



THERMAL TECH

Equine Thermal Imaging

Thermal Imaging Report Storm



*Thermal Imaging completed by
a Certified Thermographer
Authorized with the EquineIR™
Network.*



*Interpretative results
completed by Licensed
Veterinarians in contract with
Integrated Equine Infrared.*



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PATIENT: Storm

THERMOGRAPHY DATE: 8/14/13

IMAGING TIME: 8:30am

August 21, 2013

Terrie Knotts
Client Address
Tyler, Texas 75705

Dear Terrie Knotts:

EquineIR was recently requested to perform a full body thermal imaging scan of: **Storm**

The following photo report was completed by your EquineIR™ Certified Thermographer and all interpretative results were channeled through interpretir.com and subsequently formulated and input by a licensed veterinary team member with Integrated Equine Infrared.

The interpretation is intended to aid your state-licensed veterinarian in providing a diagnostic or treatment protocol. All follow-up testing and treatments should be conducted and administered by your primary veterinarian. The interpretation provided is based solely on the conditions at the time of survey and the thermal images included in this report. Thermography is a diagnostic tool that measures heat emitted from the surface of the patient. The thermal imaging camera converts infrared energy into a visible image. Emitted heat is related to circulation; as such, the thermal camera can help detect areas of inflammation as well as decreased circulation. Thermal symmetry is key, so you compare one anatomic area with the same area on the other side. The EquineIR™ report is prepared in this manner. It should be understood that correct patient preparation and environment are vital to a successful survey. Your EquineIR™ technician is also a Certified Infrared Thermographer and has been trained in the proper use and the proven techniques of thermal imaging as it is used with horses. There are however certain situations which may reduce the quality of the survey including the improper preparation of the horse prior to technician's arrival. The interpreting veterinarians who review the imagery base their findings and recommendations on information provided, so it is critical that proper care be taken in the preparation process to ensure success.

Thermal imaging is a physiologic modality and should not be relied upon as the sole diagnostic tool. A complete clinical examination by your state-licensed veterinarian is always recommended for the best diagnosis and follow-up treatment. This Report is not a definitive diagnosis of any illness or disease. It is intended for use only by licensed veterinary professionals to evaluate patient health, diagnose medical conditions, and provide treatment. It is not to be used by individuals for self-diagnosis or self-evaluation, nor for the diagnosis or evaluation of other non-qualified personnel. This report does not replace, nor is intended to replace a complete clinical evaluation by your state-licensed veterinarian. Under no circumstances will EquineIR™, Integrated Equine Infrared or its affiliates be held responsible for illness, injury, or death to the patient as a result of the information contained herein. This report does not replace, nor is intended to replace a complete clinical evaluation.

Your EquineIR™ Technician looks forward to working with you in the future. If you would like to set up an ongoing maintenance imaging program for your horse(s), we can arrange this at discounted rates along with multiple horse discounts. Please call our office with any questions as we would love to assist you in your success.

Sincerely,

Randy Phillips

Randy Phillips, *Certified Infrared Thermographer*
Thermal Tech



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EQUINE CLIENT INFORMATION

CLIENT NAME: Terrie Knotts
MAILING ADDRESS: Client Address, Tyler, Texas 75705
CLIENT EMAIL: terrieknotts@yahoo.com
CLIENT PHONE: 903-530-6272

HORSE AGE: 14
HORSE BREED: QH
HORSE PRIMARY USE: Barrels

SURVEY INFORMATION

THERMOGRAPHER: Randy Phillips
INFRARED CERTIFICATION #: 9210
INFRARED CAMERA MODEL: T420 **CAMERA SERIAL NUMBER:** 62102174
NUMBER OF THERMAL IMAGES SUBMITTED: 30

WEATHER: Light Wind, Cloudy, Hard Rain, Very Dark, Very High Humidity
APPROXIMATE TEMPERATURE: 85 °F
IMAGING LOCATION: Covered area

EXERCISED PRIOR: Yes **HOW LONG:** 20 Min **WHEN:** 10 min prior
TYPE OF EXERCISE: lunged

BOOTS OR WRAPS ON HORSE? No **HOURS SINCE:** Not Applicable
FLYSPRAY OR LINIMENTS APPLIED WITHIN 24 HOURS: No

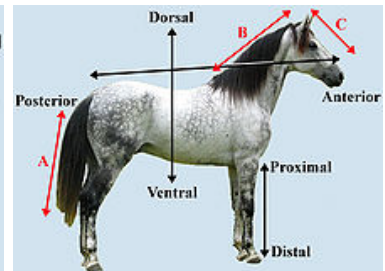
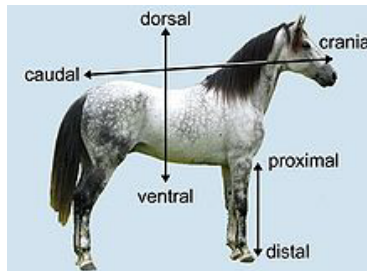
REASON FOR SCAN or HISTORY RECEIVED: Kissing Spine Surgery,- Rolled under succer- rod stall, injured left poll, left shoulder, hip – Calcium deposits top left side behind left poll to withers, left shoulder is higher than right side, rears when saddled, does not like to turn right on barrel , Last vet visit 3/13 for vacs. & teeth, and injections - Farrier last visit aug. 7 for trim, 6 week cycle. Lamé 3 years would like answer for possible treatment.

