Chapter 37

An Elderly Doctor with Acute Onset of Focal Headache (A Patient Seen Too Soon)

Seymour Solomon, MD

Case History

A 79-year-old physician awoke one morning with a burning and throbbing pain in the right frontal area. The only other symptom was malaise. The pain did not respond to acetaminophen, and he sought advice from his friend and colleague, a neurologist who saw him at noon. The patient had had migraine between the ages of 20 and 50 years, but only rarely thereafter. The migraine was recalled as a burning and throbbing pain over either left or right frontotemporal areas with malaise, similar to the patient's present complaints. Photophobia and nausea associated with past bouts of migraine did not accompany the present headache. There was no other pertinent past history. The patient's mother had had migraine in her youth and had died suddenly of a cerebral event, probably hemorrhage.

The physical examination was normal except for the blood pressure of 180/100. (The hypertension was a surprise, although he had not seen a physician for a routine examination in 3 or 4 years). The neurologic examination was normal. There was no evidence of indurated or tender blood vessels in the scalp, no bruit, the neck was supple, and the optic fundi were normal.

Questions on the Case

Please read the questions, try to answer them, and reflect on your answers before reading the author's discussion.

- There was no obvious diagnosis. What is the differential diagnosis?
- What diagnostic studies are appropriate?
- What immediate therapy, if any, is warranted?

Case Discussion

Differential Diagnosis

The differential diagnosis is extensive in a 79-year-old man who experiences the acute onset of a severe unilateral headache, and whose examination is normal except for hypertension of unknown duration. Consider the major etiologic categories:

1. Is this a physiologic phenomenon? The headache and malaise are similar to the patient's bouts of migraine during his young adult life, but there are no other features of migraine, and it would be unusual for an attack of migraine to occur after 2 or 3 decades of migraine freedom, particularly in a 79-year-old man.
2. Is this a vascular disease? This would certainly be a category that should be foremost in consideration, given the patient's age and hypertension. Has the patient experienced some event similar to that which caused his mothers death (probable cerebral hemorrhage)? The degree of hypertension per se would not cause headache. Could there be a cerebral infarct or hemorrhage in a

"silent" area of the brain underlying the right frontal headache? If so, one would expect, if not focal, motor, or sensory signs, then some general signs of impaired consciousness or mentation. Those features were not present. The headache of a subarachnoid hemorrhage might be initially lateralized, but would typically cause nuchal rigidity. At the age of 79 years, giant cell arteritis must be a major consideration. With giant cell arteritis, there are usually systemic symptoms in addition to malaise, most typically polymyalgia rheumatica. But the patient had no symptoms other than malaise.

The patient's symptoms might be the first indication of a mass lesion such as a neoplasm. In this age group, subdural hematomas may occur without a history of head trauma. Again, one would expect some hint of focal or generalized brain symptoms. Finally, an inflammatory process should be considered, such as the onset of encephalitis or meningitis. But with these conditions, one would expect fever as well as other symptoms or signs. No other disease came to mind in the differential diagnosis. But, as it turned out, not any of the above were present.

Laboratory Evaluations

Standard blood studies as well as erythrocyte sedimentation rate and C-reactive protein were ordered to look for evidence of cranial arteritis or evidence of other systemic disease. These were normal. A roentgenogram of the chest was also normal. The heart was not enlarged, suggesting that the patient's hypertension was not of long duration. A computerized tomogram of the head without and with contrast was obtained and was normal. This ruled out a mass lesion, but not necessarily a small subarachnoid hemorrhage. To rule out a subarachnoid hemorrhage or early meningoencephalitis, a lumbar puncture was performed. The cerebral spinal fluid was clear, under normal pressure, and cytology and chemical parameters were normal. Having completed all of the seemingly appropriate studies, the diagnosis was still in doubt.

Therapy and Course

If cranial arteritis is strongly suspected, immediate therapy with steroids is warranted to prevent ischemic retinal or cerebral lesions, but the suspicion of cranial arteritis was not great enough to warrant therapy. After all, this was a symptom complex of less than 24 hours duration.

It was decided to treat the headache symptomatically with acetaminophen and codeine and observe the patient's course. The following day revealed no new symptoms or signs. The headache was only partially ameliorated with acetaminophen with codeine, so oxycodone was therefore prescribed.

When seen in the office on the third day, again there was no change in symptoms or signs, but on the evening of the third day, the patient noted first itching and then vesicular eruption over the right forehead. Perhaps, if the patient were not a friend and physician and had waited a few days before being evaluated, the diagnosis of herpes zoster affecting the ophthalmic division of the trigeminal nerve would have been obvious.

Overview of Herpes Zoster

Herpes zoster is one of the most common viral infections of the nervous system. It affects about 4 in 1,000 people per year, but the incidence is much higher in the elderly. Zoster is characterized by a vesicular cutaneous eruption, often preceded for several days, as in this case, by a burning or itching sensation in the affected dermatome. Systemic symptoms of a fever and malaise may accompany the acute attack. The virus causes an acute inflammatory reaction in spinal or cranial sensory ganglia. Sometimes, the inflammation extends into the adjacent spinal cord, brainstem, or meninges. The zoster virus is the same as the varicella virus, and its DNA structure is similar to the virus of herpes simplex. Herpes zoster develops as a spontaneous reactivation of the virus, which was latent in the neurons of sensory ganglia following an infection with chicken pox. The reactivation is attributed to impaired immunity. This explains the increasing incidence with age, with lymphomas, and with the use of immunosuppressive drugs.

