

Clinical Minute: Fracture Management

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Introduction

Fractures (broken bones) occur frequently and often times unexpectedly in our furry friends. Fractured bones happen typically after significant trauma, or less frequently due to disease of the bone as seen with bone cancer. Blunt force trauma such as being hit by a car, jumping from high surfaces, or even jumping up after a Frisbee can lead to a broken bone. Young, growing dogs are even more susceptible to broken bones, especially around the growth plates.

Clinical Signs and Diagnosis

Often times the broken bone is only a small part in the bigger picture after suffering a traumatic event. It is extremely important that after any traumatic event that your dog is evaluated by a veterinarian to ensure life-threatening conditions are recognized and treated. If the event occurs during the day your dog should be taken to your regular veterinarian as soon as possible; if it happens at night or when your veterinarian is closed your dog should be taken to an emergency veterinarian. It is not recommended to wait after traumatic events. Immediately after trauma it may not be known if there are any broken bones, therefore your veterinarian or the emergency veterinarian will evaluate your entire dog. This exam typically includes radiographs (X-rays) of the chest, abdomen, and limbs, potential ultrasound of the abdomen and chest, along with blood work, and monitoring of vitals.

Pain management is very important and often times your pet will need to be stabilized with intravenous fluids and medications. Once your pet is stable, any fractures will be identified, and commonly the fractured limb is placed into a bandage or splint (if the fracture involves a lower limb) until surgical treatment can take place. It is not uncommon for

fracture management to occur 24-72 hours after the trauma. This waiting time is used to ensure that there is no bruising of the lungs or heart, and that your pet is able to handle the anesthesia needed for a fracture to be repaired.

With broken bones your pet may not want to put any weight on the limb, and severe swelling or bruising may be noted. Your veterinarian or VOSM will perform an orthopedic and neurologic exam to determine the location of the fracture and if any neurologic deficits are present. Radiographs will be needed to determine the exact bone, the fracture configuration, and the best way to repair the broken bone.

How are fractures treated?

Surgery is commonly recommended for most fractures. Which bone is fractured and the type of fracture will dictate what type of fixation is needed. At VOSM, we have many options to repair fractures, from intramedullary pins and wire, bone plates and screws, to external skeletal fixation. Since not all fractures are the same, our surgeons are trained in many different ways to fix fractures so that treatment can be customized to your dog and the type of fracture. The surgeons at VOSM are also trained in the use of minimally invasive fracture management, and, when able, recommend performing fracture fixation in as minimally invasive way as possible. To accomplish this we routinely use fluoroscopic imaging (real time radiography) to assist in the placement of pins, plates, and screws. This allows us to make smaller incisions, avoid disrupting the fracture blood supply, reduce pain, and speed up healing time.

What happens after surgery?

After surgery your dog will need a period of rest and relaxation of about 8-12 weeks. This means no running, jumping, or playing. Your dog will need to be taken outside on leash to urinate and defecate; excessive climbing up and down stairs or on and off furniture should be avoided. We recommend when not directly supervised that patients be placed in a crate, small laundry room or bathroom, or a small portion of the house sectioned off so that your dog remains calm and confined. Excessive activity will lead to implant breakdown, soft tissue injuries, or delayed healing.

The staples/sutures will be removed approximately 2 weeks after surgery, and radiographs will be needed at 4, 8, and possibly 12 weeks after surgery to evaluate healing. At these points an orthopedic exam will also be performed to ensure the surgical site is healing as expected.

Just as with humans, we recommend physical rehabilitation beginning two weeks after surgery. Rehabilitation will involve once-weekly formal rehabilitation sessions in conjunction with an at-home exercise program. We have noted quicker healing, maintenance of muscle mass and range of motion, and superior outcomes in patients that under go rehabilitation. Furthermore, rehabilitation offers an outlet of energy in controlled manner so that your dog is still able to maintain some activity while healing.

Following surgery at VOSM, we recommend that patients begin oral joint supplements (Dasuquin Advanced, Nutramax Labs), omega-3 fatty acids (Welactin, Nutramax Labs), maintain a healthy body weight, and remain active once healed from surgery. These things will be the building blocks along with surgery to minimize and slow down the progression

of osteoarthritis, especially if the fracture involved a joint.

Are there any possible complications?

At VOSM we take great pride ensuring our patients return to as normal function as possible. As with any surgery there are risks associated. Particularly, with fracture fixation surgery, the most common complications noted are implant breakdown (breaking/bending of the pins, plate and/or screws), infection, and soft tissue injuries.

Infection rates are relatively low unless the bone has penetrated the skin causing an open fracture; during surgery at VOSM your dog will be given antibiotics during surgery and will be sent home with antibiotics after surgery in many cases. If an infection does occur, then once the bone is healed, the pins, plate and/or screws will be removed to resolve the infection. Implant breakdown and soft tissue injuries typically occur from over activity. Many soft tissue injuries will resolve with appropriate rest, rehabilitation, and medications.

Furthermore, to ensure keeping infection rates low you dog will receive antibiotics before, during, and after surgery. Additionally, just as if any individual human or animal undergoes anesthesia, it is considered very safe, but there are risks involved. Because of these risks, a complete physical exam and blood work is completed by one of VOSM's specialists. During surgery your pet will be monitored by one our trained staff members at all times to ensure the highest level of monitoring and safety.

About the Author



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