

Tibial Fractures

Anatomy

The hind limb has two bones between the knee and the ankle joint: the tibia and fibula bones. The tibia is the larger weight-supporting bone, whereas the fibula bone supports minimal weight. Puppies have much softer bones than adults; therefore, more fractures occur in younger dogs. If the tibia fractures, the fibula commonly fractures too.

Cause of fractures

In small breed dogs, landing on the hind limb from a fall or being stepped on are the most common causes of fracture of the tibia. In large breed dogs, usually substantial trauma is needed, such as being hit by a car. Gunshot injuries will result in an open wound over the fracture in which dirt and hair usually are driven into the tissues. This could potentially result in infection and delayed healing of the bone.

Surgery

For most fractures of the tibia, a bone plate and series of screws are used to stabilize the fracture. This treatment results in the least aftercare for the client and has an excellent chance for a successful outcome.

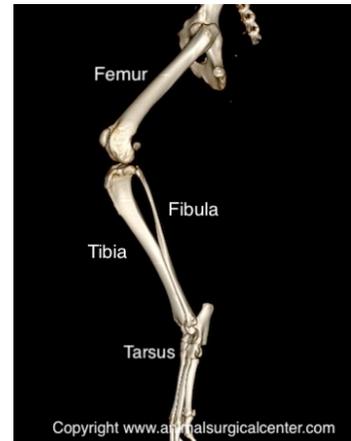
If the fracture is caused by a gunshot or other trauma that results in an open wound over the fracture site, an external fixator may be the treatment of choice. Also, if the bone is fractured in multiple small pieces, the best treatment may be an external skeletal fixator. This apparatus consists of multiple pins that penetrate the skin and bone and are connected to external bars that run parallel to the bone.

Another implant that can be used to stabilize a tibial fracture is called an interlocking nail, also known as the I-loc. This implant is placed in the marrow cavity and has two bolts that are placed through the cortex of the bone at each end which then further lock the bone to the medial rod. This is a very stable and strong repair that is commonly used for complex tibial fractures.

The use of a cast as the sole treatment commonly results in a nonhealing fracture or malalignment of the bone (bent/twisted bone).

Home care

After surgery, you can continue to give your pet a prescribed pain reliever to minimize discomfort. A bandage should be kept on for about 1 week after surgery. You may remove the bandage at home or if you choose, return to your local veterinarian or us to have this done. It's also extremely important to limit your dog's activity and exercise level during the post-operative period. Detailed instructions will be given to you after the surgery. The surgeon will monitor the healing process with at least two follow-up exams. The first is



scheduled at two weeks after the surgery. During the second exam, at five to eight weeks after the surgery (depending on the age of the patient), radiographs will be made to evaluate the healing process.

Results

Surgical repair of a fractured tibia with a plate and screws, I-loc or external skeletal fixator offers multiple benefits including a faster recovery, earlier use of the limb after surgery, better chance to return to athletic activity, less risk of a second surgery being required, and better range of motion of the joints above and below the fracture. Uncommon complications include infection, nonhealing of the fractures, breakage of the metal plate, osteoporosis of the bone, bone cancer induce by metal implants, cold sensitivity and fracture of the bone again.

Assessment and recommendations

Patient: _____ Date: _____

Treatment

- Surgery is recommended

The following has been prescribed

- No medications or special diet are necessary at this time.
 Pain controlling medication: _____
 Nonsteroidal anti-inflammatory medication: _____
 Antibiotics: _____

Exercise

- Confine your pet to the house other than very short leash walks necessary for bowel movements and urination
 Restrict exercise to leash walks 10 minutes twice daily
- A splint/bandage has been applied. Twice daily, please check for:
- Swelling of toes (if there is no swelling the middle two toe nails will touch each other)
 - Cold toes – this may indicate poor circulation
 - Foul odor
 - Discharge seeping through the bandage
 - Increased lameness
 - Excessive licking or chewing at the bandage
 - Please note that a new bandage/cast will feel strange to your pet initially, but he/she will typically get used to it within 12 hours. If your pet continues to be uncomfortable or more lame after the bandage has been changed, please call us.

Preparation for surgery

- Start fasting your companion at midnight before the surgery; water should not be withheld
 Pepcid AC 10 mg tablets: give _____ tablet(s) with water (if needed use a syringe) at 6 AM on the day of surgery