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Nonunion fracture treatment of a toy breed dog with mini ilizarov external fixator

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Abstract

Fractures of antebrachium are common in dogs and cats and usually occur as a result of minimal trauma. The possibility of delayed union and nonunion is seen more in small breeds. Biomechanical and vascular abnormalities can cause delayed union and nonunion. The mini ilizarov external fixator system's recommended because it prevents bending fracture and rotation of stabilized bone fragments while allowing micro-movement of the fracture site around it's axis during weight bearing. In this study, mini ilizarov application and results of non-union antebrachium fracture in a immature dog are presented. The case is 1.5 y old, 3 kg male Chihuahua breed dog which had middle diaphyseal antebrachium fracture. In line with the information given by the owner, osteosynthesis was performed with the intramedullary pin. In the follow-up controls lameness and pain was continuing and nonunion was observed on the radiographs. Reoperation was made with acrylic external fixation technique. The patient was brought to the IUC Veterinary-Faculty-Surgery-Department 4 months later due to its continuing complaints. For the treatment, previously applied external fixator and intramedullary pin were removed. After the mini ilizarov external fixator was configured, it was applied to the area so that 80 mm diameter rings were placed on the proximal and distal fragments of the fracture. A K-wire was used with an addition to the distal ring for increasing the stabilization of the distal fragment. It was observed that the union started at the 3rd month follow-up. At the 6th month follow-up the patient did not show any signs of lameness or pain. It was observed that the non-union in the radius had union with the compression and distraction applications provided by the fixator. As a result, non-union formation in antebrachium fractures, and union can be achieved with the mini ilizarov external fixator system in these patients. This method of treatment represents an effective surgical option for a variety of orthopedic problems in dogs because these systems are versatile and applied in a minimally invasive manner.

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