Frontal absence seizures are rare and are due to diffuse, bisynchronous frontal epileptic activity. These consist of staring and mimic typical or atypical absence seizures (see later). Seizures arising in the posterior frontal lobe motor cortex (precentral gyrus) are classically clonic with a Jacksonian march.

Parietal and occipital lobe epilepsy involve sensory structures and at least initially, have only subjective symptoms. *Parietal lobe seizures* consist of somatosensory sensations or higher cognitive function disruption. The somatosensory sensations can have a Jacksonian march with sensory symptoms progressing along the sensory homunculus. *Occipital lobe seizures* involve unformed or poorly formed visual hallucinations that are often in color (in contrast to the visual aura of migraine, which is black, gray, and white). Forced eye deviation can occur with occipital seizures. Occipital seizures can have a prolonged discharge lasting tens of minutes that is subclinical or minimally clinical before propagating. Parietal and occipital seizures do not become complex until propagating to the temporal lobes or limbic system. *Reflex seizures* are precipitated by a specific stimulus, such as touch, a musical tune, a particular movement, reading, flashing lights, or certain complex visual images. With the exception of the photosensitive response in juvenile myoclonic epilepsy (see later) which is relatively common, reflex seizures are rare and classified as a type of parietal or occipital lobe epilepsy because these regions mediate sensory functions.

Posttraumatic epilepsy is a type of symptomatic focal epilepsy distinguished by its etiology. The likelihood of developing posttraumatic epilepsy relates directly to the severity of the head injury. The relative risk for developing epilepsy after a penetrating wound to the brain (e.g., bullet or shrapnel) is up to six hundred times that in the general population. Severe closed head injuries result in epilepsy in 20% of patients. Severe closed head injuries are defined by the presence of an intracranial hemorrhage (subdural, epidural, subarachnoid, or cerebral contusion), unconsciousness or amnesia lasting more than 24 hours, or persistent abnormalities on neurological examination, such as hemiparesis or aphasia. Although the majority of the patients with a severe head injury develop seizures within 1 to 2 years, new-onset epilepsy may appear after 20 years or longer. Mild closed head injuries (uncomplicated brief loss of consciousness, no skull fracture, absence of focal neurological signs, and no contusion or hematoma) may minimally increase the risk of seizures. Posttraumatic epilepsy is always focal or multifocal, although only convulsions may be clinically evident, especially with multifocal injury. Several early seizures within a week of a head injury do not necessarily predict that future epilepsy will be present.

Primary Generalized Seizures (Seizure Types)

Primary generalized seizures begin diffusely and involve both cerebral hemispheres simultaneously from the outset. Primary generalized seizures should be distinguished from partial seizures because in some cases they have similar clinical features, yet respond to different treatments.

Absence seizures (historically termed petit mal) occur mainly in children and are characterized by sudden, momentary lapses in awareness with staring. Sometimes rhythmic blinking occurs with a slight loss of neck tone. Most absence seizures last less than 10 seconds. If the absence lasts longer than 20 seconds, automatisms are usually present, making differentiation from partial seizures based on clinical observation difficult. The EEG has a characteristic pattern of generalized 3 per second spike and slow waves (Fig. 118-2) during an absence seizure. Behavior and awareness return to normal immediately after the seizure ends, although brief confusion may be present if the surroundings changed during the seizure. There is no postictal period and usually no recollection that a seizure occurred.

Myoclonic seizures manifest as rapid, recurrent, brief muscle jerks that can occur unilaterally or bilaterally, synchronously or asynchronously, without loss of consciousness. To be a seizure, the myoclonus must have a corresponding discharge on EEG. Other types of myoclonus, such as benign nocturnal (hypnic) jerks, or subcortical and spinal myoclonus related to lesions,

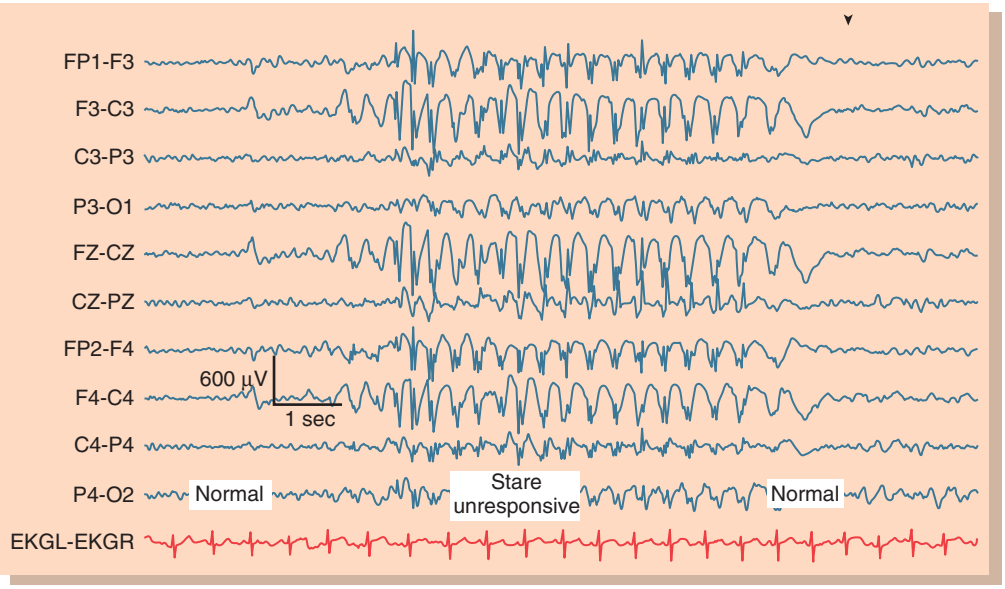

FIGURE 118-2 Absence (petit mal) epilepsy. The electroencephalogram shows the typical pattern of generalized 3-Hz spike-wave complexes associated with a clinical absence seizure.