

Extra-capsular stabilisation for Cranial Cruciate Ligament Injury

Your vet has arranged for me to see your dog because they are concerned that there is an injury to the *cranial cruciate ligament* in their knee joint. This is a fairly common injury in dogs. You may have heard of cruciate ligament injuries in people – it's a common knee injury in footballers and other athletes.

Although both dogs and people injure this ligament, the cause of the problem appears to be quite different. In people, a structurally normal ligament is snapped by excessive force. In dogs it appears that the ligament gradually deteriorates over time, for reasons that we don't fully understand. This means that very often there is a period during which the knee is sore even though the ligament hasn't snapped, and when the ligament does give way, it may be during completely normal exercise without there being any accident/fall.

Although our understanding of the underlying reason for the ligament to degenerate is poor, what we know very clearly is that in dogs that are heavier than about 10-15kg, surgical treatment is usually required. Treatment without surgery is usually unsatisfactory and leads to a chronic lameness. Surgery may also be recommended in some smaller dogs if they have not recovered by themselves.

The aim of surgery is to stabilise the knee. Damage to the cranial cruciate ligament results in instability of the knee in a forward/backward direction. When your dog is attempting to bear weight on the affected leg, the knee is giving way so they cannot push off that leg with any confidence.

There are many techniques to treat this injury. The placement of a nylon suture to replace the function of the ligament is a well-established technique which has been performed for many years with good success. There are other more modern alternatives now considered the gold-standard, but this procedure is still a good option for smaller dogs or where there are other factors involved (e.g. the cost of the operation).

The Operation

Your practice will make arrangements with you to drop your pet off on the day of the surgery. Please don't give breakfast on the morning of the procedure. If they are receiving pain relief, they can have their pain relief the night before the operation, but if you normally give it in the morning then please don't give it on the day. Please let the nurse/vet admitting your dog know when they last had pain relief, and also if you will need a further supply of any medication. I will probably not meet you in person on the day of the procedure, but I will speak to you by phone if possible. If you have any questions based on the information in this sheet then please feel free to ask me then. When I arrive at the practice I will examine your dog and confirm the diagnosis and plan for surgery. If for any reason we need to alter the plan I will contact you to discuss it.

Your dog will be mildly sedated to minimise stress, and then anaesthetised. Your dog's leg will be prepared for surgery. The leg will be shaved from hip to toe to give us a large clean zone to minimise the risk of infection.

The first part of the operation is to open the knee joint and remove the damaged remnants of the ligament. We also need to check structures called the menisci ("cartilages") which can also be damaged/torn. If the menisci are damaged then the damaged parts will be removed.

Once the joint has been checked it will be closed and the nylon line will be placed, replacing the function of the damaged ligament. The line is secured with a metal *crimp* (a small tube which is squeezed to hold the line tightly). The surgical site will then be closed. In most cases there will be no skin stitches visible – all the stitches will be under the skin and dissolving.

In most cases your dog will be discharged from the practice the evening of the procedure. You will receive a printed discharge note from me which will give details of the procedure, medication and instructions for exercise. Your dog will receive an injection of painkiller immediately before going home and you will also generally have some further pain relief to give at bedtime. Nonetheless, on the night after a major operation like this you may find your pet is restless or agitated. You should make sure that you know how to contact your practice's out-of-hours service and also where you would need to go if your dog needed to be checked over, bearing in mind that this may not be at your usual practice premises.

EXERCISE & RECOVERY

Before surgery, please obtain a crate or cage for your dog to be confined to. This should be about twice the size they need to lie down comfortably. It is sensible to familiarise your dog with the crate before surgery and you can help them feel settled inside by adding some of your worn clothing so the crate contains familiar smells. It is also beneficial to wash and clean all of their bedding that they will use so that this provides a cleaner environment for recovery after surgery.

Your dog will be strictly rested for the first 6 weeks after surgery, and it is very important that you enforce this at all times. They should be restricted within the cage when you are not with them or actively in control of them, and they should be kept on a short lead at all times when they are out of the cage. It is very important that they are not allowed to jump up on the furniture, play with other dogs, run around off the lead or go up any stairs.

A sling/towel under the abdomen can be used to aid mobility in the first few days after surgery, if required. This is more important for larger dogs or those who have problems with both back legs.

For the first 3 weeks after surgery your pet should only go out on a short lead for toileting to the garden 3-4 times per day for no more than 5-10 minutes. From week 4 after surgery they can start light exercise again and can be taken for two short walks a day always on a short lead. Start with 5 minute walks and gradually increase these up to 15 minutes by the end of week 6. You should concentrate on walking very slowly to encourage them to use the leg as much as possible in a controlled manner – this will ultimately speed up their full recovery. Allowing too much exercise too soon during recovery is one of the most common causes of problems with the recovery from this surgery.

Physiotherapy is an excellent way to get the best possible recovery after orthopaedic surgery. We will provide some initial physiotherapy guidance after surgery, and your vet will be able to advise further on this, but I would also thoroughly recommend seeing a veterinary physiotherapist to help with rehabilitation.

It is important that your pet is not allowed to lick or interfere with their surgical wound until it has healed – please use a buster collar to prevent this if required. Licking, or handling, of the surgical area before the surgery wound is healed is the most likely way of introducing post-operative infection.

Your vet will arrange for your pet to have follow-up x-rays taken to assess healing of the surgery – this is normally performed about 6 weeks after the original procedure. We will assess these x-rays and provide further instructions at this time. In most instances, we hope for pets to be able to end crate restriction in the house after this time, although still being prevented from jumping/climbing/etc., and to be able to have their lead exercise gradually increased with the aim of being back at normal levels of lead exercise by 12 weeks after surgery.

Risks of Surgery

This is a procedure with relatively low risks, and it is a procedure that for us is very routine. However as you would expect for major surgery there are some risks.

1. Infection – Infection is a small risk of all surgery. We will take all the same precautions to avoid infection as I would take if I were performing the surgery at a specialist hospital (drapes, gowns, gloves etc). Your dog will also receive antibiotics during surgery. You should monitor the wound after surgery for any excessive redness, swelling or discharge. If an infection does develop it will generally resolve with further medical treatment. Very occasionally the area may need to be flushed. In rare cases the nylon line may need to be removed if it becomes infected.
2. “Late Meniscal Injury” – if the cartilages in the knee are normal at the time of surgery, we will leave them in place, as they are important for knee function. Occasionally a cartilage tear will occur later on and result in a recurrence of lameness. A surgical procedure to treat the cartilage tear may be required.
3. Osteoarthritis – Some degree of “wear and tear” in the joint is inevitable following the injury and no surgical procedure has ever been demonstrated to stop this. However, surgical treatment now is the best way to minimise this, and many dogs will not be troubled by arthritis for many years.
4. Other leg affected – because this appears to be a “condition” rather than an injury in dogs, the other knee is very often affected within 1-2 years and the same treatment required. There is not a great deal that can be done to prevent this other than keeping your dog at a sensible weight.

There is a small risk associated with a general anaesthetic. Your vet may discuss with you whether you would like your dog to have a blood test prior to surgery to ensure that there are no underlying health problems that we were unaware of.

Thank you for entrusting the care of your pet to us, and I look forward to speaking to you on the day of the procedure.

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