

## Humeral Condylar Fractures

### Why do dogs get lateral humeral condylar fractures?

Three bones come together to form the elbow joint: the humerus, radius and ulna bones. The radius bone supports 80% of the weight, whereas the ulna supports 20% of the weight. The top of the radius bone is in contact with the outer half of the bottom of the humerus bone (called the lateral humeral condyle) at the level of the elbow joint. Because of this anatomy, the forces that are transmitted through the limb can break off the lateral humeral condyle. In some cases, both condyles are broken off the end of the bone, making the surgery much more complex. Puppies have much softer bones than adults; therefore more fractures occur in immature dogs. All it can take to sustain this type of fracture is a fall or jump off an elevated surface.

Some adult dogs also are susceptible to developing this type of fracture because the humerus bone has a soft spot (incomplete ossification). This is potentially caused by a genetic defect; therefore breeding of affected dogs is not recommended. Breeds that are prone to incomplete ossification of the humerus bone include Pugs, French bulldogs, Cocker spaniels, Brittany spaniels, and occasionally Rottweilers.

### Surgery

Because this type of fracture extends into the elbow joint, surgery is essential. Conservative treatment of such fractures with a splint or cast consistently results in a stiff elbow, which impairs the ability of the pet to use the limb. Surgical treatment of a lateral condylar fracture of the humerus must be done soon after the fracture has occurred for the best possible outcome. Your companion's surgeon will make an incision to expose the fracture. Next, the bones are positioned together so that they line up perfectly and a screw and pin are inserted to stabilize the fracture.

### Home care

After surgery, you can continue to give your companion a prescribed pain reliever to minimize discomfort. A bandage should be kept on for 3 to 5 days after surgery to help with swelling. You may remove the bandage at home or return to your local veterinarian or us. It's also extremely important to limit your dog's activity and exercise level during the postoperative period; keep in mind that the bones are very soft and the screw may pull out of the bone with excessive activity.

Detailed instructions will be given to you after the surgery. Rehabilitation exercises can be done at your home or if you choose, by professionally trained therapists at an animal rehabilitation center. Rehabilitation therapy should be continued until your dog is bearing weight well on the operated limb (typically 4 weeks after 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 five to eight weeks after the surgery (depending on the age of the dog), radiographs will be made to evaluate healing of the fracture.



## Results

Surgical repair of a lateral humeral condylar fracture is essential for a successful outcome. Surgery offers multiple benefits including a faster recovery, early use of the limb after surgery, and correct healing of the fracture. Although this type of fracture involves the growth plate, one study has shown that the overall length of the humerus bone is not shorter, nor does the bottom of the humerus become deformed.

Uncommon complications include infection, failure of the fracture to heal, breakage of the metal screw or pin and arthritis of the elbow joint. The result could be arthritis and lameness. Overall, 85% of patients that receive surgery to correct a humeral condylar fracture have very good limb function after healing takes place.

## Reference

Lefebvre JB, Robertson TR, Baines SJ, et al. Assessment of humeral length in dogs after repair of Salter-Harris type IV fracture of the lateral part of the humeral condyle. *Vet Surg* 2008 Aug;37(6):545-51.

## Assessment and recommendations

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

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:

\_\_\_\_\_

## Exercise

Confine your pet to a small room or crate

Carry your pet outdoors for bowel movements and urination

A 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

## Preparation for surgery

Start fasting your companion at 10 PM, the night before the surgery; water should not be withheld

Pepcid AC 10 mg tablets: give \_\_\_\_\_ tablets with water (use a syringe if needed) at 6 AM, on the day of surgery