Characterization of Nuclear Scintigraphic and Magnetic Resonance Imaging in Horses With Proximal Suspensory Desmopathy

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Magnetic resonance imaging is useful for the diagnosis of desmopathy of the proximal aspect of the suspensory ligament. Nuclear scintigraphy is effective at identifying regions of pathology but is less sensitive at identifying a specific cause of that pathology. Authors’ addresses: Alamo Pintado Equine Medical Center, PO Box 249, 2501 Santa Barbara Avenue, Los Olivos, CA 93441 (Zdimal, Judy, Herthel); and College of Veterinary Medicine, University of Minnesota, 1365 Gortner Avenue, St. Paul, MN 55108 (Saveraid); e-mail: nrzdimal@gmail.com. *Corresponding and presenting author. © 2012 AAEP.

1. Introduction
Pain associated with the proximal metacarpal and metatarsal regions is a common source of lameness in equine athletes. The purpose of this study was to compare the results of clinical cases undergoing nuclear scintigraphy and magnetic resonance imaging (MRI) for orthopedic conditions related to the proximal aspect of the metacarpal and metatarsal regions and to determine if there was any correlation between increased radioactive uptake (IRU) patterns with a specific diagnosis based on the MRI findings. It was hypothesized that there would be no correlation between the degree of IRU in the proximal palmar (plantar) aspect of the third metacarpal (metatarsal) bone and the specific diagnosis based on MRI.

2. Materials and Methods
Medical records of 26 horses undergoing both nuclear scintigraphy and MRI from July 2006 to February 2012 were reviewed. Criteria for inclusion were based on the IRU patterns observed in the region where the suspensory ligament originates from the palmar or plantar aspect of the metacarpus or metatarsus.

3. Results
Comparison of the severity of the scintigraphy uptake and the findings on the MRI did not identify any statistically significant correlations between the intensity of the uptake and the specific abnormality on MRI. Trends were noted, with mild scintigraphy findings having a tendency to more likely represent suspensory ligament pathology alone and more severe scintigraphy findings being more likely to represent a combination of osseous and ligamentous pathology.

4. Discussion
The findings of this study confirm that the degree of uptake does not specifically indicate the character, specific structures involved, or the severity of the pathology of the region. Osseous lesions could not be distinguished from a ligamentous injury based on scintigraphic images alone, making additional diagnostics necessary for an accurate diagnosis.