

Cruciate Ligament Failure

Failure (also called rupture, strain or insufficiency) of the cranial (also incorrectly called “anterior”) cruciate ligament is the single most common cause of hind limb lameness in dogs. Lameness is due in part to the fact that the ligament has failed but also due to the progressive arthritis which ALWAYS develops.

While some cases are easy to diagnose, others are much more challenging and even after anaesthesia and X rays, some cases cannot be confidently diagnosed even by experienced general practitioners and the commonly used tests have been shown to be rather unreliable. Accurate diagnosis is essential so that a good decision can be made about the best course of treatment – cranial cruciate ligament (CCL) failure is a condition that can be treated very effectively by surgery.

Very small and sedentary dogs might not need surgery – the combination of natural healing processes helped along by pain control using non-steroidal anti inflammatory (NSAID) medication is usually effective in getting these smaller, relatively inactive patients back to full pain free function.

Restoration of full pain free function is the aim of treatment in CCL failure. Larger dogs and more active or working dogs are more of a challenge – not least because “full function” in a game-keepers Labrador is rather different from full function in your granny’s dog. In these more active patients, surgical treatment of cruciate failure is appropriate. That appropriate and competently performed surgery can restore even the largest and most active dog to full function and even work, is beyond doubt. However, that surgery is not always successful is, equally, beyond doubt.

So, why is cruciate surgery not always successful? First, there are a lot of different techniques: some are technically difficult, others are less so; some require lots of additional instruments and others don’t; some have stood the test of time, others haven’t; some can be used on all shapes and sizes of dog, others can’t; some have a sound theoretical basis and others haven’t!! Added to that, veterinary surgeons have variable levels of training and while most vets in practice would claim to be able to “do a cruciate op” some will have had no training other than their university lectures plus whatever they have picked up during their years in general practice where they might do only a handful of cruciate surgeries in a year. Others will have years of specialist post graduate surgical training and experience in orthopaedics and will spend all their time performing more complex operations including one hundred or more cruciate ops each year. Success rates will vary!!

At Croft, all our cruciate surgery is performed by qualified, specialist orthopaedic surgeons. Having treated nearly 3000 cruciate cases over the last ten years, we are not short of experience. Because of our experience and expertise we can choose the treatment which best suits the needs of each individual patient. We are not restricted in any way by lack of instruments, lack of training or lack of experience and our specialist training allows us to use even the more technically demanding procedures with confidence.

Most of our patients fall into one of three categories – the smallest sedentary dogs which will be treated non-surgically using medication etc. Small or medium sized pet dogs (up to about 10Kg or about 25lbs) will be treated surgically using the Fabello-Tibial suture technique – a tried and tested method whereby a nylon band is used to stabilise the stifle joint. While this technique works predictably well in medium sized, less active pets we will see the occasional failure. In larger and more active dogs, these failures are common and if we consider a very active working Labrador for example,

the likelihood of a poor outcome following fabello-tibial suture is so high that we would use a different technique instead.

Tibial plateau levelling osteotomy (TPLO) is our preferred surgical technique for treatment of cruciate ligament failure in larger, more active and working dogs. We also use the technique in other dogs where conventional surgery (fabello-tibial suture or other) has failed or is likely not to work. In our hands, TPLO is a very effective procedure with around 95% of our TPLO patients doing so well that they can return to pre-surgery levels of activity and that includes returning working dogs to work! The disadvantages of TPLO are that it is complex, invasive and technically demanding surgery – consequently it costs between two and three times as much as conventional surgery. However, the advantages are that outcome is better, a good outcome is more likely and though convalescence is lengthy, most dogs do most of their recovery in the first six weeks and during the convalescence, owners report that their dog is not painful.

With experience of more than 3000 cases operated at Croft, and with several hundred dogs followed for more than a decade after their operation, we have developed considerable confidence in our ability to use this procedure to “deliver the goods”. The only significant disadvantage of TPLO is the cost and this remains a stumbling block in some cases.

TPLO works by altering the shape and therefore the biomechanics of the dog's stifle joint such that an intact cranial cruciate ligament is no longer essential for good joint function. In recent years a couple of other procedures have been developed along similar lines including “Closing Wedge Osteotomy (CWO)”; “Triple tibial osteotomy (TTO)” and “Tibial Tuberosity Advancement (TTA)”. Some of these techniques have found favour amongst certain surgeons – often the kind of surgeon who is keen to adopt a technique because it is “new”. At Croft we keep a watching brief and a close eye on all developments and on the back of that research we are, for now, sticking with TPLO. Looking more closely at the other techniques – CWO is in fact an old technique and though similar to TPLO, it lacks precision and reproducibility and complications are quite common – it could be said that TPLO is the new and (much) improved version of CWO. Some surgeons will still use CWO because they can do it without investing in appropriate instruments and additional training. TTO is, in effect, a modification of CWO driven by a wish to avoid the special instrumentation and training of TPLO. The technique has little to commend it. TTA is a rather different procedure involving the cutting and forwards transposition of the tibial crest. Substantial research has shown that this procedure (like TPLO) is theoretically sound. However, there are several reasons why we have not adopted this as our “first choice”. First, the claim that TTA is “less invasive” than TPLO is difficult to believe. Furthermore, research into TTA has shown that the beneficial effect of the procedure might be proportional to muscle tension and consequently, advancing the tibial tuberosity a fixed distance might not be an adequate solution in particularly active and working dogs – the very population which have benefitted most from the availability of TPLO. Finally, the nature of the TTA technique and implants is such that many dogs have a stifle conformation that cannot be fully “corrected” by even the most extreme TTA. TPLO on the other hand can be used reliably and effectively in pretty much any dog that limps through the door and it is for that reason that until someone comes up with something better, we (in common with hundreds of orthopaedic specialists worldwide) will continue to use TPLO as our surgery of choice.