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TRAUMATIC ELBOW JOINT LUXATION AND ITS OPERATIVE TREATMENT IN A DOG

ABSTRACT

A traumatic elbow joint luxation seen in a 2.5 year old German Shepherd and its operative treatment is described.

Keywords: Dog, Elbow Joint, Luxation, Diagnosis, Treatment

BİR KÖPEKTE TRAVMATİK DİRSEK EKLEMİ ÇIKIĞI VE OPERATİF TEDAVİSİ

ÖZET

Yapılan çalışmada, 2,5 yaşındaki bir Alman kurt köpeğinde karşılaşılan travmatik dirsek eklemi (traumatic elbow luxation) çıkığı ve operatif sağaltımı anlatılmıştır.

Anahtar Kelimeler: Köpek, Dirsek Eklemi, Çıkık, Teşhis, Tedavi

1. INTRODUCTION (GİRİŞ)

Luxations are rarely seen on the elbow joint due to its anatomical structure (Brinker et al., 1983). Elbow joint luxation is a displacement of one or more bones forming this joint where, as a consequence of this displacement, the joint surfaces of the bones involved are not in a normal contact with each other (Campbell, 1971; Taylor, 1998).

Severe elbow joint traumas generally cause caput radii luxation with ulna fracture known also as "Monteggia fracture-luxation" (Dassler and Vasseur, 2002; Schaeffer et al., 1999; Schwarz and Schrader, 1984). Elbow joint luxations are less frequently seen as congenital defects. Between 17-20% of nontraumatic claudication of the elbow joint is related to congenital luxations (Bingel and Riser, 1977; Campbell, 1971; Campbell, 1963; Pass and Ferguson, 1971; Milton et al., 1979; Withrow, 1977). For the luxation to occur without a fracture, the flexion angle of the joint should be less than 45° during the trauma (Dassler and Vasseur 2002; Denny and Butterworth, 2000; Schaeffer et al., 1999; Taylor, 1998; Valastro et al., 2005).

2. RESEARCH SIGNIFICANCE (ÇALIŞMANIN ÖNEMİ)

A traumatic elbow joint luxation seen in a 2.5 year old German Shepherd and its operative treatment is described.

3. CASE HISTORY AND OBSERVATIONS (OLGUNUN GEÇMİŞİ VE GÖZLEMLER)

The subject of the present case-study was a 2,5 year old male German shepherd weighing 25 kg. The owner mentioned that the dog was unable to use its left foreleg and had claudication for 10 days. During clinical examination, a deformation in left posterior cubiti, pain and articular movement restriction were observed. Medio-lateral (ML) and cranio-caudal (CrCd) radiographies were taken of the area (Fig 1). Following clinical and radiological examinations, humero-ulnar luxation formation and lateral dislocation of the caput radii were diagnosed.

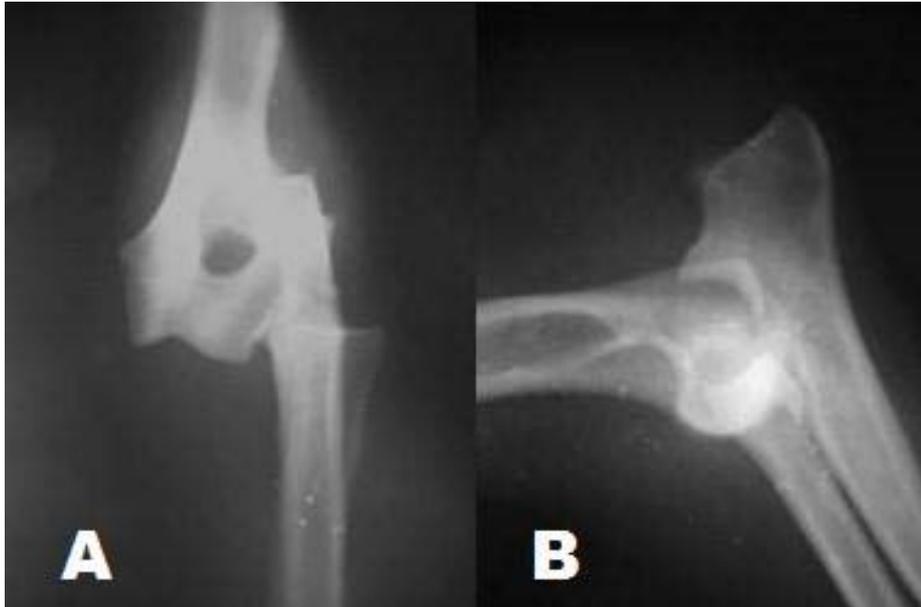


Figure 1. Preoperative cranio-caudal (A) and medio-lateral (B) radiographies of the case
(Şekil 1. Vakanın operasyon öncesi cranio-caudal (A) ve medio-lateral (B) radyografik görünümü)

