



Sevenoaks
Veterinary Surgery

Swanscombe
Veterinary Surgery



Meopham Veterinary Hospital

CRUCIATE LIGAMENT DISEASE – CLIENT INFORMATION SHEET

What is the cranial cruciate ligament?

The cranial cruciate ligament (CCL) is a band of tough fibrous tissue that attaches the front of the femur (thigh bone) to the back of the tibia (shin bone). It prevents the femur moving backward relative to the tibia and helps to prevent over-rotation (inward) of the knee joint.

What is the cause of cruciate ligament disease in dogs?

In most cases cranial cruciate ligament disease is caused by a slow degeneration or fraying of the ligament (similar to fraying of a rope). The exact cause of this is not known but there appears to be some genetic factors linked to the development of the disease. We see it more commonly in certain breeds: Labradors, Rottweilers, Boxers, West Highland White Terriers and Newfoundlands; however it can also be seen in other breeds. Unfortunately if a dog develops it in one knee it has, approximately, a 50% chance it will develop it in the other knee. Other factors including obesity, individual conformation, hormonal imbalances and certain inflammatory conditions of joints may also play a role.

What are the signs of cruciate ligament disease?

Limping (lameness) is the most common sign of CCL disease. It may appear suddenly, have a slow progression or be intermittent in other cases. Affected dogs may also sit with their leg out to the side.

In some cases it affects both knees at the same time and this may make it more difficult to diagnose. Dogs may find it difficult to rise or stand and can have a 'pottery gait', these cases can be confused with spinal disease.

What is happening inside the affected knee?

The fraying of the ligament causes inflammation within the knee and at the time of diagnosis osteoarthritis is often already present. Along side the painful lameness caused by the inflammation, a mechanical lameness develops due to the shape of the tibia. The top of the tibia has a backward slope, when the CCL is intact it helps to keep the femur in the right position on the top of the tibia but when the ligament is diseased the femur can slide backward on this slope causing instability within the knee.

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How is it diagnosed?

Diagnosis is based on clinical examination and radiography of the affected knee. In most cases the surgeon will demonstrate laxity in the joint by specific manipulations. Diagnosis can only be 100% confirmed by directly visualizing the ligament at surgery.

How is it treated?

There are several different treatment options available. At The Meopham Veterinary Hospital we perform a Tibial Plateau Leveling Osteotomy. A crucial part of the surgery is inspecting the inside of the joint, both the ligament and the cartilage are assessed. If the ligament is completely ruptured the loose ends are removed. When the joint is unstable the bones start to rub on the cartilage in inappropriate ways and this can cause tearing of the cartilage. This can be present at the time of surgery or can develop afterwards, which is a common cause of failure to improve or improving then deteriorating after surgery.

The surgery is not the only part of treatment, to achieve the best results a strict exercise and rehabilitation regime is also essential. Recovery can take 3-6months.

Tibial plateau leveling osteotomy

This surgery involves a semi-circular cut in the top of the tibia, the segment is then rotated to change the slope of the top of the tibia. This prevents the femur 'sliding' off the back of the tibia. The bone is then fixed in place with a plate and screws in the new position

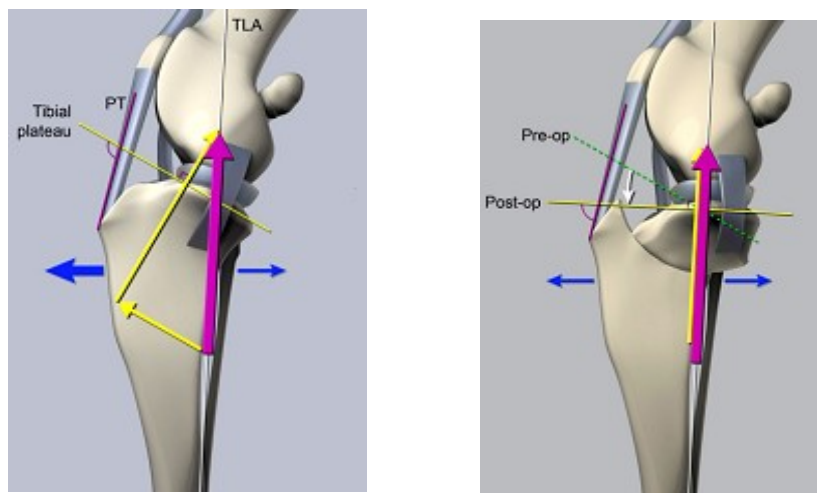


Figure 1 Taken from lecture notes from Depuy Synthes Course by Michael Kowaleski

What are the advantages of a TPLO over other techniques?

Recovery after TPLO surgery has been shown to be advantageous over other techniques with a shorter recover in the short-term and better long-term outcome.

What are the success rates?

As a general rule approximately 90% of dogs will return to normal activity after a TPLO.

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What are the potential complications?

All surgeries carry some potential complications. The 2 most common complications after surgery are infection and mechanical complications. Infection is treated by using antibiotics; in some cases surgical irrigation is necessary and in the worst case scenario the implants may need to be removed.

Mechanical complications occur when the dog stresses the plate and screws too much before the bone has healed, which is normally around 6 weeks. Post-operative radiographs are taken at 6 weeks to confirm the healing. In some cases mechanical complications require surgical revision. A rare complication of late injury to the menisci (cartilage).

Post-operative care and recovery

The first 6 post-operative weeks require the greatest degree of restriction in the dogs' activity levels. Animals should be confined to one room or a cage and taken outside on a lead for toilet purposes only, they must be restricted from activities likely to overload the repair.

Clinical and radiographic examination of your dog is required 6 weeks post-operatively. This will allow clinical assessment and discussion of your dog's progress and future plans.

In the vast majority of cases animals can usually start to increase their activity levels following this visit and may also benefit from physiotherapy and hydrotherapy at this stage. The aim is for a full return to exercise 3 to 4 months following surgery.



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