

Degenerative Myelopathy

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BASIC INFORMATION

Description

Degenerative myelopathy is a spinal cord condition that results in progressive hind leg weakness and incoordination. The spinal cord is composed of nerve cells and fibers (axons). Nerve impulses are transmitted along the axons of the spinal cord from the brain to the limbs, and vice versa. When portions of the spinal cord degenerate, nerve impulses are not properly transmitted in both directions. Consequently, the legs become weaker, and eventually the dog cannot voluntarily move them. Feeling in the legs is also affected. The degeneration involves primarily the spinal cord in the back region, so the hind limbs of the dog are predominantly affected.

Causes

The exact reason degenerative myelopathy develops is not well understood. An inherited (genetic) basis is suspected. The German shepherd dog is the most commonly affected breed, but any large-breed dog may develop the condition. Other breeds commonly affected include the boxer and Pembroke Welsh corgi. The myelopathy usually occurs in older dogs (older than 5 years).

Clinical Signs

Degenerative myelopathy causes a chronic, progressive, nonpainful hind leg weakness.

- Affected animals become uncoordinated (unsteady) in the hind legs, scuff or knuckle over on those toes, stumble, and have difficulty rising from a down position.
- Eventually, the disease worsens to the point where the dog can no longer walk and drags its hind legs.
- Loss of voluntary control of urination, fecal incontinence, and front leg weakness may occur late in the disease.

Diagnostic Tests

Currently, there is no definitive test for degenerative myelopathy. Routine laboratory tests may be recommended but are usually

normal. A presumptive diagnosis can be made when advanced imaging studies reveal no abnormalities of the spinal cord or vertebral canal. In other words, advanced imaging rules out other diseases that can cause similar signs. The best imaging technique for this purpose is magnetic resonance imaging (MRI), but myelography (x-rays taken after insertion of a dye around the spinal cord) and computed tomography (CT scan) can also be used. Evaluation of cerebrospinal fluid (CSF) taken from a spinal tap may be normal, although sometimes the protein content of CSF is mildly increased.

A DNA test is available through the Orthopedic Foundation for Animals to look for the genetic mutation associated with this disease. The test identifies whether the dog is clear of the mutation, a carrier, or at risk for developing degenerative myelopathy. Unfortunately, definitive diagnosis can be made only by evaluating the spinal cord after death via an autopsy.

TREATMENT AND FOLLOW-UP

Treatment Options

Currently, no proven effective treatment exists for degenerative myelopathy. Treatment consists of nursing care and assisting movement in dogs that cannot walk well. Carts, similar to wheelchairs, are sometimes used to help weak or paralyzed dogs move around.

Follow-up Care

Animals are rechecked periodically to monitor the progression of disease. Urinary retention may predispose the dog to bladder infections, so periodic urinalyses may be recommended.

Prognosis

Long-term prognosis is very poor, because the disease progresses to paralysis over the course of 6 months to several years. Animals are usually euthanized when they become severely debilitated.