Epilepsy: its presentation and nursing management

Each year in the UK about 25,000 people develop epilepsy (Walker and Shorvon, 1999), making it the most common serious neurological condition. Seizures are a symptom of a disease (Sander and Hart, 1997a: 13), just as a sneeze may be a symptom of influenza, and they may be the first indication that something is not right. Sander and Hart (1997a: 14) describe an epileptic seizure as: ‘a transient paroxysm of excessive or uncontrolled discharges of neurons which may be caused by a number of different aetiologies, leading to epileptic seizures’.

The form a seizure takes depends on where in the brain it starts and how far it spreads. Seizures must be recurrent for a diagnosis of epilepsy to be considered (Russell and Wehrle, 1998). It is vital, therefore, that a detailed history is obtained as soon as possible after the first seizure. A clearly documented medical history from the patient may speed up the introduction of a successful course of treatment. When taking a history it is crucial to ask the patient about any drugs currently being taken and whether these are prescribed, over-the-counter or recreational.

There are various types of epileptic seizure, and it is important to recognise each one, as the management will vary according to the type. There are two main categories – partial and generalised – with different types of seizure in each category.

Partial seizures
These originate in one of the lobes of the brain. There are two types of partial seizure – simple and complex – and each manifests itself in the patient according to the part of the brain from which it originated.

Simple partial seizures
■ These originate in the lobes of the brain (see Fig. 1);
■ Patients may say they are having an aura, or warning, in this case it is an epigastric sensation;
■ Consciousness is not impaired;
■ Some patients report a tingling or numbing sensation, while others report flashing lights.

Nursing management
Because some of the symptoms can be very frightening, the nurse should stay with the patient and offer reassurance that the seizure will pass. Because the simple partial seizure is a warning of a stronger seizure, the nurse should assess the immediate environment to ensure that, should the patient fall, any potential hazards are removed that could cause injury.

Complex partial seizures
■ These start as a simple partial seizure, but spread out of the localised area to include other areas of the brain, although the activity is still confined to the hemisphere of the brain where the activity originated – it does not spread into the opposite hemisphere;
■ The patient appears blank, stares, and is unaware of his/her surroundings and may be unable to communicate verbally;
■ In some patients there is posturing of the upper and lower limbs, which may extend outwards, and the head may turn to one side;
■ Patients who have no warning will fall to the floor if they are standing. A phase of involuntary motor movements may follow of which the patient usually is totally unaware;
■ Complex partial seizures last from a couple of minutes to several days in a few extreme cases.

The involuntary movements (automatisms) may present differently in different patients. Some may have verbal automatisms, making noises, meaningless sounds, grunts, or whistling noises, others may clearly repeat words or sentences.

Some patients may demonstrate ambulatory automatisms such as walking about the room or running very quickly when least expected. Oro-alimentary auto-matisms involve the oro-facial muscles, and include chewing movements, lip smacking, and swallowing movements.

Patients may show signs of fear or laughter, known as mimicry automatisms. Other automatisms cause patients to fiddle with their hands, clothes, or objects in the room, or they may tap, pat or rub objects. This could become serious if a patient were in an acute hospital ward near vital life-saving equipment. Some patients may start undressing or fiddling with themselves in the genital area. Violent automatisms can occur, but these are usually a result of the patient being acutely confused as a consequence of the seizure. Some patients become violent if they are restrained. A person who is having a complex partial seizure is often mistaken by the public or emergency response teams as being drunk or having taken drugs.

Nursing management
Complex partial seizures can be difficult to manage. If the seizure starts as only a warning, nursing management should be the same as for simple partial seizures. However, should the patient fall to the floor management should be as follows:
■ Assess the patient for any signs of injury. Check also for limb displacement, as this may indicate the patient has a fracture;
Patients’ behaviour may change if they think they are being restrained. Therefore, nurses must consider their own personal safety;
- Talk in a calm, reassuring voice;
- If the patient gets up from the floor and starts to walk off before the automatisms start, be prepared to go along as well. If it is known that the patient is likely to remove his or her personal clothing, grab a blanket or towel to minimise any embarrassment to the patient on recovery.

**Generalised seizures**

Generalised seizures differ from partial seizures in that they involve both hemispheres of the brain at onset. Patients never have a warning with generalised seizures and consciousness is almost always impaired from the start. The various types of generalised seizure are discussed below.

**Absence seizures**

These used to be called ‘petit mal’ seizures but this is discouraged today. Absence seizures may be typical or atypical.

**Typical absence seizures**

These are characterised as follows:
- Patients will suddenly stop what they are doing and lose consciousness for the duration of the event. They do not usually fall if they are standing;
- Patients appear to have a glazed or vacant expression on their face, with drooping of their eyelids. They are totally unaware of their surroundings;
- There may be very subtle jerks of the eyelids and/or slight tremor in the limbs. The seizure lasts about 10 seconds then stops as abruptly as it started;
- Patients can normally continue with whatever they were doing before the seizure.

