



GPCA Health Committee



Degenerative Myelopathy (DM) in the Great Pyrenees - 2007

Overview:

Canine degenerative myelopathy (also known as chronic degenerative radiculomyelopathy) is a neurological disease occurring with increasing frequency in several breeds, including the Great Pyrenees. The disease is chronic and progressive and is caused by the degeneration of the myelin sheath which insulates the neurons in the spinal cord. This results in a loss of communication between the nerves in the lower body of the dog and the brain and, as a consequence, the dog loses both sensation and control.

Although the cause of DM is unknown, a genetic component has been suggested due to the high occurrence rates in certain breeds (German Shepherd, Welsh Corgi, Irish Setters, Collies, Siberian Huskies, Labrador Retrievers, Belgian Shepherds, Kerry Blue Terriers and Chesapeake Bay Retrievers). A proposed cause is that the immune system attacks this sheath, breaking it down, and has been compared to Multiple Sclerosis in humans.

Symptoms:

The disease usually manifests itself (depending upon the breed) after the age of 5 years. Initially, the back legs are affected causing muscle weakness and loss/lack of coordination. These cause a staggering effect that may appear to be arthritis. This can be apparent on one side (unilateral) or affect both sides. The dog may scuff one or both rear paws when it walks, wobble when walking, knuckle over or drag their feet, and may cross the feet. This scuffing can cause the nails of one foot to be worn down. As the disease progresses, the limbs become weak and the dog begins to buckle at the knees and have difficulty standing. The dog begins to have considerable difficulties walking, and may ultimately lose control of elimination and front limb function. Eventually the back legs become useless, at which point euthanasia may be the only option. Progress of the disease is generally slow but highly variable.

Diagnosis:

DM is a diagnosis of elimination. After the other possible causes for the weakness have been ruled out; e.g., slipped discs, spinal cord infection, tumors, cysts, injuries, stroke, we end up with a tentative diagnosis of DM. The combination of x-rays, myelogram, spinal tap, and a CatScan or MRI will allow a diagnosis of most of the aforementioned diseases. Since there is no genetic test available at the present time, other possible diagnoses must be ruled out. The process of diagnosing DM can become time consuming and costly for the owner. You may wish to consult a certified Veterinary Neurologist (a specialist in diseases of the nervous system). The only way to confirm a diagnosis of DM is to examine the spinal cord under the microscope at necropsy (post-mortem).

Treatment:

There are no treatments or medications which have clearly shown to stop or slow down the progression of the disease. Things that can improve the quality of life for the dog include good nursing care, physical therapy, pressure sore prevention, aggressive treatment of urinary infections, and sometimes carts or harnesses to improve mobility. Exercise has been recommended to maintain the dog's ability to walk. Physiotherapy and hydrotherapy (swimming) may be helpful in maintaining muscle tone. The outlook for a dog with DM is still grave.

The AKC Canine Health Foundation, in cooperation with Scott's House (a Rehabilitation facility located in Menlo Park, California), has recently released a FREE instructional video on caring for affected dogs. The video shows how owners can modify their homes to make it easier to live with a DM dog, reviews products that can help such dogs live more comfortable and functional lives, and explains how physical rehabilitation therapy may help slow the progression of the disease. The video can be downloaded from the CHF website at: <http://www.akcchf.org/video/>. There is also a DVD providing DM care information available through the Canine Health Foundation by calling toll free: (888) 682-9696

Studies / Grants:

Texas A & M Study, funded by CHF: Researchers - Drs. Leigh Anne Clark and Kate Tsai. To define the genetic contribution to DM. Identification of a marker or markers would help breeders as they attempt to breed out this adult-onset condition. Supported, but not funded, by the GPCA Health Committee.

U.C. Davis School of Veterinary Medicine, funded by CHF: Researcher - Dr. Richard Vulliet. To conduct safety trials of adult stem-cell treatment of DM and other diseases. Supported, but not funded, by the GPCA Health Committee.

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The occurrence rate of DM in the Great Pyrenees is unclear, but it is suspected that the rate is much higher than previously thought. If one takes into consideration the symptoms of DM and compare it to the GPCA Health Survey analysis since 1999, which includes the health status of a total of 2187 Great Pyrenees, 249 have reported the health problem of: Spinal problems, Spinal myelopathy, gait problems, weak pasterns, loss of rear function, age related-down in rear, Spondylosis, and arthritis

affecting both the front and rear. As the only means of definitive diagnosis for DM is necropsy, few have had this done after losing their companion.

Please complete and submit the GPCA Health Survey if you have / or have had a dog with this health problem; sufficient data is required to verify the need for participation and funding by the GPCA for the aforementioned studies. The survey can be downloaded from our website www.gpcahealth.org.

References:

Degenerative disease, Merck Veterinary manual (9th ed.)
Listing of Inherited Disorders in Animals -University of Sidney
Degenerative Myelopathy German Shepherd Dogs, University of Florida
www.vetmedicine.about.com
AKC Gazette: Sept. 2007; p.30