The authors declare no conflict of interest.

MAGNETIC RESONANCE IMAGING OF EQUINE TARSAI DISORDERS – 34 CLINICAL CASES

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Introduction

currently, tarosal disorders are mainly diagnosed using radiographs, ultrasonography, scintigraphy and/or arthroscopy. Additionally, several reports describe CT scanning. However, each of these techniques has limitations preventing complete/simultaneous imaging of osseous/soft tissue tarsal structures. Whereas human tarosal conditions are routinely diagnosed in bone and ligament/cartilage pathology, sensitivity and specificity is lower as compared to MRI. However, they will remain primary diagnostics for practical reasons. Scintigraphy is useful to detect low-grade chondropathies, synovialitis, adhesions, tendovaginitis and arthritis. Generally, MRI-findings were particularly useful to estimate expansion/duration of desmo- and tendopathies, bone edema, fractures/foreign body and/ or subchondral bone cysts and/or concurrent pathology.

Discussion

For many years, equine tarsal MRI was challenging due to patient size and/ or suitable gaiters. Although radiography, ultrasonography, scintigraphy and/or arthroscopy can identify some tarsal disorders, sensitivity and specificity is low as compared to MRI. However, they will remain primary diagnostics for practical reasons. Scintigraphy is useful to detect on-going inflammation, but fails to reliably identify subtle pathology. Furthermore, it is subjected to environmental regulations. More recently, tarsal CT provided more detailed insight in bone and cartilage pathology. Although CT was rapidly performed, it remained challenging in portraying soft tissue lesions in detail as compared to MRI. Also, high-field MRI for detection of distal tarsal bone pathology was described. However, our low-field MRI-protocol allows for routine scanning of all tarsal lesions and we report on results independent on size, breed, age, gender or tarsal region. Our findings indicate, that low-field tarsal MRI is save, delineates normal/abnormal structures thoroughly/simultaneously and appears superior to identify low-grade or concomitant bone-soft tissue pathology as compared to traditional diagnostics. Similar to human orthopedics, MRI could develop into the „Gold standard“ for investigating tarsal pathology. Although arthroscopy remains important for exploration and therapeutic intervention, anatomy limits complete exploration, certain lesions remain inaccessible and/ or are located extraarticularly and thus, may be missed in surgery. Therefore, tarsal lameness negative to traditional diagnostics should be considered for MRI-examination. MRI is an excellent complementary tool for managing and pre-OP planning of inconclusive tarsal lameness. Timely MRI-scanning may prevent delayed diagnosis and/ or unnecessary arthroscopy with inaccessible and/ or extrarticular lesions and allows more targeted therapeutic intervention resulting in appropriate treatment and prognosis.

Conclusion

In conclusion, combination of low-field MRI-scanning with traditional diagnostics and/or arthroscopy may be a promising approach for better understanding of tarsal pathology, management, treatment and prognosis.

References


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