

Sliding Humeral Osteotomy

A new Treatment for Medial Compartment Disease / Elbow Dysplasia in Dogs

Modified with permission of Kurt S. Schulz, DVM, MS, DACVS, Burlington Veterinary Specialists*

Elbow dysplasia and the secondary arthritis are the most common causes of foreleg lameness in dogs. Fragmented coronoid process (FCP) is the most common form of elbow dysplasia in dogs. In this disease, a fragment of bone and cartilage of one of the bones of the elbow joint (ulna) is broken off. More important, the rest of the joint may be normal or there may be additional cartilage damage, including severe full-thickness cartilage loss. Damage to the cartilage in dogs with elbow dysplasia is called Medial Compartment Disease because it commonly results in severe erosion of the cartilage of the medial aspect of the joint.

Diagnosis and Treatment Options for FCP and Medial Compartment disease (MCD)

Diagnosis of FCP and MCP can be challenging. The diagnosis is initially based on a careful orthopedic examination. X-rays (radiology) are of limited use in the diagnosis of FCP. The FCP fragment and damage to the cartilage cannot be seen on x-rays. We recommend arthroscopy for the diagnosis of FCP and MCD because it allows early and accurate diagnosis and treatment

Dogs with Medial Compartment Disease usually require more continuous medical treatment of osteoarthritis and owners should consider additional surgical treatment options. Depending on the amount of joint damage at the time of surgery, it may be sufficient to remove a possibly fragmented medial coronoid process, or to perform other procedures to restore a smooth joint surface, such as an osteotomy of the ulna. Advanced surgical treatments of Medial Compartment Disease include Sliding Humeral Osteotomy (SHO) and total elbow replacement.

Total elbow replacement may be indicated when the cartilage is severely damaged throughout the elbow joint. Numerous total elbow replacements have been designed over that last 15 years and to date none has been proven to be safe and effective enough for routine use. SHO presents a new method which has shown promising results in most treated cases.¹



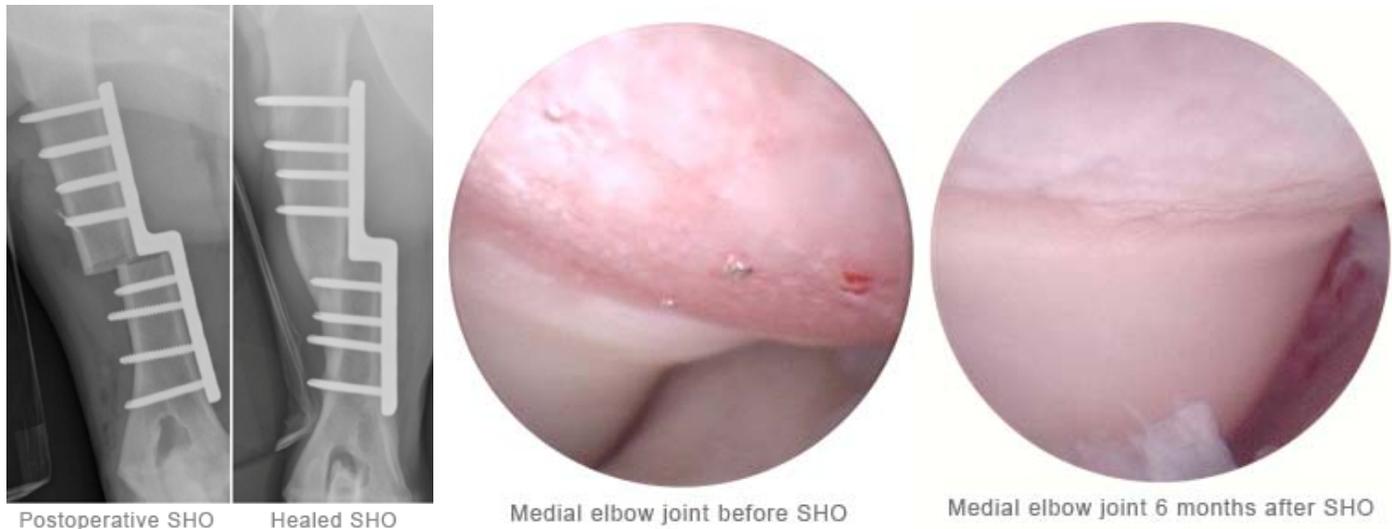
Arthroscopic view of worn cartilage in the elbow joint (Courtesy: K. Schulz)

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Sliding Humeral Osteotomy

The Sliding Humeral Osteotomy (SHO) procedure is the result of almost 10 years of laboratory research. These laboratory studies have demonstrated that SHO significantly decreases joint pressure in the medial side of the elbow joint.

The surgical technique for SHO in the canine patient was developed also in the Orthopedic Research Laboratory of the University of California by Dr Schulz. The procedure is based on similar procedures that are performed on people for arthritis of the knee. The procedure realigns the limb to shift the forces off of the area of cartilage damage and back on to healthy cartilage. This relieves the pain of grinding of bone on bone and gives the damaged joint an opportunity to heal. The illustrations below show radiographs (X-rays) and pictures of the joint cartilage at the time and a certain time after surgery. Note the healing of bone and cartilage over time.



(Courtesy: K. Schulz)

Clinical results

Careful clinical studies have been performed to evaluate the efficacy of this procedure. A report on initial results in over 70 dogs that were operated on between 2005-2008 was recently published.¹ The majority of dogs undergoing SHO have decreased lameness by 12 weeks postoperatively with many dogs having no visible lameness at a 26 week evaluation. Complications may include but are not limited to fracture of the humerus, fracture of screws, delayed osteotomy union, infection, wound irritation, or hematoma. However, the rate of complications requiring major surgical revision when using the latest technique for SHO is reported to be approximately 5%.¹ The owner satisfaction rate following SHO has been universally high.

SHO surgeons

Surgeons performing the SHO procedure are all highly experienced orthopedic veterinary surgeons. They have completed a course covering the theory, indications, and application of the SHO technique.

If you are interested in the SHO procedure or to locate a surgeon in your area contact: Dr. Kurt Schulz at - ksschulz@mindspring.com or New Generation Devices at customer-service@newgenerationdevices.com

Veterinary Specialists of Alaska, P.C. is honored to be among the small animal clinics offering SHO to our four-legged friends. We appreciate the tremendous amount of work and dedication, which Kurt Schulz and co-workers have put into the development of this procedure and acknowledge the generosity of these people to making it available for our patients.

Reference: 1.) Fitzpatrick N, Yeadon R, Smith T, Schulz K. Techniques of Application and initial clinical experience with sliding humeral osteotomy for treatment of medial compartment disease of the canine elbow. *Veterinary Surgery* 38:261-278, 2009.