

Epilepsy

Epilepsy - G40.9 (Clinical term: Epilepsy F25)

Presenting complaints

- Usual presentation is sudden collapse associated with loss of consciousness and a convulsion.
- A range of phenomena may also be epileptic in origin although frequently are not recognized as such by patients: repetitive psychological sensations (such as déjà vu), motor phenomena, brief loss of consciousness and sudden muscle jerks.

Diagnostic features

Epilepsy is the tendency to have repeated seizures that originate in the brain.

The lack of a comprehensive diagnostic test, and the similarity of presentation of many other conditions, can lead to diagnostic inaccuracies (ref 124). Diagnosis should be established by a physician/paediatrician with training and expertise in epilepsy.

Epilepsy is primarily diagnosed on the basis of an accurate description of the seizure. As the patient is frequently unconscious a witness history is absolutely essential.

Partial (focal) seizures:

- simple partial: no loss of consciousness
- complex partial: commonly impaired consciousness, 'dazed' with automatisms such as lick-smacking or fumbling with fingers
- simple or complex partial evolving to secondarily generalized as above but progresses to generalized convulsive seizure

Generalized seizures:

- absence: brief loss of consciousness.
- myoclonic: brief sudden jerking of limbs, often in the morning
- clonic: rhythmic jerking
- tonic: stiffness of body
- tonic-clonic: classical stiffening then jerking of body and fall to ground often with incontinence and tongue biting; so-called 'grand mal'.

Epilepsy may affect any patient group throughout the lifespan. High-risk groups include those with an intellectual disability, traumatic brain injury and cerebrovascular disease.

References

124 Smith D, Defalla BA, Chadwick DW. The misdiagnosis of epilepsy and the management of refractory epilepsy in a specialist clinic. *Q J Med* 1999, 92: 15-23.

Differential diagnosis

Thirty to forty percent of epilepsy has a recognizable cause. For example, intrauterine and perinatal factors; infections leading to brain damage; tumours primarily intracerebral or metastases from extracerebral sites; injury to the brain or surgical intervention; degenerative brain disease; metabolic disorders including liver/kidney diseases; hypoglycaemia and porphyria; drugs and alcohol in both intoxication and withdrawal states; prescribed medication including psychotropic medication reducing threshold of seizures.

Epileptic seizures need to be distinguished from other causes of impairment of consciousness or episodic neuropsychiatric dysfunction:

- Certain physical conditions (eg syncope, transient ischaemic attacks [TIAs], migraine, acute confusional states).
- Certain psychiatric illnesses, for example acute episodes of anxiety symptoms, particularly autonomic symptoms, somatoform disorders including conversion and dissociative disorders, psychotic illnesses including schizophrenia-like psychotic symptoms, organic confusional states.

The seizure type, epilepsy syndrome and aetiology should be determined because correct classification has important implications for treatment and prognosis. Further investigations (EEG/CT-MRI, as appropriate) should be done in the evaluation of a suspected epileptic seizure (defined on basis of a careful history) to aid diagnosis, classification and prognosis.

Essential information for patient and family

- Epilepsy is a common condition; 0.5-1.0% of the population in the UK has epilepsy.
- Epileptic seizures are usually self-remitting and brief.
- Rarely, status epilepticus develops, ie ongoing seizures one after another or an unusually prolonged seizure of four to five minutes or longer. Status can be a potentially dangerous situation and an ambulance should be called to seek professional treatment. Injectable medication by the paramedics might be required, or the patient may be taken to hospital for further treatment.
- At the time of the seizure, ensure that the patient does not come to any harm because of the manifestations of loss of consciousness, eg injury caused by a fall.
- Most patients achieve seizure freedom.
- A three to five year seizure-free period with anticonvulsant medication is considered to be a good result. Consideration can be given to reduction/withdrawal of anticonvulsant medication if this is achieved, particularly where side-effects have been an ongoing issue.
- Continued seizures place individuals at some risk - eg bathing, driving - which need careful explanation.
- Psychiatric symptoms can occur secondary to epilepsy and during or between seizures: neurotic, psychotic or cognitive symptoms. Complex partial seizures are particularly relevant in this case.
- A long history of seizures and prolonged use of anticonvulsants can sometimes both individually or together lead to cognitive impairment.
- Women with epilepsy need careful preconceptual counselling (ref 125).

