

DEVELOPMENTAL ELBOW DISEASE – ARTHROSCOPIC EVALUATION and TREATMENTS

A variety of lesions are associated with developmental elbow disease in the growing dog. Correctly diagnosing which disease is affecting your dog is very important. This requires a careful orthopaedic evaluation and well positioned x-rays. From this information, your vet can often get a good idea if your dog may have elbow problems. Categorising the elbow disease still further may require advanced imaging by way of a CT scan. Direct visualisation of the joint can be performed with arthroscopy. As conclusive evidence for the single best treatment is lacking, it is important to approach every case on an individual basis. By trying to understand the cause of the elbow disease we can then consider the best treatment strategy. Unfortunately for many dogs with severe disease the longterm prognosis can be poor. As such early surgical intervention in the younger patient may become necessary in an attempt to limit the progression of osteoarthritis and loss of cartilage in the joint.

For some patients fragmentation of the bone located on the inside of the joint can be removed with arthroscopic guided retrieval. This entails a tiny camera being placed in the joint and a minimally invasive procedure performed to grasp and remove the bone fragments. At this time it is also possible to grade the extent of cartilage loss in the joint. This can give an indication of prognosis. For more severe cases or when efforts to unload the inside of the joint are necessary, your vet may consider further surgical options. These include bone osteotomies and total elbow replacement. In addition for some cases intra-articular, or joint injections, may be of benefit. Please see additional hand-out for information on these procedures.

POSTOPERATIVE CARE AND REHABILITATION AFTER ARTHROSCOPY

Incision site care

Please check the incision site daily and keep the bedding/room where your pet lives clean and dry. There will often be a small amount of bruising in the initial 3-5 days. Please contact your local vet should you notice discharge or excessive swelling from the wound (other than a small amount of crusting). Your pet should not lick the incision site. An E-collar may be necessary to prevent this.

Progress checks

These are often carried out by a veterinary nurse or your vet at 3-4 days, 10-14 days, 30 days, 6-8 weeks and 12 weeks after surgery. They may be more frequent if concerns arise.

What to expect?

Your pet may feel a little groggy for the first few days after surgery. If you think he/she is in pain, please contact your local vet for advice. Your pet should be restricted to a single clean room (ideally with no slippery flooring) with no access to stairs.

Phase 1—Immediate Motion Phase (Weeks 1–3)

The goals of this phase are to minimize the effects of immobilization, protect healing tissue, re-establish nonpainful Range of movement (ROM), decrease pain and inflammation, restore weight bearing, and retard muscular atrophy.

It is important to restrict activity to avoid running, jumping and rough play, and to engage in short leash walking only.

Important! We normally expect a small amount of weight to be taken on the leg within 2-3 days. If this is not the case, or if you are concerned about progress, please call your local vet for advice.

Manual Therapy

Cryotherapy may be performed to assist in reducing pain and inflammation. Using a gel ice pack wrapped in a cloth, you can ice your dog's elbow for 15-20 minutes, three times daily. Icing is one of the most important things you can do to help your dog in the immediate post-operative period. It controls and decreases inflammation and will help to reduce post-operative pain. Only do this if your dog is happy to let you!

Passive Range of Movement (PROM)

Early PROM exercises are performed to nourish the articular cartilage and assist in the synthesis, alignment, and organization of collagen tissue. PROM is performed on the entire forelimb, toes, carpus, elbow, and shoulder, with slow controlled movement.

These should be very gentle with no attempt to go beyond what is comfortable for your pet.

Have your pet lie on his/her good side and gently flex and extend the elbow while supporting the leg. Being very patient and careful, perform 5-10 slow repetitions. Repeat these three times daily. You should only do this if it is within your pet's comfort level. Ask the veterinary nurse to demonstrate this exercise to you when in for a progress check.

Re-establishing full-elbow extension is the primary goal of early ROM activities to minimize the occurrence of elbow flexion contractures.

Adjunctive Modalities.

