



Cranial Cruciate Ligament Rupture

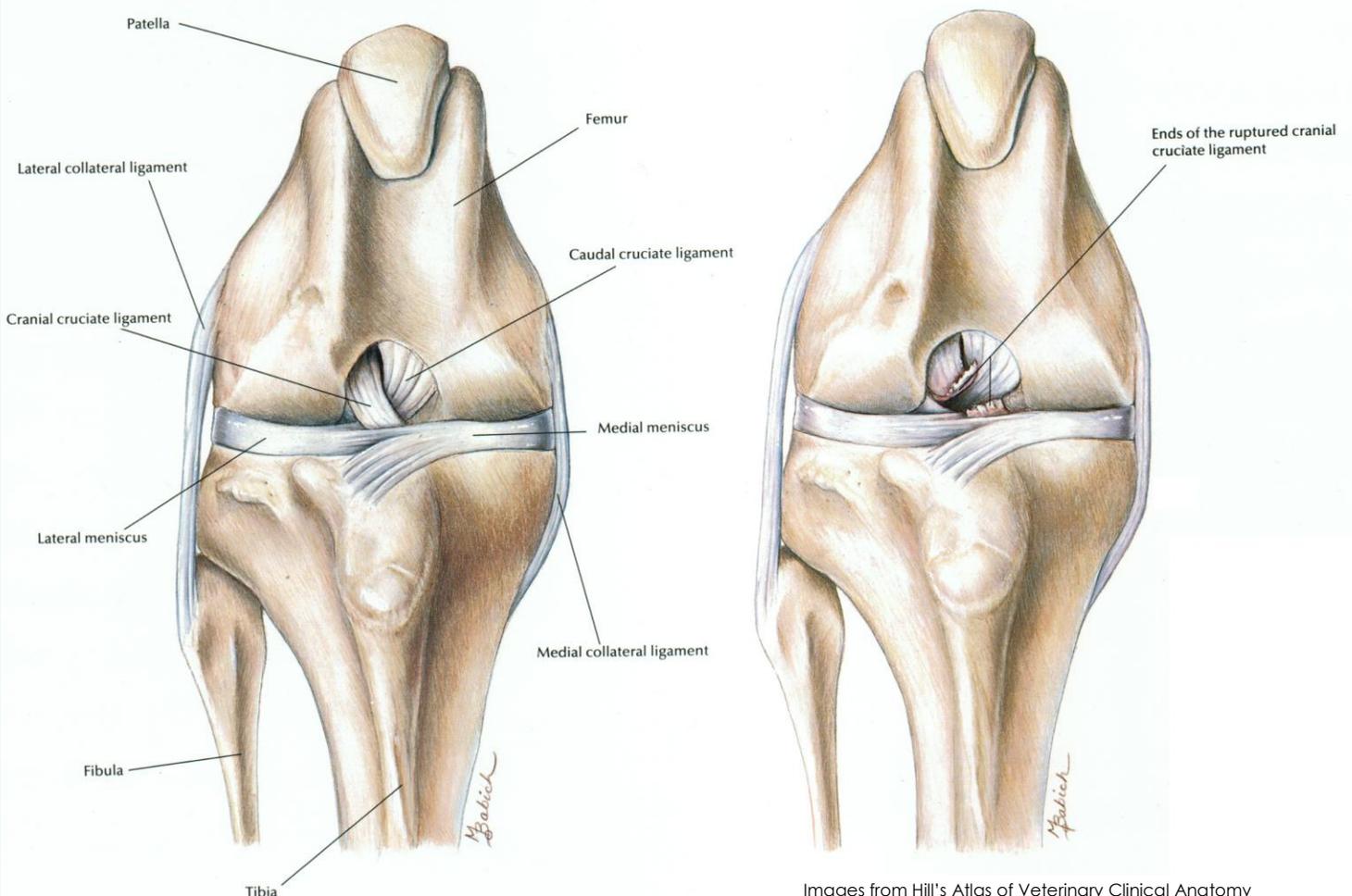
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What Is A Cruciate Ligament?

Cruciate ligaments (CL) are ligaments that stabilize the knee joint by preventing a sliding motion within the joint. The name cruciate (or "X") comes from the crossing of the cranial and caudal (front and back) ligaments inside the knee joint.

Why Do Cruciate Ligaments Rupture?

A Ruptured CL occurs most frequently in large breed, middle aged, overweight dogs. The ligament appears to weaken as pets age, and will rupture as a result of a minor trauma such as a sudden stop or turn. This trauma tears the ligament near the attachment to the joint. Dogs that are very straight through the back legs, such as Huskies, Chesapeakes, Rottweilers, and Akitas (to name just a few breeds) are more susceptible to knee damage than breeds with a more pronounced bend at the knee. It is also thought that dogs with hypothyroidism are more prone to this injury.



Images from Hill's Atlas of Veterinary Clinical Anatomy

How Can I Tell If The Ligament Is Torn?

Animals that have torn the cruciate ligament are suddenly and severely lame. Most pets are reluctant to put any weight on the injured leg, at least for the first few days. A cranial cruciate rupture may be diagnosed by a veterinarian after a physical exam for this lameness. The knee joint (or stifle) is examined for pain and swelling. Stability of the knee is assessed by testing if the lower leg moves more than normal relative to the upper leg; a special test for this is called a Drawer Test because it tests to see if the lower part of the leg slides forward like a drawer. To be absolutely sure of the diagnosis, the muscle must be relaxed. Due to the large size of most of these dogs, sedation is usually necessary to test the stability of the knee, and x-rays are needed to assess any further joint damage.

