EQUINE AMBULATORY NEWS

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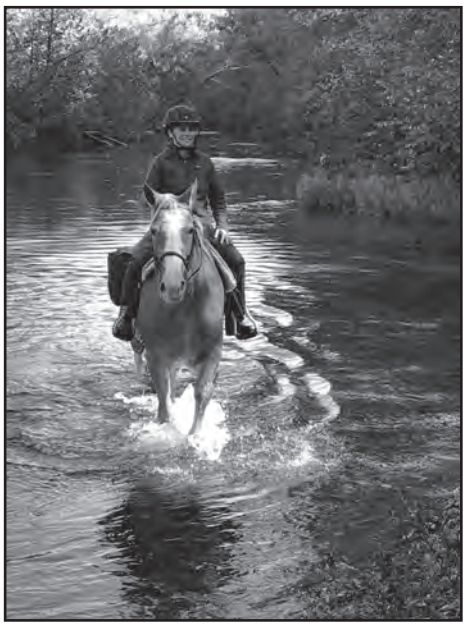
Fall is the Perfect Time for a Trail Ride

Fall is an exciting time in many ways. It's such a wonderful time of year to ride our horses as the leaves change and we are no longer melting from the summer heat. Fall is also an exciting time because the *Equine Ambulatory Newsletter* is sent to production! We appreciate our loyal clients so much and we hope you enjoy this newsletter as much as we enjoy having all of you as clients.

We welcomed three excellent interns to our program in June of this year, so many of you have likely already met them. Please read their interesting biographies about past experience and future plans. We are fortunate to be working with some very talented individuals. We are also very excited to be working with Amanda Trimble, an internal medicine specialist who will be helping us both on ambulatory and internal medicine services this year.

All aspects of veterinary medicine and education technology are continuously in flux as we are always working to improve patient care and our educational practices. Two of our main missions in the veterinary college are to provide state-of-the-art patient care as well as giving our students the building blocks



they need to be the best veterinarians possible. For the past couple of years, Martha Scharf and I have been involved in a new class at the veterinary college called The Healer's Art. This class focuses on the well-being of our students, giving them techniques and confidence to better understand the challenges of our industry as well as tools to overcome these challenges while maintaining a love our the profession. The goal of the course is to offer a safe learning environment for personal in-depth exploration of the values of service, healing, reverence for life and compassionate care. Not only are we instructors in the class, but we learn as we go and this has been such an incredible and inspiring opportunity.

I have had this crazy dream for the past few years of going on a horse camping trip with my family. We made this dream a reality this month and spent two beautiful days riding trails in southern Missouri. We are so lucky in this state to have so many beautiful and well-maintained trails. Although I'm a novice trail rider myself, I have such respect for you trail bosses out there. It was so much fun seeing so many people and their horses from all walks of life enjoying time together.

We would like to wish you, both horse and human, a very happy and safe holiday season. As always, we would like to thank you for your continued support of the Equine Ambulatory Service here at the Veterinary Health Center. Our students, interns and all of our veterinarians are so grateful for the opportunity to work with you.

Sincerely,

Alison LaCarrubba, DVM
Associate Teaching Professor
Diplomate, ABVP (Equine Practice)

Meet the MU Equine Ambulatory Team

Alison LaCarrubba, DVM, DABVP

Alison LaCarrubba, originally from New York, grew up riding hunter-jumpers and dressage from a young age. After graduating from Cornell University with a degree in animal science, LaCarrubba moved to the Midwest to obtain her veterinary degree. She graduated from the University of Missouri College of Veterinary Medicine in 2001. LaCarrubba completed an internship in equine medicine and surgery at the university and subsequently spent a year working in an equine exclusive private practice. She returned to the university in July 2003 as a clinical instructor, and in 2009 she completed the specialty boards with the American Board of Veterinary Practitioners in Equine Practice.

