Montana Equine
Medical & Surgical Center

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Winter, 2008
Greetings and Happy Holidays.

Equine medical science continues to blossom with stronger understanding of preventing, diagnosing and treating the conditions that affect horses. More than ever before, equine veterinarians rely on very close working relationships with other experts to perfect the art and science of modern equine care. There is so much to know that one person cannot be expert in everything! That's why we always emphasize the team approach at Montana Equine; we have assembled a team of veterinarians emphasizing each of the three core disciplines of modern equine care: Surgery, Internal Medicine, and Reproductive Care. We are truly unique in our region, providing University-Level care for you, with access to all facets of modern equine veterinary medicine. And our board-certified experts are available year-round and at a moment's notice.

In this edition of our regular newsletter, we are also emphasizing another critical component of equine care team: the farrier. To this end, we've invited the respected local farrier, Tom Wolfe, to be our featured guest writer. Tom is the instructor in charge of the MSU Horseshoeing School and currently teaches nine months of the year while maintaining a half-time farrier practice. Tom has been a full time professional farrier since 1971, and works with all breeds and types of horses. Tom's educational background includes a Bachelor of Science degree in Biology from the University of New Mexico. Prior to his appointment at MSU, Tom practiced in Albuquerque. Tom is a member of the American Farrier Association and has served for three years on that organization's executive committee. Certified Journeyman Farrier

And folks have been asking me to discuss my specialization in internal medicine. Aside from advanced lameness and performance, most of my work relates to my specialty of internal medicine, often involving the use of ultrasound to diagnose and treat patients. Not everyone knows about this specialty, especially since there are no other equine internal medicine experts in our region. Classically, specialists in equine internal medicine emphasize the internal organs: the heart and heart disease; brain and neurologic dysfunction; liver and kidney disease; ophthalmic disease, and so on. In reality, internal medicine specialists most commonly practice emergency and critical-care medicine, like cases of colic, infections, and sick foals. We talk about things like "acid/base balance" and "systemic inflammatory response", and typically diagnose atypical illnesses and subtle performance problems. It has been said that equine internal medicine is mostly about *restoration* of normal function, while surgery is about *repair* of a broken part.

But both surgery and medicine are technology-intensive, so we maintain the tools and equipment to perform all sorts of specialty procedures at a moment's notice. And since we receive referrals from such a large geographic region, it is possible to stay sharp by performing these procedures on a regular basis, keeping fresh in current techniques. For example, we perform many spinal myelograms, ultrasound-guided biopsies and injections, echocardiograms and other advanced procedures, providing not just a diagnosis that might otherwise require travel to a far-away university teaching hospital, but also a good estimate of how a horse may ultimately fare with further treatment.

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Caudal Heel Pain
Featured Guest Writer: Tom Wolfe

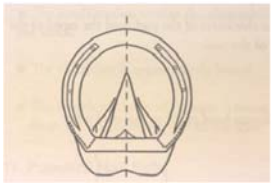
In 1900 the veterinary school in Dresden, Germany examined 10,979 horses for lameness and found 31% to be lame in the foot. Similar results were reported at the Berlin school of farriery (40%) and in a survey of Veterinary clinics in London England (30%). One hundred years later equine veterinary clinics and Veterinary schools report foot lameness as high as 90% with the majority of those lameness's occurring in the posterior half of the foot. As a farrier my experience has been similar. Of the horses shod in coordination with veterinarians in 2007, 85% had been diagnosed with caudal heel pain which is defined as pain in the posterior half of the foot usually associated with the sensitive and/or elastic structures. I would like to consider the factors that account for this increase in occurrence of caudal heel pain and the role of the farrier and horse owner in managing the problem.

One factor could be a change in use. Although no statistics are available comparing the average amount of exercise horses received in 1900 compared to 2000 it would be reasonable to speculate that when horses were the main form of transportation and a large component of the workforce they were used on a more regular basis than our current day domestic horses. One goal of horseshoeing in horses with caudal heel pain is to make them comfortable so they will move freely and can be exercised.

Another component might be the change in morphology of the horse and in particular the change in average foot size over this period of time. In the 1930's American horseshoe manufacturers began numbering their shoes for ease of identification. The smallest size was labeled 1, the largest 8 and the average size sold was a 4. By 1960 just 30 years later, manufacturers had to make smaller and smaller sizes to accommodate the change in hoof size of domestic horses so they began numbering backwards and added sizes 0, 00, 000, and 0000.The average shoe size in America today is an 0, four sizes smaller than in 1930. Many have expressed the notion that this decrease in regular exercise coupled with small feet has made the horse more susceptible to foot lameness in general and heel lameness in particular.

The leading causes of caudal heel pain in the horses we encounter are under run heels, contracted heels and sheared heels brought on by mismanagement, neglect, and improperly balanced feet. Horse owners must handle the issues of management by providing regular, consistent trimming and balancing. As hoof wall grows long it becomes weaker and susceptible to breaking and can change the angles formed by the bony column. Farriers are responsible for balanced hoof preparation and if appropriate the application of a horseshoe. The concept of "balancing the foot" is vague and has no agreed upon universal definition. In addition hoof balance can include aspects of static balance, dynamic balance, anterior-posterior balance, and medio-lateral balance, to name a few. Several current notions have been articulated and follow similar guidelines which if adhered to will do no harm and certainly help the imbalanced horse. These include but are not limited to guidelines proposed by David Duckett, William Russell, Michael Savoldi, Gene Ovnicek, and the American Farrier Association. Farriers dealing with lameness issues should be familiar with all of these descriptions and assessment of balance.

