Fibrocartilaginous Embolic Myelopathy

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BASIC INFORMATION

Description

The spinal cord needs a proper blood supply to maintain normal function. Any decrease in blood (ischemia) or loss of blood supply (infarction) to a region of the spinal cord causes spinal cord damage and neurologic abnormalities. Blood supply is usually lost when an obstruction (embolus) develops within a blood vessel supplying the spinal cord.

Between adjacent vertebrae are discs (intervertebral discs) composed of a fibrous outer portion (annulus fibrosis) and a gel-like center (nucleus pulposus). These discs act as cushions between vertebrae and provide strength and stability to the spine. Fibrocartilaginous embolic myelopathy (FCEM) occurs when microscopic pieces of an intervertebral disc lodge in the blood vessels that supply blood to the spinal cord. The end result is spinal cord ischemia or infarction.

Causes

The cause of FCEM is unknown. Medium- to large-breed dogs are more commonly affected; however, smaller dogs, such as the miniature schnauzer, Shetland sheepdog, and Yorkshire terrier, can also develop FECM. Rarely, FECM may occur in cats.

Clinical Signs

FCEM causes a sudden onset of neurologic abnormalities, which are dependent on the area of spinal cord affected. The condition is not typically painful; however, some animals cry out when the infarction occurs. Neurologic abnormalities do not usually progress or deteriorate from their initial severity and are usually worse on one side of the body or in one leg.

An uncoordinated gait suddenly develops that may involve all four legs, the legs on just one side of the body, or only the hind legs. The animals may be weak, scuff their feet, and cross their legs when walking. Severe injury to the spinal cord can result in paralysis and the inability to feel a painful stimulus applied to the toes.

Diagnostic Tests

FCEM is initially suspected in animals based on the history and neurologic examination findings. Routine laboratory tests and x-rays may be recommended to rule out other conditions that produce similar signs, but they are usually normal. Magnetic resonance imaging (MRI) is the best test available to diagnose FCEM and to rule out other conditions. Others tests, such as myelography (a series of x-rays taken after injecting a dye around the spinal cord) or computed tomography (CT scan), can be used to eliminate other conditions but are often normal in cases of FCEM. A spinal tap and evaluation of cerebrospinal fluid (CSF) may be recommended to help eliminate other neurologic diseases.

TREATMENT AND FOLLOW-UP

Treatment Options

No specific treatment exists for the spinal cord damage that develops during FCEM. Treatment involves supportive care and allowing time for the spinal cord to heal. Hospitalization is often required. Physical therapy, such as hydrotherapy, may be recommended during recovery. Supportive care is particularly important for paralyzed animals. These patients may develop urinary retention and bladder infections, urine-induced scalding of their skin, skin ulcers, and pneumonia if excellent nursing care is not provided.

Follow-up Care

While the animal is hospitalized, neurologic functions are re-evaluated frequently. If the animal improves enough to be discharged, then periodic rechecks are usually done to evaluate signs of recovery. If the animal recovers the ability to walk and urinate on its own within the first 3 months, then long-term follow-up may not be necessary. If the animal does not regain the ability to walk or remains incontinent, frequent rechecks are necessary.

Prognosis

Prognosis depends on the severity of clinical signs. Many mild to moderately affected dogs improve over time. Recovery may take weeks to months, and some dogs do not return completely to normal. Residual neurologic problems can include inability to walk, weakness, and urinary or fecal incontinence. Any clinical signs remaining after 3-4 months are likely to be permanent. Prognosis is worse in animals that have severe spinal cord injury and do not (from the onset of FCEM) have the ability to feel a painful stimulus in the affected legs.

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