

Standard Reconstructive Surgery for the Treatment of Canine Cruciate Ligament Disease- Information for Owners

SURGICAL REFERRAL SERVICE

INTRODUCTION

Your pet has been diagnosed with an injury of the cranial cruciate ligament. This orthopedic disease is the most common that we see in our practice, and it affects dogs of various ages and breeds. It is essentially the same knee injury that is often suffered by people, where it is referred to as ACL (anterior cruciate ligament) injury. While we have traditionally viewed this as a traumatic injury, many canine patients present without any apparent trauma, but with a more gradual onset of vague lameness. Mounting evidence suggests that other factors result in damage to the cruciate ligaments, especially in some breeds such as the Retrievers and Rottweillers.

The recommended treatment for the majority of confirmed cases of this type of injury is surgical reconstruction. This handout describes “conventional” reconstructive techniques aimed at replacing the torn ligament. We are also now offering a more recently developed technique for our medium, large and giant breed patients. Tibial plateau levelling osteotomy (TPLO) is showing promise in terms of improved return to full function and is the subject of a separate handout. If your dog is a candidate for the procedure, this option will have been discussed with you at the time of the appointment.

DIAGNOSIS AND TREATMENT

In most cases, cruciate ligament damage can be diagnosed during a complete orthopedic examination. The most important finding is instability in the stifle (knee) joint, which confirms rupture of the ligament. In some cases the ligament may be only partially torn, or there may be scar tissue preventing abnormal movement of the knee. In these cases, radiographs and other tests may be advised to confirm a diagnosis prior to treatment.

The first step in conventional reconstructive surgery is to inspect the joint for damage and remove any diseased portions of the ligament. In many cases, there is also damage to part of the meniscus, which is a sort of cartilage pad in the joint. In these cases, a portion of this damaged meniscus usually needs to be trimmed and removed. The most involved part of the procedure is surgical reconstruction, which is aimed at establishing stability and function to the knee joint. In most dogs, this will be performed with a combination of procedures. First, a replacement graft is created using some of the tissue that covers the muscle adjacent to the knee. This graft is placed through the knee joint, following the path of the original ligament and is then anchored in place. To provide further support to the repair, a synthetic nylon implant is placed immediately outside the knee joint and anchored in place with stainless steel clips. The aim of this combined repair is to eliminate the instability in the joint and preserve as much normal motion and function as possible.

PROGNOSIS AND POTENTIAL COMPLICATIONS

In most cases, the prognosis after surgery is good, meaning that most dogs return to normal or near normal levels of function. This return to function is a gradual process, with the lameness becoming less apparent over several weeks. The majority of our patients are able to return to an active life with only minor limitations. It is fair to say, however, that the larger and more athletic the dog, the more likely it is that they will not return to normal function with conventional surgical repair. A small percentage of dogs still have significant lameness even though there are no specific complications. After this injury, degeneration of the cartilage (osteoarthritis) is inevitable. While most dogs will compensate well for this, some individuals do not. We currently recommend that all dogs be on a cartilage protecting medication for at least six months to help protect the joint against damage. We will often start this medication after surgery and have you follow-up with your veterinarian for long-term therapy.

Other complications include infection, and breakdown of the surgical repair. Infection occurs in about 7% of cases and is largely related to the presence of a permanent implant in the knee. Most infections are resolved with antibiotic treatment, but removal of the implant is occasionally necessary. Complete breakdown of the reconstruction is relatively rare and is prevented by diligent exercise restriction on the part of the owners.

We frequently see dogs that eventually develop cruciate ligament injuries on their other hind leg. Some studies put the incidence of this type of recurrence as high as 40-50%. This recurrence is even more of a risk in breeds that commonly experience this disease if there are predisposing factors such as obesity, thyroid deficiency, etc. To try to prevent injury to the other knee, we recommend keeping your dog in good physical condition and limiting extremes of activity that include a lot of twisting and turning.

POST-OPERATIVE CARE

The first few months after surgery are critical for a good return to function for your dog. While limited activity is emphasized, it is important that there is a balanced approach between exercise restriction to prevent damage to the knee and controlled increases in activity to strengthen the affected leg. We will outline a protocol for you, but we realize that you will need to integrate our advice into your own household and routine. The answers to some of our *frequently asked questions* (attached) may help you in establishing a routine when your dog goes home after surgery.

