

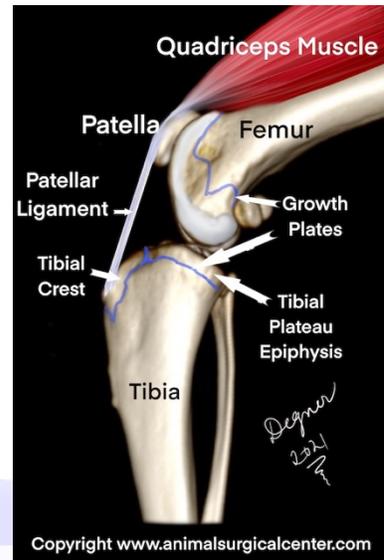
# Tibial Plateau Growth Plate Fractures

## 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. The top and bottom of the tibia bones have a very soft region called the growth plate from which the bone grows. This area is particularly prone to developing a fracture until the growth plate has closed (fused) at 8 to 10 months of age. This type of fracture is uncommon in cats.

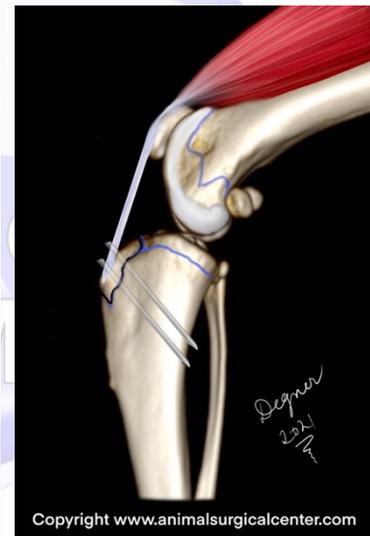
## Cause of fracture

The patellar ligament is attached to the tibial crest. A tractional force placed on the tibial crest by the pull of the quadriceps muscle can result in a fracture through the growth plate of the tibial crest.



## Surgery

For most fractures of the growth plate of the tibia, one or more pins and sometimes a tension band cerclage wire are used to repair the fracture. There are two approaches to repair tibial crest fractures: minimally invasive surgery and open surgical incision. The minimally invasive surgery involves the use of intraoperative radiography to place pins through the skin. The open surgical approach involves making an incision large enough to expose the tibial crest and pin it in place. With this approach a tension band cerclage wire can be applied for additional fixation of the bone in place. In our experience, both minimally invasive surgery and open surgery have the same success rate. Surgical repair of a displaced tibial fracture is essential, due to continued displacement of the bone by the pull of the quadriceps muscles/patellar ligament.



Minimally displaced tibial crest fractures commonly will become significantly displaced. However, with strict cage rest, a minimally displaced tibial crest fracture can heal. Splints applied to the limb commonly fail to stabilize the fracture. In these conservatively managed cases, weekly radiographs should be made (until fracture heals) and if there is displacement of the tibial crest fracture, surgery should be completed.

## Home care

After surgery, you can continue to give your pet a prescribed pain reliever to minimize discomfort. A cast may be placed on the limb for selected fractures and in some cases only a bandage is applied. It's also

extremely important to limit your companion'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 three to five weeks after the surgery (depending on the age of the pet), radiographs will be made to evaluate the healing process.

## Results

Surgical repair of a fractured tibial crest offers multiple benefits including a faster recovery, better chance to return to athletic activity and better range of motion of the knee joint. Uncommon complications include infection, shifting of the tibial crest, breakage of the metal pins or wires. Formation of a fluid bubble (seroma) of over the end of the pin(s) may develop; if the seroma does not resolve after fracture healing has taken place, then the pins can be removed. If partial closure of front side of the growth plate of the tibial plateau occurs, the tibial plateau will flatten which will have a protective effect against cranial cruciate ligament tear.

## Assessment and recommendations

Patient: \_\_\_\_\_ Date: \_\_\_\_\_

### Treatment

- Surgery is recommended
- No surgery is recommended and crate rest is recommended; please return for an assessment to us in \_\_\_\_\_ week(s).

### 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

### 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 (use a syringe if needed) at 6 AM on the day of surgery