As in any field of medicine, the neuro-ophthalmic history guides the physician’s examination and differential diagnosis. From the beginning of the history taking, the physician should attempt to categorize the patient’s problem. Table 1.1, which mirrors the organization of this book, classifies neuro-ophthalmic disorders into three groups: afferent disorders, efferent disorders, and headache and abnormal facial sensations. It can be used as a guide in generating a differential diagnosis. Then, influenced by the patient’s age, gender, underlying illnesses, and disease risk factors, the physician can narrow the list of potential diagnoses and shape the examination to confirm or eliminate each disorder.

As the clinician gains experience and sophistication, he or she can frequently diagnose the correct neuro-ophthalmic disorder based on the history alone. For instance, an otherwise healthy young woman with sudden vision loss in one eye with pain on eye movements probably has optic neuritis. An elderly man with hypertension, new binocular horizontal double vision worse at distance and in right gaze, and right periorbital pain most likely has a vasculopathic right sixth nerve palsy.

This chapter reviews the various elements of the neuro-ophthalmic history (Box 1.1) in the context of neuro-ophthalmic disorders. Electronic medical record (EMR) technology allows templates to be constructed using these elements to guide the history taking. However, clinicians should avoid simply cutting and pasting, which is tempting with EMRs, and ensure that the history tells a story.

Although important, topics such as physician demeanor, style, language use during history taking, the best environment for the interview, and the physician–patient relationship are beyond the scope of this chapter and are discussed eloquently in other textbooks.1,2

**Chief Complaint**

The patient’s age and gender should be ascertained first. This important demographic information will allow the examiner to consider the rest of the history and examination in context. For instance, congenital neuro-ophthalmic problems are more likely to be seen in children, and degenerative and vascular disorders are seen predominantly in adults. Neoplasms affecting the chiasm occur at all ages, although the tumor types are often age-dependent. For instance, in children the most common causes are optic pathway gliomas and craniopharyngiomas, while in adulthood pituitary adenomas are the most likely culprit. Ophthalmic complications of breast cancer are obviously more prevalent in women, but optic neuritis, giant cell arteritis, and Duane’s retraction syndrome are as well.

Then the patient should be asked to summarize his or her complaint in one sentence. Simple statements such as “I cannot see out of my left eye,” “I have double vision,” and “My left eyelid droops” are extremely helpful and immediately allow the examiner to begin thinking about a differential diagnosis. However, when the complaint is vague, such as “I haven’t seen very well for 6 months,” further historic clarification is necessary.

The clinician should then reduce the chief complaint to one sentence that contains the patient’s age, gender, and complaint: “The patient is a 45-year-old woman with left facial pain,” for example.

**History of Present Illness**

The patient’s chief complaint should be explored in further detail, including the temporal profile of events and any associated symptoms.

**DETAILING THE PROBLEM**

**Afferent Dysfunction.** If the patient complains of visual loss, its pattern and degree should be explored to help localize the problem within the afferent visual pathway. The patient should be asked whether the right or left eye or both eyes are involved and whether the visual loss affects the nasal, temporal, superior, or inferior field of vision. Then the visual loss should be characterized according to its quality and degree (complete blindness, grayness, or visual distortion, for example). Defects in color perception should be noted. Higher cortical visual dysfunction should be considered when the visual complaints are vague and there is a history of dementia, stroke, or behavioral changes and no clear ocular explanation for the visual impairment.

**Efferent Dysfunction.** The most common efferent neuro-ophthalmic complaint is double vision. Patients with diplopia should be asked whether their double vision is (1) binocular, (2) horizontal or vertical, and (3) worse in left-, right-, up-, or downgaze, or distance or near. Neurologic diplopia is almost always binocular, and the defective nerve or muscle can often be determined according to the direction in which the double vision is worse.

