Canine Elbow Dysplasia *Did You Know?*

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Canine elbow dysplasia encompasses multiple diseases including fragmented medial coronoid process, ununited anconeal (UAP) process, osteochondrosis of the medial humeral condyle (OCD), and elbow incongruity. Causes of the diseases that make up elbow dysplasia include osteochondrosis, trochlear notch dysplasia and asynchronous growth of the radius and ulna. Fragmentation of the medial coronoid process is by far the most common disease causing elbow dysplasia in dogs of nearly any age, but all of these diseases are seen with some frequency.

Diagnosis is generally based on a history of chronic lameness, examination findings including thickening of the elbow and pain upon fuller extension or upon fuller flexion with internal rotation of the elbow, and radiographic findings including osteophytosis generally beginning over the nonarticular portion of the anconeal notch, flattening of the medial humeral condyle or presence of an ununited anconeal process. When obtaining radiographs for evaluation of elbow dysplasia it is important not only to obtain well positioned standard lateral and dorsoventral views, but a maximally flexed lateral projection is key for evaluating the nonarticular portion of the anconeal notch for early evidence of osteophytosis. Maximally flexing the elbow removes the superimposition of the humerus from obscuring this particular area. Early osteophytosis generally appears as a small bump filling in the concave dorsal aspect of the anconeal process. A mediodistal to lateroproximal 30° oblique view has also been reported to help identify osteophytes or even fragmentation at the site of the medial coronoid process. Computed Tomography and MRI have also been found to be helpful in some cases of elbow dysplasia. Unfortunately, diagnostic imaging does not always reveal objective evidence of elbow dysplasia in some cases. A recent publication revealed a subset of older patients clinically affected by fragmentation of the medial coronoid process with no radiographic evidence of coronoid disease or osteoarthritis. These patients could only be diagnosed upon arthroscopic examination of the painful elbow.

There are numerous treatments for elbow dysplasia and each treatment obviously depends upon the inciting cause or disease. UAP is treated via open arthrotomy and removal of the ununited fragment, except in very early cases when there is still the possibility of union which can be encouraged with lag screw fixation or ulnar osteotomy. OCD is treated via arthroscopy to remove the flap and to create microfractures within the OCD bed to encourage blood supply fibrocartilage formation within the defect. Radioulnar incongruence is generally treated with ulnar or radial osteotomy or ostectomy to resolve the incongruency. Medial coronoid disease is generally evaluated arthroscopically followed by mini-arthrotomy to perform subtotal coronoidectomy with an osteotome and mallet. The mini-arthrotomy also allows for microfracture of the usually present kissing lesion located on the medial humeral condyle across from the fragmented coronoid process. Simple removal of the fragmented portion of the coronoid process is generally insufficient to relieve rubbing and pressure along the humeral condylar kissing lesion, subsequently necessitating subtotal coronoidectomy which requires mini-arthrotomy. Occasionally, ulnar osteotomy is also performed in conjunction with coronoidectomy to alleviate incongruence when present.

The goal of all of these treatments is to not only attempt to create relief in the months following surgery, but long term relief as well with slowing of progressive osteoarthritis over time. Medical management of these patients is still required following surgery to control clinical signs associated with osteoarthritis and to supply needed nutrition to diseased cartilage. Please do not hesitate to call SOVSC with any questions pertaining to elbow dysplasia or arthroscopy here at SOVSC.