

6th CT-User Meeting

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Introduction

Lower back pain (LBP) is a frequent problem in dogs, mostly caused by Degenerative lumbosacral stenosis (DLSS). Orthomanual Veterinary Medicine has been used for years as a treatment for LBP in dogs. It is based on the symmetry of the vertebral column and skeleton. After inspection and palpation, a correction of vertebrae position is performed manually (orthomanipulation).

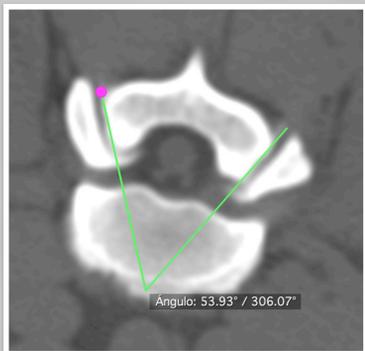


FIGURE 1. The facet joint angle. It was measured between the lines connecting the edges of the cranial articular process (B) in the transverse plane



FIGURE 2. percentage obstruction of the spinal canal by the bulging disc on transverse and sagittal images

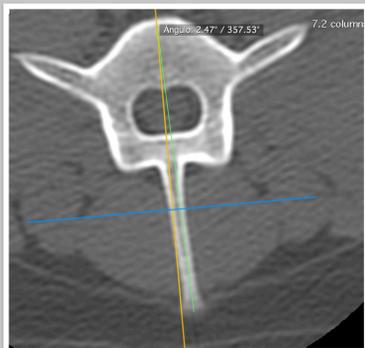


FIGURE 3. Sagittal deviation. defined as the angle formed by the sagittal axis of L6 and L7 vertebrae and by the sagittal axis of L7 and S1 vertebrae. In this figure, the yellow line represents the angle formed by the midsagittal line of L6 (shown vertebra), green line, and L7's midsagittal line, yellow line.



FIGURE 4. Dorsal spinous process deviation (DSPD), defined as the angle formed by the sagittal plane as seen in the dorsal plane of the spinous processes; between L6 and L7; and L7 and S1. in this figure angle between

Bibliography

- Suwankong N, Meij BP, Voorhout G, deBoer AH, Hazewinkel HAW. Review and retrospective analysis of degenerative lumbosacral stenosis in 156 dogs treated by dorsal laminectomy Vet Comp Orthop Traumatol 2008; 21: 285–293.
- Jones JC, Davies SE, Werre SR, Shackelford. Effects of body position and clinical signs on L7-S1 intervertebral foramina area and lumbosacral angle in dogs. Am J Vet Res. 2008; Jul;72(7):905-17
- Higgins BM, Cripps PJ, Baker M, Moore L, Penrose FE, McConnell JF. Effects of body position, imaging plane, and observer on computed tomographic measurements of the lumbosacral intervertebral foraminal area in dogs. Am J Vet Res 2011, Vol. 72, No. 7

Material and Methods

10 dogs with mild LBP using the following inclusion criteria:

- Dogs of at least twenty-four months of age with clinical symptoms typical for DLSS
- Pain and vertebral incongruence in the lumbosacral area during diagnosed by orthomanual inspection and palpation
- No previous treatment for DLSS; either conservatively or otherwise

All dogs underwent a CT-scan before and immediately after orthomanipulation. The following data were recorded: two already described measurements

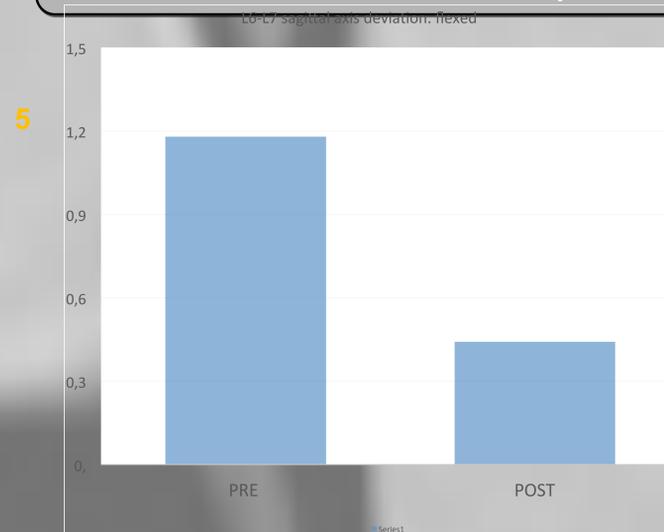
1. The facet joint angle. (Suwankong et al, 2008):

2. Disc protrusion.

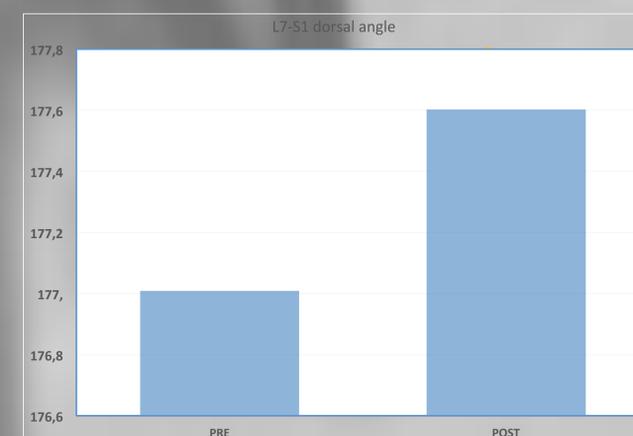
3. Dorsal spinous process deviation (DSPD), defined as the angle formed by the sagittal axis as seen in the dorsal plane of the spinous processes; between L6 and L7; and L7 and S1.

4. Sagittal deviation (SD), defined as the angle formed by the sagittal axis of L6 and L7 vertebrae and by the sagittal axis of L7 and S1 vertebrae.

Measurements 3 and 4 have not been previously described.



Spinous process deviation L6-L7 sagittal axis



Spinous process deviation L6-L7 dorsal axis

Results

All measurements were taken with the hind legs flexed and extended. Two measurements showed significant differences ($P < 0.05$): SD between L7 and S1 vertebrae, and DSPD between L6 and L7 vertebrae. On both cases vertebrae were better aligned after orthomanual manipulation

Conclusions

This is, in the authors' knowledge, the first time that measurements have been taken of the spine in dogs before and after been treated by orthomanipulation. In two measurements, statistically significant differences have been revealed, showing a better vertebral alignment. Bigger number of cases and/or more clinically severe case may show differences in more measurements.