Severe localized pain is often mistaken, as in this case, for other illnesses until the appearance of the vesicles, which occurs within 3 to 4 days. The clear vesicles become cloudy, and then crusted and scaly after a week to 10 days. When severe, the vesicles may become hemorrhagic, and healing is then delayed for several weeks. Impairment of sensation in the affected dermatome is common and, in a small percentage of patients, segmental weakness may also occur. The cerebral spinal fluid often shows an increase in lymphocytes and slight increase in protein. The disease is usually more severe when the cranial nerves are affected rather than the more typical thoracic dermatomes. The acute pain and associated dysesthesia usually lasts from 1 to 4 weeks, but in 10 to 30% of cases, postherpetic neuralgia occurs.

Ophthalmic herpes zoster accounts for 10 to 15% of all cases. A major danger of this disease is herpetic involvement of the cornea with associated analgesia and residual scarring. Adjacent cranial nerves are often affected. Zoster encephalitis and angiitis are other rare complications.

Management Strategies

During the acute stage, analgesics and topical lotions may ameliorate the symptoms; nerve blocks may offer greater but transient relief. When the lesions have dried, applica-

tions of capsaicin ointment or a lidocaine skin patch may ameliorate pain by evoking cutaneous anesthesia. Antiviral agents, for example acyclovir 800 mg five times per day or famciclovir 750 mg three times per day administered during the first week of pain, shortens the duration of the acute attack and appears to speed the healing process, but to be effective, the treatment must be started within the first 2 days. In patients with ophthalmic zoster, additional acyclovir applied to the eye in a 0.1% solution or a 0.5% ointment is warranted. If the patients are immunocompromised, then intravenous acyclovir for 10 days is recommended. Other antiviral agents such as vidarabine may also be used. Varicella-zoster immunoglobulin shortens the course of the acute attack and may protect against dissemination of virus in immunosuppressed patients. Unfortunately, the antiviral agents do not decrease the incidence of postherpetic neuralgia. The potential benefits of corticosteroids therapy in preventing postherpetic neuralgia is uncertain, and corticosteroids are contraindicated in patients who are immunosuppressed.

The management of postherpetic pain and associated dysesthesia is often frustrating for the patient and the doctor. In this hyperpathic state, even mild stimuli such as a touch or a breeze over the skin aggravates pain. The tricyclic antidepressants, such as amitriptyline, are the initial treatments of choice. Carbamazepine has also been used, particularly if the patient's pains are sharp and stabbing. All the other measures in treating chronic pain are appropriate, including the use of other antidepressants and antiepileptic drugs. Fortunately, the postherpetic neuralgia eventually subsides, at least enough to make the patient's life tolerable. The patient in this case was fortunate to experience only the acute attack without subsequent postherpetic complications.

Selected Readings

Bajwa ZH, Ho CC. Herpetic neuralgia. Use of combination therapy for pain relief in acute and chronic herpes zoster. Geriatrics 2001;56:18–24.

Gnann JW Jr, Whitley RJ. Herpes zoster. N Engl J Med 2002;347:340–60.

Hilt DC, Buchholz D, Krumholz A, et al. Herpes zoster ophthalmicus and delayed contralateral hemiparesis caused by cerebral angiitis: diagnosis and management approaches. Ann Neurol 1983;14:543–53.

Hugler P, Siebrecht P, Hoffmann K, et al. Prevention of postherpetic neuralgia with varicella-zoster hyperimmune globulin. Eur J Pain 2002;6:435–45.

Johnson RW, Dworkin RH. Treatment of herpes zoster and postherpetic neuralgia. BMJ 2003;326:748–50.

Mahalingam R, Wellis M, Wolf W, et al. Latent varicella-zoster viral DNA in human trigeminal and thoracic ganglia. N Engl J Med 1990;323:627–31.

Peter C, Watson N. A new treatment for postherpetic neuralgia. N Engl J Med 2000;343:1563–5.

Raja SN, Haythornthwaite JA, Pappagallo M, et al. Opioids versus antidepressants in postherpetic neuralgia. A randomized, placebo-controlled trial. Neurology 2002;59:1015–21.

Rice AS, Maton S, for the Postherpetic Neuralgia Study Group. Gabapentin in postherpetic neuralgia: a randomized, double blind, placebo controlled study. Pain 2002;94:215–24.

Wood MJ, Johnson RW, McKendrick MW, et al. A randomized trial of acyclovir for 7 days or 21 days with and without prednisolone for treatment of acute herpes zoster. N Engl J Med 1994;330:896–900.

Editorial Comments

This is a cautionary tale—the early presentation of herpes zoster, or shingles, as pain before vesicular rash. Once the rash ensues, the diagnosis is easy, and the big issues revolve around antiviral agents and steroid prescriptions, and their relative merit, both in alleviating the signs and symptoms of the shingles, but also in preventing postherpetic neuralgia. We prescribe tricyclics commonly, gabapentin and oxcarbazepine often, and topical lidocaine more and more frequently. And always, as Dr. Solomon admonishes, one must be vigilant for an underlying cause of immunosuppression, besides old age. This case also points out that when it comes to colleagues and friends, more care is needed to avoid premature conclusions, and follow-up is definitely indicated. We thank Dr. Solomon for sharing this case with us, as it teaches us some basic points in diagnosis.

Final diagnosis:

Herpes zoster, first division of the trigeminal nerve