INTERPRETATION INFORMATION (Completed by Veterinarian)

INTERPRETATION TYPE: Full Enhanced Survey

DATE OF INTERPRETATION: 8/19/2013

REVIEWING VETERINARIAN: Joanna Robson, DVM, CIT

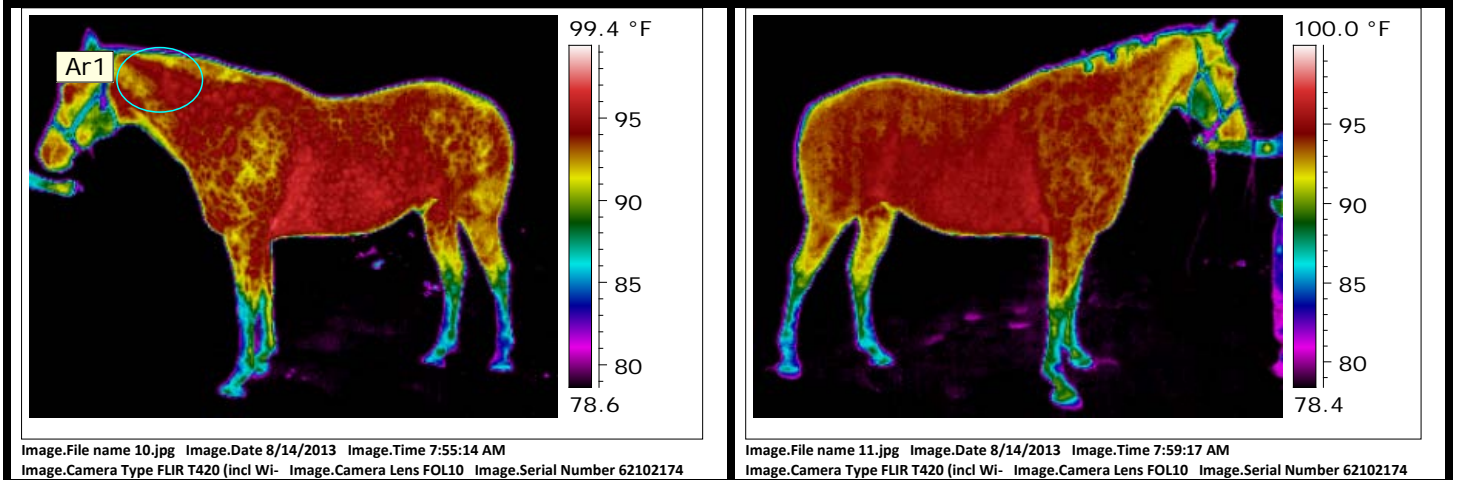




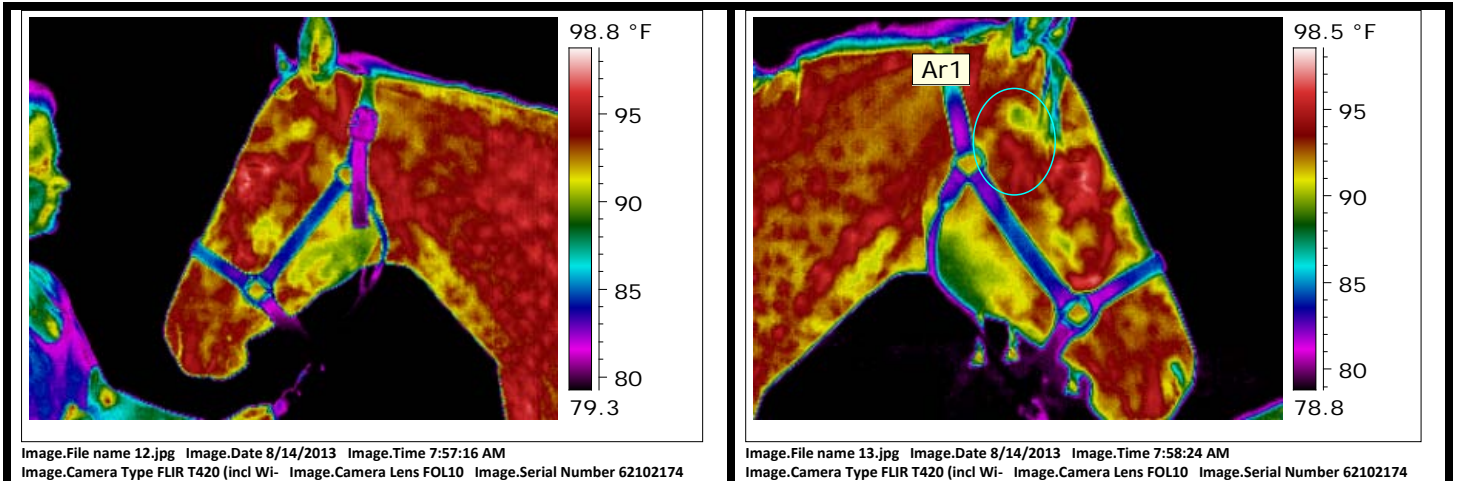
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Patient still shows a lot of heat related to exercise prior to imaging – longer lag time may be useful, especially given the high humidity and heat. That said, images are generally symmetrical in patterning, with increased heat at the left neck, also noted below.



