

Neurology

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Owner Information Sheet – *Degenerative myelopathy*

Background

Degenerative myelopathy (DM), previously termed chronic degenerative radiculo-myelopathy (CDRM), is a cause of progressive, non-painful weakness and incoordination of the back legs in dogs.

The condition typically affects middle-aged and older adult dogs (usually >7 years old), and both males and females can be affected. Medium to large breed dogs are more likely to be affected, with German Shepherd Dogs, Boxers, Chesapeake Bay Retrievers, Rhodesian Ridgebacks and the Pembroke Welsh Corgi most commonly affected. Dogs of any breed, however, can develop the condition.

Cause

Degenerative myelopathy is a neuro-degenerative disease. This means there is a loss of the normal nerve fibres in the spinal cord over time, without a known inflammatory, infectious or cancerous cause. A strong genetic component is suspected in dogs, particularly involving the gene called superoxide dismutase-1 (SOD-1).

Clinical signs (symptoms)

The spinal cord in the mid-lower back is most commonly affected first in dogs with DM. The clinical signs result from a disruption to the messages travelling between the brain and back legs, resulting in slowly progressive weakness and incoordination of the back legs. The weakness is often worse on one side and, most importantly, pain is not a key feature of the condition.

With time, the condition will progress forwards and backwards along the spinal cord, potentially resulting in urinary and faecal incontinence, front leg weakness and eventually problems with swallowing, barking and breathing.

Diagnosis

Definitive diagnosis of this condition is challenging as it is based on looking at a tissue sample from the spinal cord under a microscope. This is usually only possible post-mortem, as a spinal cord biopsy can cause irreversible damage to the spinal cord and permanent weakness.

We therefore base the diagnosis on a combination of physical examination findings and the exclusion of other potential causes of the same clinical signs. These could include a protruding disc or a spinal tumour. An MRI scan is required to exclude these conditions and increase the suspicion for DM in a dog with compatible clinical signs.

A genetic test is available for the condition, but it is important to understand the limitations of this test. If positive, a dog has an increased susceptibility to suffer from this condition at some point in their lifetime, but they may never develop it or may be suffering from it at the time of testing. If negative, this condition is less likely but cannot be completely excluded as some dogs have been found to suffer the disease without the specific gene mutation being detected. We therefore perform the gene test to increase our index of suspicion for DM, with a positive test and a normal MRI scan supporting the diagnosis.

A veterinary neurologist may sometimes advise other tests like the collection of a cerebrospinal fluid sample via lumbar puncture (to rule out meningitis), or electrical nerve and muscle testing.

Treatment

There is no specific treatment for DM. There is a lack of long-term studies investigating the treatment of this condition but it seems that treatment with drugs like steroids will not help to slow progression of the disease.

Intensive physio- and hydro-therapy is the only treatment modality that has been associated with slowing of the disease process. These modalities are known to improve the quality of life of a DM-affected pet and their owner.

Some authors advocate various anti-oxidant treatments such as vitamin E. The bottom line is there is currently no evidence to support the efficacy of these treatments.

Prognosis

Sadly, the prognosis for DM is considered poor. The condition will progress with time despite treatment efforts. Most large breed dogs with this diagnosis lose the ability to walk 6-9 months after diagnosis. Smaller breed dogs can walk for longer and may be easier to nurse. It is therefore important to regularly assess the quality of life of every dog with DM.

If you have any concerns about your pet then do not hesitate to contact your primary care veterinarian or veterinary neurologist.

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