

Canine Unicompartmental Elbow as Treatment for Elbow Dysplasia



What is Canine Elbow Dysplasia? What are the symptoms of elbow dysplasia? What are my treatment options for MCD?

Elbow dysplasia is a general term used to identify the group of disorders that affect many dogs, especially large breeds and working/performance dogs. The three most common disorders included in the elbow dysplasia group are:

- Fragmented Medial Coronoid Process (FMCP)
- Osteochondrosis Dessicans (OCD)
- Ununited Anconeal Process (UAP)

While these disorders involve different areas of the elbow joint of affected dogs, they all result from abnormal development of the bone and cartilage of the elbow and lead to osteoarthritis. Elbow dysplasia is the most common cause of forelimb lameness in dogs. The abnormalities start to occur when the puppy is going through a rapid growth phase (typically 4-10 months of age), but often the symptoms are not noticed until the dog is much older. Changes in activity level, limping, swollen elbows, pain in the elbows, decreased performance, and behavioral changes are some of the visual signs you may observe if your dog has elbow dysplasia.



Figure 1. Elbow X-Ray

Your veterinarian will perform a careful orthopedic examination of your dog to diagnose the problem. With elbow dysplasia, the doctor may note joint thickening and swelling, pain on joint manipulation, and loss of range of motion. X-rays should be done to confirm the findings and characterize the type and severity of elbow dysplasia. Options such as oral medications, joint injections, and physical therapy may be beneficial in many cases for at least a period of time and should be discussed with your veterinarian. Advanced imaging, such as arthroscopy of the joint, CT scan, or MRI, may also be necessary to fully determine the extent of the problem and the most appropriate treatment options.

Fragmented Medial Coronoid Process (FMCP) is by far the most common form of elbow dysplasia in dogs. In this disorder, the bone and cartilage on the medial part (inside portion) of the elbow joint develop cracks (microscopic or larger) which can cause the symptoms of elbow dysplasia and lead to osteoarthritis. The cracks may result in the formation of fragments of bone and cartilage that may remain in place or move in the joint like a pebble in your shoe. Arthroscopy performed by an experienced surgeon is an ideal way to deal with FMCP in dogs as it allows accurate and comprehensive diagnosis, as well as immediate treatment. Through two small incisions, the veterinary surgeon is able to carefully assess the joint, remove the fragments, and treat the surrounding cartilage as needed. This procedure typically takes between 20 and 45 minutes per elbow and many dogs can be treated on an outpatient basis.

Arthroscopic treatment of FMCP has a high success rate of removing the abnormal cartilage and bone, slowing down the progression of osteoarthritis, and improving the symptoms of the disorder. However, it is not a cure and the osteoarthritis will still progress to some degree and needs to be monitored long term with a likely need for further treatments later in the dog's life. As the dog ages, the osteoarthritis from FMCP and other forms of elbow

dysplasia may result in complete loss of cartilage on the weight-bearing surfaces of the medial joint structures resulting in what veterinarians call Medial Compartment Disease (MCD). This is the “end stage” form of elbow dysplasia where the inside part of the joint collapses with eventual grinding of bone on bone. Interestingly and importantly, the larger lateral (outside) part of the elbow joint appears normal in the vast majority of patients. When surgical treatment is deemed necessary, as is often the case, the Canine Unicompartmental Elbow (CUE) is a safe and effective option to consider.

The CUE was developed as a treatment for MCD for dogs in which arthroscopic treatment and the nonsurgical options are no longer successful. By focusing on the specific area of disease (the medial compartment), the CUE implant provides a less invasive, bone-sparing option for resurfacing the bone-on-bone medial compartment, while preserving the dog’s own “good” cartilage in the lateral compartment. This medial resurfacing procedure reduces or eliminates the pain and lameness that was caused by the bone-on-bone grinding.



Figure 2. (top) Humeral Implant (bottom) Ulnar Implant

What can I expect after CUE surgery?



Figure 3. Elbow Image with Implants
(left) Prosthetic Elbow (right) X-Ray Post-Op

You will be sent home with antibiotics and pain-relieving medications for your dog. A bandage will be placed on the limb, which you will need to keep clean and dry. The bandage will be changed after one week and maintained for at least two weeks after surgery. Sutures will be removed approximately two weeks after the procedure. For eight weeks after surgery, your dog must be restricted to rest in a kennel or crate, with controlled leash walking only. Follow-up examination and assessment of healing will be performed 8-10 weeks after the procedure, at which time rehabilitation exercises will be initiated to allow a progressive return to full activity levels by six months after surgery. Full athletic function is not expected until six months after surgery, at which time a final assessment will be performed.