Canine Elbow Dysplasia

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Canine elbow dysplasia is an umbrella term for several congenital abnormalities that are recognized in the elbow. A dog with elbow dysplasia may be affected with one or more of the following: Un**united anconeal process (UAP)**, **osteochondrosis dissecans (OCD) of the humeral condyle**, **fragmentation of the medial coronoid process (MCP)**, and **elbow incongruity**.

Key Points (if applicable)

- Be familiar with the common breeds affected
- This is a young dog disease which will lead to degenerative osteoarthritis without treatment
  - Sometimes the best you can do is slow down the progression
- Elbow will be painful on manipulation (especially flexion and extension)
- Look for sclerosis of the ulna and degenerative changes above the anconeal process as a tip-off for potential fragmentation of the MCP

Ununited Anconeal Process

Common Breeds:

- **German Shepherds**, Bassett Hound, Bloodhound, Labrador Retrievers, Newfoundlands

Clinical Signs:

- Usually by 4-12 months of age
- Forelimb lameness
  - Pain on flexion and extension of elbow joint
- May be bilateral but not necessarily
  - Screen for disease on other side

Diagnosis:

- Radiographs
  - Physis should be closed by 4-5 months of age
- Visualize ununited anconeal process best on **flexed lateral projection**
- Anconeal center of ossification fails to fuse to the ulna
- CT

Treatment:

- Can try medical management with NSAIDS but usually unrewarding
- Excision of anconeal process seems to provide most consistent results
- Lag screw fixation and proximal ulnar ostectomy have also been reported

OCD of the Humeral Condyle

- Definition- **Abnormal endochondral ossification** resulting in thickening of the articular cartilage
- Growth rate, genetics, hormonal imbalance, and diet are potential factors

Common Breeds:

- German Shepherds, Golden Retrievers, Labrador Retrievers, Newfoundlands, Rottweiler.

Clinical Signs:
- Usually by 4-7 months of age
- Bilateral disease at least 50% of the time
- Forelimb lameness
- Pain on flexion and extension of elbow joint

Diagnosis:
- Radiographs
    - See lesion on **medial aspect** of humeral trochlea
    - May see visible flattening
    - **Subchondral bone defect and surrounding sclerosis**
    - Osteophytosis
- CT
- Arthroscopy

Treatment:
- Medical management not effective
- Surgery
    - Surgical removal of flap and debridement of subchondral bone gives fair to excellent results with most dogs
    - Typically performed arthroscopically
        - Allows better visualization of the lesion

Medial Fragmented Coronoid Process (FCP)

Common Breeds:
- Labrador Retrievers, Golden Retrievers, Newfoundlands, Rottweilers

Clinical Signs:
- Usually by 4-7 months of age
- Forelimb lameness
- Painful on flexion and extension of elbow
- May be bilateral

Diagnosis:
- Radiographs
    - It is hard to definitively visualize the fragment.
        - So you usually must go by typical secondary changes that are associated with a FCP.
        - Get a view of the other elbow for comparison and to ensure there is no disease on the other side
    - Sclerosis of subchondral bone along trochlear notch of the ulna and adjacent to the proximal radioulnar articulation near the lateral coronoid process
    - Medial coronoid process may be large, blunted, or have osteophyte associated with it on the lateral view
    - Proliferative bone may develop on the proximal anconeus
    - Degenerative joint disease
    - Concurrent elbow incongruency
- CT
- Arthroscopy

Treatment:
- Medical therapy likely not effective

- Surgical removal of the fragment or arthroscopy for removal of fragment are most common treatments
- Most surgeons perform this arthroscopically

Elbow Incongruity

- Term to describe poor alignment of the joint surfaces of the elbow
- Two features illustrate incongruity of the elbow:
  - Abnormal shape of the ulnar trochlear notch
  - Step between the radius and ulna, caused by either a short radius or a short ulna
- Very difficult to diagnose due to radiographic positioning and subjectivity
  - Some advocate CT evaluation instead
- Clinical signs and breed predispositions are the same as above
- Not as well described as other elbow dysplasia conditions
- Some people speculate that elbow incongruency leads to the other players in elbow dysplasia
- Treatment involves performing an ulnar osteotomy; however, there is come controversy as to how effective it may be