

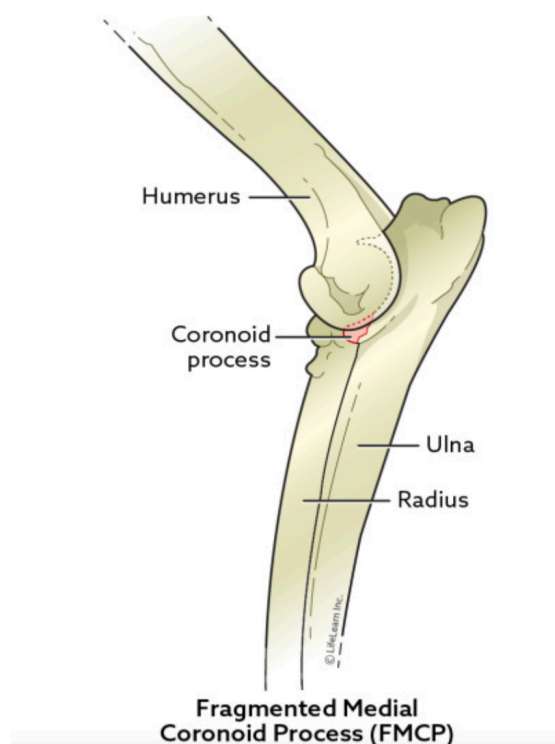
Fragmented Medial Coronoid Process (FMCP)

Elbow Dysplasia

Elbow dysplasia can be subdivided into several conditions, which can be present individually or in combination, they include:

- ununited anconeal process (UAP)
- fragmented medial coronoid process (FCP)
- osteochondritis dessicans of the medial humeral condyle (OCD),
- ununited medial epicondyle (UME)
- elbow incongruity

While all of these conditions are distinct and probably develop in different ways, they have in common that they produce loose pieces of bone and/or cartilage within the joint that cause irritation, like having a pebble does in your shoe. They are all primary problems that invariably lead to the secondary development of arthritis within the elbow. The term “arthritis” describes inflammation within a joint. The longer an elbow joint is ill-fitting or irregular, the more arthritis forms.



The elbow joint involves three bones rather than two, with weight being transferred from the humerus (upper arm) to both the ulna and radius of the lower arm. If the radius grows slightly slower than the ulna, this increases the pressure on the **medial coronoid process** of the ulna.

This is a problem that starts in young growing dogs (we often see dogs as young as 5 or 6 months old with this problem) although lameness may not be obvious until later in life. The breeds we see FMCP in most commonly are the Labrador retriever, Bernese Mountain Dog, German Shepherds and Rottweilers.



We do not know exactly why this growth difference occurs, but we believe that genetic or inherited factors are the main cause. Other factors such as overall growth rate, diet, exercise level and hormone levels may be involved to some extent.

The increased pressure on the medial coronoid process causes cracking of the bone at this point. This eventually leads to;

- damage to the cartilage of this area
- increased wear and tear of the cartilage on the humerus that rubs on the damaged area
- breakage of the coronoid process into fragments.