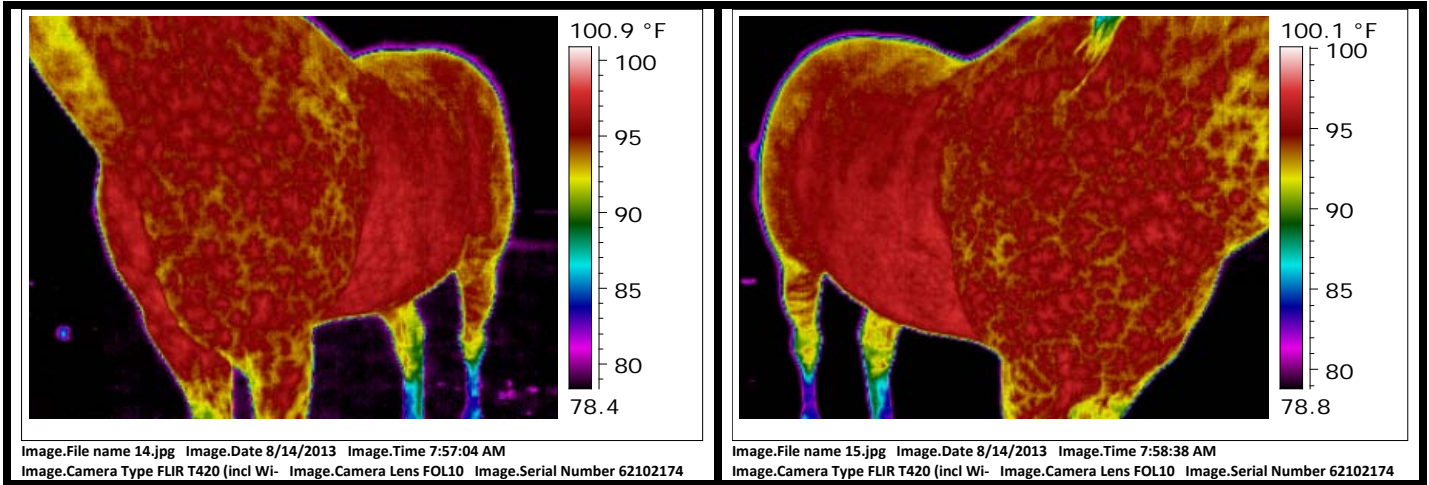
Left splenius muscle and C2-3 region are increased compared to the right, history of left sided injury. Right TMJ inflammation is suspected. Patient may lean harder on left rein, or hold on the right side.



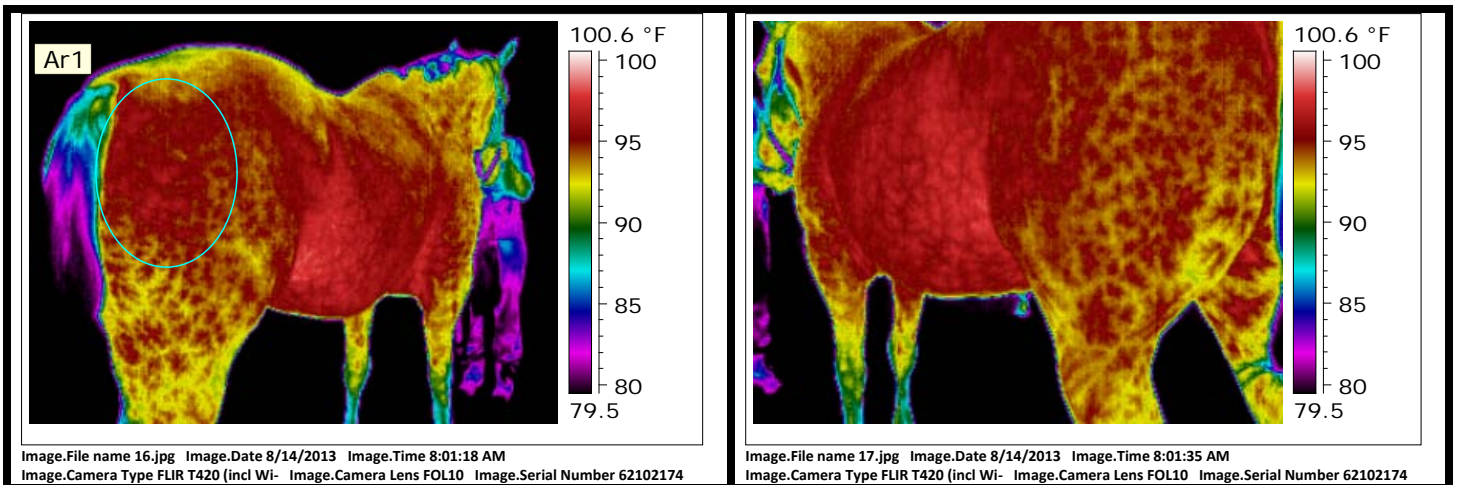
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Neck base and shoulders are generally symmetrical.



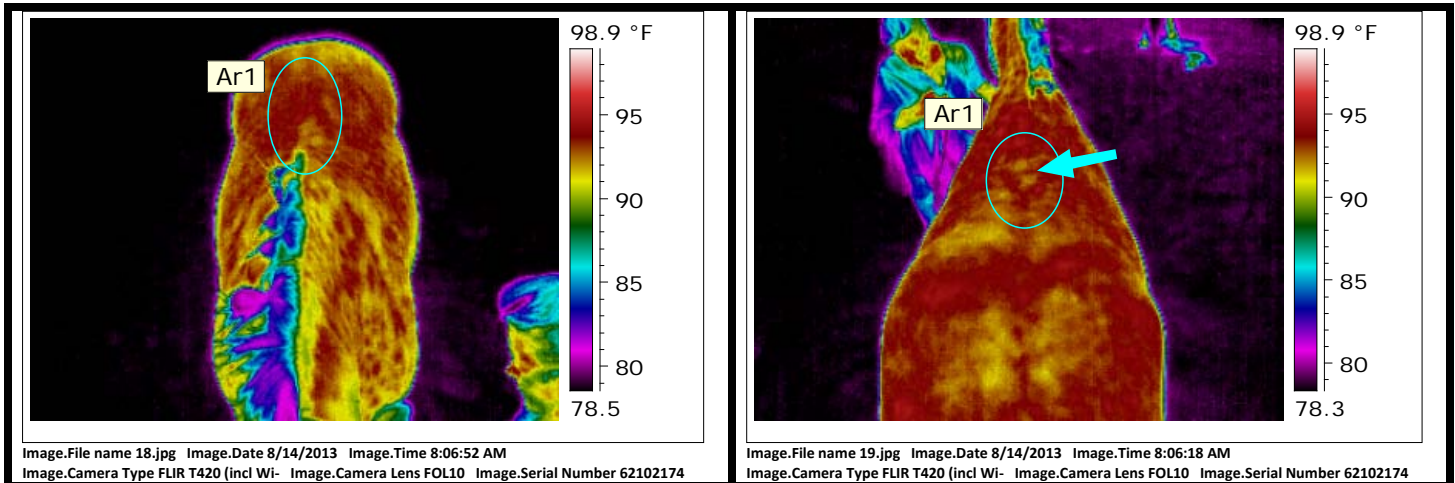
Hamstring insertions are symmetrical, flank heat is typical. Upper right hamstrings/biceps slightly increased, cannot compare to the left.



