Post Surgical Care of Tibial Tuberosity Avulsion

Home patient care after orthopedic surgery is critical to the success of the surgery. Allowing your pet too much activity may alter the anticipated outcome of the surgery. Since this injury involves the stifle (knee) joint in a young, growing dog, we must carefully balance the need for immediate use of the limb to prevent stiffening of the joint with not too much activity that might cause the implants to fail or migrate.

Please be sure to read the handout “Preventing Quadriceps Contracture” so you are aware of the catastrophic outcome if you do not follow these instructions very carefully.

This injury is not technically a “fracture” but in most cases a “separation” or “avulsion” of the tibial tuberosity from the top of the tibia through a growth plate. A growth plate is the area of the bone that actually “grows” the bone and helps to form the joint and is the weakest part of the bone.

In most cases, with prompt internal fixation of these injuries (preferably within a few days), the growth plate remains normal and continues its job growing bone. Unfortunately, sometimes the growth plate is crushed or damaged and heals “closed” not allowing any further growth to occur. There is no way to know now if this is going to happen; we can only fix the injury and then radiograph the leg in four to six weeks to see if the growth plate has remained open and functioning.

The surgeon will make an incision into the stifle and align the growth plate as near perfectly as possible to preserve the growth plate function and then place one or two small pins with or without a tension band wire across the fracture or a cancellous screw. These pins usually stay inside the leg forever, but in some cases, they may need to be removed. In rare cases, the pins can migrate out of place and need to be removed through a small incision. These fractures heal very quickly, usually within four weeks. In younger patients with a fair amount of growth potential remaining, we will remove the tension band wire (if utilized in surgery) and leave the pins in an attempt to salvage the growth plate if it is still functioning.

The following instructions will be your guide to home care.

Week 1:

1. Provide pain management with NSAID’s the first five days
2. If a padded bandage was applied, it should be removed after five days
3. Apply an ice-pack to the stifle for 10 to 15 minutes two to four times a day for the first 24 to 36 hours after surgery if no bandage is applied
4. If inflammation has resolved after 72 hours, apply a hot-pack to the stifle for
10 to 15 minutes two or three times a day if no bandage is applied
5. Perform passive range of motion exercise (gently flex and extend the knee); 10 slow repetitions three times a day
6. Precede and follow the passive range of motion exercise with massage of the quadriceps muscles (large muscles above the kneecap)
7. Begin slow leash walks of less than 10 minutes three times a day
8. Schedule a recheck with your doctor 1 week after surgery to evaluate range of motion and percent weight bearing
9. If your pet is very rambunctious we may place an off weight bearing bandage for two weeks

Week 2:

1. Apply a hot pack to the stifle for 10 to 15 minutes two or three times a day until the swelling has resolved
2. Stop passive range of motion exercise if your pet is using the leg correctly
3. Increase the slow leash walks to 10 to 20 minutes three times a day
4. Continue massage
5. Schedule a recheck with your doctor 2 weeks after surgery to remove any sutures and evaluate range of motion and percent weight bearing
6. Most patients should be walking normally by 2 weeks, but every pet is different and some may take longer

Week 3:

1. Increase the slow leash walks to 20 to 30 minutes two or three times daily
2. Have your pet perform 10 repetitions of sit-stand exercises three times a day
3. Have your pet perform 10 to 15 repetitions of figure-of-eight walks two or three times a day, circling to the right and left
4. Recheck 3 weeks after surgery if your pet is not walking normally or improving week to week.
5. If your pet is 4 months or under at the time of surgery, a radiograph should be taken around 3-4 weeks after surgery to evaluate the growth plate and remove the tension band wire if one was utilized.

Weeks 4:

At this point, your pet’s healing should be complete and should gradually return to full activity by the end of 6 weeks. It is highly recommended that you take your pet in four weeks after surgery to have a final radiograph to evaluate healing and the growth plate function. The surgeon may recommend removing the tension band wire at this time if your pet is very young and the growth plate is still open.

Additional Instructions:
1. Licking at the incision should be discouraged because it may lead to chewing at the sutures or staples causing a wound infection. It may be necessary to bandage the leg or use an Elizabethan collar to prevent licking.

2. Bandages, if used, should always be kept dry and clean. Any odors and/or persistent licking are indicators that there may be a potential problem and **should be checked by your veterinarian immediately.** Bandages and splints should be checked weekly by your veterinarian or veterinary technician.

3. Feed your pet its regular diet but reduce it by 10% to allow for reduced activity.

4. Mild swelling may occur near incision or low on limbs. Your veterinarian should check moderate or severe swelling immediately.

5. Use of a joint protective supplement with glucosamine and chondroitin is highly recommended for at least six months to prevent any arthritis from forming in the joint.

**Complications**

As with any surgical procedure, complications can occur. Unlike human patients who can use a sling or crutches, our patients do not know enough to stay off a healing leg so restricted activity is a major responsibility of you, the pet owner. Failure to follow these instructions carefully can lead to delayed healing or even failure of the implants.

The most common complication is delayed healing, where, despite our best efforts to stabilize the bone, individual patients respond slower than others. Occasionally, your pet may develop a small pocket of fluid called a seroma, around the metal pins we use. See your veterinarian if this swelling is larger than a grape. Quadriceps contracture is a catastrophic complication where the large thigh muscles on the front of the leg shorten and form scar tissue. This is totally preventable if you perform the necessary physical therapy. **Notify your doctor immediately if you think the joint is stiffening up.** If you have any questions, please feel free to ask your veterinarian or call me at the number above.

**Follow Up Instructions:**

☑ Support/pressure bandage placed post-operatively to be removed in ____ hours

☐ Please monitor your pet’s ability to urinate over the next 1-2 days. Rarely, patients that had an epidural will have transient urinary retention, straining to urinate but no stream is observed. This can lead to a ruptured bladder after several days and kidney failure if you do not seek immediate treatment.

☐ Recheck in ten days: Sutures/Staples removal / Dissolving sutures
☐ Recheck every 2 weeks after suture removal to evaluate progress
☐ Recheck radiograph between 3-4 weeks and remove tension band wire
☐ Tegaderm clear bandage can be left on until it falls off or at suture removal
☐ Start antibiotic tonight
☐ Start pain medication tonight
☐ Weight loss is very important for healing and to minimize risk of rupturing other leg 
  (40% chance in all dogs and 75% chance in overweight dogs)
☐ Start Dasuquin, Cosequin, or Glycoflex (joint supplement) ASAP
☐ Start essential fatty acid supplement, ie. Derm Caps to reduce joint inflammation 
  ASAP
☐ Call Rod Newman, MS, CCRP to schedule your initial physical therapy consultation 
  at 615-414-4867 or email him at rnewman@caninerehabnashville.com (cost included 
  in surgery fee)