**EFFECT OF EXTRACORPOREAL SHOCK WAVE THERAPY ON ELBOW OSTEOARTHRITIS IN DOGS**

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**Introduction**

- Osteoarthritis (OA) is a progressive degenerative process of synovial joints and management is multifaceted
- New modalities to manage OA are regularly promoted, but there is little objective evidence of efficacy
- Extracorporeal shock wave therapy (ESWT) has been used to treat selected musculoskeletal disorders in humans and animals, including OA

**Purpose and Hypothesis**

- The purpose of the study reported here was to evaluate the efficacy of ESWT in the management of canine elbow OA
- We hypothesized that ESWT would have a positive effect on ground reaction forces and clinical parameters of lameness

**Materials and Methods**

- 15 skeletally mature dogs with elbow OA, confirmed radiographically, were evaluated
- Diet, exercise, and other treatments were maintained the same throughout the study
- Dogs were randomly assigned to a treated or sham treatment group, if both elbows were arthritic, only the more affected limb was selected
- Data were evaluated using ANOVA with treatment and time as factors

**Results**

- Dogs generally tolerated treatment well
- There were mild improvements in outcome parameters in dogs receiving treatment
- ESWT resulted in a 4.5% increase in peak vertical force (70.4±3.21 to 78.8±3.8, as a percent body weight) compared with a decrease of 2.6% (82.7±5.7 to 80.3±3.7, as a percent body weight) in sham treated dogs (P<0.01) (Figs 1 and 2)
- Similar changes were found in vertical impulse (Fig 3)
- Peak braking (YBPeak) and peak propulsion (YAPeak) were also significantly improved after ESWT (P<0.01) (Figs 4 and 5)
- Mean lameness scores improved marginally at the walk and comfortable range of motion measurements; and determination of ground reaction forces at a trot
- Comfortable ROM remained approximately the same in both groups of dogs (P>0.05)

**Discussion**

- ESWT is a relatively new modality in small animal practice to treat OA
- Elbow OA is particularly challenging to manage, and the cases in this series were moderately lame with end-stage OA, with most dogs already receiving standard therapy
- The magnitude of improvement in mean peak vertical, peak braking, peak propulsive forces, and lameness scores in this study are similar to what might be expected with NSAIDs or other treatments
- In addition to group means, note also should be made of the percent of dogs that have a positive response to treatment
- More dogs had a favorable response to ESWT treatment as compared with sham treatment (Table 1), and the increase in weightbearing was approximately 10% (Fig 7)
- Furthermore, dogs receiving sham treatment first followed by ESWT consistently improved after ESWT, with the exception of 1 dog (Fig 8)

**Conclusion**

ESWT appears to be an efficacious addition to the multimodal approach to OA of the elbow