

Cranial Cruciate Ligament Rupture and Surgical Repair

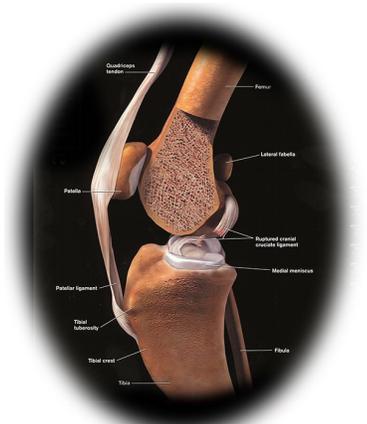
The Cranial Cruciate Ligament (CCL) is a major stabilizing ligament of the knee, similar to the ACL in humans. This ligament is a strong, broad, stranded ligament located inside the stifle (knee) joint. It serves to provide forward stabilization and rotational stability during flexion and extension of the stifle. Hyper-extension or excessive internal rotation of the tibia (shin bone) during heavy exercise is a common cause of a complete tear of the ligament. Occasionally, only part of the ligament will be torn. This partial tear still produces pain and will lead to progressive degenerative joint disease.

The diagnosis of a cranial cruciate tear is usually done via history of acute lameness after exercise, palpation or manipulation of the stifle joint producing excessive drawer movement, and radiographic (xray) evaluation. Because there is evidence to link certain diseases with cruciate tears, especially Cushings disease, bloodwork may be indicated.

Upon injury to the CCL, your dog will typically experience sudden pain, resulting in decreased use of the affected leg. As days goes by, the limp will start to fade and your pet will begin to use the leg. Usually, the limp never totally disappears because the joint remains unstable. This leads to the production of arthritis with progressive damage to the joint cartilages and meniscus.

Surgery to stabilize the abnormal joint motion is the only corrective measure that will slow the progression of arthritis and provide long term reduction of pain. Over the past 50 years, there have been many surgical procedures developed to stabilize the stifle following cruciate tears. Modified Retinacular, Fibular Head Transposition, TPLO, and TTA are a few of the most popular techniques. The most widely performed technique is the extracapsular repair known as the Modified Retinacular (MRIT). This involves anchoring a strong monofilament nylon band to a strong ligament behind the femur (thigh bone) and attaching it to the front of the tibia. The newest technique providing strong fixation for large breed dogs is the "Tight Rope" technique. The method is an improvement to the MRIT procedure, utilizing a new stronger, softer prosthetic material, and providing bone-to-bone fixation instead of ligament to bone fixation in the MRIT technique. Both procedures provide a functional replacement for the unsuturable torn cruciate ligament. Over time, fibrous scar tissue will form around the banding and provide the needed long term support and stabilization. Strict control of activity following surgery is required for the formation of scar tissue and a successful outcome. These are the two procedures I will most often perform because they will provide a high probability of a successful outcome at a cost far below the newer techniques of TPLO or TTA.

Although surgery is the treatment of choice for CCL tears, the joint will never be completely normal. 85% of all patients undergoing cruciate ligament repair will have significant improvement by 4-6 months following extracapsular repair. Most pets will plateau on healing at about 6 months post surgery and reach 85 – 95% return to normal function with minimal pain. Half of the patients will experience some degree of lameness after prolonged heavy exercise and with some weather changes associated with low pressure centers. 50% of all pets rupturing one cruciate ligament will rupture the other leg in time. Obesity plays a major roll in cruciate tears, therefore, maintaining a normal body weight will help prevent damage to the other leg and slow the progression of arthritis.



Images courtesy of Novartis Animal Health US