Shoeing options vary and should be decided upon in consultation and cooperation with the attending Veterinarian based on her/his diagnosis. The shoe should be aimed at the specific foot problem and take into account the use and living environment of the horse. Proper hoof preparation and regular consistent maintenance cannot be overemphasized. A perfect shoe will do nothing applied to an improperly balanced foot. A perfect shoe applied to a properly balanced foot may become a disadvantage when left on beyond 4-6 weeks. Horses with run under heels, contracted heels, and sheared heels respond well to a straight bar shoe. **Figure 1**:



This shoe provides support to the foot particularly the back half or heel area by reducing shearing forces on the sensitive and elastic structures as well as stabilizing the navicular bone on uneven surfaces. It has been suggested anecdotally that the bar shoe eases the breakover of the foot as some horses shod in this manner travel more efficiently and cleanly. The theory is that the bar across the heel provides support and "flotation" in the dirt thus preventing the heels from sinking into the ground as much as with an open heeled shoe. Bar shoes are generally forged on site from bar stock as exact fit is very important. They may be steel or aluminum depending on the use of the horse. Manufactured bar shoes are available but large size increments make them difficult to fit properly. Run under heels, Contracted heels and sheared heels can be dealt with more successfully than can small feet as the former are generally due to mismanagement whereas the latter is genetically determined.

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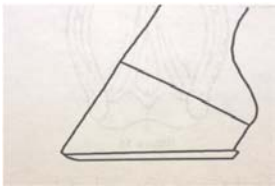
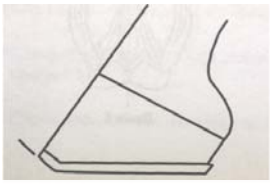
Additional shoe modifications may be employed depending on the diagnosis of the veterinarian. Common modifications are rolled toe shoes, **Figure 2**:



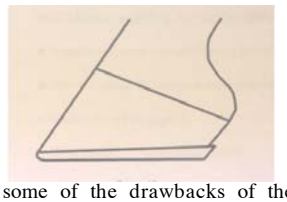
rocker toe shoes, **Figure 3**:



or shoes set back slightly at the toe, all designed to assist limb movement. Two recent studies indicate that these modifications have no influence on the initiation of breakover in the correctly trimmed foot. It is important to note that these studies were conducted on sound horses and did not consider the effects of the modifications as the foot grew longer during a shoeing cycle. It is this farriers opinion that rolling or rockering the toe of the shoe does no harm and may slow the toe flaring that occurs in some horses as they grow during a shoeing cycle. In certain horses this seems to help maintain proper pastern –hoof axis over a six week period of time. However, setting the shoe back and removing hoof wall on a properly prepared foot should be avoided as this removes valuable bearing surface, making a foot that may be too small even smaller. A skilled farrier can forge into a shoe many modifications that can ease breakover, provide support, shift support, or assist limb movement in various ways.

The farrier may also apply pads, packing material, or impression material based on the veterinarians diagnosis and recommendation. Some horses with caudal heel pain develop sole bruising near the toe as they attempt to land off the heel area. These horses might benefit from additional protection to encourage movement and facilitate exercise. In Montana winters, shod horses with caudal heel pain must have some sort of padding to prevent the build up of snowballs in the sole which may exacerbate the lameness. Wedge pads have been suggested particularly in horses with run under heels. Two recent articles indicate that although wedge pads give the initial impression of "correction" they tend to encourage more heel wear and put more pressure on the wall and supporting structures causing eventual collapse.

If a wedge heel is deemed necessary another option is a shoe with the wedge forged into the shoe. **Figure 4**:



This eliminates some of the drawbacks of the wedge pad.

Caudal heel pain is a commonly occurring lameness and requires the cooperative efforts of veterinarian, horseowner, and farrier. A comprehensive examination and diagnosis by a veterinarian will provide the farrier with recommendations and options for shoes and/or shoe modifications. The horse owner must insure regular, consistent trimming and balancing as well as regular exercise and turnout when possible. A farrier who is skilled in the forge and competent in preparing and balancing feet is essential. With this combination the majority of horses afflicted with caudal heel pain can be returned to soundness.

Tom Wolfe can be reached at the MSU Farrier School: 406-994-2648

References

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Our internship program:

Like teaching hospitals and most highly-respected regional referral centers, Montana Equine offers a one-year internship to highly-qualified veterinarians seeking additional training under our team of experts. The terminology can be a bit confusing, because its natural to think of an "intern" as an undergraduate volunteer, or possibly as a veterinary student. But in the veterinary field, "intern" means a fully-fledged graduate veterinarian, but someone who is seeking additional immersion by training under board-certified experts, usually in a regional referral practice. It is relatively rare for any veterinarians to pursue even a one-year internship program of any sort – less than 1/3 of all graduates from veterinary school pursue any advanced training, and only 3% of all new graduates join equine-exclusive practice. But for veterinary students who plan to specialize, an internship is an important prerequisite to becoming a true board-certified expert specialist via training in a residency program. Many of you have met Dr. Amy Kafer, who is our talented 2008-2009 intern. Through a combination of mentorship and direct experience, Dr. Kafer is honing her skills in medicine, surgery, and primary care, and is well on her way to a very promising career. We will soon announce our selection of our intern for 2009-2010.

What is a Specialist?

Although some veterinarians who practice exclusively on one species do develop familiarity with more aspects of care, a true specialist is a board-certified in their discipline. This requires completion of an internship (1 year) and residency (3-4 years) *after* graduation from veterinary school. So true specialists have additional years of specialty training under other board-certified experts, treating the more challenging cases while benefiting from the experience of their mentors. Following internship at Montana Equine, young veterinarians are eligible to apply for University residency programs, the path to true specialization. via specialty board certification.

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