

Cranial cruciate ligament rupture is one of the most common orthopedic ailments in dogs. The cranial cruciate ligament or CCL is a ligament located within the knee joint or stifle joint. This ligament provides a significant stabilizing force for the knee during walking and running. When the ligament is torn, the knee may be significantly unstable resulting in pain and arthritis.

CCL rupture in animals is a similar injury to the anterior cruciate ligament rupture or ACL tear, which is a well known injury of humans. However, in dogs cranial cruciate ligament rupture is commonly due to a chronic degenerative process that is the result of many different factors.

When a dog experiences such an injury, it often will display a non-weight bearing lameness of the hind limb. If untreated or undiagnosed, this lameness may eventually improve within weeks to months but the animal may undergo a gradual decline later in the course of the disease. This is often due to progression of arthritis in and around the knee joint.

In addition to cranial cruciate ligament rupture, injury to a small cartilage structure, the meniscus, may occur. The meniscus is a paired structure that is also located within the joint. Joint exploration is often necessary to make the diagnosis of meniscal injury.

The dogs most commonly affected are typically middle aged medium to large breed dogs. The diagnosis of a cranial cruciate ligament rupture is made by performing a thorough orthopedic examination and radiographs, or x-rays, of the knee. The radiographs are often performed with the use of mild sedation or anesthesia to minimize stress on the animal.

Once a diagnosis is made, treatment options consist of combined medical and surgical therapies. Although numerous surgical techniques have been described through the years, a couple of procedures have remained in favor among veterinarians and veterinary surgeons.

One of these procedures involves the placement of a large medical grade nylon strand on the outside of the joint to mimic the cruciate ligament. This provides temporary stability while the body creates scar tissue to provide permanent stability for the knee joint.

A second procedure involves a corrective cut in the tibia bone or lower leg bone and then securing the cut bone with a bone plate and screws. This procedure changes the physical forces experienced by the bones in the knee allowing for a stable joint during walking and running.

Both procedures require a period of strict confinement of the dog in a crate or carrier to allow for appropriate healing. In addition, medical therapy and intense physical therapy must be considered to manage the arthritis and improve function of the limb.

When all appropriate treatments are employed, dogs will be provided with the best means for a successful outcome.

This column is provided by the faculty of the OSU Boren Veterinary Medical Teaching Hospital.

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