LaCarrubba's love of equine dentistry has inspired her to continue her training in this area. In recent years she has attended a variety of advanced equine dental courses, which have allowed her to develop specialized skills and expertise in this field. As the equine dentist for the university, LaCarrubba is excited to see all things dental, from routine work to more complicated extractions. When she is not at work, she is spending time with her husband and three children. The whole family enjoys horses and riding together on Missouri's beautiful trails.

Martha Scharf, DVM, DABVP

Martha Scharf practices equine ambulatory medicine at the Equine Hospital. Scharf was born in Chicago and grew up riding hunter-jumpers in St. Louis. Since moving to Columbia she has continued to ride and started to explore three-day eventing. After earning a DVM at MU, she completed a rotating equine internship at the university. She continues to work as an assistant teaching professor for the Equine Ambulatory Service.

Scharf spends the majority of her time instructing senior veterinary students while providing quality medical care for horses within the Columbia area. She is particularly interested in wound management and emergency care in the ambulatory setting. Scharf works closely with the referral clinicians in the Equine Hospital to provide superior care to horses.

Amanda Trimble, BVMS, MS, DACVIM-LAIM

A Maryland native, Amanda Trimble earned a bachelor of science degee at Dickinson College. She earned a veterinary medicine degree at the University of Glasgow in Scotland, and a master of science at Kansas State University. Trimble completed an equine internship at MU in 2014-15. She then completed residency training and board certification in large animal internal medicine at Kansas State University before returning to MU in the fall of 2018. Her research interests include equine infectious disease. Her clinical interests are equine infectious disease, gastroenterology, respiratory physiology, and neurology, as well as teaching veterinary students.

In her free time, she enjoys riding horses, watching football, and exploring with her rescue dog, Pippa.

Our interns have a special interest in working with horses and potentially going on to complete a residency, specializing in either equine medicine or equine surgery. Every June we welcome a new crop of interns. This year our interns include Lindsey Hayden, Kallie Hobbs and Meghan McCarthy.

Lindsey Hayden, DVM

Lyndsey Hayden is a 2017 graduate of Auburn University College of Veterinary Medicine. Following graduation, she completed a surgical internship at Hagyard Equine Medical Institute in Lexington, Kentucky. She has an interest in surgery, lameness and sports medicine. Hayden is a native of Connecticut and grew up riding and showing hunter-jumpers in the Northeast.
In her free time, she enjoys riding her horse, hiking with her dog, yoga and cooking.

Kallie Hobbs, DVM

Kallie Hobbs graduated from the University of Illinois College of Veterinary Medicine in May 2017. Following graduation, she began an internship at Tryon Equine Hospital in Columbus, North Carolina.

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Chiropractic Care Can Fix Movement

Martha Scharf, DVM, DABVP

This year, Martha Scharf attended a six- month training course and achieved certification in animal chiropractic through the International Veterinary Chiropractic Association. Since June, she has been offering chiropractic care to large and small animals in the clinic and on the farm through the equine ambulatory service.

Equine chiropractic is a component of equine health care that works to optimize the function of the musculoskeletal and nervous system. A chiropractic exam focuses on localizing areas of the vertebral column and other bones with reduced or abnormal mobility. The abnormal motion of these areas can affect the horse's comfort, use of muscles, and soundness. Additionally, this abnormal mobility can also affect the nervous system, leading to poor nerve control of movement, pain, posture, and detection of disease.

A chiropractic adjustment is a manual therapy that uses controlled force on specific regions to induce changes in joint movements,

similar to loosening a sticky door hinge or the lid of a jar. Restoration of normal movement aims to change movement, nerve function, and comfort. Continued therapy can help to retrain normal movement and alleviate the abnormal patterns of muscles, posture, and nerve function.

Over time, chiropractic care can be a key component of health care, optimizing athletic function and overall health.

Horses that can benefit from chiropractic care can present with many signs, the most common of which is pain. This can be indicated in many ways such as reduced performance, abnormal posture, resistance to saddling, trouble with collection or lateral gaits, fighting the bit, refusing jumps, tail swishing, ear pinning, behavior changes, or sensitivity to touch.