Several modalities may be used to aid in the healing process during this stage and serve as an adjunct to manual treatments and therapeutic exercises. Laser therapy sessions may be available at your Local Vets.

Therapeutic Exercises.

The early phases of rehabilitation must also focus on retarding muscular atrophy through therapeutic exercises. Leash walking may be initiated after surgery beginning with 5–10 minutes, 3 times/day, increasing duration to 20 minutes as tolerated by the end of this phase.

Weight-bearing exercises are initiated at this time and are performed on a daily basis. These can be demonstrated to you; some exercises don't suit some dogs so an individual plan is suggested at your progression check. Some examples include:

Three-leg standing—lift nonsurgical forelimb and shift weight on to surgical limb.

Down to stand—ask dog to lie down and then to stand. Use treats as needed.

Rocking on all 4's—dog stands on all 4 limbs, gently rock the dog from side to side and diagonally, with 3cm perturbations in each direction. Promotes weight bearing and proprioception to affected limb

Phase 2—Intermediate Phase (Weeks 4–6)

This phase is initiated when the dog has full ROM, minimal pain and tenderness, and improved lameness. The goal of this phase includes enhancing elbow and upper limb mobility, improving muscular strength and endurance, and re-establishing neuromuscular control of the elbow complex.

PROM exercises are continued to maintain full elbow flexion and extension.

Important! At your progression check you will be advised on the best exercises for your dog in this phase, some examples are listed below.

Strength exercises may include longer leash walks, including up and down hills, stepping over objects such as poles/sticks, or over uneven surfaces such as sand, mulch or tall grass.

Initiating walking in circles and figure 8's by starting with moderately sized circles and decreasing diameter weekly until tight circles are achieved. Figure 8 pattern may be formed around cones placed 5–6ft apart depending on the size of the dog.

Additional therapeutic exercises include:

Ladder—use an extension ladder on a level floor or cavaletti rails. Walk the dog slowly through ladder or rails to ensure individual weight bearing on all limbs.

Wheelbarrow exercises—hold both rear legs and have the dog walk on front limbs only. Begin for short distances and increase as tolerated.

Hydrotherapy—the use of underwater treadmill or swimming may be effective during this stage. Full elbow ROM should be present and there should be no palpable tenderness/inflammation of the elbow or shoulder.

Phase 3—Advanced Strengthening Phase (Weeks 7–11)

The third phase involves a progression of activities to prepare the dog for return to off-lead activity and sport participation. The goals of this phase are to gradually increase strength, power, endurance, and neuromuscular control, to prepare for a gradual return to sport. Specific criteria that must be met before entering this phase include full nonpainful ROM, no pain or tenderness, and strength and muscle mass that is 70% of the contralateral thoracic limb.

DEVELOPMENTAL ELBOW DISEASE – LONGTERM MANAGEMENT

Keeping your dog lean will help limit both the progression and impact of elbow osteoarthritis. Your dog should be comfortable and it may be necessary to provide medication to help control any pain. Your vet can discuss these options with you and ensure they are safely administered. Nutritional management of osteoarthritis should include essential fatty acids, OMEGA-3 and -6. These can be provided by using a specially formulated diet or by way of a supplement to your dog's normal diet. Your vet can discuss this further. Regular, moderate, controlled exercise will be important to maintain good musculing of the leg without exacerbating pain. It is not uncommon for patients with developmental elbow disease to show peaks and troughs of pain-associated lameness. Intra-articular treatments, or joint injections, can be useful to help manage flare episodes. At VetFix we use many different types and we are happy to discuss these options further. Treatments include corticosteroid, hyaluronic acid, platelet-rich plasma and stem-cells. The latter two agents form part of the emerging "biologic" compliment of treatments. As novel treatments it is important to review unbiased peer-reviewed literature for evidence to recommend these agents. We continue to do this and follow this exciting treatment option closely. A further handout of intra-articular joint treatments is available upon request. As always if you have any concerns about your pets health please contact your local veterinarian.