

# **DISORDERS OF THE ELBOW JOINT**

## **ANATOMY OF THE ELBOW JOINT**

It is a true diarthrodial joint formed by the articulation of the epicondyles of the humerus, the condyles of the humerus, the radius and the ulna.

The joint is stabilized by the medial and lateral collateral ligaments from the humeral condyle to the head of radius.

### **Common Disorders of the Elbow joint:**

- Elbow luxation: disarticulation of the radius from the humeral epicondyle.
- Ununited anconeal process: Non fusion of the anconeal process to the proximal ulna.
- Fragmented coronoid process:
- Osteochondritis dissecans of the medial humeral condyle: a degenerative disorder of the articular cartilage of the elbow joint.
- Other conditions which have been reported infrequently are: fracture of the anconeal process, condylar fracture of the humerus.

### **Elbow dysplasia:**

This term generally refers to instability of the elbow joint characterized by intermittent fore-limb lameness. It is generally a problem of the large breed of dogs e.g. Bull Mastiff, Boerboel, Bernese mountain dog, Rottweiler, Great Dane, and Alsatian.

#### **Causes:**

- Osteochondritis dissecans of the medial humeral condyle
- Fragmented coronoid process
- Ununited anconeal process

#### **Aetiology:**

- Trauma
- Hereditary predisposition
- Over supplementation with either calcium or copper.

#### **Clinical Signs**

- Intermittent forelimbs lameness
- Crepitation and swelling of caudolateral capsule
- Tenderness over the area of medial collateral ligament
- Muscle atrophy

## **Diagnosis**

The following radiographic view should be obtained:

- Flexed lateral
- Extended lateral
- Antero-posterior
- Latero-medial, cranio-caudal oblique

## **Radiographic Findings**

- Radiolucent line separating the anconeal process from the olecranon (united anconeal process)
- Poor definition of the cranial margin of the medial coronoid process
- Osteophytes formation on the proximal margin of the anconeal process and the lateral epicondyle
- Subchondral bone sclerosis proximal to the radio-ulna articulation and adjacent to the trochlear notch
- Large osteophytes around the medial coronoid process, as well as degenerative peri-articular osteophyte formation

## **Surgical Approach to the Elbow Joint**

- Longitudinal myotomy of the flexor carpi radialis
- Osteotomy of the medial epicondyle
- Tenotomy of pronator teres
- Triceps tenotomy
- Olecranon osteotomy
- Medial collateral ligament desmotomy

## **Longitudinal Myotomy of the Flexor Carpi Radialis**

Advantages:

- Require less instrumentation
- It is less painful
- Post-operative complication is minimal
- Allow access to the medial aspect of the joint capsule

## **Technique**

- An incision is made on the medial epicondylar crest of the humerus to end 3-4 cm distal to the epicondyle
- The subcutaneous tissues are incised on the same line, followed by the deep antebrachial fascia from the point of the epicondyle distally over the flexor muscle to allow the visualization of the flexor muscle and the pronator teres
- The joint capsule is then incised on a line which coincides with the cranial border of the medial humeral condyle
- The medial collateral ligament is then incised to expose the flexor muscle
- The flexor muscle are then retracted distally and caudally to allow for the inspection of the entire anterior rim and the visualization of the coronoid process

- Osteophytes are removed while cartilage flaps are curetted
- Collateral ligament and the origin of the pronator teres are sutured with non absorbable suture
- Padded bandage is then applied for 4-6 days

### **Management of Elbow Dysplasia**

- A lag screw can be used in the case of ununited anconeal process or fracture of the anconeal process
- Cartilage flap should be curetted while osteophytes are removed with periosteal elevator
- External immobilization can be provided with Thomas splint or padded bandage.
- Non steroidal anti-inflammatory drugs e.g. carprofen, piroxicam should be administered to relieve pain
- Disease modifying osteoarthritic agent (DMOA) such as glycosaminoglycans should be considered in cases of degenerative disorders.