USE OF IMAGING TO AID THE ENFORCEMENT OF THE HORSE PROTECTION ACT

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Tracy A. Turner, DVM, MS

- 1978 Graduate Colorado State University
- M.S. degree Purdue University, thesis: “Thermographic Evaluation of the Equine Lower Limb” 1979-1981
- Spoke nationally and internationally on lameness topics
- Written over 100 scientific publications and book chapters
- Board certified in Surgery (ACVS) 1986
- Board certified in Equine Sports Medicine and Rehabilitation (ACVSMR) 2013
- Fellow of American Academy of Thermology (AAT) 2002
- Inducted into Am Farrier’s J Equine Veterinary Hall Fame in 2004 for my work on the horse’s foot
- Member of ad hoc committee on the AAEP Tennessee Walking Horse white paper
- Consultant to USDA and FEI
- Past President of Minnesota Association of Equine Practitioners
- Past President of Minnesota Horse Council, chair of the MHC Legislative and Welfare Committees
- Served 2 terms on Central States Dressage and Eventing BOD
STARTED with a CLINICAL PROJECT

Study Event took place in December 2007

15 TWHs of various disciplines participated

All horses were teamed by Persons Responsible to be fit to compete, and were currently being actively shown.

Researchers were blinded as to the individual horse’s identity or competition records.

Research Activities

1) Pre-exercise Thermographic exam

2) Clinical exam using the currently established protocol which includes a 3 part evaluation of General Attitude (GA), Locomotion/Lameness (L), and Physical Exam / Palpation (PE). Each segment is scored 1 - 3 in terms of normal = 1 and severe = 3.

3) Horse to enter the ring and compete vigorously in its normal occupation at winning level of intensity. Horse to stay in motion for 10 minutes.

4) Post Exercise Physical exam

5) Post Exercise Thermal Exam
   Horses allowed to cool out and rest.

6) Horses all received DP and Lateral Digital Radiographs of all four feet.

7) 2 hour post exercise Physical Exam.
8) 2 hour post exercise Thermal Exam.

Horse 1 excused from evaluation
RESULTS of the STUDY

- 14 HORSES WERE THERMOGRAPHICALLY NOT NORMAL
- 11 CONFIRMED ABNORMAL BY FURTHER EXAMINATION:
  - 10, ABNORMAL PALPATION and/or HOOF TESTER EXAMINATION
  - 8, ABNORMAL DIGITAL RADIOGRAPHY
RESULTS of the STUDY

- 15 HORSES EXAMINED, 1 WAS NORMAL
- 5 HORSES HAD AN ABNORMAL PASTERN
- 3 HORSES HAD ABNORMAL HOOVES
- 5 HORSES HAD ABNORMAL PASTERNs AND HOOVES
- 1 HORSE HAD ABNORMAL CANNON
THERMOGRAPHY INITIALLY WAS A SCREENING TOOL

- ALL HORSES WERE EVALUATED, ASSESSED AS NORMAL or NOT NORMAL
- NORMAL WOULD PROCEED WITH ROUTINE INSPECTION
- NOT NORMAL, THE HORSE COULD RETURN TO THE BARN, NO QUESTIONS, or COULD PROCEED THROUGH ROUTINE INSPECTION
- WE OBSERVED and CORRELATED IMAGES
INITIAL FINDINGS

1. ODD “COLD PATTERN” OVER PASTERNs
2. OUR INITIAL IMAGES WERE NOT ADEQUATE
NORMAL
NEEDED MORE DETAIL OF THE PASTERN
THE “COLD PATTERN”
THE “COLD PATTERN”

- In 2011, we selected horses exhibiting this pattern to be swabbed.
- 52 of 52 horses swabbed were positive.
- Majority were ‘Caines’.
- This pattern is not associated with any known pathological process.
- Pattern is adulterated by an intent to obstruct reactivity to palpation.
USE of the NEW VIEW
SCARS
PATTERN ASSOCIATED with SCARS

- HEAT EMANATING FROM POCKET
- CORRUGATION PATTERN
NOT NORMAL PATTERNS

➢ THERMAL ASYMMETRY
➢ WHY?
➢ NEEDS CLOSER SCRUTINY
NOT NORMAL PATTERNS

CORRUGATIONS

TRUE SCAR
NOT NORMAL PATTERN

- More heat over pastern than expected based on whole thermal image
- Needs closer scrutiny to determine if it is painful
DIGITAL RADIOGRAPHY

- NEEDED AWAY TO LOOK INSIDE THE HOOF and PACKAGE
- ILLEGAL SHOEING
- PRESSURE SHOEING
HPA SPECIFIC PROHIBITIONS

- PROHIBITIONS ON SHOEING:
- SHOEING OR HOOF TRIMMING THAT CAN REASONABLY BE EXPECTED TO CAUSE A HORSE TO SUFFER PAIN OR DISTRESS
- ANY OBJECT OR MATERIAL INSERTED BETWEEN THE PAD AND THE HOOF OTHER THAN ACCEPTABLE PACKING
ILLEGAL METAL IS EASY TO FIND
MORE METAL
WHAT CONSTITUTES ILLEGAL METAL???
LEGAL

METAL

NOT LEGAL
SHOEING
Specific Prohibitions

- ARTIFICIAL EXTENSIONS OF TOE LENGTH THAT EXCEED 50% OF THE NATURAL HOOF LENGTH
- THE USE OF “POLY” AND OTHER HOOF BUILDING MATERIALS, COMBINED WITH “HOOF BLACK” POLISH HAS MADE THIS DIFFICULT TO DETERMINE. RADIOGRAPHY MAKES IT POSSIBLE
PRESSURE SHOEING

ILLEGAL METAL
PRESSURE SHOEING

PACKING MATERIAL THAT EXTENDS OVER SOLE; PACKING IS USUALLY OVER THE FROG
POST INSPECTION LEAD ADDED TO PACKAGE
WHAT ELSE ARE WE LOOKING FOR: HOOF IMBALANCE

1. SOLAR ANGLE
2. MEDIAL LATERAL BALANCE
3. ROTATION, GREATER THAN 5º IS SORE IN THAT FOOT

- WE HAVE FOUND THE TENNESSEE WALKING SHOW HORSE TO HAVE THE MOST IMBALANCED HOOVES
WHAT’S NEW

➢ WALL THICKNESS: DORSAL HOOF WALL THICKNESS SHOULD BE AT LEAST 16mm, anything less than 14mm VIOLATION?

➢ SOLE THICKNESS FROM TIP OF COFFIN BONE SHOULD BE AT LEAST 10mm
DORSAL WALL THINNED DISTALLY
FOR WHAT PURPOSE?
LONG HOOF CAN CAUSE PAINFUL PROBLEMS
THANK-YOU

ANY QUESTIONS
SHOEING CAN CAUSE SORING

WRINKLES IN THE SKIN