References

125 Crawford PM, Appleton R, Betts T, Duncan J, Guthrie E, Morrow J. Best practice guidelines for the management of women with epilepsy. *Seizure* 1998, 8: 201-217.

General management and advice to patient and family

(ref 126)

- Because 30-40% of epilepsy has a recognizable cause, a new case needs to be investigated to find the cause. This is more likely to be relevant for adult-onset epilepsy.
- During a seizure, the best intervention from the family is to ensure that the patient is protected from injury during the period of impaired consciousness. The patient should be placed on a comfortable surface in the coma position and any hard objects removed from the vicinity.
- Recording frequency and types of seizures in a diary is very helpful for determining treatment.
- Psychosocial aspects of treatment include clear and supportive education to patient and family. Essential limitation of activities that may increase risk of injury to the patient must be advised appropriately (eg driving, swimming, use of stairs or crossing streets with traffic).
- Engagement with support groups might be useful for both patient and family.
- You should enquire about the contraceptive method used by women of childbearing age and on carbamazepine, phenytoin, topiramate or phenobarbitone, and preconceptual counselling and advice on childbearing given.
- The DVLA must be notified in all cases. Licences for motor vehicles can be restored one year seizure-free or after three years if the seizures are uniquely nocturnal; for LGV/PCV drivers, licences can be restored after 10 years if the patient has been seizure free and not taken antiepileptic drugs for that time (ref 3).

References

3 Driver and Vehicle Licensing Agency. At a Glance Guide to Medical Aspects of Fitness to Drive. URL <http://www.dvla.gov.uk>. Further information is available from The Senior Medical Adviser, DVLA, Driver Medical Unit, Longview Road, Morriston, Swansea SA99 ITU, Wales.

126 NICE are due to publish a guideline on the management of Epilepsy in June 2004.

Medication

(ref 126,127)

- Antiepileptics are the mainstay of treatment. Seizure type affects the choice of treatment. The antiepileptic drug should be gradually increased to a maximum tolerable dose, if necessary, to control of seizures completely (BNF section 4.8)
- The decision to start antiepileptic treatment should be made by a doctor skilled in the management of epilepsy, along with the patient.
- To ensure compliance with medication it is important to educate the patient about possible precipitants of seizures (eg missing doses, alcohol, photosensitivity, sleep deprivation and even emotional states).

- Good compliance ensures earlier control of seizures and thus reduced doses of medication, risk of side-effects and any long-term effects on cognitive functioning. It also lessens the damaging effects of prolonged seizures on confidence and psychosocial skills.

The following clinical scenarios are faced in the management of epilepsy.

Single seizure. A single seizure is predictive of further seizures in the individual (in 30-40% of cases) (ref 128). Risk of recurrence is higher in those with a congenital neurological deficit or EEG abnormalities. In general, management is an individual decision and the wishes and circumstances of the patient must be taken into consideration.

Subsequent seizures. An attempt should be made to control seizures with monotherapy. Treatment choice is influenced by seizure type and gender. Patient concerns over side-effects are of major importance and decisions should be based on the fully informed choice of patients and their families.

- Seizure type: for patients with partial epilepsy, carbamazepine (starting dose 200mg, maintenance 400-1600 mg; lamotrigine (starting dose 25 mg, maintenance 100-400 mg) and valproate (starting dose 200-500 mg, maintenance 500-3000 ,g) are the treatments of choice (BNF section 4.8) (ref 129). For patients with generalized epilepsy (or where classification is not possible), valproate and lamotrigine are preferred .
- Gender: women of childbearing age who have epilepsy face very specific risks from epilepsy treatments; for example interference with contraceptive treatment and teratogenic effects of anticonvulsants

First drug failure. Patients who fail with their first anticonvulsant owing either to poor seizure control or intolerable side-effects, should be switched to an alternative monotherapy.

Monotherapy failure. If monotherapy is not completely successful, try combinations with second-line drugs. Drug interactions are complex and mainly relate to liver enzyme effects. Serum level monitoring becomes relevant when it is proving difficult to balance therapeutic benefit with side-effects and in renal/hepatic disease and pregnancy. Again, treatment choice is influenced by gender and seizure type:

- partial: gabapentin, levetiracetam, tiagabine and topiramate
- generalized: topiramate and possibly levetiracetam. Ethosuxamide can be used in patients with absence epilepsy.