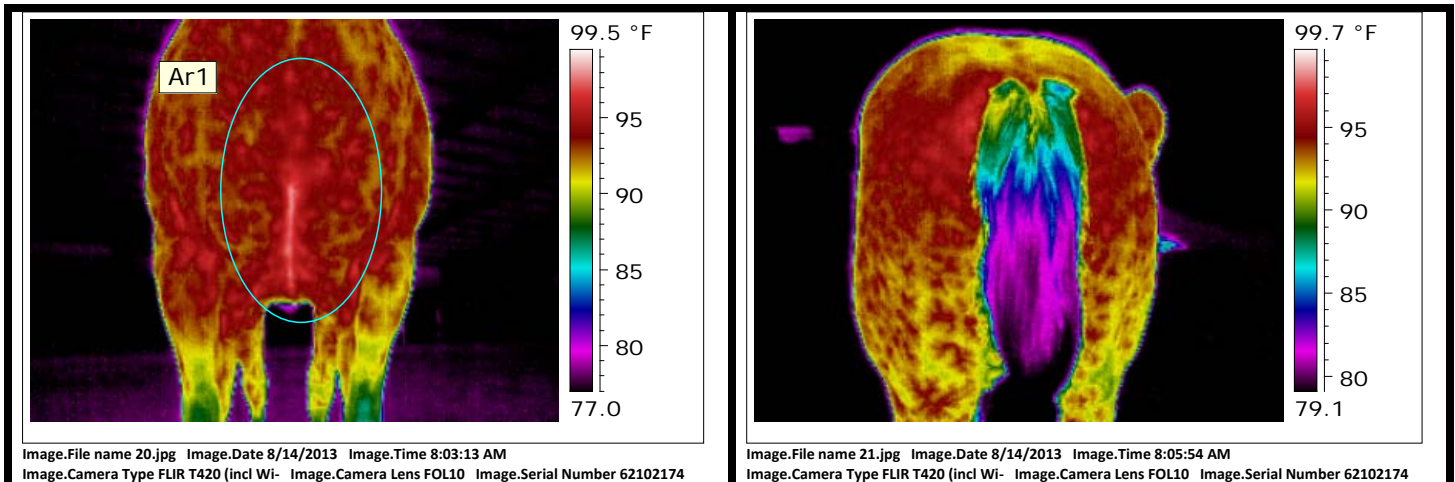
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Heat in the dorsal midline is typical due to the close interface of the skin with the dorsal spinous processes; however, this patient presents with an unusual pattern, which may be consistent with the history of kissing spine surgery (sites and date not listed). There is heat at the withers, with a cooler region from approximately T14-18 with a v-pattern at each side. There is one perpendicular branch that suggests ongoing inflammation across the vertebrae. The patient is very short-backed and broad, and deep-spined, and given the history or rearing and performance issues, a very careful saddle-fit evaluation is required.



Pectoral and hamstring views are generally symmetrical, with increased central heat and slight left shift possibly off-loading from the left front foot but more likely just secondary to the patient's deep musculature.



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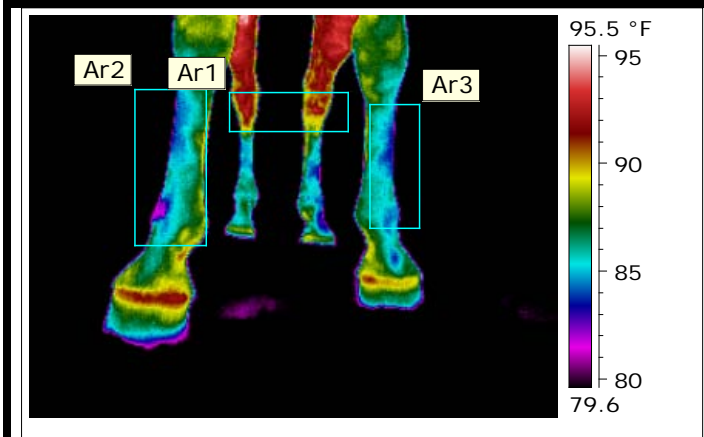


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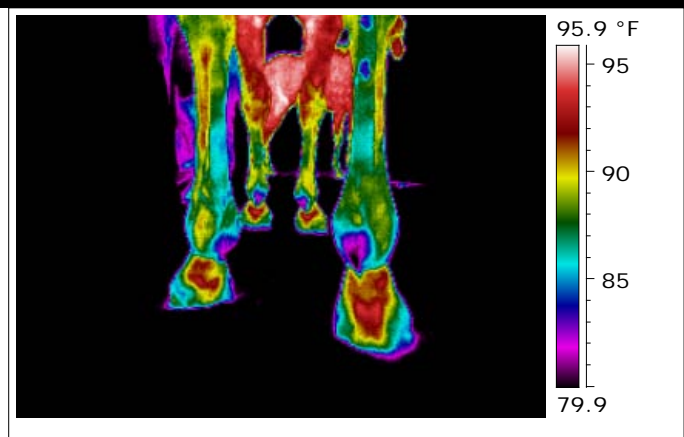


Image.File name 23.jpg Image.Date 8/14/2013 Image.Time 8:05:04 AM
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Cool patterning across the limbs is likely artifact given the presentation and technical specs listed; however, dermatomes related to changes in the patient's neck cannot be ruled out given the patterning here. Careful palpation and range of motion assessment of the patient's cervical vertebrae is warranted. PA view is generally good with hooves obscured by footing and uneven loading changing the patterning across the pasterns. Both hocks show patterning consistent with active inflammation.

