

Fits, faints and funny turns – the differential diagnosis of epilepsy

J.W. SANDER

Department of Clinical and Experimental Epilepsy, University College, London, Institute of Neurology, Queen Square, London, and the National Society for Epilepsy, Chalfont St Peter, Bucks

The diagnosis of epilepsy is essentially clinical, and relies on the description of the seizure provided by the patient and an eyewitness. The account of an eyewitness is of great importance, especially if there is any impairment of consciousness during the seizure. An attempt should also be made to identify any condition that could trigger or provoke an epileptic seizure, and to categorise the seizure or seizures according to the classifications of the International League Against Epilepsy.

Issues which should be particularly addressed include the nature of the aura, if present; the ictal manifestations themselves; and the presence or absence of post-ictal confusion, drowsiness or headache. Precipitating factors should be addressed. A full medical (including neurological) history should be taken, in addition to details of previous psychiatric problems and family history. The patient should be asked particularly whether he or she has ever had febrile convulsions, significant head injury, encephalitis or meningitis and whether birth was normal.

Differential diagnosis

There are many disorders involving alteration of consciousness, or focal neurological symptoms, which may be confused with or mimic epileptic seizure; these are summarised in Table I.

The conditions most commonly mistaken for epileptic seizures are vasovagal attacks, sleep disorders and non-epileptic attack disorder. Chapters on syncope (Chapter 18), sleep phenomena (Chapter 19) and dissociative seizure disorders (Chapter 20) cover these conditions more fully.

Hyperventilation and panic attacks

Hyperventilation usually occurs during periods of stress in susceptible persons. It causes a feeling of dizziness and sometimes even altered awareness or loss of consciousness. The patient may also complain of chest pain, dyspnoea, blurred vision, paraesthesias, muscle cramps and fatigue. This may progress to a panic attack in some people. In a panic attack the patient hyperventilates intensely and feels very anxious and often frightened. This feeling is accompanied by such physical symptoms as palpitations, dyspnoea, sweating, trembling and abdominal discomfort. Usually it is possible to distinguish such attacks from the history, but occasionally seizures of temporal lobe origin may have similar symptomatology.

Episodic dyscontrol syndrome

Rage attacks, often apparently occurring out of character, are sometimes attributed to epilepsy. In practice, however, rage occurring in the context of epileptic seizures is rare, unprovoked and usually undirected.

Breath-holding attacks

These occur in children, usually under the age of six years, and are commonly mistaken for seizures although, if witnessed, diagnosis should be possible from the history of precipitating factors. Cyanotic breath-holding attacks occur when the child is frustrated or angry. A period of crying is followed by cessation of breathing. Cyanosis follows and the child becomes limp and unresponsive, sometimes trembling, or a few clonic movements may occur. Unresponsiveness usually persists for about two minutes and is followed by rapid recovery. Pallid breath-holding attacks often follow mild head-trauma. The child may not cry, but abruptly loses consciousness and becomes limp. Clonic movements are common as a result of cerebral hypoxia, but recovery is fairly rapid.

Day-dreaming

Innocent day-dreaming may occasionally be mistaken for true absence attacks, but can be distinguished by the fact that the child can be easily alerted and by the absence of postural changes or automatisms.

Migraine

There are several reasons why migraine attacks may be confused with epileptic seizures. Syncope may occur during the course of the migraine, particularly when vomiting occurs. Basilar migraine may present with loss of consciousness, often in association with other symptoms and be followed by headache, causing confusion with epileptic seizures. The accompanying brainstem symptoms and a family history of migraine may help in their differentiation. Migraine preceded by visual or sensory disturbances may also be mistaken for partial epilepsies. It should be noted that non-specific paroxysmal EEG phenomena may be seen in migraine.

Transient ischaemic attacks

Transient ischaemic attacks may produce weakness and sensory symptoms; it is the latter which usually cause confusion with epileptic seizures. Transient ischaemic attacks usually last longer than epileptic seizures, and there is rarely loss of consciousness. Sensory phenomena in epilepsy may spread in the manner of a Jacksonian march. This is not usually the case in transient ischaemic attacks.

Transient global amnesia

Transient global amnesia is a condition occurring in middle-aged or older people. Most often this occurs as an isolated episode lasting several hours, in which the patient is unable to remember. He or she remains alert and communicative throughout this period, but may repeatedly ask the same question. Except for amnesia of the episode, recovery afterwards is complete. The cause of transient global amnesia remains unclear. Migraine, epilepsy and cerebrovascular disease have been suggested, but it is thought that only a small minority of patients with such symptoms have epilepsy, and in these the attacks are usually short-lived and recurrent.

Movement disorders

A variety of movement disorders may on occasion be mistaken for seizures, although the distinction is not usually difficult. Tics and chorea may sometimes be confused with myoclonus. Paroxysmal choreoathetosis is a familial disorder characterised by repeated episodes of dystonia or choreoathetosis, unaccompanied by loss of consciousness. Despite the absence of ictal EEG abnormalities, the condition often responds to antiepileptic medication. In paroxysmal kinesigenic choreoathetosis the attacks, which are short-lived,

are precipitated by sudden movement. Tonic spasms similar to those seen in paroxysmal chorea are also sometimes seen in multiple sclerosis.

Paroxysmal familial ataxia is an inherited condition in which episodes of ataxia lasting up to 30 minutes may occur, without other accompaniments. It has been reported in people of Mediterranean origin and it is important to recognise since it may have an excellent response to acetazolamide.

Hypoglycaemia

This is an uncommon condition affecting people with diabetes, and in particular, those taking insulin or oral hypoglycaemic agents. Very rarely, however, it is due to an insulinoma. Hypoglycaemia normally first produces autonomic changes, including pallor, sweating and tachycardia, and these may be recognised by the patient who can then take appropriate action. If autonomic changes do not occur, or if there is no warning, coma ensues and genuine seizures may eventually supervene.

Vertigo

Vertigo has many causes, but is often paroxysmal, and as a result is sometimes misdiagnosed as epilepsy. Very occasionally, vertigo itself may be a symptom of an epileptic seizure, particularly in the case of parietal lobe epilepsy.

Examining the patient

All patients developing seizures should have a complete general and neurological examination. Specific signs which should be sought include the presence of any cutaneous stigmata that may indicate the cause of the epilepsy (café au lait spots, adenoma sebaceum or trigeminal capillary haemangiomas, suggesting the possibility of neurofibromatosis, tuberous sclerosis and Sturge-Weber syndrome respectively). Focal neurological defects suggesting the presence of a structural lesion should be assiduously sought. Abnormalities may be subtle, for example, impairment of fine finger movements. The patient should also be examined for any evidence of hemiatrophy, indicating a cerebral lesion occurring in early life.

Table I. Conditions which may be confused with epilepsy.

Breath-holding attacks	Night terrors
Day-dreaming	Panic attacks
Episodic dyscontrol syndrome	Pseudoseizures
Hyperventilation	Syncope
Hypoglycaemia	Transient global amnesia
Migraine	Transient ischaemic attacks
Movement disorder	Vertigo
Night terrors	
