Pre-Operative Notes for Triple Tibial Osteotomy

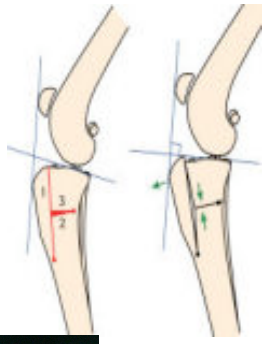
This procedure is carried out in order to restore function in the stifle, or knee joint, of dogs in which the cruciate ligament has been partially damaged, or has ruptured. Diagnosis is based on clinical appearance, examination, and examination under general anaesthesia. Radiographs may sometimes be required for diagnosis and occasionally we require sample of fluid from the joint to demonstrate inflammation in the jopint. has The cranial cruciate ligament is a ligament in the knee which helps to limit knee movement to bending rather than allowing one bone to slide over the other.

Cruciate ligaments in dogs may rupture because of a gradual degeneration, or with trauma. It occurs both in young dogs of some breeds as well as the more common presentation being in mature dogs.

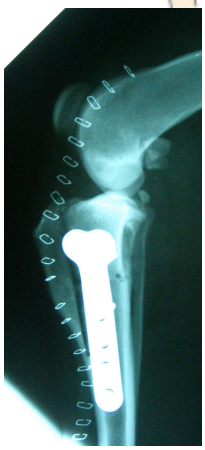
Many techniques exist to restore function to these joints. Repair of the ligament itself is unrewarding and is basically never successful. Other techniques have involved using a layer of tissue from the thigh to replace the damaged ligament but this doesn't last for long and gradually degenerates. Other techniques involve using material running from behind the joint and through a bone tunnel in the shin bone. This technique works reasonably well but the material first strecthes and then eventually breaks in the majority of cases.

Gradually, techniques have turned to altering the angles of the tibial plateau - the surface of the shin bone. These techniques involve cutting bone rather than using materials to mimic ligament function. The cuts in the shin bone alter the slope on the surface of the shin bone to alter the way the joint behaves when weight is put down through the joint. A variety of these techniques have been developed but the technique that has been completed is a relatively new addition. Some techniques involve a curved cut called TPLO - tibial plateau levelling osteotomy, or a straight cut called a Tibial wedge osteotomy.

This new technique is is called Triple Tibial Osteotomy - TTO. It combines both the alteration in the angle of the slope, with a relative movement of the tibial crest - the point at which the patellar ligament inserts. Three cuts are made, two of which are to remove a wedge of bone. The bone is repaired with a plate and healing will take 6 weeks on average.



An x-ray will be required at around six weeks post-operatively to monitor healing.



Once healing is observed to be complete, then exercise can be increased.

I hope these notes go a little way to explaining the nature of the surgery. It is a major orthopaedic surgery but immediate recovery is remarkably good, infact much better that the previously used techniques.

Gareth W. Harries
BVMS CertSAS MRCVS