



# BRANDYWINE VALLEY

## Veterinary Hospital & Surgical Referral Service

Compassionate Pet Care through Client Communication

[www.brandywinevalleyvethospital.com](http://www.brandywinevalleyvethospital.com)

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### Frequently Asked Questions about Cruciate Lameness in Dogs

#### **1. What is the Cranial Cruciate Ligament?**

Commonly referred to as the Anterior Cruciate Ligament (ACL) in human medicine, the Cranial Cruciate Ligament is a thick band of tissue that connects the two major bones of the knee, or stifle, together. More specifically, the Cranial Cruciate Ligament connects the back of the Femur bone to the front of the Tibia bone. Instead of a single sheet of tissue, the Cruciate Ligament is comprised of many individual fibers. When intact, this ligament prevents excess motion between these two bones. Partial tears and complete rupture result in pain, swelling, lameness, and arthritis.

#### **2. Why did my dog rupture this ligament?**

The most common reason this ligament tears in human medicine is trauma (think football!) In veterinary medicine, the cause is not completely understood, but it is felt trauma has a very minor role. Research shows that even dogs with excessive Tibial Plateau Angles (abnormal conformation of the knee joint) do not always tear their Cruciate Ligament. Some researchers think that in the healthy knee, the muscles of the knee control the majority of movement. It is the Cruciate Ligament's job to serve as a safety check to prevent movement in certain directions. If there is a change in the muscular control of the knee (perhaps secondary to spinal or hip disease), the Cruciate Ligaments are put under additional stress. Eventually this additional stress leads to deterioration and fraying of the ligaments. Most dogs present to veterinarians with Cruciate Ligament damage are partial ruptures which have progressed to full ruptures.

#### **3. Why does my dog need surgery?**

Although rest may temporarily improve a dog with a partial Cruciate Ligament tear, dogs with full tears always require surgery for optimum function. When the ligament is ruptured, the shearing force inside the joint remains unchecked allowing the Femur to slide backward along the Tibial plateau. This abnormal motion may also commonly damage the shock absorbers, (menisci), of the joint. The end results of all this wear and tear on the joint is arthritis and constant pain. Surgery is our only means of minimizing this abnormal motion and decreasing our pet's pain.

#### **4. Why do some doctors do different procedures?**

Veterinarians have been treating dogs with Cruciate Ligament damage for years. Dr. Moss has been doing cruciate surgery for over 35 years. Through research, we have begun to understand more about why this condition occurs, but unfortunately we are still not able to repair the joint as it was designed by Mother Nature. Therefore, as research has been performed, procedures have been developed to overcome the limitations of prior techniques. This does not mean that surgeries developed 20, 10, or 5 years ago are no longer useful, only that we as veterinarians are always striving to improve our patient's quality of life.

#### **5. What are the types of procedures currently performed to repair a ruptured Cranial Cruciate Ligament?**

Presently, most doctors perform a lateral suture procedure, a TPLO, a TTA or a Tightrope cruciate repair.

#### **6. What are the pros and cons of the TTA Procedure?**

The Patellar Tendon is one of the strongest ligaments in the body. The Quadriceps muscles are attached to the Patellar Tendon, and are one of the strongest muscular groups in the body. Research has shown that the Patellar Ligament can stabilize the joint, if it is at a 90 degree angle to the Tibial Plateau. In advancement of the Tibial Tuberosity, we can overcome the abnormal front to back motion of the tibial thrust and decrease the tendency for internal rotation. The TTA procedure was designed with this principle in mind. Since its development, current thought supports that this procedure produces less arthritis in the joint and is the treatment of choice of many surgeons. The TTA repair may be done on any size dog, but is usually done on dogs over 40 lbs.

#### **7. Why do some surgeons perform the TPLO surgery when the TTA has been shown to be a better procedure?**

First of all, there has never been one procedure which has been universally accepted as better than another. Presently, the TTA appears to be our best choice in repair of a ruptured Cruciate Ligament, but years from now this may not be the case. Secondly, as the TPLO is a patented procedure, a surgeon must take classes held by the company who owns the patent. The surgery requires the purchase of specialized equipment, which in turn requires a substantial investment on the part of the surgeon. These factors make it hard to give up a procedure that you have invested time and money in, especially when neither procedure has been shown to be the clear winner. Finally, many surgeons perform the TPLO because simply put it is still a good procedure. Although TTA research is encouraging, it does not mean that the TPLO is wrong. Additionally, for some dogs, older procedures also produce good results. Keep in mind, in the future we will likely still be performing different procedures.