**Atypical absence seizures**

- These are longer in duration than a typical absence seizure – sometimes up to 45 seconds;
- The changes noted in the typical absence group tend to be more apparent in atypical absences, with a longer recovery time;
- Loss of awareness is not always complete. Many absence seizures go unnoticed to an onlooker. But should the patient go on to have an atypical absence seizure that lasts, say, 40 seconds while crossing a busy road, he or she will require assistance, as both the patient and other road users are at risk.

**Myoclonic seizures**

- A myoclonic seizure is a ‘brief contraction of a muscle, muscle group or several muscle groups caused by cortical discharge’ (Shorvon, 2000a). Some patients may have only a single ‘jerk’, while others may have many in a cluster, or a continuous spasm;
- Myoclonic jerks are sometimes strong enough to throw patients out of bed or a chair, and if they are standing, they could be thrown to the floor by the jerking movement. They may utter a very brief vocal noise at the time of the jerk;
- As these seizures last for less than five seconds, a single myoclonic jerk may go unnoticed. It is not until they cluster that they become noticeable. They may lead into a generalised tonic clonic seizure;
- The muscles involved in the myoclonic jerks are generally those in the arms, legs, torso and face, but some patients’ bladder or bowel muscles are affected and they may try to get to the toilet for fear of being incontinent.

Because of the nature of the jerks in patients having a myoclonic seizure, they may harm themselves; for example, if they are holding a hot drink they may scald themselves (or others who happen to be close by); or if they fall they may sustain injury to their knees, ankles or face.

Many people who do not have epilepsy experience involuntary jerks as they are going off to sleep. It is important to stress that this is a normal physiological phenomenon and not epilepsy.

**Atonic seizures**

These occur as a result of sudden loss of tone in the postural muscles (Sander and Hart, 1997b: 23). They are characterised as follows:
- The patient will drop to the floor if standing, and if seated will slump in the chair;
- Consciousness will be lost for a split second; in most cases the patient can get up again straightforward.

Common injury sites are the ankles, knees and chin area of the face. In some cases fractures are sustained at the sites of impact.

**Tonic seizures**

These are characterised as follows:
A sudden increase in the body’s muscle tone causes the muscles to contract; the neck extends, but it does not rotate to either side; the upper limb muscles contract forcing the arms and shoulders to abduct and elevate. The upper parts of the arms usually come alongside the ears, but in some cases the arms will stretch down to the floor; the patient’s hands will abnormally posture, either being clenched in a fist shape or flexed open with fingers extended outwards; the facial muscles contract, which cause the eyes to open and the eyeballs to rotate upwards; the muscles involved in respiration contract, forcing air out of the lungs, which can be heard as a cry. This is followed by a short phase of apnoea, during which consciousness is lost; the patient’s legs extend outwards. Patients who are standing will fall to the floor.

Tonic seizures are brief and for some patients consciousness is regained before they hit the floor. The most common injury tends to be to the patient’s head. As with any head injury, post-seizure care involves recording neurological observations and using a recognised recording scale, such as the Glasgow Coma Scale. Recordings should continue until they are reviewed by a doctor, or if the patient has obviously recovered.

Clinic seizures
These are characterised by asymmetrical jerking, without any prior stiffening.

Tonic clonic seizures
Tonic clonic seizures are the most dramatic form of epileptic seizure, and are usually the type nurses fear the most. These used to be called ‘grand mal’ fits. There are two stages – tonic and clonic. The characteristics of the tonic phase have already been described above.

All the movements characteristic of the tonic phase will occur at the same time, and will continue for up to 30 seconds before the seizure proceeds into the clonic phase, the characteristics of which are as follows:

- Convulsive movements, usually involving all four limbs and the facial muscles, may be seen. The limbs abduct and extend repeatedly for up to 60 seconds. These movements then diminish in strength and slow down in frequency;
- Breathing is impaired, and because the muscles involving breathing have contracted, air is expelled, generating a noise as it does so;
- Excessive salivation may present as frothing at the mouth;
- Changes in some autonomic functions occur as a result of the assault on the body described above, for example, the pulse rate and blood pressure increase and may take time to return to normal;
- A period of rest follows the above activity, after which the patient’s muscles relax and become flaccid;
- Breathing becomes stertorous and may last from two to 25 minutes;
- Consciousness is regained slowly;
- Patients remain confused for some time after the seizure and drift off into a deep sleep.

Some patients will be incontinent of urine or faeces during a seizure. On recovery, they may report headaches and sore muscles. It may be several days before some patients feel better.

Nursing management
Tonic clonic seizures are severe and can be frightening to an onlooker, but nurses should bear in mind how frightening they must also be to the patient. The following procedures should be taken when managing such patients:

- Communicate with the patient throughout the seizure;
- Continually give reassurance that the seizure will stop and that the patient will not be left alone;
- Protect the patient’s head from banging on the floor while the convulsive movements are occurring, and loosen any tight clothing;
- Try to turn the patient into the recovery position;
- Do not force anything into the patient’s mouth as this could damage teeth and gums.

