

Tibial Plateau Leveling Osteotomy (TPLO)



Blue Springs Animal Hospital & Pet Resort

TPLO is an advanced orthopedic surgery for treatment of cranial cruciate ligament rupture in the knee joint of dogs.

The cranial cruciate ligament is an important structural support in the knee (stifle) joint. Rupture of this ligament is one of the most common causes of rear limb lameness in the dog, causing severe pain and inflammation in the knee joint.

The cruciate ligament normally keeps the femur bone in position on top of the tibia, with the meniscus (a cartilage pad) acting as a cushion between the bones.

When the ligament is torn and the dog bears weight on the leg, the femur slides down the tibia and scrapes back and forth, causing damage to the meniscus and other cartilage in the joint.

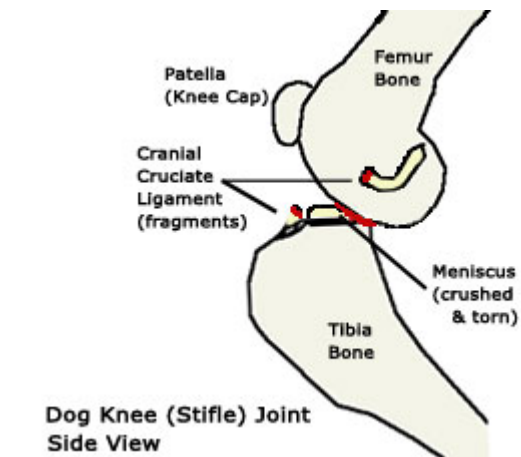
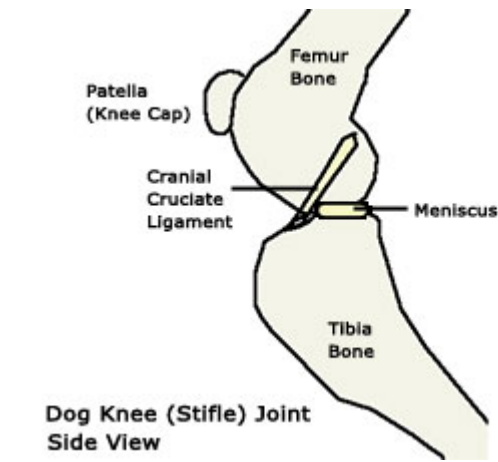
If untreated it may lead to severe chronic degenerative joint disease (arthritis) in the knee.

Causes of cruciate ligament rupture

Rupture of the cruciate ligament may be caused in a healthy joint by a traumatic incident, or it may be the result of gradual weakening of the ligament due to predisposing factors such as obesity, age-related ligament degeneration, pre-existing inflammation, and anatomical abnormalities, particularly excessive slope of the top of the tibia bone causing chronic stress to the ligament.

Symptoms

An acute traumatic tear of the cruciate ligament results in sudden non-weight bearing lameness in the affected leg. If the disease is chronic due to a predisposing factor, the dog may experience milder episodes of lameness prior to complete rupture of the ligament. Once the ligament tears completely, there will usually be a period of non-weight bearing lameness, which may be followed by the dog gradually starting to bear partial weight on the leg again. Some small breeds of dogs may be able to recover normal use of the leg with only mild arthritic changes. But, larger dogs generally require surgical intervention or they will have debilitating long-term arthritis and pain in the joint.



Diagnosis

Cranial cruciate ligament ruptures are diagnosed based upon symptoms and palpation of the joint with the dog under sedation. With sedation the muscles relax and the veterinarian can move the tibia back and forth under the femur freely, called a positive drawer motion, which would be impossible if the cruciate ligament were intact.

Following initial diagnosis and as part of the evaluation for TPLO surgery, the knees will be x-rayed. The condition may occur in both legs from 30-50% of the time.

In the x-rays to the right, the upper X-ray shows a normal leg with the femur in proper position on top of the tibia. In the second x-ray, the ligament is torn, and the femur has slid down the slope of the tibia, causing damage to the joint surface as it grinds bone against bone with weight bearing.

On the abnormal x-ray, the doctor has taken some measurements and marked the x-ray in preparation for the TPLO procedure.

TPLO is the best surgical option

There are several options available for dogs who need surgical correction for cranial cruciate rupture. But, over the last few years TPLO has emerged as the surgery with the best results.

Compared to other options, TPLO generally provides:

- faster recovery
- more range of motion for the joint
- a better return to athletic or working activity
- less long term arthritis and pain

TPLO surgery levels the top of the tibia, creating a stable surface for the femur and eliminating the sliding action which causes damage to the joint. To accomplish leveling of the tibia, the top of the tibia is cut, re-aligned, and a metal plate is placed to hold the top of the bone in position to heal. During the surgery the torn ligament and the meniscus, if damaged, will be trimmed or removed to reduce inflammation.

In the X-rays to the right, the leg from above has been corrected by TPLO, and the femur is now resting securely on top of the tibia, in a similar position to the normal joint.



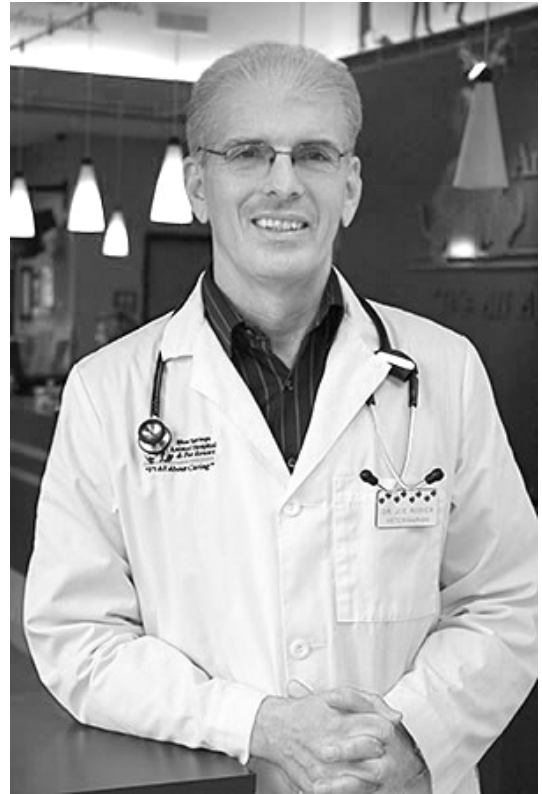
Choosing a veterinary surgeon

TPLO surgery has a steep learning curve and should be performed by a Slocum TPLO Certified Veterinarian with advanced training for the procedure and experience with successful cases.

Dr. Joe Rodier has many years of experience and a record of success with advanced orthopedic procedures. When this procedure was developed a few years ago, he recognized it as a superior procedure to the other available options. He trained with a board certified surgeon and received his certification for performing the TPLO procedure.

Over the last couple of years he has performed TPLO surgery on many dogs, often several per month, with excellent results.

Dr. Rodier is available for consultation, second opinions, or referrals for the TPLO surgery procedure.



Post-op Care and Recovery

Recovery from TPLO surgery is more rapid and complete than for other procedures used in the past. Some dogs will start bearing weight within 24 hours after surgery, and almost all dogs are starting to put weight on the leg within 2 weeks. Generally within 1-3 months the leg is fully healed.

It is very important in the post-op period to restrict the dog's activity to walking on a leash and to prevent falling, jumping, playing with other dogs, or any activity which could result in trauma to the surgery site. On a case by case basis, the doctor will recommend physical activities to maintain strength in the muscles while the leg heals.

