



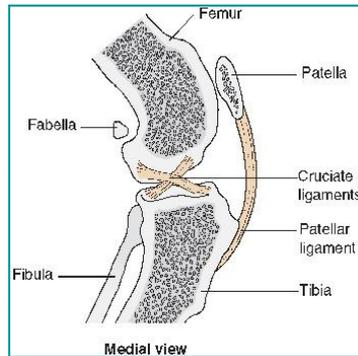
CRANIAL CRUCIATE LIGAMENT DISEASE

Overview of the Disease

“Cranial cruciate ligament disease” is the sudden (acute) or progressive failure of the cranial cruciate ligament, which results in partial to complete instability of the stifle joint.

A “Cranial cruciate rupture” is the tearing of the cranial cruciate ligament; it is the most common cause of rear-leg lameness in dogs and a major cause of degenerative joint disease (progressive and permanent deterioration of joint cartilage) in the stifle joint; rupture may be partial or complete.

The “stifle” is the knee joint of the dog; it is the joint between the large upper thigh bone (the femur) and the two lower leg bones (tibia and fibula). A “ligament” is a band of connective or fibrous tissue that connects two bones or cartilage at a joint; the “cranial cruciate ligament” is the ligament that connects the inner, back part of the femur with the tibia—it helps to stabilize the stifle joint.



How common is the disease?

It is uncommon in cats and seen mostly in dogs. All breeds are susceptible to the disease however there has been an increased incidence in Rottweilers and Labrador Retrievers

What are the main causes?

- Trauma
- Repetitive micro injury to the cranial cruciate ligament
- Conformation abnormalities

What can put my pet at risk?

- Obesity
- Kneecap (known as the “patella”) dislocation (known as a “patellar luxation”)
- Poor conformation
- Abnormalities of the bones making up the stifle

Clinical Signs

- Related to the degree of rupture (partial versus complete), the mode of rupture (sudden [acute] versus long-term [chronic]), the presence of other injury to the stifle, and the severity of inflammation and degenerative joint disease (progressive and permanent deterioration of joint cartilage)
- History of athletic or traumatic events—generally precede sudden (acute) injuries
- Normal activity resulting in sudden (acute) lameness—suggests degenerative rupture; “degeneration” is the decline or loss of function or structure of a tissue
- Subtle to marked intermittent lameness (for weeks to months)—consistent with partial tears that are progressing to complete rupture
- Sudden (acute) cranial cruciate rupture results in non-weight-bearing lameness, fluid build-up in the joint (known as “joint effusion”) and the affected leg held in partial flexion while standing
- “Cranial drawer test”—specific manipulation evaluating the status of the cranial cruciate ligament; diagnostic for cranial cruciate rupture
- Decrease in muscle mass (known as “muscle atrophy”) in the rear leg—especially the quadriceps muscle group

How can it be treated?

Healthcare

- Dogs less than 33 lbs (15 kg)—may treat conservatively as outpatients; 65% improve or are normal by 6 months
- Dogs greater than 33 lbs (15 kg)—treat with stabilization surgery; only 20% improve or are normal by 6 months with conservative medical management
- Following surgery—ice packing and physical therapy (such as range-of-motion exercises, massage, and muscle electrical stimulation); important for improving mobility and strength

Diet

- Weight control—important for decreasing stress on the stifle joint

Activity

Restricted—with conservative medical treatment and immediately after surgical stabilization; duration of activity restriction depends on method of treatment and progress of pet.

Surgery

Stabilization surgery—recommended for all dogs; speeds rate of recovery; reduces degenerative joint changes; enhances function. Various surgical techniques are available to treat cranial cruciate rupture. Here are the different types of methods available;

Extra-Articular Methods:

Variety of techniques that use a heavy-gauge implant to tether the tibia to the femur and restore stability. Implant material—placed in the approximate plane of the cranial cruciate ligament attachments to the bones (femur and tibia)

Intra-Articular Methods:

Designed to replace the cranial cruciate ligament anatomically. Uses various materials to “act” as the ligament, including autografts (patella ligament, fascia), allografts (bone-tendon-bone), and synthetic materials.

Modified Extra-Articular Methods:

Fibular head transposition or popliteal tendon transposition. Involves realignment and tension on the lateral collateral ligament or popliteal tendon to stabilize the stifle joint.

Tibial Plateau Leveling Osteotomy (TPLO):

Surgical cutting (known as a “rotational osteotomy”) of the tibia. Is held in place with a special plate and screws.

Tibial Tuberosity Advancement:

Surgical procedure in which part of the tibia is cut (procedure known as a “tibial crest osteotomy”), crest is held in an advanced position with a cage and plate, bone graft fills the defect. Active control of cranial tibial displacement is improved which helps stabilize the stifle.

What medications are available?

- Nonsteroidal anti-inflammatory drugs (NSAIDs)—minimize pain; decrease inflammation; examples include *meloxicam*, *carprofen*, *etodolac*, *deracoxib*
- Medications intended to slow the progression of arthritic changes and protect joint cartilage (known as “chondroprotective drugs”), such as polysulfated glycosaminoglycans, glucosamine, and chondroitin sulfate—may help limit cartilage damage and degeneration; may help alleviate pain and inflammation
- Pain relievers (known as “analgesics”)

What are the possible complications?

- Second surgery may be required in 10% to 15% of cases, because of subsequent damage to the meniscus (a crescent-shaped cartilage located between the femur and tibia in the stifle)
- Approximately 20-40% of dogs with cranial cruciate ligament rupture involving one leg will rupture the ligament in the opposite leg at a later date

Follow up care & Prognosis

Regardless of the surgical technique, the success rate generally is better than 85%. Although regardless of the method of treatment provided, some degenerative joint disease (progressive and permanent deterioration of joint cartilage) is common. Most surgical cases will require 2-4 months of rehabilitation. Approximately 20-40% of dogs with cranial cruciate ligament rupture involving one leg will rupture the ligament in the opposite leg at a later date. For your pet to return to full athletic function is possible but requires considerable rehabilitation.

