

NEUROLOGY

MUE

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Meningoencephalitis of unknown etiology is often times abbreviated as (MUE) and is a category, or group of diseases, that affect the brain and spinal cord as a result of inflammatory cells within the central nervous system. The diseases included in MUE are granulomatous meningoencephalitis (GME), necrotizing encephalitis (NE) and some of the breed specific encephalitides (Pug dog, Yorkie). Each aforementioned type has their own specific changes and characteristics and thus each condition has slight variations in management and prognosis.

MUE is commonly seen in small breed dogs with potentially a genetic basis, however there are reports of large breed dogs developing this disease. There does seem to be a female predisposition and usually affected dogs are over 6 months of age.

The cause of MUE is unknown. We see infiltration of normal tissue (brain and spinal cord) by cells of the immune system. These cells are like the armed military of the body. They go to the area where they are called and release destructive biochemicals with the goal of obliterating infectious organisms and/or dead/diseased tissue. As a result, normal brain or spinal cord tissue is also damaged/destroyed. We do not know where the cells of infiltration come from in MUE. They may come from the circulation or come from local proliferation (or release) of cells that already exist in the central nervous system.

Clinical signs of MUE vary pending on which area of the brain is affected. The signs that are most commonly seen include: seizures, muscle tremors, blindness, head tilt, and abnormal behavior.

The definitive diagnosis is by biopsy, however as this is difficult, presumptive diagnosis can be made by ruling out other causes of encephalitis such as a viral,

protozoal, fungal, or bacterial cause. Cancer can usually be ruled-out by specific testing.

Following presumptive diagnosis by MRI and cerebrospinal fluid (CSF) tap, we often treat with immune-modulating drugs to reduce the inflammation. We typically use corticosteroids and other immune-suppressing drugs that penetrate the blood-brain barrier. Treatment is often life-long and requires multiple follow-up visits to the neurologist. Oftentimes, retesting is needed to evaluate effectiveness of treatment. Specific treatments will be discussed with your neurologist. Treatment improves quality of life while extending disease-free progression.

Again prognosis depends upon the underlying etiology however dogs that respond to treatment after three months tend to have a better prognosis than pets who do not respond within the first three months of treatment.