Refractory epilepsy. Patients with drug-resistant epilepsy should have:

- reassessment of diagnosis
- reassessment of drug therapy
- assessment of compliance
- assessment of precipitants
- assessment of suitability for epilepsy surgery.

Antiepileptic drug withdrawal:

- Three to five years of complete control is generally considered sufficient to justify reductions or trial of cessation of medication (ref 130).

- Risk of re-occurrence of seizures has to be balanced against the hazards of continuing medication, including effect on psychosocial aspects of a patient's life.

References

126 NICE are due to publish a guideline on the management of Epilepsy in June 2004.

127 Marson A, Ramaratnam S. Epilepsy. *Clinical Evidence* 2002, 8: 1313-28. (AI) Reviews in people with drug-resistant partial epilepsy have found that adding gabapentin, levetiracetam, lamotrigine, oxcarbazepine, tiagabine, topiramate, vigabatrin or zonisamide to their usual treatment significantly reduces seizure frequency (compared with adding placebo). Adding second-line drugs compared with adding placebo increases the frequency of adverse effects. Randomized controlled trials have found that immediate treatment of single seizures with antiepileptic drugs (compared with no treatment) reduces seizure frequency over a two-year follow-up period. No evidence was found that treatment alters long-term prognosis. Long-term antiepileptic drug treatment is potentially harmful.

128 Berg AT, Shinnar S. The risk of seizure recurrence following a first unprovoked seizure: a quantitative review. *Neurology* 1991, 41: 965-972.

129 Marson AG, Williamson PR, Hutton JL et al.; on behalf of the epilepsy monotherapy trialists. Carbamazepine versus valproate monotherapy for epilepsy (Cochrane Review). In: *The Cochrane Library*, Issue 2, 2003. Oxford: Update Software. (AI) Eight studies were analysed. There was some evidence to support the policy of using carbamazepine as the first treatment of choice in partial epilepsies, but no evidence to support the choice of valproate in generalized epilepsies. Confidence intervals were too wide to confirm equivalence, however.

130 Sirven JI, Sperling M, Wingerchuk DM. Early versus late antiepileptic drug withdrawal for people with epilepsy in remission (Cochrane Review). In: *The Cochrane Library*, Issue 2, 2003. Oxford: Update Software. (BI) Seven studies were examined. There is evidence to support waiting for at least two or more seizure-free years before discontinuing anti-epileptic drugs (AEDs) in children, particularly if patients have an abnormal EEG and 264 References 05-WHO-(Refs)-resize-cpp 19/1/2004 2:33 pm Page 264 partial seizures. There is insufficient evidence to establish when to withdraw AEDs in paediatric patients with generalized seizures. There is no evidence to guide the timing of withdrawal of AEDs in adult seizure-free patients.

Referral

Referral to neurology or other epilepsy services (including those for people with intellectual disability) is essential for:

- a new diagnosis
- initiation of treatment
- pre-conceptual counselling
- refractory epilepsy assessment
- withdrawal of antiepileptic drugs
- epilepsy surgery

Some psychiatric services have specialist neuropsychiatry/epilepsy clinics, with specialist nurses for counselling. Psychotherapeutic services especially geared for epilepsy are not yet widely established.

Referral to Social Services can be considered for specific benefits relating to a patient's disability.

Resources for patients and families

Epilepsy Action 0808 800 5050 (helpline 9am–4.30pm, Monday–Thursday; 9am–4pm, Friday)

Email: helpline@epilepsy.org.uk; website: <http://www.epilepsy.org.uk>.

Epilepsy Action is the working name for the British Epilepsy Association.

National Society for Epilepsy 01494 601 400 (helpline 10am–4pm, Monday–Friday)

Website: <http://www.epilepsynse.org.uk>.

Epilepsy Youth in Europe (EYiE)

Website: <http://www.eyie.org>.

Provides an opportunity for young people to discuss epilepsy and its effect on their lives.

Epilepsy Bereaved 01235 777 2852.

Email: <http://dspace.dial.pipex.com/epilepsybereaved/eb/ebhome.htm>.