Altered muscle coordination can also be seen and manifested as arrhythmic gaits, vague lameness, stiffness when leaving the stall or when bending, muscular atrophy, difficulty with engagement, shortened stride, difficulty with poll flexion, lameness, leaning on one rein, and lack of back flexion.

Chiropractic examination and treatment does not replace traditional veterinary medicine; however, it can provide an additional means of diagnosis, treatment, and rehabilitation for a variety of musculoskeletal disorders.

Please contact us if you have questions or are interested in having your horse examined.

Team, *continued from page 2*

Meghan McCarthy, DVM

Meghan McCarthy grew up outside of Boston, Massachusetts. As a youth she evented throughout New England before turning her focus to the jumper ring. While completing her undergraduate studies at the University of Georgia, McCarthy competed her Hanoverian mare, Wilma, on the East Coast jumper circuit.

She obtained her DVM from Ross University in St. Kitts, and completed her clinical training at Texas A&M. More recently she completed an 18-month internship with Rood & Riddle Equine Hospital in Wellington, Florida. Her primary interests include surgery and sports medicine, and she hopes to complete a surgery residency in the future.

During veterinary school, received her master of business degree and is currently working on completing a master of science at the University of Missouri. She enjoys working with both ruminants and equines. Her interest include teaching, large animal medicine and emergency, critical care. In her free time she enjoys riding her horse, hiking with her dogs and spending time with family and friends.

Diligence Needed to Keep Ticks in Check

Martha Scharf, DVM, DABVP

Ticks are a constant problem for humans and animals in Missouri, seemingly regardless of the weather and conditions. Yet, this year, the tick problem seems further amplified, potentially due to increased temperatures or wildlife populations. Ticks are not species-specific, meaning that the same ticks that bite horses will also bite you and your other animals. The small insects perch at the tip of plant leaves, tree branches, and grass blades with their front legs outstretched, waiting to climb aboard a nearby host. Ticks know when to jump onto their hosts by detecting ammonia, given off by a mammal's breath and sweat, or by sensing heat, moisture and vibrations.

Once aboard the animal, ticks migrate to thin skinned areas, often settling on the horse's chest, underbelly, mane, tail, and flank. The ticks then attach, bite, and fill with blood before dropping off to continue their lifecycle. Often, they leave behind a firm nodule and a small crusted wound on the skin.

In most cases, tick bites also produce localized tissue irritation, which can lead to skin rubbing, abrasions, and hair coat damage. When present in large amounts, ticks can also leach enough blood to cause anemia. Perhaps most frightening, ticks can also transmit a number of serious diseases, such as piroplasmosis, Lyme disease, equine granulocyctic anaplasmosis, and equine infectious anemia.

It is generally believed that the tick must be attached for approximately 24 hours to transmit disease, but this may not be true in all cases. Depending on the disease, the horse can be affected by a wide variety of signs, including fever, anemia, exercise intolerance, weight loss, lameness and stiffness, muscle wasting, neurological disease, eye inflammation, edema and clotting problems. These diseases can be challenging to diagnose and treat, requiring good observation and dedication from both owners and veterinarians.

At this time, there are no vaccines labeled for use in horses to inhibit tick-borne disease. Instead, protecting your horses from ticks is the best way to prevent infection. This is easier said than done, as elimination of ticks requires diligent monitoring and treatment.

Repellents are the most commonly used prevention and come in many forms. Permethrin products come as sprays, pour-on products (Ultra Boss, Buzz Off, Brute), and spot-on products (Equi-Spot, Celebration, Force 50, Freedom 45). Sprays have to be applied daily or multiple times daily, while the pour-on and spot-on products can be applied less often. Dust, dirt, perspiration and water all shorten the efficacy of these products, making intermittent reapplication important.

Some success has also been found with dog and cat repellents such as fipronil (Frontline). While use of Frontline is off-label in horses, many horses experience relief from applications to the limbs, mane and tail. In extreme cases, flumethrin (Seresto) collars have also been used off-label around horses' pasterns to prevent ticks.

