

Fracture of the Lateral or Medial Humeral Condyle

Your dog has suffered a fracture of the humeral condyle of the elbow. This may have been a purely traumatic injury, however, in some dogs, the elbow is weakened by a condition known as Humeral intracondylar fissure (HIF) which was previously known as incomplete ossification of the humeral condyle (IOHC). HIF has been reported in many breeds; the most affected breeds are Springer and cocker spaniels and the French bulldog.



In the young growing dog, the medial and lateral aspects of the humeral condyle are separated by a cartilage plate (ossification centre). This plate normally ossifies (becomes bone) by four to five months of age, fusing the two halves of the condyle. In dogs affected by HIF there may be inherent weakness in this region, such that the condyle is more susceptible to fracture. Intracondylar fissures may develop later in life and may be a type of stress fracture. HIF may occur in both elbows; it is advisable to check the non-injured elbow for evidence of the condition.



This may be done by x-ray, arthroscopy, or computed tomography (CT) scans. CT scans are by far the most effective way of assessing potential HIF. Where HIF has been confirmed in the non-injured elbow placement of a transcondylar screw is recommended to try and prevent fracturing in the future.



Fractures of the humeral condyle are typically repaired with a transcondylar lag screw in combination with either an anti-rotational Kirschner-wire, additional lag screws or a bone plate and screws. Occasionally an external skeletal fixator may be employed. For breeds at risk of HIF, healing of the intracondylar component of the fracture may be compromised, so more rigid fixation is desirable e.g. bone plate and screws to repair the supracondylar column in addition to a transcondylar lag screw.



Outcome and potential risks of surgery

As with any surgery, complications may arise and are detailed below, although serious complications are rare.

- Infection is an uncommon complication as strict sterile technique is used during the surgery and antibiotics are administered during and after the procedure. Statistically approximately 1 in 50 animals undergoing orthopaedic surgery are likely to develop a post-surgical infection; this will be higher for risk factors such as soft tissue injuries, contaminated wounds or pre-existing disease in the patient. Contamination of the wound in the early post-operative period may increase this risk e.g. your dog licking the wound in the first few days after surgery may significantly increase the risk of infection. Should infection occur, early detection and treatment generally results in rapid resolution, although very occasionally removal of the implants may be required once the bone has healed. More serious problems may occur if infection progresses untreated or in the presence of bacterial resistance e.g. MRSA. If you suspect an infection, contact your Vet immediately.
- Excessive early activity will reduce the likelihood of the bone healing and will increase the risk of screw failure or loosening, particularly in very young dogs that typically have much softer bone.
- Even after the bone has healed it is still important to have a controlled, gradual increase in activity, like human patients undergoing rehabilitation following surgery. If activity in dogs is increased too quickly after surgery straining of joint structures may occur. Rest and anti-inflammatory medications typically resolve these problems.
- As the fracture is inside the joint it is inevitable that arthritis will develop and progress. Fortunately, the majority of dogs recover very good joint function despite this.
- In immature animals the growth plate in the humeral condyle may suffer damage at the time of fracture. Occasionally this may result in significant shortening of the humerus or marked deformity of the humeral condyle. Consequences may include lameness and develop of significant osteoarthritis due to abnormal joint loading.

Postoperative care

Your pet should be kept confined to restrict activity (a large cage is advised). Short **leash** walks in the garden (a few minutes four to six times daily) are recommended to allow toileting. Confinement should be maintained at all times for the first three to four weeks following surgery, with the exception of scheduled rehabilitation as detailed below.

Ice packs for 10 to 15 minutes several times daily are recommended in the first few days following surgery to reduce swelling and improve comfort.

Passive range-of-motion exercises should be commenced 3 to 5 days after surgery (if tolerated). Flex and extend the affected elbow twenty to thirty times and repeat three to six times daily.

Four weeks following surgery commence lead walking for 5 minutes at a time, two to three times daily, but maintain confinement at other times. Lead walking may gradually increase but should not exceed **10 minutes** at a time for the first six weeks following surgery.

Hydrotherapy is beneficial (but not essential) to recovery but should only be performed in a centre with qualified personnel. Hydrotherapy may commence at three to four weeks.

Declaration:

I have read the information contained herein and am satisfied I have a sufficient understanding of the procedures my dog is scheduled to undergo, including potential complications that may occur and requirements for aftercare following surgery.

I hereby consent for my dog to undergo elbow fracture repair.

Owner's name:

Dog's Name:

Owner's signature:

Date: