TREATMENT OF EARLY CLOSURE OF THE DISTAL RADIAL EPIPHYSEAL GROWTH PLATE IN A GERMAN SHEPHERD DOG

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Summary: In total or partial early closure one of the distal or proximal growth plates in long bones, extremity deformities and joint incongruity in the upper or the lover joint in the related bone occur. In this study, correction of incongruity of the elbow joint of a dog whose distal radial growth plate had early closure and growing period still continued was subjected. In this study was carried out in a 5 month old, male, German Shepherd mixed dog which was brought to Ankara University Faculty of Veterinary Medicine, Department of Surgery, Orthopaedics and Traumatology Clinic**.** In the clinical examination, pain and reduced movement range were diagnosed in the elbow joint, besides there was remarkable incongruity in the elbow joint in the radiological controls. In the technique, transversal osteotomy was performed on radius and radius was freed by taking out a 2 cm fragment. Following this, proximal part of the radius and tuber olecrani was crossed by pins -one each- and dynamic distraction was performed outside by elastically bands. In the distraction period, weight bearing was avoided by using a PVC supported bandage. The application was continued until the joint incongruity disappeared. The healing period of the cases was evaluated clinically and radiologically in 10 day period. In the end of the 10^{th} day, it was seen that the joint incongruity disappeared and callus tissue started refilling the osteotomy line. In the end of the 20^{th} day the osteotomy line was fulfilled by callus tissue and there were no signs of joint incongruity so the treatment ended. Antebrachial deformities are the most commonly seen skeletal system growth abnormalities with a 74% percentage. Among these abnormalities, the most common developing situations are the early closure of distal plates of ulna and radius. In our study, a technique was used which is easy to perform on patients whose growing period still continues and who still hasn't developed deformities. In conclusion, this treatment was found be successful to solve the incongruity in the joint and to provide extremity extension.

Introduction

Antebrachium deformities are the most common musco-sceletal growth anomaly with a rate of 0.74% in dogs. The main cause of this disease is reduced or totally stopped epiphyseal growth of radius or ulna. Also trauma, chondrodysplasia, metabolic diseases, hyperparathyroidism, multiple cartilagoneous exostoses, hypertrophic osteodystrophy or rickets are the secondary causes of deformities by growth. Malunion of antebrachium fractures, joint contractures, and polyarthritis caused deformities are also seen. Radius and ulna are the two bones that are growing together and synchronized. The main ethiology of deformities is asynchoronised growth of these two bones. In total or partial early closure one of the distal or proximal growth plates in long bones, extremity deformities and joint incongruity in the upper or the lover joint in the related bone occur.

The aim of this study is to share the treatment of a dog with early closure of distal radial epiphyseal plate and the incongruity of elbow joint cause of this early closure.

Material and Methods

In this study was carried out in a 5 month old, male, German Shepherd mixed dog which was brought to Ankara University Faculty of Veterinary Medicine, Department of Surgery, Orthopaedics and Traumatology Clinic**.** Pain elbow joint and reduced range of motion in

elbow joint was seen in clinical examination. After radiological examination elbow incongruity was diagnosed in dog. In the clinical examination, pain and reduced movement range were diagnosed in the elbow joint, besides there was remarkable incongruity in the elbow joint in the radiological controls. In operation transversal radial osteotomy was done and 2.0 cm bone was extracted. After exraction one pin to proximal radius and another to tuber olecrani was inserted and a dynamic traction was provided by a elastic rubber band which is applied between these two pins. PVC based bandage was carried for the patient during distraction to avoid weight bearing. This was done until the incongruity was restored.

Results

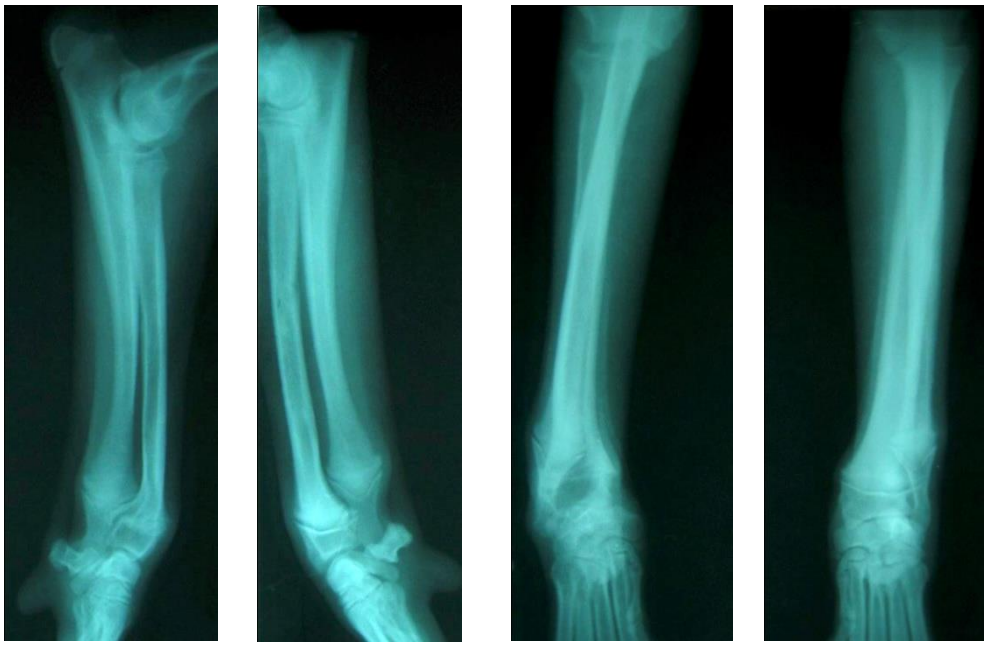
Clinical and radiologic evaluation of the treatment was done by 10 days of period. After first 10 day the incongruity was no more observed and primary callus was seen in osteoectomy line. On the 20^{th} day the incongruity was restored and the callus was seen in osteotomy line and the treatment was ended.

