

Anterior Cruciate Ligament Injury and Your Pet

Injury to the Anterior Cruciate Ligament (ACL) or Cranial Cruciate Ligament (CCL) is one of the most common causes of rear leg lameness in dogs. The condition is uncommon in cats. The function of the ACL is to constrain the knee joint by limiting internal rotation, forward displacement of the tibia relative to the femur, and to prevent hyperextension. Rupture of the ACL can be either complete or partial. Untreated patients with ACL rupture will develop degenerative joint disease (DJD) or arthritis in the affected knee within a few weeks and severe changes within a few months. In over 50% of ACL injuries there is also damage to the medial meniscus. The medial meniscus is a cartilage cushion between the femur and the tibia.

CAUSES

Injury to the ACL can either be degenerative (chronic) or acute (traumatic). Causes of ligament degeneration include aging, conformational abnormalities (bowlegged, knock-knee, straight knee or hock, patellar luxation, caudal sloping of the tibial plateau), disuse related to sedentary life style or limb immobilization, and immune mediated (arthritis, synovitis). Larger dogs (over 30 pounds) are more likely to suffer from ligament degeneration related to aging than are small dogs.

DIAGNOSIS

Diagnosis of either a partial or complete ACL rupture is usually made based on the history and physical examination. Clinical signs are related to the degree of rupture (partial vs. complete), the mode of rupture (acute vs. chronic), the presence of meniscal injury, and the severity of inflammation and DJD. Athletic or traumatic (e.g. hit-by-car, stepped-in-hole) events usually precede acute ACL injuries that result in non-weight bearing lameness (partial-toe-touching or complete). Normal activity that results in acute lameness is suspicious of degenerative ACL rupture. Mild to marked intermittent lameness that has been going on for weeks to months is consistent with partial ACL tears progressing to complete rupture. Presence of a cranial drawer sign (cranial movement of the tibia while the femur is held motionless) is diagnostic of ACL rupture. The knee joint may be swollen due to fluid accumulation or there may be a noticeable thickening of the joint capsule on the medial side (medial “buttress”). Hindlimb muscle atrophy may be present in chronic cases.

Radiographs are rarely diagnostic of ACL rupture, but may help confirm the presence of degenerative joint disease, or to rule-out small fractures or tumors. Radiographs of the lower back and hips are often taken at the same time to rule-out co-existing problems which may affect an animal’s prognosis for recovery.

Occasionally fluid from the knee and/or other joints may be collected and analyzed to identify the presence of intra-articular disease and to rule-out infectious or immune-mediated disease.

TREATMENT

Dogs less than 30 pounds can be treated conservatively with 85% being improved or normal by 6 months. Only 20% of dogs greater than 30 pounds are improved by 6 months when treated conservatively. Therefore, it is recommended that medium-to large-breed dogs should have surgery. Surgery is recommended for all dogs to speed recovery, to prevent degenerative changes, and to enhance/restore function.

Surgery: A variety of surgical techniques have been described to stabilize knees that have suffered ACL rupture. The cost of surgery ranges from approximately \$800 to \$2000 depending on the type of surgery and the facility at which it is performed. Recovery time is generally 8 to 12 weeks.

In addition to surgery, the treatment for a ruptured ACL includes restricted activity, weight control, and drugs. These treatment options are discussed in detail in the Degenerative Joint Disease (DJD) handout.

PROGNOSIS

Regardless of surgical technique, the success rate is approximately 85%. Second surgeries are required in 10 to 15% of patients due to meniscal damage or implant failure. Regardless of the method of treatment, DJD is common. Return to complete athletic function is uncommon. 20 to 40% of dogs with unilateral ACL rupture will rupture the ACL in the other knee within 17 months.

If you ever have any questions about any of the above information, please do not hesitate to contact us. Visit us online at www.WhiteBearAnimalHospital.com.

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