

Elbow Dysplasia

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Elbow Dysplasia (ED) - There are 4 main subgroups of elbow dysplasia, which may occur alone or in combination. Generally they are considered inherited in most breeds and the incidence may be adversely affected by incorrect diets in some breeds. Excessive rate of weight gain can affect the incidence of many elbow conditions, often leading to joint incongruity (uneven rate of growth between the radius and ulna), and OCD seen particularly in males.

1. UAP - Ununited Anconeal Process - The part of the elbow involved is a large triangular shaped piece of bone situated at the back of the elbow joint. This has a separate ossification center in a handful of breeds notably the GSD, Labrador, Great Dane, Irish Wolfhound, Newfoundlands, Bloodhound, Basset and Afghan hounds. The process normally is fully ossified (sealed) by 16-18 weeks of age. This condition is considered inherited with a possible 3 different genes being involved.

Symptoms - Clinically signs are seen from as young as 5-6 months with often an intermittent lameness, which is exaggerated by exercise. Full flexion and extension of the elbow will elicit pain. There is often an accompanying lateral bursitis (fluid swelling). X rays of the elbow in the flexed lateral position will readily show whether the process has unified or not. Long standing cases often have boney arthritic changes as well.

Treatment - Either (a) removal of the process, if done while young, reasonable prognosis with some arthritis later, or (b) fixation of the loose fragment by a lag screw, for reasonable prognosis in early cases. As the anconeal process is not a weight bearing surface, results following early surgery gives much better long term prospects than in the FCP cases (as loss of that process affects the weight bearing surfaces of the joint).

The majority of UAP cases in the GSD have good congruity of the head of the radius relative to the ulna. Where there is poor congruity, ie. the radius is too long for the ulna, osteotomy (cutting) of the ulna to allow it to lengthen naturally is another option.

Affected dogs should not be breed from. UAP is generally considered to be inherited as a separate condition from OCD and FCP in the GSD.

2. OCD - Osteochondrosis Dessicans - this occurs in many larger breeds, almost any breed greater than 18-20kg at adulthood. There is a higher incidence in males versus females. This can affect many joints, the commonest being the elbow. Breeds that see with a reasonably high incidence of elbow OCD would cover the following :- Rottweiler (high incidence), GSD, Golden Retriever, St Bernard, Great Dane, Border Collie, Rhodesian Ridgeback, Labrador.

Symptoms - Generally seen as a shifting lameness in the forequarter from around 5-8 months of age, some joint capsule swelling and usually a turning out of the front legs at stance as the inner edges of the elbow are most commonly affected. The cause of the problem is considered to be due to a faulty blood supply to the joint cartilage secondary to very rapid growth. On X ray the signs are often quite subtle in mild cases with minor "fluffiness" of the joint surfaces to the more distinct pot holes of larger lesions. Generally diagnoses of a straight extended and slightly medially rotated view of the elbow.

Treatment - If this condition is mild, treatment with drugs such as Cartrophen which increases the blood supply to cartilages, can be very effective along with complete rest, slowing down of the rate of weight gain, and low doses of anti-inflammatories. Repair and recovery can take up to 6-8 weeks of age depending on the severity of the condition, very heavy puppies may have to be kept reasonably restricted until 9 months of age by which stage all rapid growth has slowed dramatically. Severe cases of OCD are often found in conjunction with a FCP, and may



require surgical intervention. Most cases >80% show good responses to medical, dietary and exercise management.

3. FCP - Fragmented Coronoid Process (of the Ulna) - this is generally referring to the medial coronoid process, a process that stabilizes the medial edge of the joint. Fragmentation of this process means that the inside edge of the elbow is not stable, hence the very typical lateral rotation of the leg away from the pain. Again, the same age group as above. On X ray the process can be seen as separated on a plate with the elbow extended straight out and a second view with slight medial rotation. If these are diagnosed when young, surgical intervention gives reasonable results, in the older dog where there are considerably secondary arthritic changes, medical management with tablets if probably preferred. Regardless of the treatment, the resulting joint incongruity (unevenness) will lead to ongoing osteoarthritis over time.

4. Joint Incongruity - While most forms of elbow dysplasia can by their development result in joint incongruity, here we are looking at where there has been a possible early closure of a distal growth plate in the foreleg resulting in uneven growth of the radius (usually slightly shorter) in relation to the ulna. The resulting uneven ends of the bones within the joint can cause excessive wear on cartilages and in the worst cases, force the anconeal process distally (ie. create a UAP). Relatively uncommon in the GSD, however severe cases require surgery.

Other forms of elbow “dysplasia” exist, these forms generally involve the lateral displacement of the top of the radius in relation to the ulna (giving a cabriole effect) but these very rarely affect the GSD.

General Treatment of Elbow Dysplasia - As with any painful bone disorder, regardless of the age presented, common treatment is aimed at pain management, sensible diet and weight control and a restricted, suitable exercise regime. Where there are only minor changes in joint surfaces, medical management and conservative treatment with anti-inflammatory agents and rest is generally all that is needed. Those animals with UAP require surgical intervention to minimise future arthritis. Dogs with FCP or those with loose cartilaginous flaps, should in the younger dog be removed in order to minimise future damage to the joint. However due to the incongruity of the joint, there will be ongoing changes regardless. In the older dog with advanced arthritic changes, medical management and conservative exercise regimes is generally the preferred method of treatment.

Diet and Elbow Dysplasia - While diet may not of itself create elbow dysplasia, it can affect the severity OCD seen. Rapid weight gain will push factors such as joint congruity, as well as blood supply to the cartilages within the joints.

Rule outs (differential diagnosis) - Not all forelimb lameness is due to elbow dysplasia. Panosteitis and simple injuries should be checked for, particularly where there is a very sudden onset of lameness.

Controlling the incidence of Elbow Dysplasia - As elbow dysplasia is highly inherited, breeding from severely affected dogs should be heavily discouraged. Generally dogs with a UAP, FCP and arthritis of greater than 5mm are not used for breeding in the GSD in Australia. Breeding from dogs with mild changes should ideally be to normal partners and preferably to lines with low incidences of problems. As this is a group of highly inherited conditions, fairly rapid improvements can be made over reasonably short periods of time.

Dogs with normal elbows and those with a maximum of Grade I are given the ‘Z’ Stamp by the GSDCA Council and are deemed to be within normal breeding limits for the breed. Care should be taken in breeding with any scored elbows, preferably to normal status partners.

