

What is Fibrocartilaginous Embolus (FCE)?

Fibrocartilage is fibrous connective tissue.

An embolus (plural: emboli) is material that travels through the circulation and blocks a blood vessel. Therefore, a fibrocartilaginous embolism is a blood vessel obstruction caused by fibrocartilage.



Another term for FCE is “fibrocartilaginous embolic myelopathy,” with the word “myelopathy” describing a problem with the spinal cord.

Accordingly, an FCE is the acute death of part of the spinal cord, caused by an embolus of fibrocartilaginous material. The material blocks arteries and/or veins in the spinal cord and may originate in an intervertebral disk or the marrow found within a vertebral body. The precise way the material gets into the vasculature is unknown.

Spinal x-rays are usually normal. The most common diagnostic test for FCE is magnetic resonance imaging (MRI).

Is this condition more common in some breeds than others? Does age have anything to do with FCE?

Giant and large breed dogs are most commonly affected; however, the condition has been seen not uncommonly in Miniature Schnauzers, Shetland Sheepdogs and Yorkshire terriers. It appears that FCE may more commonly occur in males than females. Miniature Schnauzers and Shelties are overrepresented among these patients. Most patients are young adults between 3 and 5 years old, but the condition has been recorded in dogs as young as 4 months and as old as 10 years of age.

What causes FCE?

It’s most common for an FCE to occur following a mild trauma or during vigorous exercise, although some cases are reported in dogs that are simply walking. FCE occurs very suddenly, and the affected dogs typically cry out in pain. Most often the pain subsides within a few minutes, and signs of weakness and/or paralysis develop fairly quickly as well. These dogs are generally stable within 12 to 24 hours.

What are the clinical signs of FCE?

Although dogs with FCE typically have a period of acute pain, it is common for a dog with FCE to be relatively comfortable within a short time. In general, nervous system deficits (such as

weakness and paralysis) are localized to one side of the body, and the other side of the body is either mildly affected or completely normal.

Occasionally, the embolic lesion is positioned in such a way that both sides of the dog's body are affected. The level of the dog's dysfunction depends upon what level of the spinal cord is damaged, and the signs may be as simple as incoordination or as serious as paralysis of the affected limbs.

How is FCE treated?

Most dogs who experience FCE are hospitalized in the acute phase, in order to perform diagnostic tests that look for and rule out other causes of acute-onset weakness or paralysis. If the dog is incapable of walking, then intensive nursing care is needed, including keeping the dog on a padded surface and turning them frequently to prevent pressure sores. It is important to encourage these dogs to move and walk as soon as it is possible for them to do so.

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There is no specific medical treatment for FCE. Instead, the emphasis is on supportive care and physical assistance. Using assistive devices like a lightweight harness with a handle along the back, a fabric sling, or a walking cart can facilitate both healing and early restoration of mobility. Physical rehabilitation, including assisted exercises, muscle stimulation and hydrotherapy in an underwater treadmill, can also help these dogs regain strength and coordination.

Once other causes of weakness or paralysis are ruled out, activity should be encouraged to prevent, or at least minimize, muscle atrophy. Most improvement for these dogs occurs within 3-4 months, but every dog is different.

Do I need to worry about this happening again? Are there any other potential complications?

FCE is unlikely to recur. Depending upon the lesion, a dog may have difficulty emptying her bladder, requiring assistance and vigilance to prevent a urinary tract infection. Also, depending upon the lesion, the dog may have stool incontinence.

If the clinical signs of FCE progress during the initial phases of the disease, this indicates progressive destruction of the spinal cord that is not reversible and, unfortunately, euthanasia may be indicated.

Recovery from the weakness or paralysis caused by FCE is slow and gradual and often reaches a plateau. Some dogs appear to make a complete recovery. In any event, your veterinary health care team can assist with guidance and support following FCE.