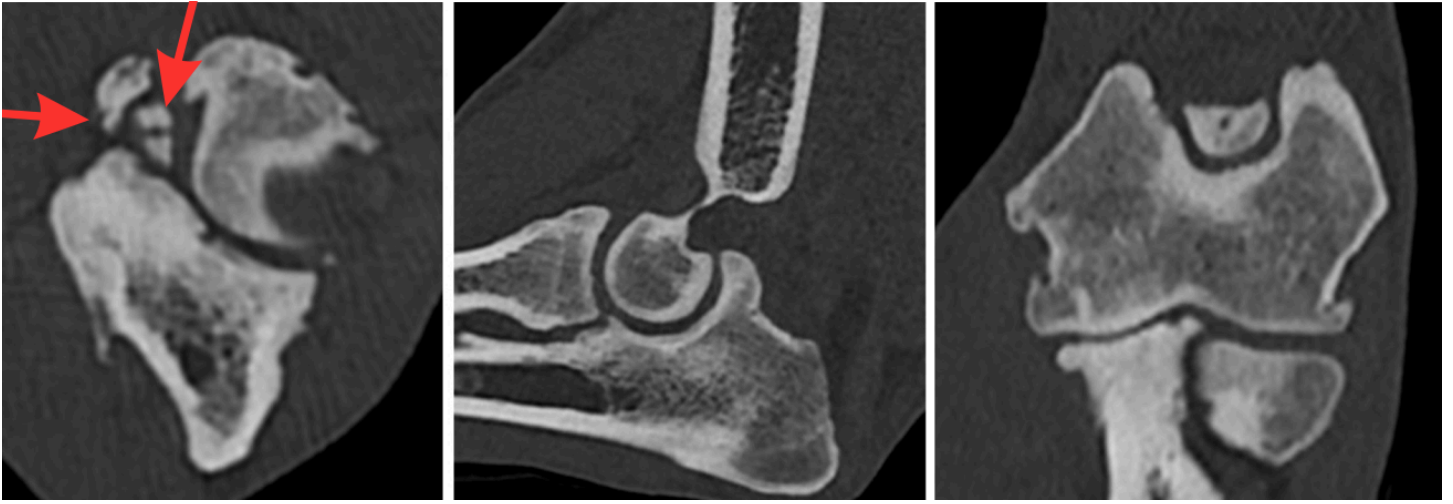
Together, this causes pain, lameness and arthritis.

Signs of FMCP

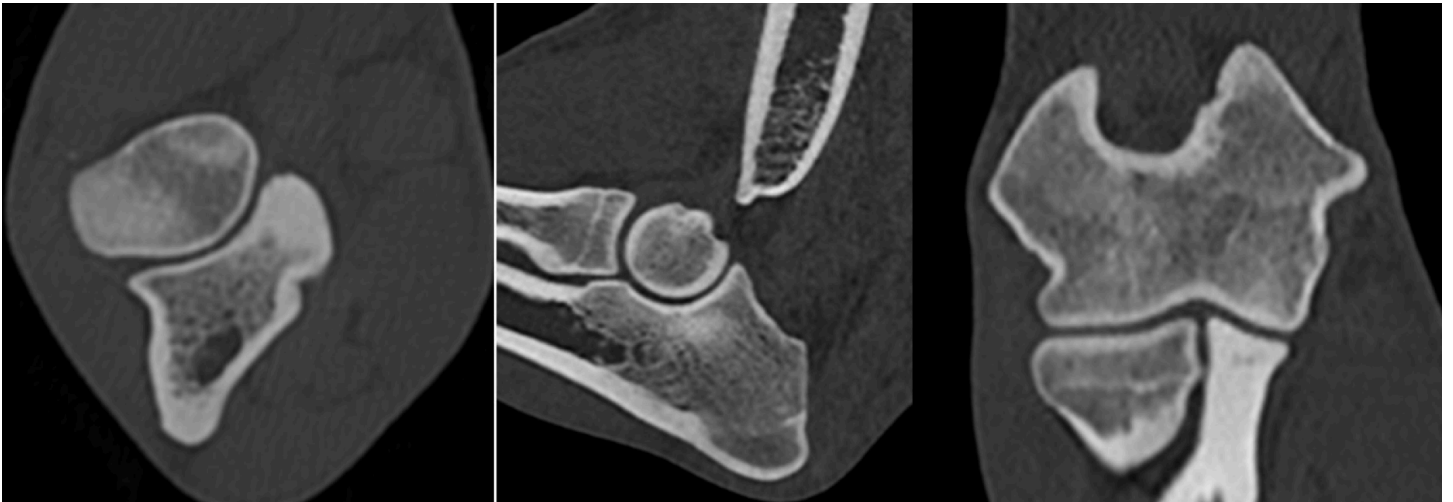
With this condition, lameness usually develops in the front leg (forelimb) of young dogs between the ages of 5 and 14 months. The dog will have a mild to moderate weight-bearing lameness, often worse after exercise or after periods of rest and being laid down. Dogs with this disease are lame in the affected leg(s) and they may cry when the elbow is palpated. In some cases, the affected joint is swollen and warm to the touch. The elbow joint will have a decreased range of motion on examination. It is relatively common for the condition to develop in both elbows (35% of cases will be bilateral), although it is usually worse on one side than the other.