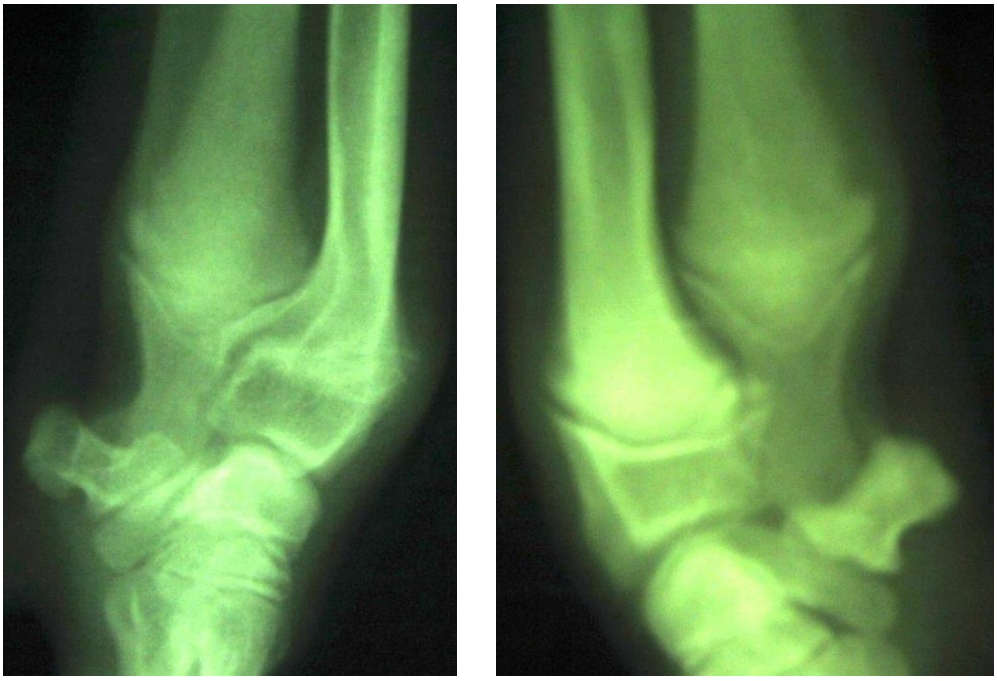
Conclusion

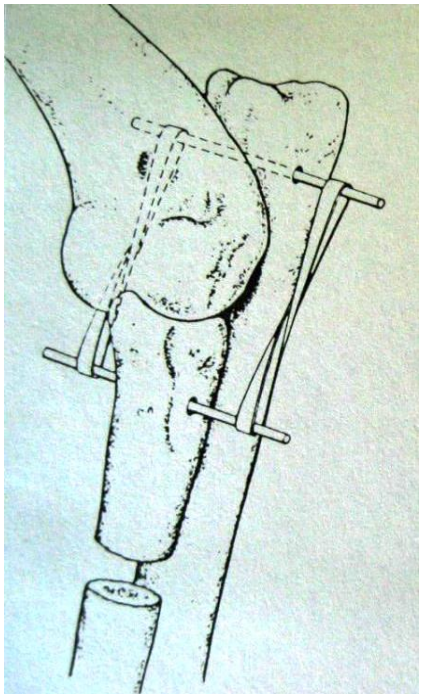
The most common growth anomaly of the dogs is the antebrachium deformities and because of this there are so many techniques for treatment. The most common technique that are used to treat antebrachium deformities are open or close osteotomies and internal or external stabilization of the bones. But rigid stabilizations to the young patients should be discussed because of ongoing growth process.

In this case because of ongoing growth and the easy application of the method we choose and external stabilization after osteoectomie of radius.

As a conclusion restoring the incongruity and allow to growth of the bones were performed together and the results were satisfied.







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