Neurology
Fact Sheet

ACVIM Fact Sheet: Fibrocartilaginous Embolism

Overview

A fibrocartilaginous embolism (FCE) is a fairly common disorder in which a piece of fibrous cartilage obstructs the blood supply to the spinal cord. It is suspected that fibrocartilage from the soft gel like center (the nucleus pulposus) of an intervertebral disc enters a vertebral blood vessel, blocks the vessel and causes a "stroke" to the spinal cord. When the flow of blood is reduced or stopped, that part of the spinal cord goes without oxygen and nutrients and the neurons in the spinal cord become dysfunctional and can die off, leading to the clinical signs we see.

Signs & Symptoms

A fibrocartilaginous embolism typically occurs during times of activity, such as running or jumping. The majority of dogs will yelp once, or seem painful at first, but later there is typically no pain associated with this disease. The usual signs are a very abrupt loss of function to one limb, both pelvic limbs, one side of the body or all four limbs, depending on what part of the spinal cord is affected. Most often, one half of the body is significantly worse than the other.

Diagnosis

With any loss of function due to a nervous system abnormality, a referral to a neurologist is always recommended. A presumptive diagnosis is made based on the history and thorough neurological examination. With an acute onset of neurologic weakness and absence of pain, a fibrocartilaginous embolism is the most probable diagnosis. Spinal radiographs are helpful to rule out a fracture or other traumatic cause. The best way to definitively diagnose an FCE is to perform an MRI (magnetic resonance imaging) of the part of the spinal cord affected. This will help to confirm a diagnosis and rule out other causes of acute neurologic weakness. An MRI can also help give a prognosis for the return of function based on the size of the area of "stroke." A CT scan (computed tomography) and myelogram are other tests that can be performed to look for other causes of spinal cord dysfunction, but are less sensitive for confirming an FCE.

Treatment & Aftercare

There is no direct therapy for an FCE as we do not have a way to remove the fibrocartilage from the blood vessels in the spinal cord. We rely on time to allow the spinal cord to make new blood vessels or to recannalize (open up) the obstructed vessel. The immediate aftercare depends on how severely affected your pet is.

In dogs that cannot stand or move their limbs, keeping them rested on a soft, well padded bed, rotating from left to right side every four to six hours is ideal to prevent bed sores. You may have to express your pet's bladder to prevent it from over filling and possibly

developing a urinary tract infection. Some neurologists use an indwelling urinary catheter to help manage the bladder.

To improve strength and coordination, physical therapy is key in the recovery phase. Exercises such as passive range of motion, using an underwater treadmill, wobble board, stretching exercises, and walking in and out through weave poles and over Cavaletti poles.

Corticosteroid use is controversial as there is no proven benefit and there are side effects to these medications.

Some alternative therapies that anecdotally help with improvement are hyperbaric oxygen therapy, laser therapy, and even acupuncture.

Prognosis
The long term prognosis for returning to walking is good in most cases. Most dogs tend to show a slow but steady improvement in the ability to walk over the first 2-6 weeks. Not every dog will improve and that is partly due to the severity of the initial injury.

The chances of having a second FCE in the future are slim.

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medical problem or condition, please contact a qualified veterinary health care professional immediately.

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