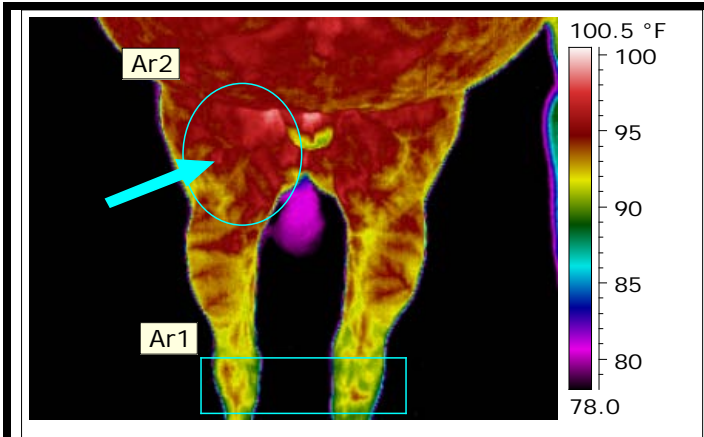


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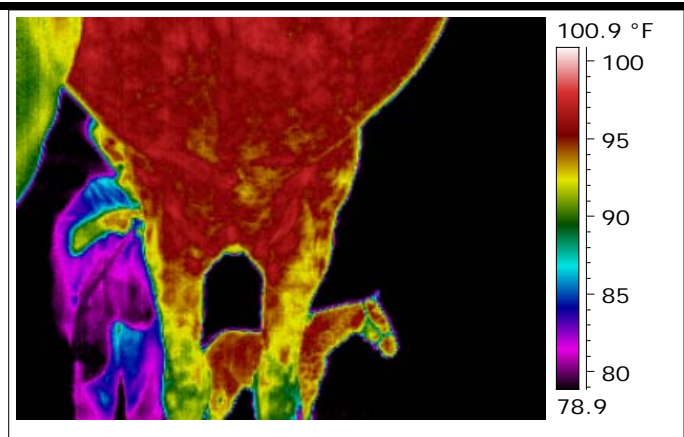


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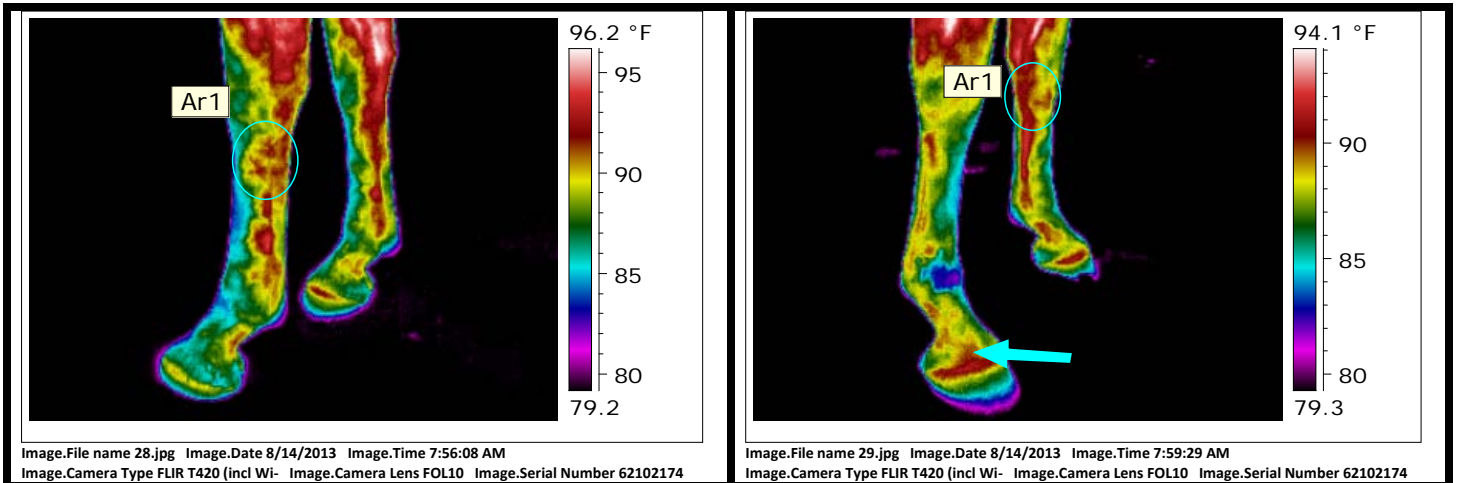
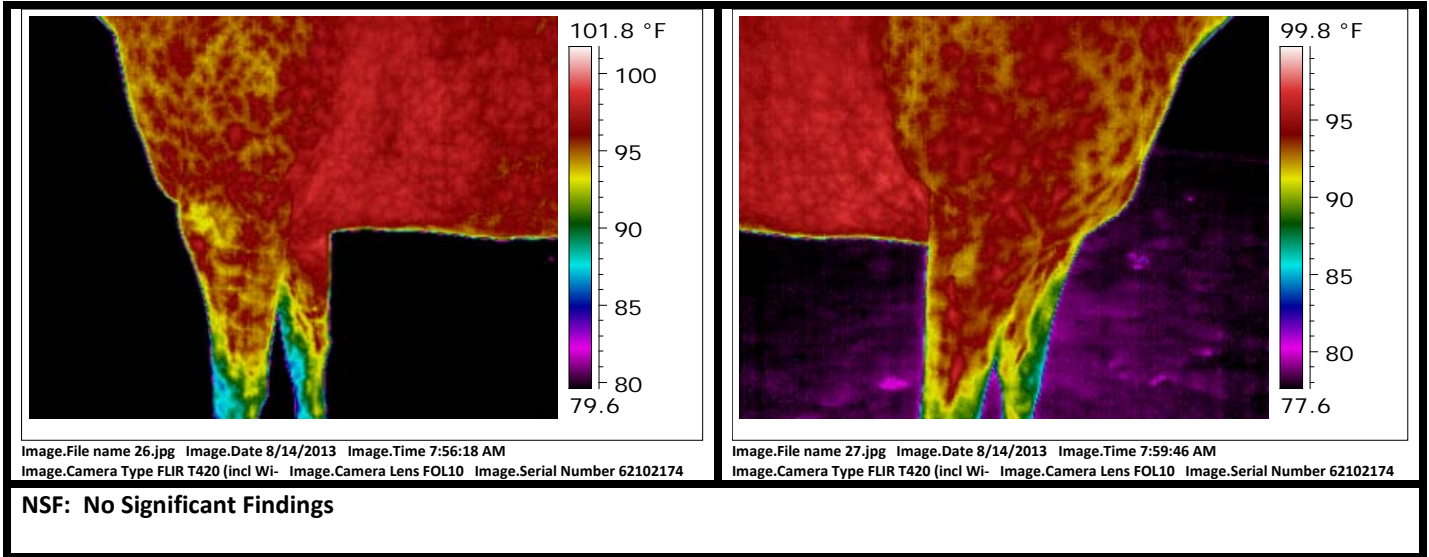
Both hocks present with patterning consistent with tarsitis, right hind worse than left, or showing increased loading, as there is increased heat through the gaskin and medial adductors. Medial right stifle area should also be evaluated. PA view.



