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Medial coronoid process fragmentation in small dogs

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INTRODUCTION
Fragmented Medial Coronoid Process (FMCP) is a developmental disease seen most commonly in young large breed dogs (Labradors, golden retrievers, German shepherds, Newfoulands and Chows). The disease process starts when the animal is immature with clinical signs first becoming apparent at 5 to 7 months of age. However, FMCP may be seen at any age. The underlying pathophysiological mechanisms resulting in the development of FMCP are not well understood. However, proposed theories include osteochondrosis, elbow joint incongruity due to trochlear notch dysplasia or asynchronous growth of the radius and ulna, fatigue microdamage of the subchondral. Occasionally, FC are seen in small dogs. The goal of our presentation is to review all the cases of FMCP in small dogs.

MATERIALS AND METHODS
In a retrospective study over 21 years (1989-2010) 12 FMCP in12 small dogs (less than 20 kg) were evaluated and treated. Each patient had a complete orthopedic examination, radiographs and 3 had an arthroscopy of the elbow. A CT-scan was done on 7 elbows. The surgical treatment used either an arthrotomy (4 elbows) or an arthroscopy (7 elbows) of the medial compartment of the elbow joint associated with a proximal dynamic ulnar osteotomy when needed (5 cases). Clinical and radiographic follow-up was done in each patient with a mean of 2 years and 1 month (11 weeks to 12 years).

RESULTS
Nine breeds were represented in this study. There were 7 right elbow and 5 left, as well as 7 males and 5 females. The mean age was 18.6 months (youngest: 4 months and oldest: 54 months). The mean weight was 10.6 kg (smallest: 4 kg and heaviest: 19kg). The cause of FMCP was associated with a short radius (5), unknown (4), short ulna (2), and fracture (1). Previous trauma was observed in 3 patients. Osteoarthritis was observed in 5 of the 12 elbows. The clinical result was good and excellent in 11 of the 12 dogs. The 12th dog kept a lameness in spite of his severe radius curvus and elbow deformity.

DISCUSSION
Fragmented medial coronoid process (FMCP) has traditionally been described as a developmental disease that most commonly affects the elbow joints of skeletally immature, rapidly-growing, large breed dogs. However, it has also been reported in some medium-size and chondrodystrophic breeds. FMCP has been described in association with traumatic elbow injuries such as elbow luxation, distal humeral condyle fracture, and subluxation secondary to premature closure of the distal or proximal radial physis and/or distal ulnar physis. However, acute traumatic fracture of the medial coronoid process without any other associated lesion is uncommon. Recently, ‘jump down syndrome’ (JDS), or traumatic FMCP, has been described as a common phenomenon in performance dogs. Unlike the classic condition of FMCP affecting the elbow joints of skeletally immature, large breed dogs, JDS appears to have no age or size limitations. Although the cause and pathogenesis of JDS have not yet been fully explained, it was proposed that abnormal repetitive loading, such as landing from a jump, may lead to fatigue microdamage in the subchondral bone and eventual fracture. Dogs with joint incongruity may be predisposed to this condition.

REFERENCES