How Can My Pet Be Treated?

The recommended treatment for this type of rupture is surgical. Surgery stabilizes the knee, improves the use of the leg, and slows the formation of arthritis. Good success is seen with surgery after several months of rehabilitation. Without surgery permanent lameness can occur, although many dogs and cats are eventually able to use the leg. It remains more prone to re-injury without surgery and has a much longer recovery period.

No Surgery: The down side of surgery is there is still a chance that the ligament re-ruptures months, or even years, down the road. There are patients who have to go through the surgery on the same knee more than once. The other option is to put the patient on a good pain medication like Deramaxx for a number of months and allow the joint to form a fibrous scar tissue, that will help to stabilize itself. Mobility of the leg will not be perfect but many dogs are still highly active once the joint has stabilized. Some of our older pets have other medical conditions that make surgery very risky. Sometimes surgery cannot be afforded. We understand these problems and try to work with you to give your pet the best possible care. First we try rest and exercise restriction, just like after surgery. We also start focusing on the weight loss and arthritis treatments. If your pet is still very lame after 4 weeks, we start discussions with you about what is realistic for your pet to endure.

What Surgery Does My Pet Need?

There are 2 main ways to perform this surgery: Extracapsular Stabilization (ECS) and Tibial Plateau Leveling Osteotomy (TPLO). There are newer techniques being developed. Check with the specialist about the availability of newer techniques such as the Tibial Tuberosity Advancement (TTA). The ECS surgery is only recommended for dogs under 35kg (about 75lbs). It can be performed on larger dogs, but with a lower success rate due to the extra forces on the knee caused by the larger size.

This surgery places synthetic sutures on the outside of the knee joint to prevent that excessive sliding movement caused by the ligament rupture. The sutures have been known to break if the patient is not appropriately restricted in exercise after surgery. Infections are also a possible side effect of any bone or joint surgery. The TPLO is recommended on larger dogs and athletes. This procedure requires the lower leg bone (tibia) to be cut to change the anatomy of the knee joint. The bone is then plated with a special bone plate to allow the cut to heal.

What Happens After Surgery?

Strict exercise restriction is necessary for 6-8 weeks after injury and surgery. This is followed by 6 months of no "competitive" activities (jumping, running, rough play)> A crate or kennel large enough to allow room to run around and lie down should be used. Your pet should be taken out on a short leash only to relieve themselves and then returned to the kennel. Cats can be given a larger kennel to accommodate a litter box but not allow jumping. Some dogs may require additional support of a sling around their waist to lessen the strain on the good leg during the recovery period. This is especially important when the ground is icy or the floor is slippery. The doctor can advise when to gradually start increasing the movement of the leg to aid with the healing process. In many cases a gentle physiotherapy program will be discussed with you.

The success of surgery depends greatly on the proper after surgical care at home. Once a patient leaves the clinic they cannot be responsible for the quality of treatment and supervision that it receives. Please contact the specialist if you have any suspicion that your pet is not responding or progressing as planned, or events occur which were not discussed by the doctor or staff.

What Else Can I Do?

Treatment for the arthritis that forms as a result of significant knee injury is important. We highly recommend starting anti-arthritis supplements immediately after injury. This may include

- Weekly injections of Cartrophen for the first month, then once every 3 months.
- Anti-inflammatory medications such as Deramaxx, Metacam, or Rimadyl.
- Pain relief medications include the above medications, but may also include Tramadol or Fentanyl for additional relief.
- Glucosamine and chondroitin are available in a powder or as chewable, flavored tablets – depending on which is easier to give to your pet.

The second recommendation is to get your pet to a lean, healthy body weight. We want to prevent the second leg from becoming injured, if possible.

- Prescription Weight Loss Diets will be recommended
- Regular weigh-ins are recommended to monitor your success
- Diets such as Hills Prescription j/d and Royal Canin Mobility Support are great diets to maintain dogs on. They are low in calorie and contain all the arthritis supplements that your dog would need.
- Moderate exercise is important to keep the muscle mass strong and keep the joints flexible.
- A blood test to rule out hyperthyroidism may be recommended. If your pet is hyperthyroid, and is not supplemented with thyroid hormone, weight loss is going to be a huge problem for your pet, and other ligaments will continue to weaken.

Partial Tears (Knee Sprains)

When the cruciate ligament does not tear completely, steps need to be taken to reduce arthritis and to try to reduce the likelihood of a complete rupture. This pet has all the same signs of a ruptured ligament without the loss of stability. Strict exercise restriction is a must for the first 4-6 weeks after injury, just as if your dog had surgery and the same medications will be started. Every effort must be made for your pet to reach a lean, healthy body weight. Even with all these precautions, many of these pets will progress to a complete rupture over time.

**Thank you for taking the time to read this handout.
Please call our clinic if you have any questions, concerns,
or comments about what you have read.**

Source: modified from Dr. Carla Hicks' Ruptured Cruciate Ligament handout (Moosejaw Animal Clinic)