## **8. What size of dog can the TTA be performed on?**

The TTA procedure does not discriminate on the basis of size! All dogs are eligible! TTA implants may accommodate dogs ranging in size from 10 pounds to over 120 pounds! The TTA is the procedure of choice for Dr. Moss for dogs 30-40 lbs and over.

## **9. Will my dog have the same problem in its other leg?**

There's a very good chance that the same underlying reasons your dog damaged his Cruciate Ligament are also taking shape in his other leg. Statistics show that 35 to 40 % of dogs who have already damaged one cruciate ligament will tear the other.

## **10. How do I protect my dog from damaging his other Cruciate Ligament?**

While we may not eliminate all the causes for Cruciate Ligament Rupture, there are some things we can do to help. Obesity is a huge risk factor for cruciate damage. Weight reduction will help decrease wear and tear on your dog's joints. We are happy to help you learn how to "body condition score" your dog. Body condition scoring means assessing each dog's breed, frame, and size (instead of weight) to determine how much they should consume. Nutritional supplements containing glucosamine, MSM, and chondroitin are helpful in decreasing inflammation and slowing the progression of arthritis. Finally, moderate activity will enable your dog to build the muscular support it needs to help maintain the stability in it's joint. Remember, most dogs are "weekend warriors" who sleep on the couch all week. Therefore, all exercise programs need to be carefully tailored to an individual's fitness level to prevent additional damage to an already stressed ligament.

## **11. What is the newest technique for the ruptured cruciate disease?**

The newest procedure is named the Tightrope cranial cruciate repair procedure which uses a synthetic orthopedic material of high tensile strength. The material is threaded through strategically placed bone tunnels in the femur and the tibia. It looks like a promising procedure. The advantage is that this procedure is faster and less expensive than the TTA. It does have a higher complication rate and is too new (only 2 years old) to give long term results. For example, will the orthopedic implant last for 5 years or longer? Will it become a problem with implant rejection in later years? The titanium used in the TTA, is totally inert to the body and will never cause a reaction.

## **12. What is arthroscopic surgery?**

Arthroscopic surgery is a highly sophisticated very minimally invasive technique where a surgeon puts a scope into the joint through a tiny incision. The scope is connected to a camera which projects images on a television screen. The scope can see forty times better than your eyes. Imagine a piece of thread blown up forty times larger than its normal size and projected on your TV screen. This procedure allows us to visualize diseased areas of the joint and deal with them utilizing tiny, minimally invasive instruments. The results are remarkably decreased pain after surgery, better surgical visualization and increased post operative patient mobility. The disadvantage to arthroscopy is that the equipment is very expensive and it takes hours and

hours of advanced training to use it. Dr. Moss has been doing small animal arthroscopy for over ten years. Brandywine Valley Veterinary Hospital was one of the first fifty practices in the USA to offer small animal arthroscopy. All of our cruciate surgeries and other joint surgeries are done with this minimally invasive technique. You can see actual photographs of your pet's joints. It is fascinating.

### **13. Why is there such a difference in price between the different surgical techniques for cranial cruciate disease?**

One of the biggest problems for the owners of the affected pet is that quite honestly it is impossible to compare surgeries "apples to apples". Each procedure has its pros and cons. Sophisticated arthroscopy orthopedic implants and surgical training are very expensive hence that cost is reflected in the price. Every surgeon has a preferred procedure which may require equipment not used by another hospital.

### **14. So how do I choose which procedure to have done on my pet?**

The answer to this question relies on many different factors. Age , weight and lifestyle of the patient, lifestyle of the owner eg.( I want my dog to jog with me), patient and owner post operative compliance, disposable income, pet insurance and other household pets. By Taking all of these factors into account the surgeon and owner, together can chose the best procedure to use for that particular patient. This is accomplished through advice from me, the surgeon, and you the owner. Together we will formulate a plan that is best for the pet. We call it shared decision making.

***Dr. Moss is always happy to answer your questions about your pet's lameness, treatment and surgery options. Please contact him at 610-384-0731.***