



Veterinary Medical Center of CNY
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Cranial Cruciate Ligament Injury

Cranial cruciate ligament (CCL) rupture can occur in both dogs and cats, but occurs far more frequently in dogs. Medium and large breed dogs are more commonly affected, with Labrador Retrievers, Rottweilers, and the “Bull” breeds (Bullmastiffs, American Staffordshire Terriers and Pit Bull Terriers) frequently affected. CCL rupture is one of the most common orthopedic diseases seen in dogs.

What is the Cruciate ligament?

The cranial cruciate ligament is one of several ligaments in the stifle (knee) that connect the femur (thigh bone) to the tibia (shin bone). The cranial cruciate ligament plays a huge role in stabilizing the entire stifle. It is referred to as the ACL (or anterior cruciate ligament) in humans.

The medial meniscus may also be injured by cruciate ligament instability. The meniscus acts as a cushion inside the joint. Without the support of the cranial cruciate ligament, abnormal pressure is placed on the meniscus, leading to damage. A torn meniscus can be very painful.

How does the CCL rupture?

The conditions that may predispose a pet to Cranial Cruciate ligament rupture are often present in both knees, and many dogs will rupture both cranial cruciate ligaments.

Acute rupture of the cranial cruciate ligament (CCL) is caused by sudden, severe twisting of the stifle joint. The injury usually occurs when animal jumps quickly from a height (from a deck, for instance), steps in a hole or uneven ground while running, or turns quickly while the paw remains planted. The twisting motion causes the ligament to partially or completely rupture. The meniscus may also be damaged.

Chronic rupture occurs after the ligament has degenerated with age, disease, or structural abnormality. The fibers weaken and partially tear, the joint becomes unstable, and degenerative joint disease develops. A partially torn CCL is likely to eventually tear completely.

What signs will I see if my dog ruptures a CCL?

There are a wide variety of symptoms your pet may display, depending on whether the rupture is acute, chronic, or partial. Limping may be severe or mild, consistent or intermittent. It is always best to address lameness proactively and seek diagnosis from a veterinarian, as cruciate ligament injuries will not heal on their own.

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What will the surgical recovery process be?

Surgical patients at VMC receive detailed personalized instructions regarding post operative care at the time of discharge.

Regardless of the procedure your pet undergoes, your dog will require **eight to twelve weeks of exercise restrictions**.

Failure to follow the instructions for exercise restriction and monitoring detailed in the discharge instructions can result in severe complications, including complete failure of the surgical repair. To avoid complications and the potential for additional surgeries, you must follow our postoperative instructions conscientiously!

Appropriately guided physical rehabilitation, however, is an essential part of a full recovery. A detailed program will be outlined for you and your pet that involves a gradual, controlled increase of flexibility and strengthening exercises. Most dogs are allowed to return to normal activity after 3-4 months, provided the bone has healed completely and muscles have been rehabilitated.

The skin sutures or staples will need to be removed 10 – 14 days after surgery. Recheck appointments will be required in 6 weeks to assess healing. X-rays (radiographs) may be required to assess bone healing if TPLO was performed.

Visit the Physical Rehabilitation page at vmccny.com for more information!

What are the treatment options at VMC?

While no treatment will prevent the development of arthritis in the injured joint, surgical intervention is believed to provide the pet with better overall function. Currently, there are two procedures recommended and performed at VMC.

- **Extra-capsular Stabilization**

This procedure mimics the functions of the cranial cruciate ligament. A heavy gauge suture is placed across the stifle joint as the ligament would normally be placed. This procedure has an excellent outcome in all patients, but particularly in dogs (and cats) weighing less than 50 pounds.

- **TPLO (Tibial Plateau Leveling Osteotomy)**

In this surgical procedure, the angles and mechanics of the stifle joint are changed. The tibia has a natural slope. In a normal stifle joint, the intact CCL prevents the femur from “sliding” down the slope when a dog bears weight. When the CCL is ruptured, the femur slides down the tibia. In a TPLO procedure, the tibia is cut and rotated so that the tibial angle (plateau) is flattened. This prevents the femur from sliding backwards. A plate is applied to the surface of the tibia to stabilize the site. This procedure requires specialized equipment and training. Proper post operative management is critical in TPLO patients since, essentially, a fracture has been created and the bone must be allowed to heal appropriately. The TPLO is considered by many board certified veterinary surgeons to be the most successful stabilization procedure available for dogs of any size, and is particularly successful in large dogs.

What are the potential complications of surgery?

Any time an animal (or human) undergoes anesthesia there is the risk of adverse reactions to anesthesia, including death. Complications associated with surgery and anesthesia are uncommon at VMC, however. Our anesthetic protocols are constantly reevaluated at VMC to ensure we are current with the most modern, safest practices. Blood work and other diagnostic tests(if indicated) are performed prior to anesthesia to identify any underlying medical conditions. A licensed veterinary technician will be dedicated to monitoring your pet’s vital signs and condition for the entire surgical and anesthetic recovery period.

Complications associated with cruciate ligament repairs are uncommon, but include excessive bleeding, infection, fracture of the tibial crest or fibula, and surgical implant failure. It is essential that the post-operative instructions be followed precisely in order to prevent surgical site infections (can be due to dogs licking the incision), failure of the suture or implant (breakage of the suture or TPLO plate) or fracture of the tibia.