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Before You Vaccinate Your Pet, Be Aware of Granulomatous Meningoencephalitis (GME)

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By Dr. Becker

Granulomatous meningoencephalitis, or GME, is an inflammatory autoimmune disease of the central nervous system. It comes on very quickly and is life-threatening. The inflammation results in granulomas, which are clusters of cells that form when the immune system tries to build a barrier against foreign substances.

Granulomas can develop in a single location, multiple locations, or throughout the central nervous system. In GME, the cells encircle blood vessels in the white matter of the brain and spinal cord, causing neurologic and ophthalmic symptoms. GME usually occurs in small breed dogs between 6 months and 10 years of age. The disease is more common in females.

Three Types of GME

There are three types of GME:

- Focal, which is limited to one location in the central nervous system
- Disseminated or multifocal, involving multiple locations in the central nervous system
- Ophthalmic, which involves the optic nerve and eye

Dogs can develop more than one type of the disease. With focal GME, the onset is slower, taking three to six months on average, while the disseminated form comes on more rapidly in about

Story at-a-glance

Granulomatous meningoencephalitis, or GME, is an inflammatory autoimmune disease of the central nervous system that comes on quickly and is life-threatening. The condition is most often seen in small breed, female dogs between the ages of six months and ten years. There are three forms of GME, and a dog can develop more than one variety. Onset and symptoms depend on what form the disease takes and its location in a dog's body. In multifocal GME involving several locations within the central nervous system, sadly, survival time is often measured in days once the disease is identified.

Symptoms of GME can include sudden blindness, drowsiness, circling, seizures, behavior changes, weakness in the hind legs or all four limbs, and constant head pressing. Dr. Becker's experience with GME patients is that headaches and perhaps even migraines are another symptom of this devastating disease.

The traditional veterinary community considers GME to be idiopathic, or without an identifiable cause. However, there is also suspicion that the disease may be caused by an abnormal immune response to an infectious agent. Dr. Becker shares the opinion of the holistic veterinary community that GME and many other autoimmune disorders are triggered by certain vaccines. In fact, one of Dr. Becker's patients, a 2 year-old perfectly healthy female Boston Terrier, was diagnosed with GME within a few weeks of receiving the Lyme vaccine.

Diagnosing GME involves a spinal tap, and if inconclusive, an MRI. Often additional tests are also performed to rule out other conditions with similar symptoms. The only way to definitively diagnose GME is with a biopsy of the brain, which is a procedure that can't be performed on living patients.

Traditional treatment, both short and long term, for dogs with GME involves strong immune-suppressing drugs (typically prednisone,

two to six months. The ophthalmic form often shows up as sudden permanent blindness.

The disseminated form of GME has the worst prognosis, with one study demonstrating the median survival time at just eight days after diagnosis.

Symptoms of GME

The symptoms of GME depend on the form the disease takes and its location in the dog's body. The ocular form will obviously affect the eye region and the disseminated form of GME will affect the brain and/or spinal cord. The focal form of GME affects either the brain or the spinal cord.

Common symptoms of GME include blindness, drowsiness, circling, seizures, behavior changes, and weakness in the hind legs or all four limbs depending on where the lesion is located. Another symptom is head pressing, in which an affected dog continually presses her head against a wall, couch, or other stationary object.

I believe headaches or even migraines are also a symptom of this awful disease. And while we can only assume the headaches are terribly painful, in my experience with these patients, there is clearly intense head pain.

Possible Causes of Granulomatous Meningoencephalitis

The traditional veterinary community considers GME to be idiopathic, which means we don't know why it happens. However, there is also suspicion that the disease may be caused by an abnormal immune response to an infectious agent. While most conventional vets don't acknowledge a link between autoimmune diseases and vaccines – especially Lyme, rabies, and leptospirosis vaccines – holistic vets have long voiced concern about what certainly seems to be a cause-and-effect relationship between certain vaccines and the subsequent development of autoimmune disorders in pets.

I had a patient, a female Boston Terrier, who was happy and healthy at two years of age until she received the Lyme vaccine. Over the next few weeks, she started shaking her head and losing her balance. She was stumbling a lot, and she also started vomiting. The balance problem and disorientation worsened over the next week to the point where she was falling down when she tried to walk. She also experienced rear limb weakness, her lymph nodes were enlarged, and she developed a head tilt and tremors.

