Seizures

Seizures are caused by an abnormality in the rostral 1/3 of the brain or the prosencephalon. Seizure usually involve a loss of consciousness, lateral recumbency, and generalized symmetric motor signs. This can involve whole body convulsions which can be sustained (tonic) or e muscle contractions (clonic). Other things that can be observed involve, limb paddling, trembling, chewing and facial twitching. Urination and defecation can also occur during the seizure state. It is also possible for animals to have partial seizures where just jaw chomping or twitching of one area of the body can be seen.

There are essentially 3 causes for seizures which include idiopathic epilepsy, metabolic derangements and structural brain disease. Idiopathic epilepsy is usually seen in dogs between 6 month to 6 yrs of age with no other underlying causes of seizure activity.

Diagnosis is typically made by excluding other possible causes. Metabolic causes include disease such as liver disease, kidney failure, low blood sugar, severe anemia, and low thyroid levels. Structural brain disease can include tumors both benign and malignant, inflammation, infection, malformation and vascular events such as strokes.

A diagnostic work up for seizure disorders can include blood work (complete blood count, chemistry profile, blood gluclose), thyroid levels, chest radiographs, neurology titers for infectious disease, and CT or MRI. Treatment of seizure disorders is typically done with anti-convulsant therapy. The goal of treatment is not to eliminate seizures but to decrease the frequency, intensity, and duration of the seizure. It is not necessary to treat an animal that had one seizure but repeat seizure episodes should be addressed. There are two main medications used to treat seizures: potassium bromide and Phenobarbital.

Potassium Bromide is a once daily oral medication. This drug may cause a self-limiting mild sedation that can last up to 3 weeks. Profound sedation, stumbling, hind limb weakness, etc. are indications for re-evaluation and dose adjustment. Other side effects include increased drinking/urination, increased appetite, anorexia and vomiting. It is generally recommended to have a bromide level checked with us in 4-6 weeks.

Phenobarbital is a twice daily oral medication. Phenobarbital may cause lethargy/mild sedation (or conversely anxiety/agitation) during the first week of therapy. This is usually only transient but the dose may need to be decreased if it lasts longer than 4-5 days. It is also very common for patients on this medication to experience an increase in thirst, urination and

appetite. This medication has the potential for liver side effects and so routine liver value monitoring and Phenobarbital levels are necessary. We usually recommend follow-up with us in two weeks for the first blood level test.

Levetiracetam is another medication that we use commonly . It is a medication that is typically used three times a day but has no side effects. It does not cause any issues with the liver and has no effect on behavior. Patients will experience no sedation or weakness of the back legs. Because of the safety of this drug it is often used in young epileptic patients who may require life long medications or older patients with arthritis or organ dysfunction. It is at therapeutic blood concentrations in 24 hours and does not require blood tests annually.

Any one seizure lasting > 5 minutes or cluster seizures (3 or more within a 24 hour period) warrants re-evaluation as soon as possible and often on an emergency basis. Some of the side effects of uncontrolled seizure activity include extremely high body temperature with multiple organ damage, setting up of new seizure foci within the brain, accumulation of fluid within the lungs, aspiration of saliva or vomitus into the lungs and physical injuries. Even vague signs like distant mentation, starring off into space, focal twitching/tremoring of the face or elsewhere can mean seizure activity is occurring within the brain. Please monitor your pet for signs of recurrent or progressive neurologic disease including: balance loss, wobbliness, stumbling, scuffing of the feet, tremors, twitching, seizures, pacing, circling, wandering aimlessly, getting stuck in corners or under furniture, sudden behavior changes, unexplained aggression, and disorientation.

If your pet has a seizure at home remove any objects around them that could hurt them but do not put your hand in their mouth or try to hold them down. Your pet is not mentally appropriate at this time and may accidentally bite you. Keep a journal of when, what time, duration of seizures and how long it took for your pet return to normal. This will help you monitor your pet's disease process. Any changes that leads to longer or more severe seizures or more time for your pet to return to normal mentation can indicate progression of disease progress.