

CRUCIATE LIGAMENT REPAIR

Cruciate rupture

The knee joint or stifle is basically a hinge joint that moves only in one plane, backwards and forwards. Although there are many ligaments making up the joint, the range of movement is largely controlled by two bands of fibrous tissue that cross over inside each knee joint. These are the cruciate ligaments. One is in front of the other, hence they are known as anterior or cranial or posterior or caudal cruciate ligaments. They join the two major bones of the leg, the femur above and the tibia below.

We have the same anatomical structure of the knee as the dog in which the joint is known as the stifle.

Anterior cruciate ligament rupture is a common knee injury of footballers.

How does the cruciate injury occur?

Traumatic cruciate damage is caused by a twisting injury to this hinge joint. It is most often seen in both dogs and footballers when moving at speed and suddenly changing direction so that the majority of the weight of the body is taken on the joint. The injury usually affects only the anterior or cranial cruciate ligament. Once stretched or torn, the joint is then unstable and weight bearing difficult if not impossible.

The injury can also occur in obese dogs just by stumbling over small objects such as a pebble while walking.

A chronic form of cruciate damage occurs due to weakening of the ligament, either as a result of age or disease. The ligament may become stretched or partially torn and lameness may be only slight and intermittent. With continued use of the joint the condition gradually worsens.

How is it diagnosed?

Clinical signs play a large part in diagnosis. The history with traumatic cruciate rupture is that the dog was running in circles and suddenly pulled up and then was unable to weight bear on the affected leg. Even if this is not noticed subsequently the dog will be seen to be standing in a very characteristic way with the affected limb just touching the ground but unable to bear any weight on the limb.

During the examination the vet will try to demonstrate a particular movement, called a “draw sign” which demonstrates laxity in the joint. This test can usually be carried out in the conscious patient.

- If demonstration of the draw sign is painful to the dog, or there is any doubt, the test may be carried out under sedation or general anaesthesia.
- X-rays both of the affected and the normal limb are often carried out at the same time.
- Sometimes the hips are also radiographed to check if any hip dysplasia is present.
- The examination may also involve other tests.

Is other damage within the knee joint common?

Inside the stifle joint are small pieces of cartilages called menisci. Sometimes these are damaged at the same time as the injury to the cruciate and are usually repaired during cruciate surgery.

Is operation always necessary?

Occasionally following joint immobilisation healing will occur and the dog will ultimately become sound but this is soon followed by the development of arthritis within the joint.

What does surgery involve?

The aim is to restabilise the joint. Various techniques are available, aiming to mimic the action of the cruciate ligaments. In rare cases repair is attempted but usually replacement of the damaged ligaments using a variety of materials including skin, muscle sheath, nylon and carbon fibre are used.

Today this operation is carried out at many practices. Alternatively you may be referred to a veterinary orthopaedist particularly if there are complications such as arthritis. Then depending on the size, weight and age of the dog, a variety of techniques may be used which may or may not involve replacing or attempting to repair the damaged ligaments.

Recently a technique known as tibial plateau levelling osteotomy has been used very successfully in certain cases. The aim, like all techniques, is to stabilise the joint and to neutralise what is known as the cranial tibial thrust, in other words the attempt of the tibia or shin bone to move forward as the joint moves.

Irrespective of surgical techniques, success rate is more than 85%. Thus although arthritic changes can occur post operatively, usually within 6-8 weeks after surgery your dog should be relatively sound.

Is post operative nursing difficult?

It is vital that exercise is strictly controlled according to instructions for the first 6-8 weeks following surgery. Provided you are able to carry out our instructions good function should return to the limb within three months. However irrespective of the technique used to stabilise the joint, arthritis does develop over time. Thus as your dog gets older stiffness is often noticed. However provided you control weight, this

problem is usually no greater than that normally encountered in the knee joints of any active aging dog.

Why is obesity such a problem?

As mentioned obesity can result in the cruciate ligament rupturing initially. If overweight your dog's recovery time will be that much longer. The excess weight also makes the other knee very susceptible to injury particularly during that early crucial post operative phase. We will be happy to help with weight reduction and prescribe a weight reduction diet. Weight loss is, without doubt, as important as surgery in ensuring rapid return to normal function.