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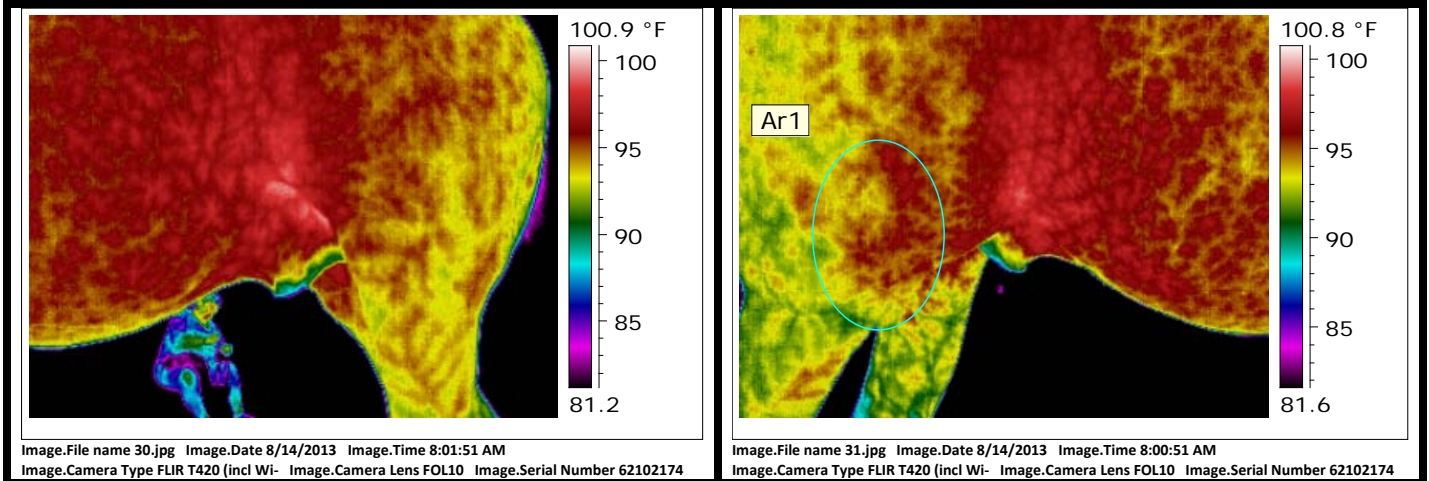
Patient is not standing on even footing, and hooves are covered. RF shows diffuse heat above collateral ligament that could suggest ringbone or sidebone, collateral irritation, or other foot jamming – interpretation is made more difficult by the environment. LF carpus and proximal soft-tissues patterning raises concern for strain or other inflammation and should be carefully evaluated with further anatomic imaging if there is pain or reactivity.



