“Elbow Dysplasia: At the Forefront of Forelimb Lameness”
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The elbow joint is a complex structure that requires precise articulation and synchronous development of the humerus, radius and ulna. When failure of normal development occurs, secondary changes can lead to osteoarthritis, pain and loss of function. The particular manifestations of abnormal elbow development include incongruence, fragmented coronoid process (FCP), osteochondrosis (OCD) and ununited anconeal process (UAP). These conditions are labeled under the global term “elbow dysplasia”. Elbow dysplasia is the most common orthopedic condition of the canine forelimb and primarily affects large to giant breed dogs.

The exact etiology of the condition is unknown but is suspected to be genetic in origin with environmental contributions likely. Patients affected by elbow dysplasia normally exhibit symptoms of progressive lameness that is exacerbated by activity. As this is a developmental disorder, symptoms typically arise early in life with clinical presentation between 5 and 18 months of age. Several breeds such as Labrador Retrievers, Bernese Mountain Dogs and German Shepherds are predisposed to developing particular aspects of elbow dysplasia.

Initial evaluation may show symptoms of effusion, decreased range of motion and pain localizing to the elbow joint. A history of lameness in both forelimbs is common as the condition is bilateral in approximately 35% of animals. A radiographic series including craniocaudal, 90° and hyperflexed lateral views is often diagnostic for conditions such as UAP and OCD and provides supportive evidence of FCP and radioulnar incongruence. However, recent analysis has confirmed that modalities such as CT and arthroscopy are superior in evaluating for the latter conditions.

A major challenge in managing elbow dysplasia is developing evidence-based treatment recommendations and this remains a controversial topic surrounding the condition. In the author’s opinion, initial conservative management is encouraged for animals minimally affected or those with signs of substantial degenerative joint disease as the outcome with surgery is variable in this patient population. Traditional aspects of this approach include weight management, joint supplementation, physical therapy and analgesic (NSAID) palliation. Other non-surgical options such as intra-articular therapy, acupuncture, laser and even radiation therapy have been evaluated more recently with encouraging results.

Surgical intervention is routinely recommended for patients with pronounced lameness, supportive evidence of elbow dysplasia and minimal-to-moderate osteoarthritis. The goals of this approach are to address the underlying cause and hopefully slow the progression of arthritic change. If significant radioulnar incongruence is present, a proximal ulnar osteotomy (PUO) can be considered to help restore normal load distribution. Pathology of the medial portion of the coronoid and OCD lesions are addressed via arthroscopy and may require fragment removal, subtotal coronoidectomy or debridement of diseased cartilage and subchondral bone. Salvage
options such as resurfacing techniques, joint replacement and sliding humeral osteotomy are also available for patients with end-stage disease but these techniques are in their relative infancy with limited long-term outcome data available.

Overall prognosis is dependent on the underlying cause and degree of degenerative change present at the time of diagnosis. Although most studies report improvement in lameness, client education is paramount as patients will remain at an increased risk of progressive osteoarthritis. Improvement is optimized with early surgical intervention and the combination of post-op rehabilitation and preventative measures against degenerative joint disease.

References available upon request.