



Should we still take radiographs of horses' feet?

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Over the past decades, imaging has seen tremendous technologic advances that have transformed the practice of veterinary medicine with the arrival on the veterinary market of new technologies enabling to image the equine patient with unprecedented detail. The rapidly increasing use of new technologies as magnetic resonance imaging, the increasing demands from horses' owners and the overuse of imaging in some cases are now posing new challenges and experts and insurers start to question not only clinical efficacy but also cost-effectiveness. Therefore, in choosing the best imaging test for each particular clinical situation, questions arise about diagnostic efficacy but also about the value given the cost and its comparability with other imaging alternatives in terms of cost-effectiveness. In fact, although an imaging diagnostic test may be ranked highly in terms of diagnostic accuracy, it may not be an ideal exam in certain situations because it is expensive and, in some cases, may provide only a little marginal benefit compared with other less expensive alternatives. In human medicine cost-effectiveness analysis are becoming increasingly common to measure and compare costs and benefits of different alternative imaging modalities and assess their relative efficiency. Comparison studies about the use of the different imaging modalities in the assessment of the equine foot would also be of value. When assessing horses' feet, low-field standing magnetic resonance imaging systems have now become relatively easily available and have provided large benefits over the previously used magnetic resonance imaging equipment that required general anaesthesia. Faster and more cost-effective than magnetic resonance imaging under general anaesthesia the standing systems allow horses' owners not only to avoid the risks but also to reduce the costs of the magnetic resonance imaging examination. Therefore this modality has become largely used to assess the equine foot and it is nowadays considered the best imaging diagnostic test to obtain a complete and accurate evaluation of both soft tissue and bony lesions within the foot. The question "should we still take radiographs of horses' feet" has therefore been raised as some owners and veterinarians may wonder why they should "waste" time and money in taking radiographs if they can offer the best to their horse by undertaking a magnetic resonance imaging exam. In our clinic we consider that radiographs should always be taken before a magnetic resonance imaging examination and that staged imaging remains the best way to serve the horse and the owner. Staged imaging is largely supported in human medicine to effectively deploy resources, as radiographs require less time to be taken and to be interpreted and are less expensive in comparison to advanced imaging modalities.

In human medicine for example radiographs are still strongly indicated before magnetic resonance imaging of the knee: a study on knees from patients aged 40 and older demonstrates that although almost 25% of magnetic resonance imaging scans were taken before the patient first obtained radiographs, only half of these magnetic resonance imaging examinations added a significant contribution in the establishment of diagnosis and treatment in comparison to radiographs. In the horse, if it is true that an early use of magnetic resonance imaging in the work-up helps to reach an accurate diagnosis more quickly and therefore improve the management of the horse and increase the chance of treatment, feet radiographs remain easy to obtain and important as a first-line screening tool for several reasons. First of all the horse's feet should anyway be properly screened radiographically for the presence of metal before magnetic resonance imaging to prevent image artefacts and therefore a radiographic examination of diagnostic quality including 2 perpendicular views may as well be easily taken. Moreover it may happen that findings on radiographs make more advanced imaging unnecessary and in some cases these findings may even not be expected. If radiographs, especially in mature pleasure horses, show significant changes in the navicular apparatus and/or in the distal interphalangeal joint, knowledge about associated magnetic resonance imaging findings may be less important because the amount of navicular and/or articular damage will likely drive treatment and orthopaedic shoeing and condition the prognosis. In some other cases, depending on the available economic means of the owners or of the insurance coverage, the reduction of the expenses related to the diagnosis may influence the amount of money available for treatment. Finally, radiographs allow an easy (although obviously partial in comparison to magnetic resonance imaging) assessment of the radiographic status of the feet at a certain time that, because of the large availability and low cost of the technique, represent useful data for future comparison or for comparison with previous pre-purchase exams.

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