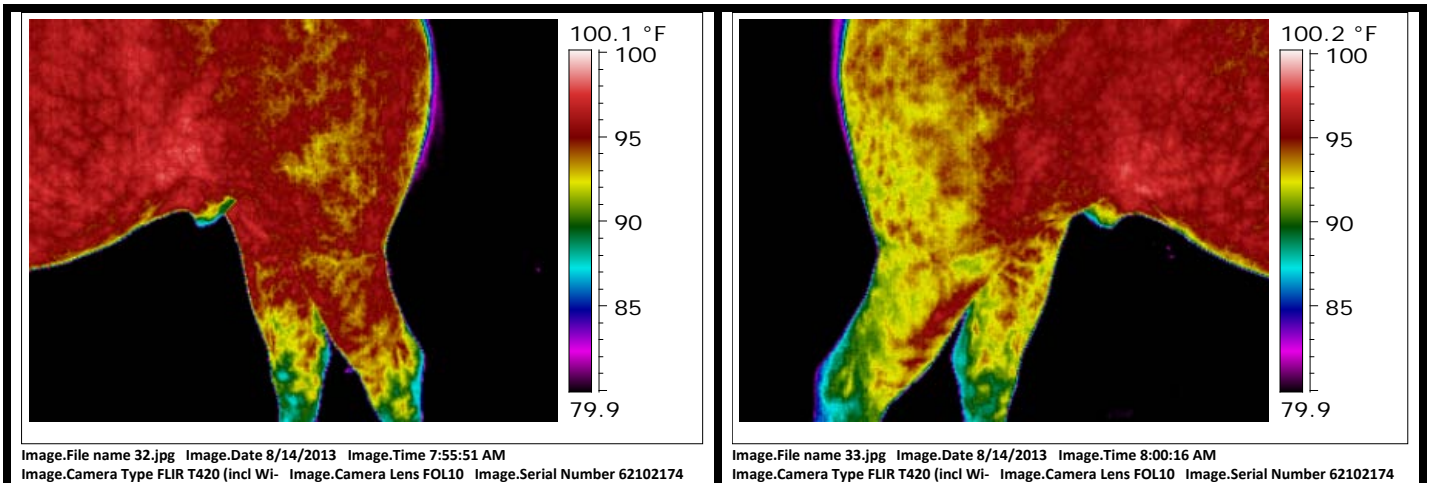
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Right lateral sifle and quads region is increased.



Some disparity between these views, not likely pathologic.

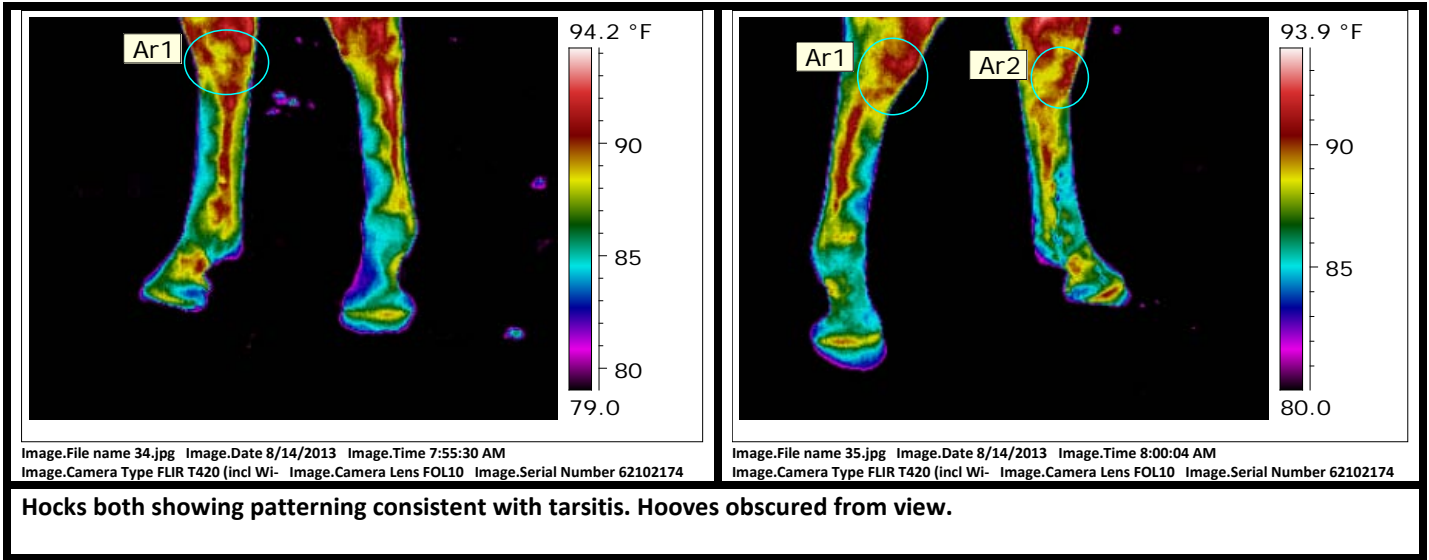


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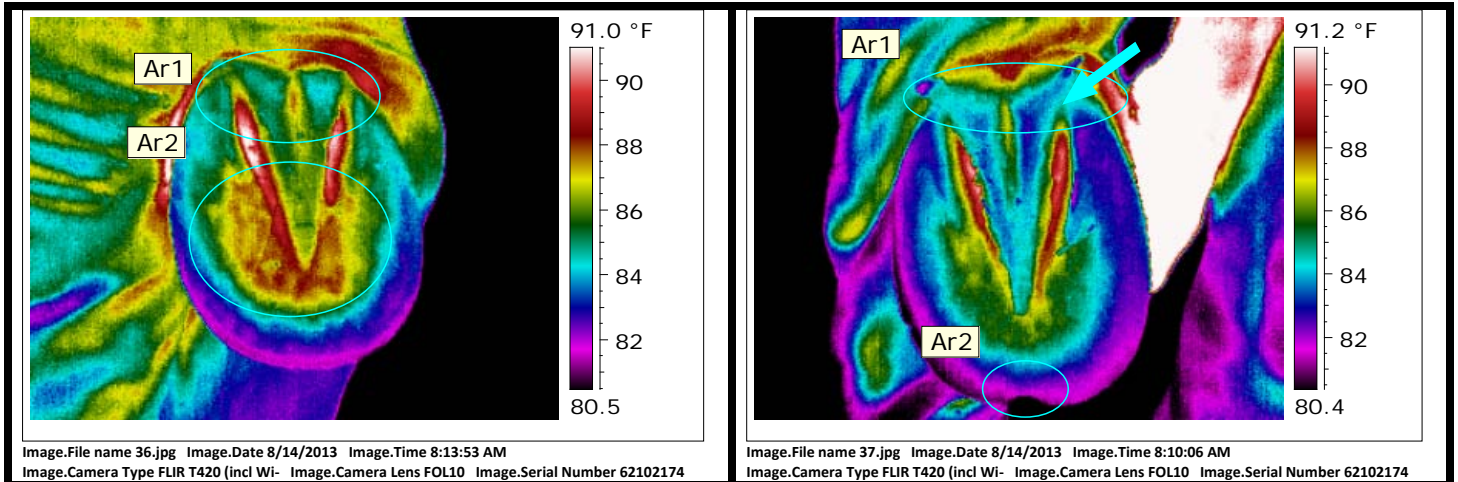




