



**ANIMAL SURGICAL CLINIC**  
of SEATTLE

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## ELBOW DYSPLASIA

Elbow dysplasia is a syndrome characterized by degenerative joint disease resulting from one or more pathologies of the elbow joint structures: Fragmented Medial Coronoid Process (FMCP), Osteochondritis dessicans (OCD), and Ununited Anconeal Process (UAP). The elbow is a complex joint whose normal function relies on the smooth articulation of the cartilage-covered surfaces within the joint space and on the uniform growth of the humerus, radius and ulna (the long bones of the canine forelimb). Unequal growth of any of these three bones can cause abnormal stresses to be placed on joint structures, leading to FCMP, OCD, and/or UAP. Trauma and dietary factors may also play a role in elbow dysplasia. Affected dogs may have dysplasia in one elbow or both, and may have more than one type of pathology in the same elbow joint.

### FRAGMENTED MEDIAL CORONOID PROCESS (FMCP)

#### What is FMCP?

FMCP is the most common pathology present in cases of elbow dysplasia. It is characterized by fissures or complete separation of the medial coronoid process from the ulna. This may result from abnormal stresses placed on the coronoid process during development.

#### What are the clinical signs and how is FMCP diagnosed?

Common clinical signs of FMCP begin between 5-8 months of age and include acute or chronic intermittent lameness, stiffness, and stilted gait. Lameness is usually intensified by exercise, and is prominent after resting. In some cases, lameness is not apparent until later in life. Palpation by the vet may show joint swelling, and pain upon extension and flexion of the leg. Older dogs may have crepitus (crackling) within the joint. The clinical signs of FMCP are very similar to those of OCD, and it is likely that the two coexist in a third of cases. The majority of cases are bilateral, but clinical signs may be unilateral. Radiographs may show degenerative changes in the elbow, including osteophyte (bony spur) formation. It is difficult to visualize the coronoid process on radiographs, and FMCPs are rarely diagnosed on radiographs alone. Definitive diagnosis requires either arthroscopic joint exploration or CT scans.

#### What is the recommended treatment for FMCP?

Treatment consists of removal of the FMCP and any other cartilage fragments through arthroscopic or traditional open surgery.

### OSTEOCHONDRITIS DESSICANS (OCD)

#### What is OCD?

Osteochondrosis is a defect in bone growth that results in soft lesions in the cartilage. As lesions progressively worsen with activity, cracks and fissures form, and eventually the cartilage may partially split away, forming a cartilage flap which causes pain when it moves in the joint space. This condition is termed osteochondritis dessicans. Once formed, this cartilage flap cannot heal back down to the underlying lesion bed. Instead, it will either continue to degenerate in place, or may break free and migrate to another area of the joint (these free pieces are known as "joint mice"). In either case, the presence of the flap will cause pain and inflammation within the joint. OCD can occur in any joint.

#### What are the clinical signs and how is OCD diagnosed?

Common clinical signs of OCD begin between 5-8 months of age and include acute or chronic intermittent lameness, stiffness, and stilted gait. Lameness is usually intensified by exercise, and is prominent after resting.

In some cases, lameness is not apparent until later in life. Palpation by the vet may show joint swelling, and pain upon extension and flexion of the leg. Older dogs may have crepitus (crackling) within the joint. Diagnosis is confirmed by visualizing the OCD lesion, flap or joint mice on radiographs and/or during joint exploration.

#### **What is the recommended treatment for OCD?**

Treatment for OCD consists of surgical removal of the flap and any other loose cartilage or joint mice, and smoothing out the area of the lesion to stimulate the lesion area to fill in with fibrocartilage (scar-tissue-type cartilage). This may be accomplished via arthroscopy or through traditional open surgery.

#### **UNUNITED ANCONEAL PROCESS (UAP)**

##### **What is UAP?**

UAP is characterized by the failure of the growth center of the anconeal process to fuse properly with the olecranon. This leads to instability or detachment of the anconeal process and osteoarthritis of the elbow. It is most commonly diagnosed in German Shepherds.

##### **What are the clinical signs and how is UAP diagnosed?**

Clinical signs are usually not seen before 5-8 months of age. Occasionally, lameness is not observed until the dog is several years old. In the earliest stages, the only clinical signs may be a slight limp and standing or walking with the paw turned out. Palpation of the joint in older dogs may reveal swelling and crepitus (crackling) within the joint. A preliminary diagnosis may be made by clinical signs, age and breed. The diagnosis will be confirmed by radiographs showing the partially or fully detached anconeal process, as well as possible osteophytes (bony spurs) throughout the joint.

##### **What is the recommended treatment for UAP?**

Treatment for UAP consists of traditional open surgery to remove the anconeal process, which is generally too big to remove using an arthroscope.

#### **GENERAL INFORMATION**

##### **What is the prognosis for a dog with elbow dysplasia?**

For OCD, UAP and FCMP, the best prognosis is expected with early treatment performed prior to extensive degenerative osteoarthritic changes. In this case, return to good function is expected, although some degenerative changes may still occur later in life. If extensive osteoarthritis is already apparent in the joint prior to treatment, the prognosis is poorer, but treatment may slow further degeneration of the elbow.

##### **What will the recovery and rehabilitation period be like?**

After arthroscopic surgery, the dog will generally stay one night for observation and then will require two weeks of confinement and rest at home. After that, the dog will have a four-week rehabilitation period with gradually increasing exercise, but no running, jumping or playing with other dogs. Pain medications and anti-inflammatories will be prescribed for the first weeks at home, and possibly longer depending on the existing osteoarthritis in the elbow. Lifetime supplementation with chondroprotective agents such as glucosamine/chondroitin may be recommended.

##### **What are the advantages to arthroscopic surgery over traditional open surgery?**

For many patients with FCMP and OCD, surgical treatment can be accomplished through the use of an arthroscope. Arthroscopy is minimally invasive and considered the gold-standard in human joint surgery.

Advantages of arthroscopy include:

- Better visualization of the entire joint and cartilage surface
- Less trauma to the joint capsule and tissues and smaller skin incisions
- Faster recovery and less post-operative pain

##### **What are the possible complications of surgery for elbow dysplasia?**

As with any surgery, there is risk of infection, as well as anesthetic risk. Anesthetic complications are rare, however, and risk is minimized by our use of best practices in anesthesia choice and extensive monitoring of your pet by our surgeons, licensed veterinary technicians and advanced monitoring equipment.