Medial compartment collapse, how best to treat?

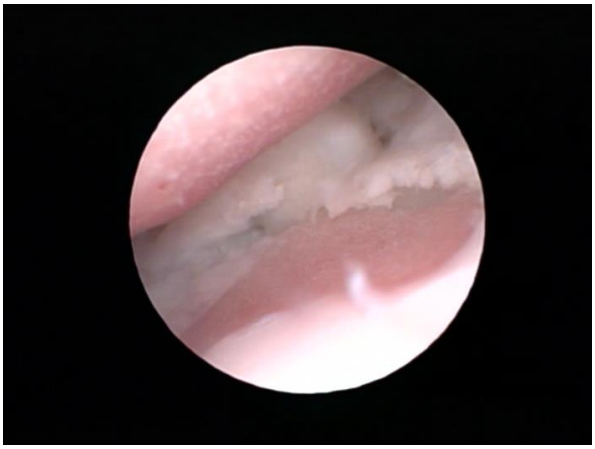
Medial compartment disease is the significant extension from simple medial coronoid fragmentation of the elbow where the cartilage has been worn out with the result that the bone of the humerus is wearing directly onto the bone of the medial coronoid. Dogs may be presented with this extensive problem at an early age (6 to 12 months sometimes) or it may be a longer term progression from an earlier less significant elbow problem. In simple terms the condition is described by the loss of cartilage in the medial aspect of the elbow on the medial coronoid and humeral condyle, once lost the cartilage will never come back and the long term prognosis for the elbow is poor.

Treatment

Until now we have been rather limited in how to treat this condition, simple arthroscopic surgery can sometimes help but the long term outcome is not good, the Canine Unicompartmental Elbow (CUE) has been designed to address this condition specifically. This is a new technique that has been developed by colleagues in the US in conjunction with Arthrex, the surgery works by replacing the worn out joint surface alone and so should not be confused with total elbow replacement which is a far more invasive procedure for dogs with "end stage" elbows where the entire elbow joint is replaced.

The technique has been rigorously developed and proven through experimental studies and then a prospective clinical trial which showed that it was successful in returning dogs to a reasonably normal gait in 90% of cases albeit that some needed some long term medications. A small number of dogs treated with this technique will do very well (return to full athletic work) but up to 10% will not and may be made worse. Bear in mind that we will never fix your dog's elbow and make it normal.

It has also been shown to be a safe procedure with a major complication rate of around 12%. The key feature for us in selecting this technique is the "bail out" safety option that is not afforded by other treatments such a sliding humeral osteotomy or proximal ulna osteotomy, this means that should problems arise they can be more easily addressed. It is not a "fail- safe" surgery however and you should carefully consider the risk to benefit ratio.



Arthroscopic view of the medial aspect of the elbow suffering medial compartment disease, note the complete lack of cartilage on the humerus and medial coronoid.

Images of the implants in position in an elbow model and the post operative X ray, images courtesy of Arthrex

Because the technique is new and requires dedicated training not everyone is allowed to perform the surgery, we are proud to be only the second clinic in the UK accredited for the procedure (accreditation 2012). This treatment is not necessarily the best option for all dogs with extensive medial compartment disease but for young dogs with a badly damaged elbow and in some older dogs it does provide the potential for a hugely improved quality of life which will hopefully provide a long term solution. Follow up studies so far have shown that the benefit that is provided in the medium term (up to 6 months) is continued later into life although so far (December '14) follow up is to 4 ½ years , so we may at last have an answer to the problem of how best to treat dogs with significant elbow disease.

The technique requires that we place the implants into very specific locations in the elbow and as such a large open approach is required. This surgery is not a small, simply procedure and as such it is imperative that we are confident that nothing else will help, this is not a first line treatment option in our clinic your dog must have first had an arthroscopy and still have a clinical problem.

Because of its significant open approach the morbidity of the procedure (the discomfort caused by the surgery) is more than an arthroscopy and your dog will sometimes take up to six months before they are showing significant improvement on how they were before surgery although in our experience they are at about the same level after about two to three months. Making sure

that you stick to the plan including careful, professional physiotherapy will maximize your dog's recovery.

Post Operative requirements

It is vital that you can guarantee to stick to the post op requirements, these are not suggestions but absolutes and if it is not possible to adhere to them CUE is not for your dog as the risks of a problem become a whole lot worse.

- Your dog will come home with a dressing on the leg which must be changed at Ridge Referrals after 1 week and is usually removed after 2 weeks.
- Your dog must be confined to a cage for the first 8 weeks after surgery only ever coming out for controlled lead toileting (maximum of 100 meters twice to three times a day)
- After 8 weeks your dog's exercise will be slowly built up over another 6 to 8 weeks to slowly return your dog to normal
- X rays are taken usually around 4 weeks and 8 weeks after surgery to check on implant placement and healing of the bone cut required to place the implants.
- Your dog will be on pain killers for at least 4 weeks after surgery and some dogs need to remain on pain killers for some time afterwards, remember this surgery will not fix your dog's problem but make it easier to manage.

No surgery has a guarantee and every surgery runs the risk of a complication, specifically with this surgery this could include:

- Infection that cannot easily be controlled
- Fracture of the ulna or humerus, this can usually be managed but may result in a poor outcome
- Delayed healing or problems with healing of the osteotomy, this is usually self limiting
- Loosening of the implants, this is rare and can usually be managed but could result in a poor outcome