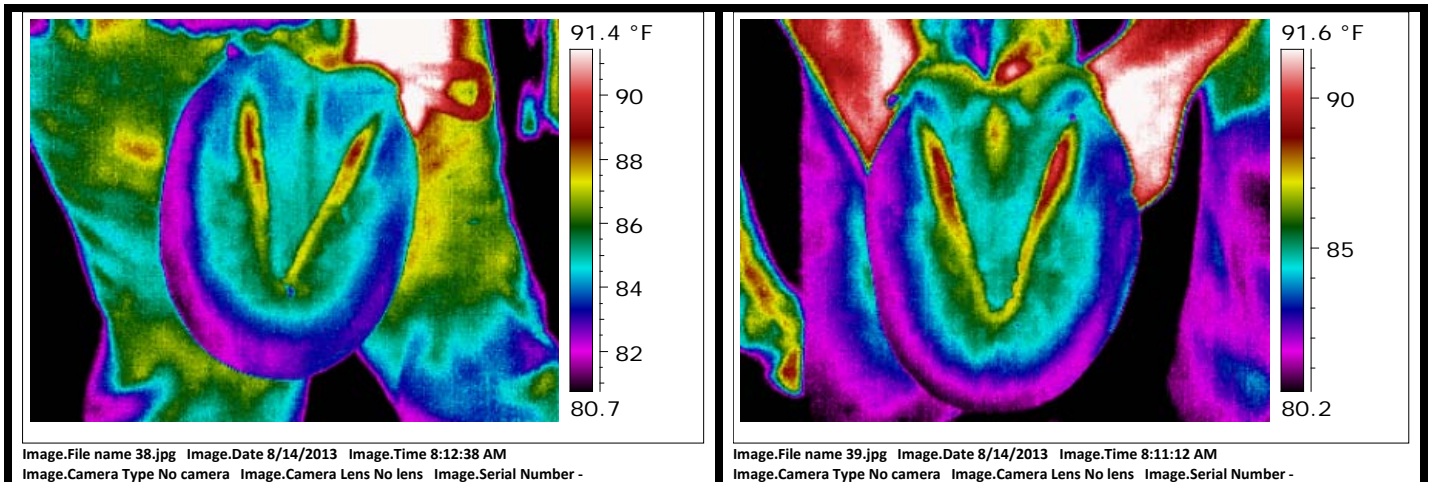
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Patient appears "pancake" footed – very flat in the sole, flat/low in the heels, and long in the toe. He is reportedly on a 6 week cycle and trimmed August 7th – he appears very long in the toe for having been recently trimmed and there is some indication of cracking at the frog sulci that should be evaluated. Radiographs are suggested to evaluate the sole depth, toe length, wall thickness, and overall angles. Mild thrush in the sulci is suspected in the digital images.



As above – long in the toes, flat-footed, though sole heat is much more typical/symmetrical in these views.



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SUMMARY AND RECOMMENDATIONS:

This report presents with some problems with artifact due to arena footing obscuring the hooves and not providing a level surface, and humidity (not enough acclimation time between exercise and imaging, cool patterning on limbs).

This patient appears to be slightly overweight/well muscled presenting with a very short and broad back. Given the history of rearing when saddled, a thorough saddle-fit evaluation is required. Stomach ulcers should also be ruled out. There is abnormal patterning in the dorsal midline consistent with ongoing inflammation; there is a history of trauma and surgery for kissing spine, and the images do suggest active changes. Careful palpation is required to further localize any pain, and recheck radiographs may be useful.

Problems are noted at the hooves, but they can only be fully evaluated in the solar views due to unevenly weighting in other images and being obscured by footing. There is a suspicious region at the RF collateral region, and radiographs of the feet are necessary to assess overall sole depth, wall thickness, boney column alignment, and to rule out deeper pathology

Both hocks show signs of active tarsitis. Unsure if "injections" listed in the history included hocks, but inflammation is apparent here, especially RH, which is consistent with challenges on the right turn. Right stifle also appears affected. Flexions and further diagnostics are warranted.

LF carpus and proximal soft-tissues appear diffusely inflamed and with abnormal patterning. Palpation and flexion is needed with further anatomic diagnostics if there is pain or reactivity.

The three-year chronic lameness may be difficult to evaluate if due to pathology of deeper structures (such as within the hoof capsule), or not actively inflamed to present patterning changes to the surface to be detected. The history is not specific to localization, so the interpretation is purely based on the provided images.

Thank You!

Reviewing Veterinarian: Joanna Robson, DVM, CVSMT, CMP, CVA, CSFT, CIT

