Post-operative Information: Femoral Fracture, IM pin stabilization

Your pet has had a fracture of the femur (i.e. broken thigh bone) repaired with metallic implants called intramedullary (IM) pins. These implants are surgically inserted down the center of the bone, bridging the fracture to provide stability until the bone heals to its original strength. The majority of patients will need to have their implants removed during a very minor sedation and surgical procedure. After fracture healing, patients will not have long term activity restrictions.

ACTIVITY RESTRICTION x 6 weeks

- Please keep your pet in a comfortable, safe indoor location without access to stairs for the next 24 hours as he/she recovers from anesthesia & surgery. Your pet may be groggy for the first few days. He/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 medication adjustments, or return for exam & additional pain medications as needed.

- Confine your pet to one level/section of the house on carpeted floors. Use baby gates, etc. to prevent access to slippery floors or stairs. Do not allow jumping on/off furniture. Confine to a small area/room/crate when unattended. Please do not allow any playing, running or jumping. For dogs, use a short leash when going outside to urinate/defecate.

- Your pet will feel like fully using the leg before the fracture is healed. Please continue the restriction during this difficult time when he/she is feeling "too" well! Failure to do so may cause serious healing problems.

INCISION CARE

- Please look at 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.

- It is common for a fluid pocket/swelling to develop over the top of the pins where they sit just under the skin up by the hip. This will resolve once the fracture heals and the pins are removed. Very rarely do we do anything for this swelling prior to fracture healing.

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; remove when indoors. You may remove the bandage in 5 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; it does not need to be replaced.

PROGRESS EXAMS

- Return to your veterinarian in 10-14 days for a progress exam. Skin healing and leg function will be evaluated, sutures will be removed, and any physical therapy questions will be addressed.

- Your pet should start touching his/her toe down within the first 2 weeks. Thereafter, leg use should steadily improve to 90% normal at 6-8 weeks. If you notice a sudden deterioration in leg use at any time after surgery, please see your veterinarian for exam.

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; carrying less body weight will relieve some of this stress from the joints. 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.

Prepared by: DIRECT VETERINARY SURGERY

PHYSICAL THERAPY REGIMEN

(We can also recommend professional physical therapy assistance in the Twin Cities. Studies have shown that a formal program can decrease post-operative recovery time. Please let your veterinarian know if you are interested in a referral.)

- 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 too early may result in failure of the implants and surgical repair.

- *Week 1*: Apply ice packs (wrapped in thin cloth) to the incision area twice daily for 10-15 minutes. Baggies of frozen peas work well for this, or make an ice pack by freezing 2 parts isopropyl alcohol to one part water in a ziplock bag. Continue 5 days.

- *Week 2*: Range of Motion Exercise-- Have your pet lie on his/her good side. Apply a warm compress to incision area. Grip the foot with one hand and slowly and gently push the foot *up into flexion* of all joints; hold 5 seconds. Slowly pull the foot and push the leg *down and back into extension* of all joints; hold 5 seconds. Repeat this motion 15-20 times twice daily. This exercise should not be performed to the point of pain or resentment. Initially there will be stiffness, primarily when attempting to flex the limb. Continue 4 weeks.

- *Week 3*: Massage-- Have your pet lie on his/her good side. Superficial skin massage around the thigh and knee involves using your fingers loosely on the surface of the skin, applying enough pressure to move the skin relative to the underlying tissues. Muscle massage of the thigh involves deeper kneading and pushing of the muscles. Perform both types of massage for 10-15 minutes twice daily. Continue 4 weeks.

- *Week 4*: Sit/stand Exercise (for dogs)—Have your pet repeatedly sit and stand for 15-20 repetitions twice daily. Use small treats to encourage participation. Continue 4 weeks.

- *Week 6*: Active exercise (for dogs)-- Place your pet on a short leash and have him/her walk at your side. Walk outside on even/solid footing for 10 minutes twice daily. Continue 4 weeks, gradually increasing time and distance.

- Swimming is wonderful rehabilitation exercise (for some dogs) when performed correctly. You may allow controlled swimming after week 6. 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, which can cause serious problems in the healing phase. Do not over extend your pet; start with short excursions (5 minutes) and increase duration and frequency gradually.

LONG TERM LIFESTYLE

- After the fracture is fully healed, there are no restrictions on activities for your pet. A gradual return to full function should occur, to allow for a smooth return of muscle function and strength following the restricted period.

- As mentioned above, the pin(s) that have been placed across the fracture commonly need to be removed to eliminate the irritation that the pins cause under the skin. These are easily and quickly removed under heavy sedation if a problems exists after the fracture is healed.

- Quadriceps muscle contracture ("tiedown"), or extensive scarring of the thigh muscles, can occur following some femur fractures, especially those near the knee. The scarring comes from excessive muscle damage sustained during the original injury. Over time, this scarring prevents normal flexing of the knee joint; early physical therapy exercises as outlined above and effective pain management (that allows physical therapy to proceed) is essential to preventing this loss of knee function following these types of injuries.

- If the fracture occurred at a growth plate, the trauma of the injury and the disruption caused by surgery to repair the fracture can cause a growth plate to "close" or stop growing. This may result in abnormal growth patterns in the bone and can cause angulation of the joints. Monitoring is required during the first 2 months following repair to determine whether growth plate problems will develop.