TIBIAL TUBerosity AVulsion

Tibial tuberosity avulsion in the dog

Tibial tuberosity avulsion describes an injury seen in the back leg of young growing dogs. A small piece of bone, the tibial tuberosity, is displaced from the shinbone or tibia by the pull of the quadriceps muscle group. It is often quite painful. If left untreated tibial tuberosity avulsion can result in an inability for your dog to extend his or her knee appropriately.

Did you know?? Sterility for orthopaedic surgery is extremely important. At VetFix we use a new set of disposable sterile drapes, gowns and of course gloves for each dog. In addition we use a high dose of intravenous antibiotic to help keep infection risk to an absolute minimum.

Surgical Technique

At VetFix we try to do this surgery with as little disruption to the surrounding soft tissues as possible. This maximises the opportunity for the fracture to heal rapidly. Typical surgical management involves replacing the tibial tuberosity in the correct position and placing a pin and wire loop to secure it. The exact procedure depends a little on the age of the patient! When the growth plates in the bone are still open we sometimes alter things a little.
Aftercare

Your dog will be discharged with pain killers and sometimes a short course of antibiotics. Please give these as directed.

Incision site care

Please check the incision site daily and keep the bedding/room where your pet lives clean and dry. There will often be a small amount of bruising in the initial 3-5 days. Please contact your local vet should you notice excessive swelling or discharge from the wound (other than a small amount of crusting). Your pet should not lick the incision site. An E-collar may be necessary to prevent this.

Progress checks

These are often carried out by a veterinary nurse or your vet at 3-4 days, 10-14 days, 30 days, 6-8 weeks and 12 weeks after surgery. They may be more frequent if concerns arise.

What to expect?

Your pet may feel a little groggy for the first few days after surgery. If you think he/she is in pain, please contact your local vet for advice. Your pet should be restricted to a single clean room (ideally with no slippery flooring) with no access to stairs. To help him/her out for toileting, a towel can be used as a belly sling to take some weight off the back legs. A veterinary nurse can demonstrate this if necessary.

Important! We normally expect a small amount of weight to be taken on the leg within 5-7 days. If this is not the case, or if you are concerned about progress, please call your local vet for advice.

EXERCISE PLAN AND PHYSIOTHERAPY REGIME

Important! Please only do what you and your dog are comfortable with. No exercise should be painful or forced. Trying to do too much is far more dangerous than adopting a more conservative approach!

WEEK 1

Expect slight wound swelling and holding the leg up most of the time

STRICT REST

LEAD EXERCISE FOR TOILETING ONLY (BELLY SLING SUPPORT IF NECESSARY)

NO STAIRS. NO JUMPING. NO SWIMMING / UNCLEAN ENVIRONMENTS

ICE PACKING (DAY 1-3): Using a bag of frozen peas wrapped in a tea towel, you can ice your dog’s knee (on the opposite side to the incision) for 5-10 minutes 2-3 times daily. Icing is one of the most important things you can do to help your dog in the immediate post-operative period. It controls and decreases inflammation and will help to reduce post-operative pain. Only do this if you feel comfortable doing it and your dog is happy to let you do so!
WARM COMPRESS (DAY 5+): If the incision is clean and dry. Use a hot water bottle (with cover on ie not too hot. It should be comfortable to touch) to warm the knee for 10 minutes. Then perform:

RANGE OF MOTION EXERCISES (DAY 5+): These should be very gentle with no attempt to go beyond what is comfortable for your pet. Have your pet lie on his/her good side and gently flex and extend the operated knee while supporting the leg. Being very patient and careful, perform 10 slow repetitions. Repeat these three times daily. You should only do this is if it is within your pet’s comfort level. Ask the veterinary nurse to demonstrate this exercise to you when in for a progress check.

Important! This injury tends to occur in young dogs or rather excitable puppies! If it is too stressful or not enjoyed by your dog (a treat helps!) then hold off and try and again in a few days.