The neurologist diagnosed her with GME. In my professional opinion, the Lyme vaccine is what triggered the disease in this previously healthy patient.

Diagnosing GME

If your dog is displaying symptoms of GME, you should get her to a veterinarian as soon as possible. Your vet

sometimes combined with a chemotherapy agent). Sometimes radiation therapy is used for certain forms of the disorder, and dogs with the ophthalmic form of GME are treated with topical corticosteroids in addition to oral prednisone. Dr. Becker's approach is to safely reduce and ultimately eliminate most or all medications while providing appropriate supplement protocols depending on the dog's symptoms and overall health status.

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will perform a basic blood panel and urinalysis. A spinal tap will also be necessary, which unfortunately means your pet will require general anesthesia. The spinal tap will look for inflammatory cells and changes in spinal fluid that are characteristic of GME.

Additional testing is usually performed to rule out other conditions with similar symptoms, including viral encephalitis from distemper or rabies, parasitic encephalitis from toxoplasmosis, fungal encephalitis, breed-specific inflammatory diseases, and cancer.

While less costly computerized axial tomography (CAT) scans aren't particularly beneficial in diagnosing GME, a magnetic resonance imaging (MRI) scan can visualize the brain so clearly that it is considered nearly a confirming test for GME. If the diagnosis is still questionable after a spinal tap, often an MRI is recommended.

The only way to definitively diagnose GME is through a biopsy of the brain, which is never done on living patients. Sadly, most confirming diagnoses don't occur until after an animal has succumbed to the disease.

Treatment Options – Traditional and Holistic

Because the disease is thought to be caused by an immune system overreaction, conventional treatment of disseminated GME involves suppressing the immune system with corticosteroids like prednisone. Sometimes a chemotherapy agent like azathioprine is combined with prednisone to lengthen remission time. Needless to say, these very powerful drugs have potentially devastating side effects long term.

If the GME is localized, sometimes radiation therapy is attempted. However, radiation of the head or face can cause abnormal blood clotting, which can lead to seizures. If the eyes are included in the field of radiation, cataracts and dry eye are common side effects. However, a certain percentage of cases of focal GME have reportedly completely resolved after radiation therapy.

If seizures develop as a symptom of GME, medication will also be given to control those.

For dogs with a severe form of GME, immediate intensive care and hospitalization are often required.

Dogs with the ophthalmic form of GME are also treated conventionally with oral prednisone, plus topical corticosteroids in some cases. Any eye disorder like glaucoma that results from the ophthalmic form of GME will also need to be treated.

As you might guess, if you're a regular visitor here, my protocol for treating GME is quite different from the traditional methods I just discussed. Often, drugs must be given initially to control the acute inflammation occurring in the central nervous system. But as soon as your dog is stable, I recommend finding an integrative practitioner who will work to reduce the amounts of drugs needed to maintain a good quality of life for your pet.

At the same time, I recommend digging for an underlying trigger that may have prompted the immune system meltdown. With the GME patient I discussed earlier – the young female Boston Terrier – I suspected her recent Lyme vaccine was the trigger. I first treated her with a homeopathic vaccine detox agent and a natural supplement that helped her body rid itself of the heavy metals, including mercury and aluminum that are often included in vaccine formulations.

Next, I slowly replaced the prednisone she was taking with a custom-compounded plant sterol. I also added several supplements, including B vitamins. I added alpha-lipoic acid, N-acetyl cysteine (NAC), inositol, and l-glutamine, which helped support her peripheral and central nervous system. Over an eight-week period, I tapered her off all powerful drugs and monitored her progress by rechecking her biologic reflexes and bloodwork every few weeks. That's a very important step, because recurrence of the immune-mediated response could have happened at any point, requiring further aggressive treatment.

Fortunately for my little patient, in a matter of months (in fact, before her third birthday), she made a full recovery from her disseminated GME. And unlike most conventionally treated dogs, she's never had to take daily doses of medications, including prednisone or other toxic drugs. Today, at age 11, she's happily enjoying her senior years with her family.

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