Manual tick removal, however gross, is also effective. To remove the tick without leaving remnants, grasp the tick at the mouth parts with tweezers or needle nose pliers right at the skin attachment and pull straight out without twisting. Even removed ticks are hardy and should be placed in a jar of rubbing alcohol to ensure their demise. Check the skin to confirm that the whole tick is extracted and no piece remains to cause irritation. The site should be treated with antiseptic after removal to prevent infection of the wound site.

Many of the other described tick removal and repellant methods, such as feeding garlic, spraying vinegar or alcohol, applying nail polish or petroleum jelly and burning with a match head, have not been shown to be effective.

Oral ivermectin products can be effective short term, but do not provide a broad strategy for prevention or treatment. Ivermectin does not prevent ticks from biting and feeding but it will kill or sterilize those that bite within 24 hours of treatment, reducing some of the future reproductive population.

Treating the environment can also be an effective means of control, especially long term. Ticks are resilient, easily surviving year-round even in the dead of winter. Year-round management is important. Because ticks thrive and breed in the protective layers of vegetation, leaves, and tall grasses, mowing and removing yard waste can make a big impact. Additionally, separating the pastures from the woods by 10 feet reduces horse's exposure to these pests as most will avoid crossing broad sunny areas of short grass. In severe cases of tick infestation, pest-control companies or commercially available insecticide sprays and dusts applied along pasture margins can treat the environment to reduce tick numbers.

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Simulations in Veterinary Education

Alison LaCarrubba, DVM, DABVP

As we continue to grow and develop as a veterinary college, we are always looking for innovative ways to improve upon our teaching in order to build the most skilled, productive and prepared students to become the next generation of veterinarians and leaders in the industry. The human medical field has been using simulations and models for their students for decades. This tool is coming to light in veterinary education.

Just this month our faculty were fortunate enough attend the International Veterinary Simulation Teaching Conference. This conference hosts a group of international veterinary educators dedicated to promoting and advancing the use of simulation in veterinary education.

So what exactly is a simulation? Veterinary simulations can either be life-like models used to practice procedures or experiences the students gain in practice sessions with actors pretending to be veterinary clients. The goal of simulations is to build technical skills as well as develop the communication skills required to be successful. Veterinary simulation models allow veterinary students to gain knowledge and experience prior to working with client-owned animals. Techniques, such as learning a variety of suture patterns, can be learned on "skin" made from silicone or other materials.

During orientation for CVM third-year students who are entering the clinical portion of their education, our students undertake a communication simulation, using the medical school's simulation center. The students spend about 10 minutes in a mock exam room, practicing taking a complete history and communicating clearly and effectively with a client. These sessions are watched by faculty, reviewed by the student themselves, and feedback is provided.

This stressful, yet fun experience provides our students with invaluable feedback prior to being in an exam room with an actual client, allowing them to hone their interpersonal skills.

As we work toward building a simulation center here in the veterinary college, there are many incredible tools we can now use. The conference was an excellent resource regarding creative experiences for students, such as practicing venipuncture, castrations and even passing a nasogastric tube, something we do frequently during colic work-ups. We are excited for what the future holds regarding veterinary models and simulations.

Ticks, *continued from page 4*

It is also strongly recommended to avoid feeding deer and other tick-carrying animals that can bring them onto your property into the pasture. Conversely, a small domestic flock of chickens or guinea hens on your farm may help reduce your tick burden by indiscriminately feasting on many different stages of the tick.

Ticks are hardy and persistent pests, making the disease threats to your horse ever present. But, advancing research is continuing to make strides to keep the risks under control. At home, continued diligent inspection or your horses and application of the above tick-prevention strategies can have a huge effect toward keeping your herd healthy.

From the Horse's Mouth

Don't forget that fall is a perfect time of year for a dental examination. Dentistry is a critical component of a complete preventive care program. Horses between 2 and 4 years of age may have wolf teeth or caps (retained deciduous teeth) that can be removed, improving comfort and performance.

