



What is Degenerative Myelopathy (DM)?

DM is a chronic spinal cord condition characterized by progressive deterioration of the spinal cord. DM occurs most commonly in German shepherds, Pembroke Welsh corgis, boxers, Rhodesian ridgebacks, and Chesapeake Bay retrievers, but it has also been reported in several other breeds of dog.

What are the clinical signs of DM?

DM typically occurs in dogs older than 5-6 years of age and manifests as weakness in one or both hind limbs that slowly progresses to paralysis of both hind limbs over several months. In time, dogs will eventually become paralyzed in the front limbs and develop fecal and urinary incontinence. The condition is not painful.

How do you diagnose DM?

Degenerative myelopathy can only definitively be diagnosed by identifying classic microscopic changes in the spinal cord on autopsy. DM is strongly suspected in dogs where all other causes for neurologic disease are ruled out. The diagnosis of DM is made with a combination of history, neurologic examination, imaging (x-rays, MRI), and genetic testing. Dogs will have a history of slowly progressive, non-painful, weakness and ataxia (wobbly gait) coupled with muscle atrophy (reduction in muscle mass). X-rays and MRI are done to look for other causes of progressive weakness including cancer and chronic intervertebral disc herniation. Cerebrospinal fluid (CSF) analysis usually shows an increase in protein. It is not uncommon for dogs with degenerative myelopathy to also have chronic disc herniations, and deciding whether the gait abnormality is due to compression from chronic disc disease or degenerative myelopathy can be difficult in some dogs.

Recently, DM has been associated with a genetic mutation in the superoxide dismutase (SOD) gene, which acts as an anti-oxidant. There is currently a genetic test available through the University of Missouri to identify carriers of this genetic mutation. Dogs who carry the mutation may have the disease, however having the mutation does not necessarily mean a patient has DM. The mutation is very prevalent in certain breeds (e.g. 35% of German shepherds are positive for the mutation, but not all have the disease). Dogs who do not have the genetic mutation are very unlikely to have DM. The genetics of DM are very complicated and may differ amongst different breeds of dogs.



A Welsh corgi affected by degenerative myelopathy, weakness in the rear legs.

How do you treat DM?

Unfortunately, there is no proven effective treatment for degenerative myelopathy. The only treatment that has shown any benefit is regular physical therapy to potentially delay the progression of neurologic signs. Various supplements, stem cell therapy, and diets have been suggested, but have never been scientifically proven to be effective.

What is the prognosis?

DM progresses at different rates in each animal, but there is no effective treatment and the prognosis is guarded. Many owners opt to purchase carts to allow their dogs to be mobile when unable to use the hind limbs. Urinary and fecal continence are usually retained until the end stages of the disease.



A German shepherd playing in a lake. The cart is used to support his rear legs.