4. TREATMENT AND DISCUSSION (TEDAVİ VE TARTIŞMA)

As 9-10 days had passed since the observed elbow joint luxation, it was treated with open reduction. For this purpose, the case was anesthetized with i.m. 2 mg/kg xylazine HCl (Bayet-Rompun 23.32mg/kg) premedication and 15 mg/kg ketamine HCl (Alke-Ketanes 100 mg/ml). After preparing the area for aseptic surgery, a skin incision approximately 5 cm long was made on the lateral aspect of the joint while preserving nevrus radialis. M.extensor digitalis communis and m.extensor digitalis lateralis were dispensed on both sides at that point. Myotomy were performed just under the m. supinator, condylus humeri that were between those muscle groups. Curved scissors were placed with the cambered side above, below the humerus. Inversion of the scissors avoided causing any harm to the joint capsulas and reduction of the radius, which was dislocated due to repression below, was established manually.

The incision was closed by known methods. The leg was retained by PVC backed bandage. Parenteral antibiotic was applied and the operation stitches were removed after 10 days. After the removal of the bandage, the owner was suggested to limit his movements for ten days. Furthermore, it was suggested that extension and flexion exercises should be performed during the following days. After two months, no complications were observed during clinical examination and in ML and CrCd radiographies taken around the joint area (Fig 2). It was determined that extension and flexion exercises applied to the joint can be performed easily.



Figure 2. Postoperative cranio-caudal (A) and medio-lateral (B) radiography of the case after 2 months
(Şekil 2. Vakanın operasyondan 2 ay sonraki cranio-caudal (A) ve medio-lateral (B) radyografik görünümü)

According to the literature (Billings et al., 1992; Schaeffer et al., 1999) elbow joint luxation is seen less frequently than hip joint luxation within small animal orthopaedics. Elbow joint luxations can be congenital or traumatic (Denny and Butterworth, 2000; Taylor, 1998). Congenital elbow joint luxation is seen more amongst small dog breeds (e.g Terrier, Bulldog) and noticed over a 3-4 month period (Piermattei and Flo, 1997; Taylor 1998; Valastro et al., 2005).

However, traumatic joint luxation is generally caused by factors such as a traffic accident, falling from a height, impact through joint area, severe flexion of the leg in abduction or adduction position and compression of the leg (Candas et al., 1989; Guzel et al., 2006). Previous researchers (Denny and Butterworth, 2000; Schaeffer et al., 1999; Valastro et al., 2005) reported that elbow joint luxations are seen more among cats and dogs older than one year. The present traumatic joint luxation case document in this work was observed in a 2.5 year old German shepherd and occurred due to a fall from height. Thus the claudication in extremity forming luxation is the first functional symptom; while holding the extremity 3-5 cm above a surface, due to flexion of the elbow, it is in a slight abduction and lateral rotation position. While volume increase, pain and crepitation were observed in palpation; it is conspicuous that the elbow joint can not be brought into full extension by passive movements. Definitive diagnosis can only be made by dual radiographies, as one-sided radiographies can be misleading (Billings et al. 1992; Bongartz et al., 2008; Candas et al., 1998). Similar symptoms were also observed in this case and definitive diagnosis was established via dual radiography. Elbow joint luxations frequently develop through the lateral, since medial epicondylus of the humerus is wider and bigger. Medial luxations of the elbow joint are generally seen with condylar fractures of the humerus. Cranial luxations are more widely seen as a result of impacts upon the ulna as caudal and with olecranon fractures. In this presented case, elbow joint luxation was observed forming through the lateral.

Previous researchers (Aslanbey and Gorgul, 1974; Denny and Butterworth, 2000; Schaeffer et al., 1999; Valastro et al., 2005) mentioned that closed or open reduction can be applied under general anesthesia for the treatment of elbow joint luxations. They emphasized that closed reduction gives more satisfactory results upon the early-diagnosed cases. However, an surgical intervention is needed for chronic cases for reduction. In the case encountered, after giving the animal general anesthesia, reduction was applied; since the result was not successful, open reduction was decided upon. For this purpose, using the manipulations mentioned in the literature, the reduction was performed by entering the elbow joint from an incision of approximately 3 cm. Following the operation, a dual radiography was taken to confirm the reduction procedure.

Previous researchers (Bongartz et al., 2008; Candas et al., 1998) stated that bandage should be applied to the elbow joint luxation following the operation. In this case, PVC backed bandage was applied for three weeks. After the bandage was removed the animal was recommended a daily exercise program. Dual radiography of the case taken after two months, showed that the elbow joint is in its correct anatomic position and the animal is able to move its leg freely.

In conclusion, it was determined that in the treatment of elbow luxations, closed reduction can give a result within a few days; however an surgical intervention done after the failure of closed reduction can succeed.

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