



## **Cruciate Surgery- Tibial Plateau Levelling Osteotomy - TPLO**

### **What is Cruciate Disease?**

Cruciate rupture is the most common orthopaedic condition of dogs. The cruciate ligament is responsible for maintaining stability of the stifle (knee joint). When it ruptures, the femur (thigh) and tibia (shin) bones slide forwards and backwards over each other when the dog attempts to weight bare. This causes pain and lameness. In contrast to their human companions, it is recognised that dogs most commonly suffer from a gradual degeneration of the ligament before rupture occurs. Lameness can be experienced before rupture occurs by the increased movement in the joint (from the laxity of the ligament) contributing to degenerative joint disease (leading to osteoarthritis) in the stifle.

### **Is surgery necessary?**

In most cases, yes. However, it is worth discussing treatment options with your vet. There is some evidence that small dogs with cruciate rupture will return to satisfactory function if they are strictly rested for 6-8 weeks with physiotherapy support from a member of the ACPAT physiotherapist Association. However, we do not know if this may increase the progression of osteoarthritis in the joint. Surgery is usually considered the gold standard approach to dogs of all sizes with cruciate rupture.

### **What is the meniscus?**

The menisci are 2 C-shaped fibrocartilages found in the stifle joint. They function as shock absorbers. When the cruciate ligament is ruptured, the sliding motion of the unstable stifle joint can crush these cartilages between the femur and tibia. This is an important source of pain and lameness in these dogs. When we perform cruciate surgery, we carefully assess these cartilages and remove torn areas. Unfortunately, the meniscus has very little healing capacity so it is necessary to remove any portions that are damaged. We always preserve as much as possible as removal of the meniscus (meniscectomy) can increase the progression of osteoarthritis.

### **Why a TPLO?**

There are several leading surgical options for the treatment of dogs with crucial rupture - Tibial Tuberosity Advancement (TTA), Tibial Plateau Levelling Osteotomy (TPLO), Cranial Closing Wedge (CCW) or Lateral Fabello Tibial suture (LFTS). TTA, TPLO and CCW are considered dynamic repair techniques as they work by neutralising the forces acting on the joint that result in instability. LFTS is a static repair technique as it acts by stabilising the joint.

A TPLO is a particularly useful technique in larger dogs with cruciate failure. Some breeds of dog are particularly prone to cruciate rupture (Rottweilers, Labradors and Retrievers). Due to the extra weight and forces acting through the stifle joint, static stabilisation methods usually fail. The aim of the TPLO surgery is to reduce the Tibial Plateau Angle (TPA) by rotating a fragment of bone at the top of the tibia. A plate and screws are applied to allow the bone to heal.

Our visiting surgeon, Katie Lenton of South West Surgical Referrals uses locking plates and screws; these are more expensive but allow the plate and screw to be locked together increasing the stability of the construct and facilitating rapid bone healing.

### **Post operative care**

It is very important that your dog doesn't overdo it in the 6-8 week postoperative period. After the initial swelling and bruising has subsided, their leg will feel much better, and they may think they can run around as much as they like. However, it takes 6-8 weeks for the bone to heal and, as such, it is very important to restrict your dog's exercise. We recommend room rest only, no stairs, jumping or playing. 5-minute walks on a short lead to perform toilet functions is all that is required.



### **Will my dog return to normal function postoperatively?**

Results following this procedure are good, with a good to excellent outcome in 90% of cases. However, it is important to remember that cruciate ligament rupture, with or without surgery, results in degenerative disease of the stifle and you should expect to see occasional lameness after exercise. It is important to keep your dog's weight under control as excessive weight gain can result in much more lameness.

There are several treatment options for osteoarthritis in dogs – Please see our article on Osteoarthritis on our website.

### **Complications**

With any surgical procedure, complications can arise. The complication rate for cruciate surgery is around 10%. The most common complication includes a late meniscal injury - this is post-operative damage to the meniscus and usually necessitates a second surgical procedure to remove the torn portion. Infection can occur despite our best efforts, and this may need treatment with antibiotics or even implant removal after 6 months. Rarer complications include implant failure and tibial fracture, which will require a second surgery to address. It is also worth remembering that cruciate ligament failure can occur in the other stifle in up to 50% of dogs within 12 months.