individuals). Treatment of post-herpetic neuralgia includes anticonvulsants like gabapentin (300–1200 mg three times daily), or pregabalin (escalating doses to 300–600 mg each day); these have been shown to be effective in randomized controlled trials. Lidocaine patches and tricyclic antidepressants (e.g. amitriptyline or nortriptyline 25–100 mg at night) have also been shown to be helpful. Opioid analgesics are often used for the acute pain, but have many side effects especially in the elderly.

Ophthalmic Perspective—Dr. Lee

Herpes zoster is most likely here because of the rash that respects the vertical midline. Sometimes the pain precedes the rash and I agree that temporal arteritis is a concern (Case 32) ESR and CRP are about 95–99% sensitive for GCA, so it drops on the differential in this case. Another consideration is that sometimes skin cancers can have a local reoccurrence and travel along the trigeminal nerve. This typically causes pain and numbness. We are not told where the skin cancer was, but it would be important to check facial sensation and inquire about the original location of the basal cell carcinoma. The rash, however, would not be seen in skin cancer recurrence.

I would also point out the importance of checking corneal sensation in HZO. A numb cornea can lead to neurotrophic injury to the cornea along with corneal ulceration and scarring. Patients with a numb cornea should be followed by an ophthalmologist and instructed to seek care if their eye turns red. These patients may need erythromycin ointment.

In some cases of HZO, the eyelid edema can be massive—so severe that the eye is swollen shut. One may need to use retractors or a speculum for a good look at the eye. Cool compresses and erythromycin ointment twice daily are reasonable for conjunctival involvement. Corneal pseudodendrites can be managed with topical ganciclovir three times daily. Topical prednisolone acetate four times daily is used for stromal keratitis with a slow taper over months if no epithelial defect is present. Treatment of uveitis with topical steroids and a cycloplegic agent are reasonable. Some cases of uveitis may be associated with increased IOP and that may require attention. Although HZO can cause a severe infection in the retina causing significant vision loss, this typically is not associated with the skin rash. However, a dilated eye examination is warranted to be sure the retina is not affected.

Non-ophthalmic/Non-neurologic Perspective

Herpes zoster is not a rare problem in primary care. Herpes zoster ophthalmicus is also common. The main things to be concerned about are treating with antivirals as above within 3 days of the rash. Watch the involvement of the eye—and if there is chemosis, redness of the eye, or blurred vision, the patient should see an ophthalmologist. Treatment of post-herpetic neuralgia is very important.

Follow-up

We treated the patient with famciclovir 500 mg three times daily for 7 days. We also started him on gabapentin 100 mg at night, increasing up to 300 mg three times daily. At follow-up he was doing well. We typically keep patients on this for 2–3

months until the sensations and pains have reduced. There are some whose post-herpetic neuralgia require months-years of treatment. *Final diagnosis: herpes zoster ophthalmicus*.

For Further Study

1. Kaufman SC. Anterior segment complications of Herpes Zoster ophthalmicus. Ophthalmology. 2008;115(2 Suppl):S24–32.
2. Lee HL, Yeo M, Choi GH, Lee JY, Kim JS, Shin DI, Lee SS, Lee SH. Clinical characteristics of headache or facial pain prior to the development of acute herpes zoster of the head. Clin Neurol Neurosurg. 2016;152:90–4.
3. Liesegang TJ. Herpes Zoster ophthalmicus: natural history, risk factors, clinical presentation, and morbidity. Ophthalmology. 2008;115(2 Suppl):S3–S12.
4. Pavan-Langston D. Herpes zoster antivirals and pain management. Ophthalmology. 2008;115(2 Suppl):S13–20.
5. Tyring SK. Management of herpes zoster and postherpetic neuralgia. J Am Acad Dermatol. 2007;57(6 Suppl):S136–42.