

Post-operative Information: Tibial Tuberosity Advancement (TTA)

Date: _____ Surgeon: Scott Murphy, DVM, Dip ACVS Patient: _____ Owner: _____

Surgical Findings:

- LEFT / RIGHT cranial cruciate ligament; PARTIAL / COMPLETE tear; ligament DEBRIDED / NOT DEBRIDED
- Caudal horn of the medial meniscus WAS / WAS NOT damaged; partial meniscectomy WAS / WAS NOT performed
- Arthritis: NONE / MILD / MODERATE / SEVERE.

Medications (please give as directed):

- Cephalexin (antibiotic) x 7 days
- Non-steroidal anti-inflammatory (pain reliever) x 10 days
- _____
- _____

ACTIVITY RESTRICTION x 8 weeks

- Please keep your pet in a comfortable, safe indoor location with no free access to stairs for the initial 24 hours following the procedure. Your pet may be groggy for the next few days. He or she may whine or appear more anxious than usual; this may indicate pain/discomfort or side-effects of the medications. Please call your veterinarian for assistance with any medication adjustments or return for an examination and additional pain medications as needed.
- Confine your pet to one level/section of the house on carpeted floors. Limited, supervised access to stairs is recommended for 8 weeks. Use a belly band for support when walking across slick floors or up/down stairs to prevent falling. Use baby gates, etc. to prevent free access to stairs during this restricted period.
- Please use a short, hand-held leash when taking your pet outside to urinate/defecate. Confine your pet to a small area/room/crate when unattended. Please do not allow your pet to run or jump during this restriction period.
- Your pet should start touching his/her toe down within the first 2 weeks. Thereafter, leg use should steadily improve. If you notice a sudden deterioration or he/she stops using the leg at any time after surgery, please call your veterinarian for advice. An exam and/or x-rays may be needed to determine if an infection or implant failure has occurred.
- Your pet will feel like using the leg normally before the bone is well healed. Please continue the restriction during this difficult time when he/she is feeling "too" well! Failure to do so can result in serious healing problems.

INCISION CARE

- Please look at the incision once daily. It should be dry, slightly red along the margins, and slightly swollen/thick on the edges. Over several days, it should lose redness and swelling. *Problems to call your veterinarian about:* a) gapping (the edges should be exactly touching); b) discharge (other than small amount of crusting); c) swelling (other than slightly raised skin near edges). Some bruising is normal and will resolve in 5-7 days.
- Do not allow your pet to lick or chew the incision as this can compromise the incision and predispose to infection. If necessary, please use an E-collar if you must leave your pet unattended.

BANDAGE CARE (if present)

- A bandage *may have been* applied to the operated limb. The goal of the bandage is to provide pressure to the surgical site to minimize swelling and improve patient comfort for the first few days. Please place a plastic baggy over the foot whenever you take your pet outside to prevent soiling of the bandage; immediately remove when indoors. You may remove the bandage in 2-3 days. If the bandage slips below the incision or becomes soiled or wet *before this time*, please remove it by simply cutting away one layer at a time (use caution and avoid damaging skin); the bandage does not need to be replaced.

DIET

- Ideally, keep your pet on the thin side of normal his/her whole life. Any orthopedic condition can progress with arthritis over time due to excessive wear & tear on the cartilage; carrying less body weight will relieve some of this. Good parameters to monitor body condition are: 1) you should be able to feel the ribs and pelvic bones, but not see them; 2) your pet should have an "hour glass" figure when viewed from above looking down; 3) your pet should have a tucked up belly when viewed from the side.
- Glucosamine/chondroitin supplements may have some beneficial effects in these patients, but this has not been clearly established. You and your veterinarian should discuss whether or not these products would be beneficial for your pet.

PROGRESS EXAMS

- Please make an appointment to see your veterinarian 10-14 days following surgery for a progress exam. Knee function will be assessed at this time, any sutures will be removed, and questions regarding physical therapy can be addressed.
- Please see your veterinarian in 8 weeks for progress x-rays. Adjustments may be made to the physical therapy schedule based on these results. Your pet may need an additional x-ray 12 weeks after surgery.

PHYSICAL THERAPY REGIMEN

Our lives are often very busy, so if you must err, err on the "do less" side of these instructions. Less physical therapy will result in a slower return to function, but more aggressive physical therapy by a non-professional may result in failure of the procedure.

