

## CANINE EPILEPSY

Seizuring is a chronic condition characterised by recurrent fitting. Although seizures are always abnormal events, not all are caused by canine epilepsy. If your BGV suffers a seizure, an "electrical storm" in his brain triggers involuntary, uncoordinated nerve transmission and haphazard nerve tissue activity. This nerve-signal burst from the brain is symptomatic of an underlying neurological abnormality and, in turn, it scrambles messages to the muscles of his body. A seizure can be partial - located in one area and infrequent; or clusters of two or more within 24hrs which continue for more than 5mins.

Watching your beloved BGV having a seizure with involuntary contraction of muscles is a shock and upsetting – however there are many causes of seizures. It is not a specific disease or even a single syndrome but a varied category of disorders. Canine “epilepsy” can therefore be broadly divided into:

*Idiopathic (primary) epilepsy* meaning there is no identifiable brain abnormality other than seizures. Most BGVs with idiopathic epilepsy suffer their first seizure between the ages of one and five and these *may* have an inherited basis.

*Symptomatic (secondary) epilepsy* covering seizures that are the consequence of an identifiable lesion or other specific cause.

With the many causes of seizure every animal has its own individual seizure threshold so a fit may be induced given the right set of circumstances.

### **Causes:**

- \* Congenital hypoglycaemia (low blood sugar)
- \* Hypothyroidism (low thyroid function)
- \* Infections causing brain damage (such as canine distemper)
- \* Exposure to or ingestion of toxic substances (such as lead paint, insecticides)
- \* Brain tumours, blood clots
- \* Portosystemic shunts (improperly routed intestinal blood vessels bypass the liver - one of the body's important waste-product detoxifiers)
- \* Vaccinations

### **Stages of seizures:**

- \* *Prodrome – Leading up to the seizure.* A change in behaviour or mood, preceding the seizure by hours or days.
- \* *Aura – Signalling the start of the seizure.* Apprehension, whining, trembling, salivation, affection, restlessness and hiding are all indicators.
- \* *Ictus – The actual seizure.* Intense physical activity, usually lasting up to 3 minutes. The dog may lose consciousness and fall to the ground. He may gnash his teeth, thrash his limbs, drool excessively, vocalise, paddle his feet, urinate or defecate uncontrollably.
- \* *Post Ictus – After the seizure.* The dog may pace endlessly, appear blind and deaf and eat or drink excessively.

### **Types of Seizures:**

- \* Mild (petit mal) can be as simple as momentarily staring into space or upward eye movement.
- \* Moderate (grand mal) occurs when the dog falls down, loses consciousness and extends its limbs rigidly. Paddling of limbs, salivation followed by possible loss of control of bladder and bowels and vocalisation (blood curdling scream) may follow. This may happen for 1-3 minutes and is most often followed by a period of restlessness, pacing, bumping into objects and loss of balance.
- \* Post Ictal period: The dog is conscious but may appear deaf, blind and disoriented. Great care must be taken to prevent the dog from injuring itself at this time.
- \* Status Epilepticus can occur as one continuous seizure lasting 10 minutes or more or as a series of multiple seizures in a short time with no period of normal consciousness intervening. *This may be life threatening.*

\* Cluster Seizures are multiple seizures within a 24 hour period time. *This may also be life threatening.* It is often difficult to distinguish between the two types and veterinary assistance is imperative. Rectal Valium is extremely useful in breaking cluster seizures.

## **The Seizure**

*Generalised, tonic-clonic (grand mal) seizure:* The usually brief “tonic part” session begins with contraction of muscles and loss of consciousness. The dog usually falls to his side with the legs stretched out and head back. This is the “tonic” period. He may be vocal or his face may twitch. He is not in pain and may drool, urinate or defecate. The “clonic” phase leads to the dog having rhythmic movements, clamping jaws shut or jerking leg movements.

Following this, the dog may lay briefly motionless. Eventually he will get up and may appear perfectly normal but typically will show signs of “post ictal” behaviour. These may include disorientation, pacing or running about the house bumping into things, even temporary blindness. This can last from hours to days after a seizure.

However all seizures vary. Some appear as a “tonic” seizure, in which motor activity consists only of generalised muscle rigidity, without the “clonic” phase. Less common are “clonic” seizures with no preceding “tonic” phase; whilst other dogs suffer milder “tonic-clonic” seizures but remain conscious.