WEEK 2-4

Expect use of the leg but still a slight lameness

CONTINUE WARM COMPRESSES AND RANGE OF MOTION EXERCISES: Continue flexion and extension exercises of the knee as described above. In addition, hold the joint in full flexion and extension for 5 seconds. Perform 10 repetitions and repeat three times daily. Again, do not go to the point of creating pain or resentment.

SLOW LEASH WALKS FOR 10-15 MINUTES 2-3 TIMES DAILY: Walking slowly encourages your dog to use the leg. Soft, flat ground (e.g. lawn) is an ideal surface.

Important! Your pet may feel like using the leg normally. It is really important that the exercise plan and physiotherapy regime is followed. Don’t overdo it!

WEEKS 4-6

Expect to have a progress check with your vet around now. They may take an x-ray to check the bone has healed. If your dog has a considerable amount of bone growth potential remaining a decision may be made to remove the pin and wire. We will advise on the next step of your pet’s physical rehabilitation plan. Below is a guide only.

CONTINUE RANGE OF MOTION EXERCISES

SIT/STAND EXERCISES: Have your pet repeatedly sit and stand for 10 repetitions twice daily. Use of a small treat can help with this! This should only be performed voluntarily- do not push down on the rump. If your dog is not quite ready for this, give it a few weeks and try again.
INCREASE LEASH WALKS TO 15-20 MINUTES 2-3 TIMES DAILY This should still be on a short leash. Only increase exercise duration if your pet is showing good progress.

WEEKS 6-8

Expect good weight bearing on the affected leg

INCREASE LEASH WALKS TO 20-30 MINUTES 2-3 TIMES DAILY AND START CONTROLLED OFF LEASH EXERCISE: This should still be on a short leash but you can start to gradually increase time and distance. You can also start to incorporate uneven ground. Provided the radiographs from the previous review are satisfactory you can start to allow some off lead exercise

CONTINUE SIT/STAND EXERCISES

WEEK 8+

Expect full weight bearing but remember every patient is different!

CONTINUE SIT/STAND EXERCISES

CONTINUE LEASH EXERCISES FOR 30-45 MINUTES TWO TO THREE TIMES DAILY Younger dogs that are recovering well can also have a slow 5-10 minute jog on the leash at this stage. In addition, small hills and uneven ground will start to build up the musculature in the leg.

SWIMMING / HYDROTHERAPY

Swimming is a wonderful rehabilitation exercise when performed correctly. It can improve range of motion of the joint and musculature of the limb. You may allow controlled swimming from 6-8 weeks after the progress check with your vet. This should not involve jumping into/out of the water. Ideally you should walk your dog slowly and safely into deeper water and allow them to swim. Only perform this in a safe area and if your dog enjoys swimming. Never put yourself or your dog at risk!

There are now several excellent pet hydrotherapy centres in the UK. Standards can be variable- your local vet will advise you on a good hydrotherapy centre in your area. Generally a referral from your local vet is requested. This ensures communication regarding your pet’s condition and allows the hydrotherapist to formulate a suitable program. Some centres will take your dog earlier than 6-8 weeks. At VetFix, we advise waiting until after the progress check/x-ray at 6-8 weeks.
LONGTERM OUTCOME AND LIFESTYLE

Prognosis varies with the age of the dog and the time from when the injury occurred to surgery. We expect a good to excellent outcome in most dogs. Some dogs that are very young will do less well. Because the tibia is still growing a tibial tuberosity avulsion can disrupt the normal growth of the bone. As such angular limb deformities can occur. We will try our best to avoid a deformity of the tibial tuberosity occurring but in some cases it can be inevitable. In rare cases this can impact on longer-term function of the joint.

COMPLICATIONS

With any surgery complications can and do occur. Perhaps the most common is irritation of the soft tissues by the pins. This can occur in 5-10% of cases and most of the time is rectified by removing the implants once the bone has healed. Despite every attention to sterility, surgical site infections can occur in approximately 5% of cases. These may resolve with antibiotics or require the implants to be removed.

Be warned! We have known tibial tuberosity avulsion to occur in both legs. There is little you can do to avoid this but be prepared emotionally and financially!! By twelve months of age you are normally out of the woods 😊