Diagnosing FMCP

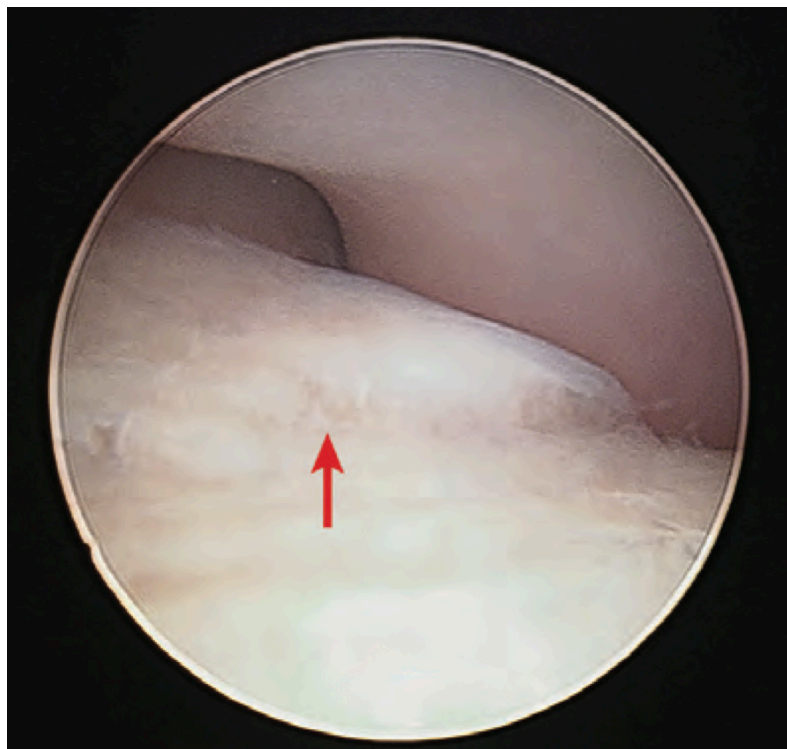
FMCP is diagnosed initially by examining your dog and X-raying or CT-ing the elbows. CT scans are far more sensitive for spotting this condition which is hard to confirm on X-rays. We can only definitively confirm the diagnosis by arthroscopy (inserting a small camera into the elbow and examining the cartilage). Sometimes no fragment will be apparent but small fissures and cracks may be seen. These can represent “the tip of the iceberg” with further damage under the surface and lifting these fragments off and removing them in a procedure called a subtotal coronoidectomy can improve the dog’s lameness significantly.



CT scans of an 18 month old female Labrador showing fragmented medial coronoid process (red arrows) with secondary osteoarthritis.



CT scans of the same dog's opposite elbow for comparison with no pathology.



Arthroscopic image showing a fissure of the medial coronoid and cartilage damage.

Factors affecting decision-making:

- Degree of clinical signs or pain
- Age
- Temperament
- Concurrent injury/problems
- Response to previous treatment
- Radiographic (X-ray or CT) findings

Whatever the treatment method chosen the elbow may still go on to develop arthritis. The treatment chosen may slow the progression of arthritis but will not completely stop it.

Non-Surgical Management

Some dogs with very minor damage may improve, at least in the short term with rest and medication alone. Medication can involve a combination of non-steroidal anti-inflammatories, other painkillers e.g. paracetamol, and monoclonal antibodies such as monthly Librela injections.

