

## **MRI accuracy in differentiating canine intervertebral disc extrusion and protrusion in small breed dogs.**

Neo, J., Lenard, Z., Hopper, B. and Martig, S.

### **Introduction:**

A guideline for differentiating between intervertebral disc extrusion (IVDE) and protrusion (IVDP) using MRI in large breed dogs has been previously reported.<sup>1,2</sup> This study aims to report on the usefulness of this guideline in small breed dogs.

### **Materials and Methods:**

This is a retrospective, cross-sectional study. The digital records database of a single institution was searched and dogs were included if 1) an MRI study of the thoracolumbar or lumbar vertebral column was performed, 2) the dog subsequently underwent surgery within 48 hours after the MRI, and 3) the dog had a body weight of less than 20kg.

The MRI images were reviewed by three specialist radiologists who were blinded to surgical outcome. Information provided included estimated length of clinical signs and site of lesion. The radiologists were provided with a questionnaire incorporating the previously published MRI variables, and were asked to make a final imaging diagnosis of IVDE or IVDP.

### **Results:**

The total number of dogs included in this study were 44. Preliminary findings found an accuracy of 78.5%, however a poor inter-rater agreement. Raters found that certain variables were weighted more important in making the decision of a diagnosis. The accuracy improved to 79.1% if the images were read holistically. It was also more likely to obtain an accurate diagnosis for an IVDE, than IVDP.

### **Conclusions:**

The results of this study suggest that the guideline has good accuracy but poor inter-rater agreement in differentiating IVDE and IVDP. It should therefore be used as an adjunct and a holistic assessment incorporating other variables should not be overlooked.

**References:**

1. De Decker S, Gomes SA, Packer RM, Kenny PJ, Beltran E, Parzefall B, et al. Evaluation of Magnetic Resonance Imaging Guidelines for Differentiation Between Thoracolumbar Intervertebral Disk Extrusions and Intervertebral Disk Protrusions in Dogs. *Veterinary Radiology and Ultrasound*. 2016;57(5):526–33.
2. Gomes SA, Volk HA, Packer RM, Kenny PJ, Beltran E, De Decker S. Clinical and Magnetic Resonance Imaging Characteristics of Thoracolumbar Intervertebral Disk Extrusions and Protrusions in Large Breed Dogs. *Vet Radiol Ultrasound*. 2016;57(4):417–26.