

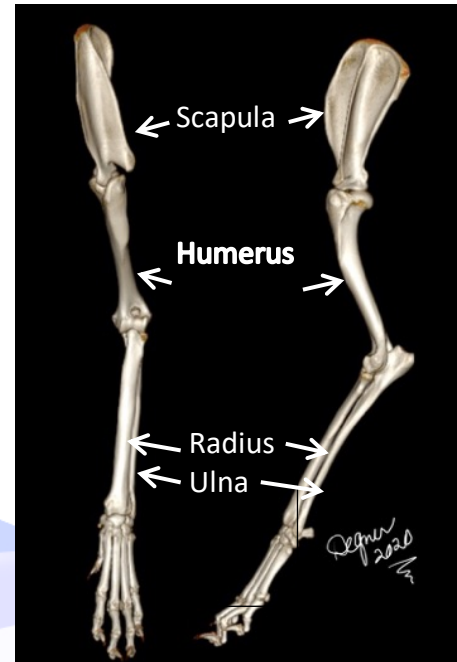
Humeral Fractures

Anatomy

The humerus connects with the radius and ulna bones to form the elbow joint and the scapula to form the shoulder joint. The radial nerve is critical for normal function of the forelimb and wraps around the outer side of the humerus bone and can get injured with humeral fractures.

Cause of fracture

Because the humerus bone is well protected by thick surround muscles, a fracture of this bone requires substantial trauma, such as being hit by a car. Secondly, gunshot injuries not only will fracture the bone, but also will result in a dirty open wound. This could potentially result in infection and delayed healing of the bone. Also, if the fractured bone is sharp it may penetrate through the skin and result in infection of the bone. If the pet sustains a fracture without any known trauma, there may be an underlying disease that has weakened the bone such as nutritional deficiencies. Foods that have too much phosphorus and too little calcium or too much vitamin A will make the bones weak. Some animals have an inherited collagen defect that weakens the bones, resulting in bone fractures with minimal trauma. Bone cancer also can weaken the bone and predispose the pet to a spontaneous fracture.



Surgery

For most fractures of the humerus bone, a bone plate and series of screws are used to stabilize the fracture (see right). 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.



A more recent treatment modality, the I-loc, which is an interlocking nail, is an excellent method to treat humeral shaft fractures. This involves placing a rod down the marrow cavity with locking bolts that traverse the bone and screw into the nail. Two bolts are placed distally and two proximally (see above right).

Home care

After surgery, you can continue to give your pet a prescribed pain reliever to minimize discomfort. 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 about eight weeks after the surgery (depending on the age of the dog), radiographs will be made to evaluate the healing bone.

Results

Surgical repair of a fractured humerus bone with a plate and screws, I-loc, or external skeletal fixator provide a fast recovery, early use of the limb after surgery, good chance to return to athletic activity, low risk of a second surgery being required, and good 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 Spika 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 (use a syringe if needed) at 6 AM on the day of surgery

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