SUMMARY

Cruciate ligament reconstruction through a standard, ligament replacement technique usually results in a good return to function, particularly in smaller breeds. While it still remains a valid option in larger dogs due to the lower costs involved, the alternative TPLO procedure is generally the recommended treatment for these patients.

FREQUENTLY ASKED QUESTIONS

How long will my dog need to stay in the hospital?

The usual hospital stay is one night after surgery, with discharge the following afternoon. Because of our association with the Veterinary Emergency Clinic, veterinarians and staff are available through the night to monitor your pet and provide medication for pain control.

How will I get my dog into the car? Will I need someone to help?

With very rare exceptions, dogs are able to walk outside the day after surgery, although they are often holding the affected leg up. Getting them into a car is usually a simple matter of giving them a “boost.” If you are alone and need help, our nursing staff will be happy to assist you to the car.

Will my dog have pain medication?

Patients are usually discharged with a pain-relieving anti-inflammatory drug called Metacam. Metacam is typically administered for 3-4 weeks after surgery. While patients are given narcotic medication for pain the night after surgery, they generally do not need this form of medication at discharge except in special circumstances.

My dog is very excitable. Is there any kind of sedative I can give?

We generally do not discharge dogs with any form of sedative. Sedatives are not safe to give on a long-term basis and, therefore, are not a solution for keeping your pet’s activity limited for several weeks.

Will there be a cast/bandage on the leg? How will I keep my dog from licking the incision?

No cast or bandage is placed on the incision after surgery. Because the surgical repair involves a joint, it is essential that there be some motion of the joint after surgery to prevent it from becoming stiff. Only a minority of dogs attempt to lick or otherwise damage the incision. If we see this happening when the dog is still in the hospital, we may send home a protective (cone) collar to be worn whenever your pet is unsupervised. If you observe any repeated licking at home, contact us as soon as possible for advice. Licking an incision is not nature’s way of healing it, and it can lead to complications such as infection.

Is it OK for my dog to climb stairs after surgery?

This depends on the size of your dog, the number of steps, and the footing on the stairs (hardwood vs carpet). For most large dogs, some climbing of stairs is acceptable. We usually suggest keeping it to a minimum for the first 1-2 months, and ideally someone should be present to ensure the dog does not run up the stairs. In some cases, we will advise using a sling to support the hindend for climbing stairs. Small dogs can be carried up and down stairs for the first 1-2 months.

Does my dog need to be kept in a cage?

In general, cage confinement is not necessary, but in some cases it may be the best solution for you. Larger dogs can have some freedom within the house as long as running, playing, jumping, and access to stairs are limited. If there are slippery floors such as hardwood, you may want to consider placing a runner carpet in areas where your dog will spend a lot of time.

Do I really have to take my dog out on leash every time?

We strongly recommend leash activity only for the first three months. Even if your dog normally just walks around the yard, consider if there is any chance of him chasing a squirrel, or running up to a fence when the neighbours are out. Any kind of sudden explosive activity in the first several weeks could put the entire surgical repair at risk.

Do we have to keep the dog separate from our other dog?

If there is any chance that another dog could entice the patient to play or to engage in other prohibited activity, the two dogs should only be together under supervision.

I had my knee scoped when I injured it; is the surgery done with a scope?

While arthroscopy (scoping of joints) is a growing area in canine surgery, there has not been a reliable method of arthroscopic reconstruction developed for dogs.

What about physiotherapy?

Since most dogs are bearing some weight within 2 weeks of surgery, there are usually no physiotherapy instructions other than the gradual increase in walking activity over several weeks. However, additional physiotherapy techniques have been shown to speed recovery. If you are interested in this and feel that you can devote even more time and energy than we have already asked of you, feel free to ask us to go over some of these techniques with you.

How long will it be before my dog can run again? Will he eventually be able to run and play like before?

Some introduction of short, supervised jogging/trotting is usually fine about three months after surgery. Full running should be avoided until four months after surgery, and even then should be introduced only in small amounts. Our goal is to have pets return to normal levels of function in most cases, but there may be some limitations due to the osteoarthritis. Also, dogs that have cruciate ligament disease in both knees, or other orthopedic or spinal problems affecting their hind end, are more likely to have limited activity.