

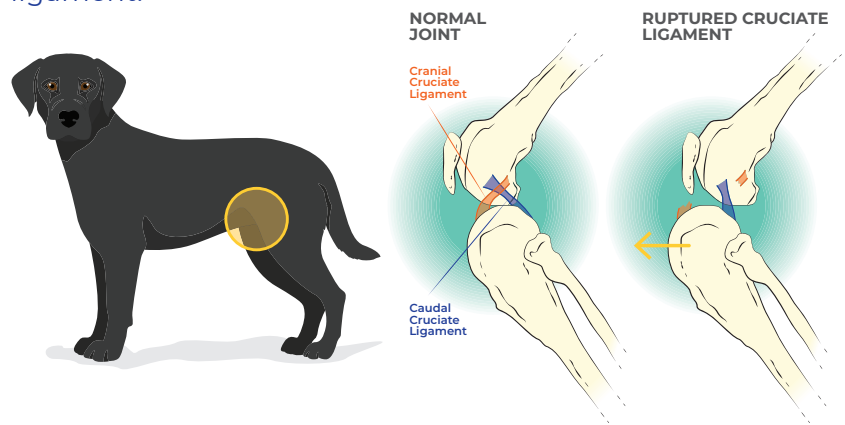


Tibial Plateau Levelling Osteotomy (TPLO) surgery for cruciate ligament disease



Anatomy

There are two cruciate ligaments present in the knee or stifle joints of dogs. There is a cranial ligament and a caudal ligament.



Function

The cranial cruciate ligament is the ligament that usually ruptures. Its function is to prevent over extension and limit internal rotation of the knee joint. The ligament also stops the tibia moving forward relative to the femur abnormality when your dog weight bears on their limb.

Symptoms

Lameness is the main sign seen after a cruciate rupture and it may appear suddenly or be gradual in onset. Improvement in lameness may be seen initially but the dog will usually remain with a limp. In some cases there may be a history of trauma such as a road traffic accident or catching the foot on a fence or in a rabbit hole.

Types of cruciate rupture

Partial ruptures

In young large breed dogs partial ruptures of the cranial cruciate ligament are commonly seen and these will usually go onto complete rupture.

Traumatic ruptures

Traumatic ruptures can happen to any dog of any age and usually there is a history of landing awkwardly or catching the foot in a rabbit hole.

Arthritis associated

A rare form of cruciate rupture is seen secondary to inflammatory arthritis (e.g. Rheumatoid).

Complete rupture in middle aged dogs

The most common scenario is cruciate rupture in a middle aged dog that can occur during normal exercise. The ligament degenerates with age therefore weakening and being more prone to rupture.



Clinical examination

When examining the knee of a dog with a long standing cranial cruciate ligament rupture the joint is not usually very painful, there may be a thickening of the soft tissues inside of the knee joint and there will probably be some muscle loss around the thigh. The integrity of the ligament can be difficult or impossible to assess in the conscious dog especially if your dog is tense.

Investigations

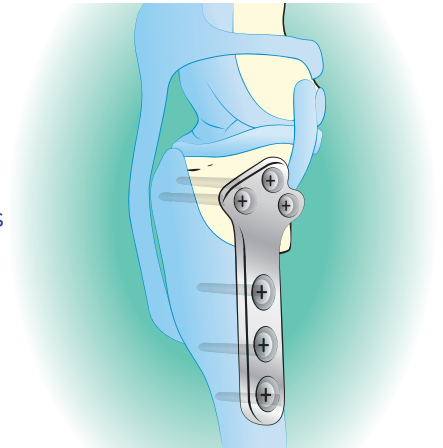
To investigate the lameness patient are often sedated or anaesthetised for palpation and radiographs. Signs on radiographs can include classic osteoarthritic changes and a joint effusion (an increase in the normal volume of joint fluid).

Tibial plateau levelling osteotomy surgery

Tibial plateau levelling osteotomy (TPLO) surgery is an operation that is designed to alter the dog's conformation slightly to prevent instability of the knee joint whilst walking and running. The operation was designed and developed by an American veterinarian Dr Barclay Slocum in the 1980's and many tens of thousands of dogs have had the operation worldwide.

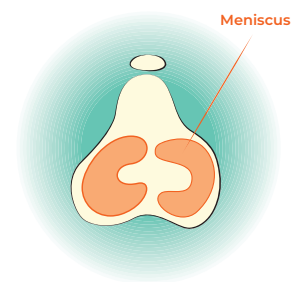
The current evidence base in the published literature on management of cruciate ligament disease supports the best clinical results to be achieved with TPLO surgery - it is anticipated that ~95% of dogs will achieve good-excellent outcome with this surgery. As such, this is the treatment of choice we would likely recommend for your dog.

The TPLO surgery is a technically difficult operation that involves cutting the bone near the knee joint and then rotating it and securing it in a new position with a bone plate and screws. Dogs however seem to show remarkably little discomfort after surgery. They will often use the leg within a few days after the operation. Use of the leg should continue to gradually improve after surgery with often complete return to normal function by approximately 6 months.



Menisci

There may also be damage to the meniscal cartilages (these are pads of tissue that sit between the bones of the knee and act as shock absorbers). Damaged menisci are painful, and the damaged portion is removed. If the meniscus is undamaged, then meniscal tear can occur in the future- however the incidence of this appears uncommon (3-5%) of cases.





Symptoms

Minor complications include some swelling (either around the knee joint or ankle joints, or both), discharge from the operation site for a few days post-operatively, and patella ligament strain (often due to over exercise). More major complications include infections, screws pulling out of the bone, breakage of the bone where the patella ligament attaches. The incidence of major complications is rare with careful postoperative management.

Post-operative care

If your dog has TPLO surgery then you will be given a comprehensive sheet detailing the care needed after surgery. However to summarise here, so you are aware of what it involves, because your dog will have had his or her bone cut then it is very important that exercise is strictly limited and controlled. How restricted will depend very much on your dog's temperament. Generally 3-6 weeks of cage rest are recommended postoperatively. Radiographs are performed at 6 weeks post op. Thereafter incrementally increasing exercise is normally recommended depending on how the bone is healing.

Diet

If your dog is overweight, it is essential that you try and diet him or her to reach an optimal weight as discussed with ourselves or your own veterinarian. Maintaining a patient at optimum bodyweight will slow the rate of progression of osteoarthritis in the knee joint that will subsequently develop in all dogs that have cruciate ligament disease.

