

CLINICAL EVALUATION OF EXTRACORPOREAL SHOCK WAVE THERAPY FOR MANAGEMENT OF CANINE OSTEOARTHRITIS OF THE ELBOW AND HIP JOINT

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INTRODUCTION AND HYPOTHESIS: Extracorporeal Shock Wave Therapy (ESWT) was introduced into human orthopedics in the early 1990's as an extension of urological lithotripsy. Extrapolation from human studies suggests that ESWT may aid in the management of canine orthopedic conditions. The purpose of this trial was to objectively evaluate the therapeutic benefits of ESWT on hip and elbow osteoarthritis (OA). We hypothesized that ESWT, either alone or in combination with other medical treatments, would improve the comfort level and quality of life for dogs with osteoarthritis.

MATERIALS AND METHODS: A blinded prospective clinical study of 9 dogs with OA of the elbow and hips was performed. Cases were randomly assigned to ESWT (N=5) or a sham (N=4) treatment. Joint capsule insertion points of the hips and elbows were treated with $0.14\text{mJ}/\text{mm}^2$ and $0.13\text{mJ}/\text{mm}^2$, respectively. Each case was evaluated by force plate analysis of gait (z-peak), measurement of comfortable range of motion (CROM), and lameness at a walk and trot on days 0, 14 & 28. Treatment means were normalized as a percent of the baseline (day 0) value. Normalized data were compared using a repeated measures ANOVA. Significance was set at $p<0.05$.

RESULTS: Significant differences were noted between the ESWT and sham cases. As a percentage of the baseline value, peak vertical force, CROM and lameness at a walk and trot improved from day 0 through to day 28 in the ESWT cases. Improvement from baseline ranged from 2 to 20 % in the ESWT group. Over the same time, the sham cases were typically less than the 100% baseline for each parameter.

DISCUSSION: Additive or synergistic effects of varying treatment modalities is likely required to manage OA. For 28 days after treatment significant improvement was observed for most parameters in dogs receiving ESWT. Additional research into the mode of action and the optimal energy level and number of ESWT treatments is necessary.

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