We can perform routine dental examinations and balance the mouth at VHC or on your farm. We are excited the dental program is developing and growing and are seeing some of the more complicated dental cases in the clinic.

If you have any questions or concerns about your horse's oral cavity health please call. We are always happy to discuss equine dentistry! For more on equine dentistry, visit our Facebook page, MU VHC Equine Hospital, or watch a video at https://vimeo.com/287069871

Treating Puncture Wounds to the Hoof

Any puncture wound to the hoof should be considered an emergency

Meghan McCarthy, DVM,

It is an all too common scenario: You walk out to see your horse, and he is non-weight bearing on one leg. You pick up the foot and see a nail sticking out of the sole of his foot. So what do you do next?

While you may feel the urge to remove the nail to make your horse more comfortable, it is best to leave it in place until you speak to your veterinarian. During this conversation you may be asked about the vaccination status of your horse. If it has been more than six months since the last tetanus vaccination was administered, it is strongly suggested you repeat this vaccination.

Any puncture wound to the hoof should be considered an emergency. Though it may seem inconsequential to pull a small nail out of your horse's hoof there are many synovial (joint) and bony structures that can be affected by even the smallest defects in the hoof. Penetrating wounds through the sole can lead to infections of the coffin bone (distal phalanx), whereas wounds around the frog or heel could affect the deep digital flexor tendon, navicular bursa, coffin joint, digital flexor tendon sheath, distal sesamoidean impar ligament, and digital cushion.

So why would your veterinarian ask you to leave the nail in place until they arrive? Leaving the penetrating object in place gives them a chance to radiograph the foot and see how deep of a puncture wound they are dealing with, and what structures may be affected. Additionally, there is always a chance of causing further damage removing the object when you are unsure what it may have contacted.

When your veterinarian arrives, a complete physical exam will be performed and then they typically sedate the horse and numb the affected area to reduce movement and further trauma to the foot. Radiographs are taken to give an idea of the extent of the trauma and how aggressive treatment should be. Puncture wounds affecting bony structures will not show immediate radiographic changes, but will provide an idea of how aggressive a treatment plan needs to be.

After determining the extent of the wound, your veterinarian will clean the area and remove the foreign object. At this point, the wound is sometimes opened to allow for better drainage and to inhibit the growth of anaerobic bacteria. Next a hoof bandage is put in place to keep the area clean and to prevent further contamination.

Many puncture wounds to the hoof will be treated with NSAIDs (phenylbutazone or Banamine) and oral antibiotics, if deemed necessary. If the puncture affects the sensitive structures of the hoof, the best course of action would be referral to the MU Veterinary Health Center.

In the clinic the wound can be cleaned under anesthesia to ensure the best outcome. In some cases, antibiotics are applied directly to the wound, injected into an affected synovial structure, or administered intravenously in a regional limb perfusion. Local administration of antibiotics allows for greater concentrations of antibiotics to reach the hoof.

Simple, superficial wounds have a good prognosis, and you will see your horse's comfort level dramatically improve in one to two days. Deeper wounds have a variable prognosis depending on the extent of the damage to the surrounding structures. Generally, addressing puncture wounds quickly, and aggressively, will help improve your horse's prognosis.

In the simplest of cases, it is best to have a re-check after a few days of therapy. For more complex cases, management on the farm may require more frequent visits or referral to the VHC. If at any point during the course of treatment the horse is not improving or the condition is worsening, you should contact your veterinarian for a re-evaluation.

Why a Veterinarian Should Vaccinate

Kallie Hobbs, DVM,

One of the most common questions made by horse owners is, "Is it ok to vaccinate our own horses?" It is common for many people with horses and other livestock to give their own vaccinations rather than going through a veterinarian. In Missouri, by law, the rabies vaccine must be given by a veterinarian, but other vaccines are not legally mandated. Outside of this, many show grounds require veterinarianadministered vaccines to enter their premises.

