USING MRI TO DIAGNOSE TOOTH RELATED SINUSITIS IN HORSES

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INTRODUCTION
Sinusitis is a common disease in horses, without clear separation between primary sinusitis and secondary sinusitis from a causal tooth. MRI poorly depict enamel, cement, dentin, cortical bone and intraoral air. However, bone medulla, pulp and parodontal space are easily viewed. This study assessed diagnostic significance of MRI in finding or excluding causal tooth sinusitis.

MATERIAL AND METHODS
Eleven horses with chronic sinonasal diseases or with fistulas lacking a clear radiographic/clinically diagnosis underwent MRI. From six horses, MR images were acquired with a 1.5 Tesla scanner, four cases utilized 0.5 Tesla. T1 and T2 weighted sequences were used in the standard planes.

RESULTS
In two horses a diseased mandibular tooth was found, five had a diseased maxillary tooth, two showed fractures without disease, one case of sinusitis followed tooth removal, and one presented with dentigerous cyst. Additionally, three diseased teeth showed a complete lack or decreased number of pulps, in two cases tooth fragments were visible, and two horses showed hyperintense rims around the roots.

DISCUSSION
The entire maxilla and mandibula, teeth and dental pulp were well depicted by MRI. Dentigerous cysts and their relation to surrounding structures were clearly shown. While MRI provides insufficient information of dental perfusion in human medicine, three equine cases demonstrated direct relationship between MRI image and changed signal intensity of one or more pulps.

CONCLUSIONS
Dental MRI provides a valuable tool for visualization and detection (or exclusion) of dental diseases in horses. Additional experience regarding changes in tooth pulp chamber is necessary.