



HEPBURN VETERINARY CLINIC

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THE CRANIAL (ANTERIOR) CRUCIATE LIGAMENT

The cruciate ligaments are 2 ligaments that run through the stifle (knee) joint forming an X when the stifle is viewed from the side. They are called the cranial (anterior) cruciate (CCL or ACL) and the caudal/posterior cruciate ligament. The ACL runs from the back of the bottom end of the femur (bone just above the knee), to the front of the top of the tibia (the bone just below the knee). The caudal cruciate ligament runs in the opposite direction, from the front of the femur to the back of the tibia.

HOW AND WHY THE LIGAMENT IS TORN

We often hear of human athletes damaging their cruciate ligaments (especially footballers, netball players and skiers), and so can our dogs. This injury is uncommon in cats. The ACL is the most frequently damaged of the two ligaments and can be torn completely or partially. Partial tears will progress to full tears, usually within a year but often more quickly.

This injury is seen more often in large breeds of dog. It can be seen at any age. In young active dogs straight forward trauma to the ligament can occur. This is more likely in dogs involved in intermittent exuberant exercise rather than regular exercise that allows conditioning of the ligaments. It also occurs frequently with dogs that chase balls as they turn suddenly on retrieving the ball. In older patients the ligaments in both legs are weakened by changes associated with aging. If one leg suffers an ACL rupture the older patient may also be more likely to damage the ACL of the other hind leg in the future. In large and giant breeds these old age changes occur earlier. Obesity can often contribute as the ligaments become overloaded. Females are more likely to be affected due to the effects of female hormones on the ligaments.

CLINICAL SIGNS

Dogs with acute (ie. sudden) ACL rupture have severe lameness in the limb at first. Over 3-6 weeks this may become more mild.

Chronic (ie. occurred previously) ACL rupture is seen as intermittent lameness.

Partial ACL tears usually display mild weight bearing lameness associated with exercise that resolves with rest. Later as the ligament tears more and degenerative changes develop these dogs develop a more severe lameness which doesn't resolve with rest.

DIAGNOSIS

Diagnosis may be possible at the initial consultation. However most awake patients are sore and nervous, and tense the muscles of the leg, making it impossible to feel the instability in the joint. This is particularly true for large dogs and dogs with partial ACL tears. Usually a general anaesthetic is needed to allow the veterinarian to make this diagnosis, and in some cases radiographs may be needed.

TREATMENT

Without surgical repair, dogs with ACL lameness never return to pre injury activity levels without recurrent lameness, and over time will develop degeneration and arthritis within the joint. Surgery is therefore recommended for any dog with ACL damage.

Surgery done at this clinic is the Modified de Angelis method, which is an extracapsular repair and suitable for most, but not all patients. Referral to a specialist veterinary surgeon may be recommended in some cases and is always available if you would prefer this option. The most common surgical procedure used usually involves:

- opening the joint to examine the menisci (cartilage cushions in the knee) for damage which can occur as a result of the ACL injury. Removing any damaged cartilage and the torn ligament. Tightening and suturing closed the joint capsule.

- replacing the function of the ruptured ACL with a strong non-absorbable suture material external to the joint

- closing other tissues below the skin tightening at the same time to help strengthen the joint

- closing the skin incision, with or without skin sutures.

Bandaging is sometimes indicated for 7-14 days.

Pain relief medication is given both into the joint, and into the body, to assist recovery and to make the patient as comfortable as possible.

POST OPERATIVE CARE

Three months is the usual recovery time post operatively. Initially restriction is advised for the first 6 weeks, gradually increased to slow, short leash walks on surfaces where your pet can be sure of stable footing. After the first two weeks, on lead swimming is ideal as this is non weight bearing exercise to promote optimal joint function and improve muscle strength.

A course of four Cartrophen injections is given weekly starting 2 weeks post surgery.

This medication helps the healing process in the stifle and reduces the risk of arthritis.

This drug is sometimes repeated monthly, 3-monthly or a repeat course yearly, depending on the development of arthritis, the age of the dog, and other areas where arthritis may be affecting the dog's quality of life eg. hips.

Weight reduction is strongly encouraged in all overweight dogs.

PROGNOSIS

The long term outcome for most patients is good if the rehabilitation schedule is adhered to. Prognosis is influenced by the activity level of the dog, the dog's size and whether the dog is overweight - large, active, overweight dogs have a poorer prognosis. A significant percentage of patients have the ACL in the opposite knee go within 1-2 years, and a small percentage of cases may damage the meniscus within 1-2 years of initial surgery. These dogs develop lameness that may be associated with a palpable or audible click or pop as the stifle is flexed and extended. Further surgery is sometimes recommended in these cases.