*Partial seizure:* This affects only part of the brain. It may remain in one area or expand to the whole brain, causing a “tonic-clonic” seizure. If the seizure starts in only one part of the brain, an underlying disease or injury may be the cause. If it spreads it may also go to other parts of the cerebral cortex producing a sequential involvement of other body parts.

Partial seizures are called “simple focal” seizures when consciousness remains and as “complex focal” seizures when level of consciousness changes. Any part of the body may be involved during a “focal” seizure depending on the region of the brain affected. In a simple partial seizure, the area of the brain that is affected is the area that controls movement. Usually only one side of the face is affected, resulting in twitching or blinking. If the seizure spreads, other parts of the body on that same side will be affected. The dog is usually alert and aware of his surroundings.

A complex partial seizure will start in the area of the brain that controls behaviour. The dog’s consciousness is altered and he may act differently or display irrational fear or aggression. He may run uncontrollably, exhibit repetitive behaviour or snap at the air as if biting at flies.

## **Post Seizure Treatments:**

To reduce post-ictus pacing, as soon as your BGV has regained consciousness and can safely eat, feeding a small amount of vanilla ice cream (a teaspoon for PBGVs; a tablespoon for GBGVs) can restore normal blood sugar levels. A seizure may drop blood sugar levels which may cause more seizures. A seizure to your BGV is like you running the London Marathon so you need to replace lost energy by feeding a full meal after the ice cream and then giving a couple of handfuls of complete feed or pasta or rice with a little butter every hour. Feeding a small amount of carbohydrates hourly will keep blood sugar levels stable. Remember your BGV will be ravenous so you will need to feed very small amounts at a time either with your fingers or in a bowl so he does not inhale the food, which could cause pneumonia. Watch your fingers as you feed him - when dogs are this hungry and recovering from seizures, they can bite you without realising it.

Bachs Flower Essence Rescue Remedy (found in many health food stores) may be useful in some cases when given at this time. Simply put four drops of the Essence into the dog's mouth after the seizure has finished.

Using these suggestions, the post ictal time and severity will hopefully be reduced considerably.

### **Types of Medication:**

This will vary depending on your vet but here are a few:

- \* Phenobarbital (abbreviated pb or phb)
- \* Potassium Bromide (abbreviated KBr)
- \* Phenobarbital and Potassium Bromide
- \* Valium (diazepam)
- \* Dilantin (phenytoin)
- \* Neurontin (gabapentin)

### **Diet:**

This plays an important role in the management of canine epilepsy. Many recommend the importance of giving a complete feed that is preservative-free as some preservatives are known to cause seizures. Many cheaper foods are high in chemical dyes and preservatives. Preferably buy a high quality complete feed made from "human grade" ingredients or, better still, cook for your BGV.

If your BGV is taking potassium bromide, be very careful if you switch dog foods. Ensure the sodium content is the same as the previous food. Change over gradually and slowly, whether it is the same sodium content or different, so that the absorption rate of the potassium bromide remains constant.

### **Environment:**

It is important to keep your epileptic BGV as free from chemical pollution as possible. Think about the environment your BGV is living in. Dogs will sometimes seize only when the lawn is sprayed with chemicals for weeds. How about the cleaner you use for the floor? Some dogs have been known to seize after the floor has been washed with a pine-scented cleaner. There are many things that can lower a dog's seizure threshold. Keep a diary of your BGV's seizures. Note anything you have done or anything that he could have recently come in contact with which could have contributed to seizure.

### **Vaccinations:**

Vaccinations can lower a BGV's seizure threshold and even trigger a seizure. If you feel that this is the case for your BGV, ask the vet to split the jabs and give them separately. Also, if he has a rabies vaccine, ask for this to be given 2 weeks later.

## **TREATING CANINE EPILEPSY**

The ultimate goal in treating canine epilepsy is to restore a normal life for you and your epileptic BGV through complete control of seizures with no side effects. However this is frequently not possible and a more realistic goal is to reduce the frequency and severity of the seizures without creating unacceptable side effects from the medications given. Usually even a well-controlled BGV will have an occasional seizure.

Finding the right medication or combination of medications takes patience. Unfortunately what works for one epileptic BGV may not work for another. Medications need to be individualized to each specific BGV's needs and this often requires trial and error to find the right medication and dose ✱.