6th CT-User Meeting

Joint venture:

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Proceedings
Multislice computed tomography for the detection of compressive hydrated nucleus pulposus extrusion in dogs

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Introduction: Compressive hydrated nucleus pulposus extrusion (HNPE) is defined as an acute extradural compressive lesion consisting of hydrated nucleus pulposus material, occurring at the level of the associated intervertebral disc in dogs. Magnetic resonance imaging (MRI) is the imaging modality of choice to diagnose HNPE.

Objectives: This study examines the possibility to detect compressive HNPE with computed tomography (CT). A first objective of the study was to determine the capability of CT to detect HNPE and to describe the CT characteristics. The second objective of the study was to determine the sensitivity and specificity of CT to detect HNPE.

Material and Methods: A retrospective analysis of the clinical and imaging data of dogs diagnosed with compressive HNPE on MRI was performed. Both CT and MR images had to be available to be included. The CT images of MRI confirmed cases were assessed by a non-blinded image reader to define the CT characteristics. The sensitivity and specificity of CT to detect a cervical HNPE was determined by 2 blinded observers using a control group of dogs with acute type 1 disc disease.

Results: HNPE was characterized on CT as a hypodense extradural compressive lesion dorsal to the intervertebral disc space with rim enhancement on postcontrast images. The sensitivity and specificity to detect HNPE with CT was respectively very good (91%) and excellent (100%).

Conclusion: CT is a useful technique to detect compressive HNPE in dogs. However, if no clear lesion is identified with CT or if information about intramedullary changes is needed, MRI still needs to be performed.