Surgical management

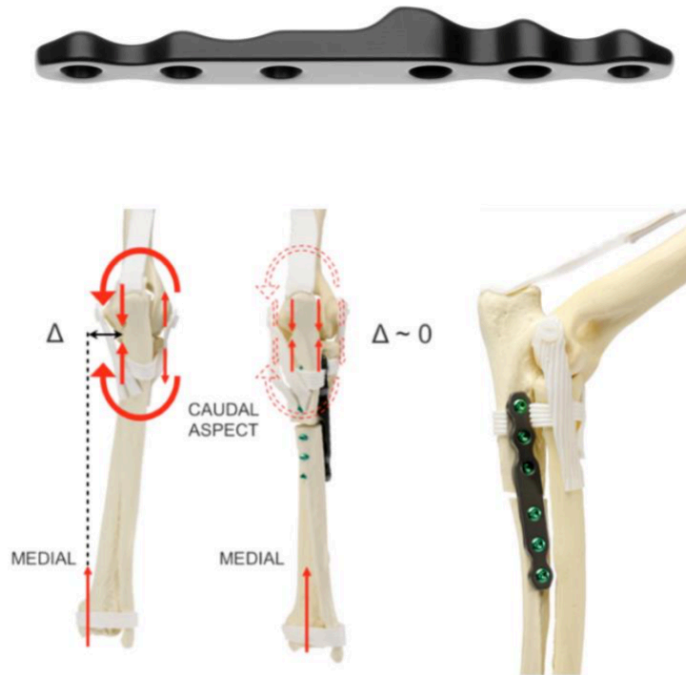
- **Subtotal Coronoid Osteotomy / Coronoidectomy (SCO)**

With more serious damage, when the coronoid process is obviously cracked or where fragments have broken away, we can improve lameness and pain in most dogs by surgical removal of the damaged parts. This can sometimes be done arthroscopically by inserting a camera into the joint and retrieving the fragments with fine instruments. Sometimes the fragments are too large so an arthrotomy (surgery to open up the elbow joint) may have to be performed to remove the fragments.

- **Proximal Abducting Ulna Osteotomy (PAUL)**

The PAUL technique aims to move the axis of weight bearing away from the damaged inner (medial) surfaces to the more normal outer (lateral) part of the elbow joint by using a plate with an 'offsetting step' applied across a cut made in the ulna just below the elbow.

Although we cannot reverse any arthritis or cartilage damage that has already taken place, surgical treatment will alleviate lameness for most dogs in the short term, and many dogs will go on to lead normal lives without showing noticeable pain or lameness.



Aftercare

- An Elizabethan (buster) collar should be worn at all times for the first 2 weeks.
- Pain relief (anti-inflammatories) will be prescribed for your dog for 4-6 weeks.
- Some surgeons will prescribe prophylactic antibiotics for the first week post operatively due to the presence of metal implants in the bone in the case of PAUL procedure.
- Your dog should be rested in a cage at all times for the first 6 - 8 weeks, until the bone has healed. They can be taken out on short lead walks for toileting purposes only.

A post op check would be recommended about 5 - 7 days post surgery.

A recheck appointment is then recommended 6 weeks after surgery. Your dog will be sedated for X-rays to check that the bone is healing and there are no concerns with the implants if they have had a PAUL. X-rays are not required if they have just had fragment removal.

If you have any problems before then, please contact your vet. It is better to have a recheck than miss a problem.

Time after surgery:

First 2 weeks	3 x 5 minute lead walks
2 - 4 weeks	3 x 10 minute lead walks
4 - 6 weeks	3 x 15 minute lead walks
6 - 8 weeks	3 x 20 minute lead walks
8 - 12 weeks	Gradual return to normal exercise

After 12 weeks Normal activity

Potential Complications

- **Surgical site infection or infected implants** – this is usually due to the dog licking their wound. It can also occur during surgery, recovery or through haematogenous spread (through the blood stream) e.g. if they have had diarrhoea.
- **Seroma formation** – this is relatively common, it is an insignificant fluid accumulation round the wound. It usually improves without any treatment.
- **Implant failure** – this is very rare and is normally due to extreme activity in the post op period or incorrect selection of bone plate.
- **Bone fracture** – this is also very rare and is again, normally due to extreme overactivity.

Signs to watch out for;

- Swelling, heat or redness around the wound after surgery; this is often a seroma but it is always worth having it checked by a vet.
- Any discharge from the wound, especially if smelly or yellow.
- Sudden worsening of the lameness that lasts for more than 12 hours.

To book in for your pet in for a health check, please call us on 01423 228080 or visit www.clarohillvets.co.uk.