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Equine Odontoclastic Tooth Resorption and Hypercementosis: An In-Depth Evaluation of 15 Cases to Determine Any Possible Causes or Associations

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Take Home Message

This presentation is a preliminary evaluation of a research project involving 15 horses that have been diagnosed with Equine Odontoclastic Tooth Resorption and Hypercementosis Syndrome (EOTRH Syndrome). Broad evaluations of these cases have been conducted with 1) in depth medical history, 2) radiographic interpretation, 3) histopathology and 4) hematology. The goal of this pilot study is to identify parameters that may represent correlations and/or associations with this disease process.

Introduction

EOTRH syndrome is a painful condition of older horses (typically recognized at 15 years of age and older) that involves both the canine teeth and incisors. The lesions may penetrate into the dentin and eventually tract into the pulp. Equine resorptive lesions with hypercementosis involving the incisors and canines were first described in the horse in 2004 by David Klugh. The disease/syndrome was classified as periodontal disease involving the incisors and canines.¹ Robert Gregory published an article on this disease in 2006 and further described it as cemental hyperplasia and hypoplasia.² Robert Baratt accurately labeled these lesions as “resorptive lesions” in 2007.³ In 2008 this disease was described and classified by Carsten Staszyk as Equine Odontoclastic Tooth Resorption and Hypercementosis.⁴

Materials and Methods

This study involves 15 horses that have been diagnosed with the EOTRH Syndrome. The protocol of this project requires: 1) a complete history/physical exam, 2) radiographic evaluation and interpretation, 3) histopathological evaluation of an extracted tooth and 4) hematological evaluation of each patient.
The history and physical examination involves a questionnaire recorded by the submitting veterinarian. The questionnaire categorizes the patients by signalment (age, breed, sex etc.), type of diet, frequency and type of previous dental care, past drug usage (antibiotics, phenylbutazone, banamine etc.) and overall health of the horse (body conditioning score, body coat, T.P.R. etc.)

The radiographic images of the maxillary and mandibular incisor and canine teeth were submitted by the contributing veterinarians. The radiographs were evaluated for the stage of disease in the clinically affected teeth, the tissues involved, and radiographic evidence of disease in subclinical teeth. The evaluation of the radiographs was conducted independently by each author and then the findings were compared.

The histopathological evaluation was conducted by Dr. Rebecca Smedley. The pathological findings are structured into descriptive categories (cemental hyperplasia, cemental hypoplasia, resorptive lesions, bacteria present, dentinal lesions, endodontic/pulp lesions, etc.) The findings are compiled into a spreadsheet for comparative analysis. See abstract from Dr. Smedley titled “Equine Odontoclastic Tooth Resorption and Hypercementosis Syndrome in the United States”.

The hematology was conducted by the Diagnostic Center for Population and Animal Health at Michigan State University and includes: 1) Complete Blood Count with differential, 2) Chemistry Panel, 3) Cushing’s Panel (ACTH, Insulin, Glucose and Cortisol), 4) Thyroid Profile (TT4, TT3, FT4 and FT3), 5) Parathyroid Profile (Parathyroid Hormone, ionized calcium, Parathyroid Hormone related protein), 6) Vitamin A and 7) Vitamin D (25 Di-hydroxy). The data is compiled into a spreadsheet for analysis.

**Results and Discussion**

Preliminary results and discussion will be outlined during the presentation.

**Conclusion**

The scope of this pilot project for the EOTRH Syndrome is of a very broad perspective. The goal of the study is to identify and flag certain parameters that may be associated with the disease process. Negative findings are as important as positive findings. By design, the information gleaned from this pilot study will direct researchers toward larger, more “streamlined” projects which will improve our understanding of the EOTRH Syndrome.

**References**