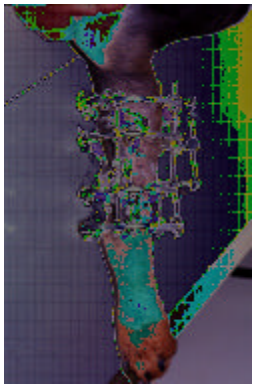
VETERINARY SURGICAL SPECIALISTS

CASE IN POINT
Angular Limb Deformity Correction with Circular External Fixator



PRESENTATION: 8 month old intact male Rottweiler presented with a right forelimb angular deformity.
HISTORY: Lameness and deviation of the limb reportedly only noticed by the owners for the past 10 days.
DIAGNOSIS: Orthopedic examination revealed a grade II right forelimb lameness with pain in the right carpus region. Radiographs revealed a normal left forelimb (pictured on the left below) and a shortened right radius with a chronic Salter-Harris II distal radial physeal fracture and premature partial distal radial physeal closure on the medial aspect and a secondary varus deformity (pictured on the right below).

TREATMENT: Correctional radial and ulnar osteotomy was performed in order to allow bone lengthening with healing. The circular fixator device is shown above. Distraction was initiated 3 days postoperatively and continued twice daily for 10 days until the limb appeared aligned. The fixator was maintained for 6 weeks until adequate callus had formed at the osteotomy sites.

OUTCOME: Lameness resolved within 14 days of fixator removal. Limb angularity and length were not visibly different from the normal left forelimb.
DISCUSSION: Angular limb deformity is most commonly the result of trauma or premature physeal closure. In some cases, the limb length is also compromised and the patient can benefit from both limb lengthening and correction of the angularity. Distraction osteogenesis is the process of stimulating and maintaining new bone formation by applying gradual traction on the cortical bone. Ideally, distraction of 1mm per day is performed divided into 2-4 distraction periods. The circular external fixator stabilizes bone fragments in all planes and allows use of small pins that minimize damage to the surrounding soft tissue, periosteum and marrow blood supply while allowing weight bearing.