If, initially, it is not possible to turn the patient into the recovery position, it is crucial that this is done as soon as the limbs relax and that the airway is checked before the stertorous breathing phase begins. Doing so will allow any excess saliva to drain freely. Do not restrain patients who are moving about; simply continue observation.

Some patients drift off to sleep after the seizure but it is important to note whether or not this is normal for them, because they may have sustained some form of internal trauma that is causing them to slip into unconsciousness.

Check the sleeping patient every few minutes, observing the breathing pattern and the level of consciousness. It is not necessary to waken the patient every few minutes, a touch on the arm or shoulder and calling the person’s name should be enough to elicit a groan or similar noise that will indicate the patient is rousable. Some patients may start to have another seizure while they are being observed, their breathing may become very shallow, or they may stop breathing during the sleep phase. At this stage, respiratory arrest procedures must be implemented according to local policy.

Unclassifiable seizures
There are many other epileptic seizures that do not fit clearly into either of the above groups. While seizures of whatever type can be frightening, most are self-limiting and will stop without any intervention other than good nursing care. Some seizures recur at frequent intervals, but the patient fully recovers in between. Seizures can also occur in clusters, occurring at certain times; for example, in the case of female patients at the time of their menstrual period.

Status epilepticus
This is defined as ‘a seizure or series of seizures lasting
longer than 30 minutes in which the patient does not regain consciousness’ (Walker and Shorvon, 1999). Emergency care is required. The most severe and life-threatening status epilepticus is of the tonic clonic variety. The patient has repeated or prolonged tonic clonic seizures that last more than 30 minutes. In patients with a history of epilepsy, status epilepticus may be a result of drug changes.

There are two phases in tonic clonic status:

■ Phase one: compensation. Cerebral metabolism starts to change causing cerebral blood flow to increase, which will increase glucose levels. Lactate levels also rise causing severe lactate acidosis. Blood pressure and heart rate rise. The patient will sweat and become pyrexial. As the seizure continues, the mechanics required for cerebral blood flow begin to fail and the second phase starts:

■ Phase two: decomposition. Hypotension develops, continuing to cause a reduction in the cerebral blood flow. With cerebral metabolism not functioning, areas of ischaemia develop, leading to metabolic damage. Cardiac dysrhythmias occur, which cause further complications.

Oxygen therapy should be started very early on in phase one, and patients should have the support of a cardiac arrest team. Patients die of the underlying condition rather than the status itself or its treatments (Shorvon, 2000b). If the status is allowed to continue into the second phase, there is a risk of permanent brain damage.

It is important to remember that when seizures appear to be subsiding in a patient in status epilepticus the situation is becoming worse, as this indicates the start of multiple organ failure and an increasing risk of cardiac and pulmonary arrest.

Causes of death in patients with epilepsy

Although patients in hospital with epilepsy may die from status epilepticus, they may also die from drowning if they have a seizure while having a bath or shower. Before showering or bathing alone, patients in hospital should therefore have a risk assessment form filled in for them by a nurse, which they sign.

Patients with epilepsy may also fall victim to sudden unexplained death in epilepsy (SUDEP). This is defined by Nashef (1997) as ‘a sudden, unexpected, witnessed or unwitnessed, non-traumatic or non-drowning death in patients with epilepsy, with or without evidence of a seizure and excluding documented status epilepticus, in which a postmortem examination does not reveal a toxicologic or anatomic cause for death’.

National initiatives on epilepsy

The chief medical officer highlighted epilepsy in his report on the state of the nation’s health, calling for a government action plan to reduce epilepsy deaths. The plan (Department of Health, 2003) reiterates many current initiatives that are in progress aimed at improving epilepsy services (see Box 1). These include the development of clinical guidelines for epilepsy by the Department of Health.

There have also been developments in terms of multi-agency support for disabled children including the ‘disabled child’ module of which will aim to improve educational outcomes for children with epilepsy (due 2004). There is a 10-year implementation plan for this, which starts in 2005. There is, in addition, a national service framework for children, the ‘disabled child’ module of which will aim to improve multi-agency support for disabled children including those with epilepsy. NICE has also undertaken reviews of a range of new anti-epileptic drugs for children and adults, the results of which are due in October this year.

Clearly, epilepsy has risen up the political agenda in recent years. This is further indicated by the fact that it has been included as one of the 10 disease areas to be assessed as an indicator of quality of medical care in the proposed new contracts for GPs.

Conclusion

Epilepsy is a very complex condition, affecting large numbers of the population. Nurses must be familiar with the different types of seizure and know how to manage them to ensure patients are given appropriate care and medication. Around 70 per cent will be free of seizures if they have the correct diagnosis and treatment.

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