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The Quest of the Laminitis Killers

By Marcia King
For Veterinary Practice News

"Attack of the Giant Leeches," a 1950s-era horror movie, depicts the frightening consequences on the night a bunch of slimy, mutated, blood-sucking monsters slither from the murky depths of the Everglades to feed on humans, slowly draining the unlucky victims of their lifeblood.

Flash forward to 2007, to a laboratory in Leesburg, Va., where a veterinary researcher contemplates what consequences today's leeches (of normal proportions) could produce. Our heroic scientist is thinking: "Perhaps medical-grade leeches can drain the pooled, deoxygenated blood from a laminitic foot, thereby stabilizing, maybe even reversing the disease."

While he labors into the night, to the north, at another research lab in Pennsylvania, veterinary researchers are revisiting an old-time horse-doctoring technique for laminitis—the one involving cross-tying the at-risk horse in a stream. Only today, there are other means of icing the foot besides a cold stream, and they refer to the procedure as cryotherapy.



This horse is rocking back onto his rear legs because both front feet suffer from laminitis. He also has a tendency to shift weight between his front feet because they are both painful to stand on.

Cryotherapy

A new spin on an old technique is cryotherapy.

"In induced laminitic models, the foot placed in an ice bath never developed laminitis," Orsini says.

The protection of the iced foot is likely due to:

- Vasoconstriction of the blood vessels feeding the foot, resulting in decreased delivery of laminitis trigger factors (LTF);
- A cold foot (33 to 34°F/1 to 3°C) requires less metabolic support; and
- The cold also reduces acute inflammation.

"Cryotherapy was a very effective preventive in the induced model of laminitis, so it would seem logical to prophylactically place an at-risk horse's feet in ice or use Game Ready Equine [a commercially available compressive/cold therapy system].

"At this time, we believe the temperature that best protects the foot is below 35 degrees Fahrenheit."

Orsini says the length of cryotherapy treatment is to be studied next. "We know that horses that were in the ice bath for 72 hours and then taken out did not develop laminitis in the foot in the ice bath. We need to know if 72 hours is a magical time and if a horse is developing acute signs of laminitis, will cold therapy used then halt or reverse the disease."