Editorial

Getting to Grips with Cruciate Ligament Disease

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There are many sage proverbs extolling the uniqueness of feline musculoskeletal injuries and diseases. So, it might not come as a surprise that an ex vivo study by Bilmont and colleagues found that the canine-style tibial plateau levelling osteotomy failed to stabilize the feline cruciate-deficient stifle.[1] Certainly ex vivo mechanical studies have many limitations, as the authors of this study have adequately addressed. However, it does raise the possibility that the good clinical results of this procedure reported previously in cats may have ensued in spite of the osteotomy. Perhaps these clinical results should be viewed with some caution; a longitudinal experimental study in cats found that at 4 months after transection of the cranial cruciate ligament (without any other surgical procedure), there was a significant reduction in cranial translation and internal rotation of the tibia.[2] This improvement in stifle joint stability is considered to be due to several concurrent processes including increased cartilage thickness, and changes in the meniscal cartilages, joint capsule and the medial collateral ligament. These changes in the secondary stabilizers do not restore normal joint mechanics, or prevent development of secondary osteoarthritis. However, the extent to which they contribute to a clinical improvement in lameness after the tibial plateau levelling osteotomy in the cat has not been quantified.

The rapid improvements in the capability for non-invasive imaging of the stifle joint have allowed us to identify and quantify changes in the soft tissue secondary stabilizers of the cruciate-deficient stifle joint. Notable are the developments with magnetic resonance imaging (MRI) and sonoelastography. These are important for the more accurate diagnosis of complications and failures that delay recovery after procedure such as tibial osteotomy. Feichtenschlager and colleagues showed that selected sagittal turbo spin echo sequences of MRI enabled interpretation of most soft tissue, osseous and cartilage structures without detrimental effects of susceptibility artefact distortions in canine stifles after implanting a tibial plateau levelling osteotomy titanium plate.[3] Although further investigations are required, the improved clinical accuracy in diagnosing soft tissue complications such as late meniscal injury will be valuable.

Sonoelastography is another recently new, non-invasive imaging modality based on ultrasound. It evaluates mechanical properties of soft tissues such as tendon, and is based on the tissue displacement with external compression. Following tibial plateau levelling osteotomy in the dog, the problem of accurately diagnosing patellar ligament desmopathy is particularly relevant clinically. The preliminary results of Piccionello and colleagues suggest that sonoelastography may prove to be a valuable imaging modality for accurate assessment of this problem in the future.[4]

As well as the topics highlighted in the editorial, there is an interesting array of other topics to pique your interest in this issue of the Journal.

References

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