

# Encephalitis: Watch Out for This Fast-Moving Brain Disease

It usually comes on without warning, progresses rapidly, and inflames the brain and sometimes other areas. Here are the symptoms that should send you to the vet, and the one test you'll want your vet to perform to confirm diagnosis.

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## STORY AT-A-GLANCE

- Encephalitis means inflammation of the brain, and it may be accompanied by inflammation of the spinal cord (myelitis) and/or inflammation of the membranes that cover the brain and spinal cord (meningitis)
- The disease is either the result of an infectious agent or it is termed "idiopathic," meaning the cause is not known. However, idiopathic encephalitis often has an underlying immune-mediated cause
- Symptoms of encephalitis depend on the area of the brain that is affected, and usually come on suddenly and progress quickly. A confirming diagnosis often involves a spinal tap
- Holistic veterinarians typically use therapies such as homotoxicology, ozone therapy, and herbal protocols in conjunction with traditional treatments for encephalitis patients

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Encephalitis refers to inflammation of the brain. "Encephalo" means brain and "itis" means inflammation. The brain and spinal cord make up the central nervous system (CNS), and inflammatory disease of the CNS is one of the most common causes of neurologic disease in animals.

There can also be inflammation of the spinal cord, which is called myelitis, and/or meningitis, which is inflammation of the membranes that cover the brain and spinal cord, along with encephalitis.

Certain dog breeds are predisposed to encephalitis, including German Shorthaired Pointers, the Maltese, and the Yorkshire Terrier.

## Causes of Encephalitis

There are two basic types of encephalitis: infectious and idiopathic. The infectious form of the disease can be caused by a bacterial, viral, or fungal infection, parasites, immune-mediated disorders, tick-borne disease, and foreign bodies.

We diagnose the disorder of idiopathic encephalitis when we can't find an infectious cause for the disease.

Where a pet lives often plays a role in the cause of encephalitis. In areas of the US where ticks are a problem, tick-borne infections such as Rocky Mountain spotted fever, ehrlichia, and Lyme disease are common causes. In the southwest US, a fungal infection known as valley fever can also be a cause.

Bacterial infections that cause encephalitis are relatively rare in companion animals, but they do occur from time to time. Viral causes include canine distemper and feline infectious peritonitis. When a parasite is involved, *Toxoplasma gondii* is often the culprit.

## **Idiopathic Encephalitis**

When no infectious cause for the disease can be found, idiopathic encephalitis often has an underlying immune-mediated cause, meaning the animal's immune system attacks its own brain or spinal cord.

Types of immune-mediated disease seen in dogs with encephalitis include granulomatous meningoencephalitis (GME), which is seen most often in middle-aged small breed dogs.

Another is necrotizing meningoencephalitis (NME). Predisposed breeds include young to middle-aged Pugs, Maltese, Chihuahuas, Papillons, Shih Tzus, and Boston Terriers.

A third type of immune disorder that can cause encephalitis is called necrotizing leukoencephalitis (NLE), which affects Yorkies, Chihuahuas, and Shih Tzus most commonly.

## **Symptoms of Encephalitis**

Clinical signs of encephalitis depend on the area of the brain that is affected. Symptoms typically appear suddenly and are rapidly progressive.

If the forebrain is involved, there can be seizures, blindness, behavior changes, depression, and circling. With brainstem disease, there can be loss of coordination, head tilting, tremors, and facial paralysis. Other signs can include fever, decreased responsiveness, unequal size of the pupils, or smaller-sized "pinpoint" pupils.

A dog or cat with encephalitis may have neurologic abnormalities that come from a single or focal area of the brain, or multiple (multifocal) areas of the brain. However, whereas many other diseases such as a stroke or brain tumor can cause focal neurologic signs, when the symptoms are multifocal, encephalitis is most often the cause.

## **Diagnosing Encephalitis**

While it's important for your veterinarian to run the usual diagnostic tests on your pet, including blood tests, urinalysis, chest X-rays, etc., it's possible for animals with encephalitis to show no abnormalities on those tests because what's happening in the central nervous system can be totally separate from the rest of the body.

That's why a definitive diagnosis of the disease often involves a spinal tap. The cerebrospinal fluid that surrounds the brain and spinal cord gives direct evidence of what is going on inside the central nervous system. A significant increase in white blood cells in the spinal fluid usually indicates encephalitis.

A spinal tap does carry some risk for certain animals. Your pet may require a magnetic resonance imaging (MRI) or computerized tomography (CT) scan of the brain prior to a spinal tap to look for signs of elevated intracranial pressure that can increase the risk for the procedure. Brain imaging can also be helpful in ruling out other causes of neurologic disease like a brain tumor.

## **Treatment Options**

Treatment of encephalitis focuses on reducing the severity of symptoms your pet is experiencing.

Typically, antibiotics or antifungals will be given if an infection is present. If the pet is having seizures, anticonvulsant medications may be recommended. Low-dose steroid therapy may also be started to treat significant inflammation in the spinal fluid or severe clinical signs.

Traditional treatments for immune-mediated encephalitis usually involve the intentional suppression of the immune system with high doses of drugs for three to six months, and sometimes longer.

Many holistic veterinarians, myself included, have found that incorporating adjunctive therapies such as homotoxicology, ozone therapy, and traditional Chinese herbal protocols that address "heat" and "wind" (the traditional Chinese veterinary medicine diagnosis of encephalitis) have been very beneficial for reducing symptoms and shortening the course of the disease for many patients.

I firmly believe that all pets that have recovered from idiopathic or immune-mediated encephalitis should never be vaccinated again for any reason. These animals should have antibody titer tests performed in lieu of traditional vaccines.

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