Legally an owner can give their own vaccines. Horse owners can buy vaccines at feed stores or online, as they are easily available to clients. With this in mind, what is the problem with owners giving vaccines?

When a veterinarian vaccinates your horse you are getting more than just a vaccine. As part of a vaccine protocol you are getting knowledge of up-to-date information on disease prevalence in your area. This can help to decide which vaccines your horse needs. For example, a horse that lives with one other horse and never leaves the farm may not need to be vaccinated for EHV, but a horse that shows every weekend would need this vaccine. With every vaccine appointment also comes a physical exam, which helps to ensure your horses are in good overall health. Along with this it is not unusual to find potential health problems during a routine physical examination, such as cardiovascular disease (heart murmur or arrhythmia), PPID/Cushing's disease, weight loss, dental care and hoof care.

In its most recent update, the American Association for Equine Practitioners cites several other good reasons why a veterinarian is your best choice for administering vaccines:

Proper Handling of the Vaccine

Many vaccines require special handling and storage. For instance, a vaccine may require protection from temperature extremes or exposure to light to preserve its effectiveness. Rely on a licensed veterinarian to store and handle the vaccine properly. Another aspect of proper handling is ensuring that the vaccine has not passed its expiration date. Veterinarians are keenly aware of the effective life of a given vaccine.

Safe Administration

Part of safe administration is a clean environment and injection site, otherwise you may put pathogens into your horse's system instead of protecting against them. Some vaccines cannot be given at the same time as other medicines. Your veterinarian will know which vaccines and medications can react with one another. Your veterinarian will document the vaccine's serial number and administration date — especially important in the event of a manufacturer's recall. This is one instance when poor documentation could put your animal in peril.

Availability of treatment for adverse reactions or failures

Any injection can result in adverse effects. Maybe it's only mild swelling at the injection site. Or, it could be lethargy and a slight fever for one to two days. In some animals, it can be as severe as an immediate outbreak of hives or life-threatening anaphylaxis. If your veterinarian is there administering the vaccine, they will know what to do to counteract a reaction — and they will have the medicine to do it.

Additionally, most pharmaceutical companies provide reimbursement for anywhere from $300-$5,000 for treatment and diagnostics should your horse contract a disease for which they have been vaccinated by a veterinarian. As the average horse that contracts West Nile virus has a medical bill of $3,000, this can go a long way if a veterinarian vaccinated your horse. If there a problem with the vaccination, the pharmaceutical companies often reimburse the client for costly or untoward effects if the vaccine was administered by a veterinarian.

It is said that an ounce of prevention is worth a pound of cure. The ounce of prevention that comes attached to veterinarian-administered vaccines is certainly worth it. Forming a good relationship with your veterinarian though vaccine appointments can help alert owners to general health problems that may save money if caught early.

Case Study:
On Farm Treatment of Tendon Sheath Laceration

Lyndsey Hayden, DVM

A 2-year-old quarter horse gelding was found to be non-weight bearing on the right hind limb when the trainer arrived to feed the horses. An 8 cm laceration was found on the back of the leg above the fetlock. There was a large amount of swelling in the limb, as a result of soft tissue swelling and air between the layers of tissues. When the wound was cleaned and the dried blood was removed, the superficial digital flexor tendon was visible through the wound. The tendon did not appear to be disrupted when it was examined through the wound.

Due to the location of the wound and the visualization of the tendon, it was determined that the laceration extended into the tendon sheath. The digital tendon sheath encompasses the superficial and deep digital flexor tendons, and it extends from the lower one third of the cannon bone to the level of the navicular bone. The tendon sheath functions to provide frictionless movement as the tendons pass over the bony prominences of the fetlock joint. At this time, there were many options for treatment, and it was elected to treat the horse at the farm.

