

Surgery to repair intracondylar fractures is often complicated and convalescence can be prolonged. It is, however, possible to diagnose and treat IOHC *before a fracture occurs*.

**DIAGNOSIS OF IOHC BEFORE FRACTURE OCCURENCE**

Suitable candidates for screening for IOHC are English springer spaniels and all dogs with pain localised to the elbows. Dogs with intracondylar fractures in one limb should have the other condyle checked as it commonly affects both forelimbs. It can be difficult to confirm the presence of IOHC on a standard x-ray so CT (computed tomography) scanning is the preferred imaging technique.



CT image of the distal humerus with visible IOHC lesion

**PREVENTATIVE TREATMENT**

If IOHC is detected before a fracture occurs prophylactic surgery can be performed to stabilise the condyle.

This involves placing a long screw across the condyle (as is also performed when repairing an intracondylar fracture).



Post operative xray showing a screw placed across the condyle

**POST OP CARE**

- Patients usually return home the day of surgery or the following day.
- Exercise should be restricted for the first two weeks.
- Thereafter exercise may be gradually reintroduced.

**FREE TREATMENT**

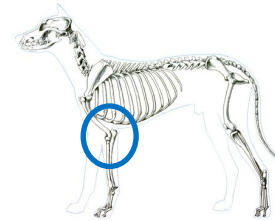
A research project is currently underway at SCVS offering free of charge x-ray and CT examination of the elbows of any English springer spaniels not suffering from forelimb lameness during 2009. Free-of-charge. Ask your vet for details.

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**INCOMPLETE OSSIFICATION OF THE HUMERAL CONDYLE (IOHC)**

**RELEVANT ANATOMY**

The humerus is the long bone of the upper forelimb.



The bottom part of the humerus (the "condyle") is part of the elbow joint.

In the growing dog the humeral condyle is divided in three by cartilage plates ("centres of ossification").

Growth of the bone takes place at these cartilage plates.

The cartilage at these growth plates turns to bone ("ossification") fusing the three sections of bone together.



View of the left humerus from behind. The condyle is circled.



View of the condyle. Blue lines represent the approximate position of centres of ossification

**WHAT IS IOHC?**

IOHC predominantly affects male Cocker, English springer and Brittany spaniels although other medium and large breed dogs may be affected. The cartilaginous plates of the humeral condyle fail to ossify completely (incomplete ossification) at the vertical physis leaving a fissure through the humeral condyle. This is a line of weakness.



IOHC commonly affects English springer spaniels

**SYMPTOMS**

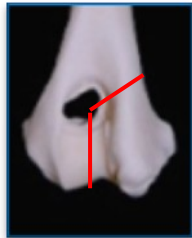
IOHC can produce clinical signs of forelimb lameness and elbow pain. Lameness may be intermittent and can range from mild to severe.

**FRACTURES**

Some dogs with IOHC do not show any clinical signs until a fracture occurs in the weak spot in the humeral condyle (intracondylar fracture). Fractures tend to separate the condyle in two fragments and extend upwards in one of four ways:



Lateral intracondylar



Medial intracondylar



'T' fracture



'Y' fracture



CT image of a medial condylar fracture secondary to IOHC



X-ray image of a lateral condylar fracture secondary to IOHC

Since these fractures affect the elbow joint, accurate surgical repair to restore a smooth weight-bearing surface is important. Surgery usually requires fixation with metal plates and screws as well as a long screw placed across the condyle.

The technique employed depends upon the number and site of fractures.



X-ray of a right condylar fracture consisting of an intracondylar fracture, and components of T (laterally) and Y fractures (medially)



Post operative xray of the same distal humerus following repair of the fracture with a single lag screw crossing the condyle (red arrow) and bone plates on the medial and lateral surfaces

Surgical repair of intracondylar fractures can have good results. Much depends on meticulous surgical technique and appropriate post operative care. Unfortunately, osteoarthritis is inevitable in elbow joints following surgical repair, and will progress throughout the dog's life.

**POST OP CARE**

- Patients are usually hospitalised for 24-48 hours post operatively.
- Pain relief is provided while in hospital and for the days or weeks following surgery.
- Exercise restriction is vital in the first 4-6 weeks to protect the implants.
- The patient should be strictly confined (crate/cage or room devoid of furniture) for the first 2-3 weeks as jumping could result in implant failure or re-fracture. Trips to the garden are allowed 4-6 times daily on the lead for toileting purposes only.
- The incision site should be checked daily for abnormal discharge and should be checked by your own vet 3-5 days after returning home. Stitches or staples can be removed (again by your own vet) 10-14 days post surgery.
- Physiotherapy and hydrotherapy in our underwater treadmill are highly recommended during convalescence. Please see our separate information leaflet for further details about how Donna Scott our physiotherapist can help your pet.