Blurred vision is a common complaint associated with refractive error, media opacity, and afferent dysfunction. However, the examiner should be aware that some patients complaining of blurred vision are actually found to have diplopia when questioned further. This should be suspected when the patient reports the blurred vision improves when either eye is covered.
and even intermittent, double vision implies a slowly expanding neoplasm or decompensated congenital strabismus. Old photographs of the patient, when details of the face and eyes are visible, are often extremely helpful in determining the chronicity of ptosis, pupillary abnormalities, and ocular misalignment, for example.

**Rapidity of Onset.** A sudden onset of symptoms suggests a vascular process, such as a stroke. Inflammatory and infectious disorders may also present acutely. In contrast, symptoms associated with degenerative and compressive processes are usually more insidious, and the patient may not be able to date the exact beginning of the problem.

**Pattern of Symptoms.** The timing of the course of symptoms can be extremely helpful. Progressive symptoms with subacute onset suggest compressive mass lesions, while those with acute onset that plateau or improve are more consistent with vascular or inflammatory processes. Episodic visual loss could be due to migraine, carotid disease, or seizures, for instance. Fluctuating ptosis or double vision that is particularly worse in the evening is highly suggestive of myasthenia gravis.

**ASSOCIATED SYMPTOMS**

The patient should be asked about neurologic or generalized symptoms that may not have been volunteered when relating the eye problem. For instance, headaches may be consistent with migraine, elevated intracranial pressure, and compressive lesions. Malaise, fevers, muscle aches, headaches, and jaw claudication indicate giant cell arteritis in an elderly patient with amaurosis fugax or frank visual loss. Pain is more typical of optic neuritis than ischemic optic neuropathy. Systemic weakness, dysphagia, and dyspnea suggest myasthenia gravis in a patient with ptosis or diplopia. On the other hand, in a patient with diplopia, dysarthria, and ataxia, a posterior fossa lesion is more likely.

**Past Neurologic and Ophthalmologic History**

A history of any neurologic disease, such as migraines, strokes, transient ischemic attacks, head injury, or seizures, or prior neuroimaging should be investigated. Important questions regarding past ophthalmologic problems include those concerning previous spectacle correction, cataracts, glaucoma, strabismus, amblyopia, eye patching, or surgery.

**Past Medical and Surgical History and Review of Systems**

Because many neuro-ophthalmic disorders are complications of underlying medical illnesses, careful exploration and documentation of the medical and surgical history and review of systems are paramount. Inquiry regarding the presence of hypertension, diabetes, coronary artery disease, arrhythmias, cardiac valvular disease, hypercholesterolemia, and peripheral vascular disease is extremely important, but any history of cancer, rheumatologic or immunosuppressive disorders, or infectious diseases may also be highly relevant.
Special Considerations in Children

Diagnostic clues in children undergoing neuro-ophthalmic evaluation may be evident in the mother’s pregnancy history, especially with regard to drug or alcohol exposure or infections. Details of the birth, including length of gestation, birth weight, Apgar scores, and presence of perinatal difficulties, should be noted. A developmental history, with particular attention to milestones achieved in cognitive, motor, and language function, should be taken as well. Loss of milestones suggests a degenerative disorder, while developmental delay with slow achievement of milestones suggests a static encephalopathy due to hypoxemia, for instance.

Family History

The history of any neurologic, ophthalmologic, or medical illnesses in related family members should be documented. In addition, many neuro-ophthalmic disorders, such as migraine, multiple sclerosis, and Leber’s hereditary optic neuropathy, have a genetic predisposition, so their presence in any relatives would strongly suggest their consideration.

Social History

Certain behaviors, such as illicit drug use, smoking, and alcohol consumption, may be important predisposing factors for neuro-ophthalmic disorders. For example, smoking is a risk factor for vascular disease, whereas alcohol may be associated with optic neuropathy.

Because occupational exposures may also be relevant, the examiner should inquire about the patient’s job. Knowing the patient’s occupation is also important in understanding how the patient’s neuro-ophthalmic problem affects his or her everyday life. For instance, a dentist may be devastated by monocular visual loss and the subsequent inability to appreciate objects stereoscopically. On the other hand, an airline reservation agent, whose job likely does not require binocular vision, may not be affected as severely by a similar injury.

References