- Week 1
 - Apply an ice pack to the knee 10-15 minutes four times a day for the first 24-36 hours following surgery (if the bandage is not present). An ice slurry can be made by mixing 2 parts isopropyl alcohol to one part water in a zip lock bag and freezing. This is kept in the freezer except when in use. Use a towel between the skin and ice pack for comfort.
 - When swelling and redness have resolved (3 days postop), begin application of a warm compress (a damp towel warmed in water) to the knee for 10 minutes three times a day before performing 10 slow repetitions of range of motion (ROM) exercises.
 - ROM Exercise--Have your pet lie on his/her good side. Grip the front of the thigh with one hand and hold the foot with the other. Slowly push the foot up into flexion of knee and then slowly pull the foot and push the thigh down and back into extension of the knee. Concentrate on the extension movement. Flex and extend only to your pet's comfort limit. Do not go to the point of creating pain or resentment. Following ROM, apply ice packs to the surgical site for 10 minutes
 - After the third day, begin slow leash walks of 3-5 minutes duration three times daily. Use a short leash during the walks outside when your dog must urinate or defecate.
- Weeks 2 and 3
 - Apply the warm compress and continue flexion and extension of the knee as described above. Now slowly push the foot up into full flexion of all joints; hold for 5 seconds. Slowly pull the foot and push the thigh down and back into full extension of all joints; hold for 5 seconds. Repeat this motion 10 times twice daily. Again, do not go to the point of creating pain or resentment. Follow each session with 5-10 minutes of ice packs.
 - Slow leash walks for 10 minutes 1 to 2 times a day is acceptable.
- Weeks 4 and 5
 - Sit/stand Exercise (for dogs)—Have your pet repeatedly sit and stand for 10 repetitions twice daily. Use small treats to encourage participation. Do not push down on his/her rump. Continue 4 weeks.
 - Massage—your pet may stand or lie down. Perform both superficial skin massage & deeper muscle massage. Skin massage around the knee joint involves using your hand loosely conformed to the surface of the skin; enough pressure is applied to move the skin relative to the underlying tissues. Muscle massage of the thigh and shin involves deeper kneading and pushing of the muscles. Perform massage for 10-15 minutes twice daily for 4 weeks.
 - Increase the slow leash walks to 20 minutes 1 to 2 times a day.
- Weeks 6 and 7
 - Active exercise-Place your pet on a short leash and have him/her walk at your side. Walk outside on even/solid footing for 30 minutes once or twice daily. Continue 4 weeks, gradually increasing time and distance.
- Weeks 8 - 10
 - At the end of week 8, the dog should be reexamined by your veterinarian for evaluation of limb usage.
 - Increase the slow leash walks to 30-40 minutes once or twice daily. The pace should be slow enough to ensure full weight-bearing on the affected limb.
 - Have your dog slowly climb a flight of stairs 5-10 times twice daily.
 - Jogging exercise-On a short leash, intermittently jog and walk your dog for 10 minutes twice daily. Continue 4 weeks, gradually increasing time and distance.
 - Swimming is wonderful rehabilitation exercise when performed correctly. You may allow controlled swimming after week 8. Controlled swimming requires that your pet not jump or leap into the water; walking into the water until it is deep enough to swim is required. Throwing balls to fetch often results in sudden jumping and lunging, this can cause serious problems in the healing phase. Do not over extend you pet; start with short excursions (5 minutes) and increase duration and frequency gradually.
- Week 11 and 12
 - Light play exercise-On a long leash; encourage playing and romping with your dog for 15 minutes twice daily. Use toys for teasing and tugging. Continue 2 weeks.
 - Healing should be complete and your dog can return to full activity by the 12th-16th week.

LONG TERM LIFESTYLE

- The prognosis for dogs treated with a TTA to correct a ruptured cranial cruciate ligament is good to excellent. The majority of dogs return to a normal gait, level of activity, and endurance. Following the 12 week recovery period, there are no recommended limitations to their lifestyle. On rare occasions the implants will need to be removed if it causes the dog any problems.
- It is very common (30-40% of patients) for both knees to develop cruciate ligament tears. Prevention is difficult; the most effective thing you can do toward prevention is to maintain your pet on the thin side of normal weight.