

Informed Consent

Fracture Repair Internal Fixation

Your pet has been diagnosed with a fracture. The goal of surgery is to realign the bone and place some method of fixation to hold it in place. Methods used vary depending on the fracture and the circumstances, but may include pins, wire, and/or a bone plate and screws (or plates). These stainless steel objects are called surgical implants, or simply “implants.” Generally the prognosis with surgery is much better than without, and the prognosis is generally good to excellent. However, the prognosis for some fracture types (complex fractures or fractures involving the joints) may not have as good of a long term prognosis due to complexities of repair and the nature of joints involved. You have elected surgical repair/fixation of your pet’s fracture and even though the prognosis is favorable with surgery, we need to make you aware of a few of the most common complications that could arise after this surgery. If you have any questions or concerns, please let us know.

The risks of complications after fracture repair is low, about 10-15% of cases. Here are some potential risks:

Infection- this may require oral antibiotic therapy and in some cases may require removal of the metal fixation

Implant failure- if there is too little fixation applied or there is too much activity after surgery, the fixation (plates, screws, pins, and/or wire) could loosen or break prior to the bone healing. Generally, the bone takes about 3 months to heal (closer to 2 months in very young pets) and the fixation has to hold up during this time to remain effective. Generally implant failure requires revision surgery.

Implant loosening- generally due to excess motion or infection, and usually occurs with screws or pins. This complication may not require revision but usually requires removal of the loose component because it causes irritation.

Inadequate reduction - we try our best to put bone back together how it was before the fracture occurred. We cannot, however, always get it back together as “perfect” as it was. Most bones will heal and function acceptably, as long as they are close to where they need to be. In some cases, revision surgery may be needed to obtain near perfect reduction, if a fracture involves the joint. This is to prevent long term complications in the joint (stiffness and/or arthritis).

Improper implant position- if the surgical implants are not optimally placed during surgery, they may need to be repositioned to help achieve the best outcome. This surgical revision is generally performed immediately during the initial surgical procedure.

Quadricep contracture- this can occur specifically with fractures of the femur, especially fractures close to the knee, and especially in young pets. The condition occurs as a result of vigorous healing, and leads to an irreversible shortening of the thigh muscles (quadriceps) and often affects limb and joint function. These pets cannot flex their knee. The condition is not repairable and when they cannot function in this scenario, amputation is required. Prompt fracture repair, rigid fracture stabilization and good physical therapy postoperatively can minimize the risk of this complication.

Healing complications- there could be a delay in normal healing (delayed union) where the bone takes longer to heal than expected. Geriatric patients or those patients with underlying health issues are at greater risk of poor bone healing. There could be a situation where the bone isn't able to be put back together as it was and it might heal in the "wrong" position (known as malunion). Malunion doesn't usually require revision but it could affect limb function. If the bone simply doesn't heal, that is known as nonunion and is usually due to excess motion or infection, but usually requires revision.

There can be damage to soft tissues including muscle, tendons, ligaments, nerves, and blood vessels. This could be due to the trauma that caused the fracture, or could occur during surgery. Of the soft tissues, usually the most permanent is nerve damage.

Angular limb deformity- fractures in skeletally immature animals can cause damage to the growth plates that could cause growth disturbances as they continue to mature. In addition, fractures that involve or are close to growth plates in young dogs and cats that are repaired surgically could also be disturbed by the fixation that is applied to repair the fracture. The severity of the deformity often ultimately depends on the age of the pet at the time of the disturbance. Very young pets have a greater risk of growth plate complications, as they have a greater period of time before they stop growing. This may or may not require additional surgery to remedy, depending on the severity of the deformity and the function of the leg at the time the deformity is noted.

Osteomyelitis- this is a rare but severe infection of the bone

For fractures that involve a joint, the complications may include arthritis (osteoarthritis or OA)/degenerative joint disease (DJD)- one of the goals is to align the bone more normally to keep the joints in a more normal alignment. This may only be possible to some degree and if the joints are not aligned normally, there could be a change in how forces are transmitted through the joints. That could lead to arthritis in the joints of the limb down the road. Once arthritis starts, it progresses through life. This is addressed on a case by case manner.

There may be other fracture complications that will be addressed by your veterinarian or veterinary surgeon on a case by case basis.

Fractures and fracture biology is complex and dependent on the individual animal with it's biology, the trauma that caused the fracture, and how that trauma affected the animal. The reality of this situation is that there may be issues and complications we cannot predict. In other words, this list is not exhaustive, but includes the most common issues we do see. Please let your surgeon or veterinary staff know if you have concerns.