The gelding was sedated, and the affected area was clipped and thoroughly cleaned. The area was then blocked with carbocaine, which temporarily numbed the area to provide pain relief while the wound was explored, flushed and sutured. With the gelding sedated and the area sufficiently blocked, we explored the laceration by inserting a sterile probe into the wound. To determine how far the probe extended into the wound, radiographs were taken. The sterile probe could be seen tracking throughout the majority of the tendon sheath. Sterile fluids were then used to flush, or lavage, the wound through the probe. The goal was to flush out the bacteria and any dirt or debris that were within the tendon sheath.

Antibiotics were then infused directly into the tendon sheath following the lavage. The wound was then sutured closed. The tendon sheath itself was not closed, but the skin over it was. A sterile bandage was applied which would apply pressure to the wound.

Wedges were then taped to the bottom of both hind feet to elevate the heels. This was done for two reasons: to relieve the weight that is placed on the back surface of the limb and to prevent overloading the non-injured limb. The gelding was immediately started on a broad-spectrum antibiotic, which was administered for 14 days, and pain medications that were gradually reduced over a week's time. We also administered a tetanus booster.

It was important that we evaluated the wound and changed the bandage every day for the first three days. After the first three days, the bandage changes were performed every two days for two weeks. This was necessary to assess if a tendon sheath lavage or regional limb perfusion were needed.

We elected to repeat the tendon sheath lavage and perform a regional limb perfusion as there was increased swelling of the sheath on day five. The tendon sheath was scrubbed, and a needle was inserted into the tendon sheath. A sample of fluid from the sheath was obtained. The fluid appeared to be slightly abnormal (cloudy and bright yellow). There was also a mild elevation of protein, indicating inflammation of the sheath. Sterile fluids were put into the sheath, and the fluid from within the tendon sheath was removed. This was repeated multiple times. The goal again was to remove any bacteria or debris within the sheath.

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Laceration, *continued from page 8*

The same day a regional limb perfusion was performed. A regional limb perfusion is a technique that provides a high concentration of antibiotics to the tissues, bones and joints of the limb. For this procedure, a vein on the lower part of the limb slightly above the infected area is scrubbed, a tourniquet is applied above the affected area and the prepared vein, a small catheter or needle is placed into the vein, and an antibiotic is administered through this catheter. The tourniquet is left in place for 15-20 minutes to allow for a high volume of the antibiotics to reach the affected tissues in the limb. This was repeated one additional time two days later.

The sutures were removed at day 14, and no other complications were encountered. At the time of the suture removal, the gelding was walking sound on the limb and was ready to start with slow rehabilitation. When rehabilitating a tendon sheath injury, it is important to start slowly, incorporating controlled low impact exercise into the horse's routine once the initial injury is healed to prevent adhesion formation. Adhesions are strands of scar tissue that can restrict the ability of the tendon to stretch and glide. With this case, it was recommended that the horse start short periods of hand-walking once the sutures had been removed.

This case stresses the importance of early intervention. Since wounds involving any synovial structure (joint, tendon sheath, etc.) can be life threatening, it is critical to initiate treatment early and to be aggressive. Even a small wound can cause serious problems if it affects these sensitive joint structures. There are many options for treating tendon sheath lacerations, ranging from conservative management on the farm to bringing the horse to the hospital for more intensive care. It is important to discuss these options with your veterinarian to determine the best treatment plan for you and your horse.

Lurking in the Alfalfa
Blister Beetle Poisoning in Horses

Amanda Trimble BVMS, MS, DACVIM-LAIM

Certain areas of the Midwest have the perfect climate and habitats for a small insect called the blister beetle, which can cause devastating disease in horses. This article is to raise awareness in the area, and to help you recognize clinical signs and prevent potential problems.

What is blister beetle poisoning?

Blister beetles are small insects that live in alfalfa hay. They contain a toxin, called cantharadin, which causes ulceration of the gastrointestinal tract and urinary system in horses when it is ingested. Cantharidin can also cause ulcers in humans who come in contact with it. The severity of the poisoning is based on how much cantharadin is ingested.

What signs should I look for in my horse?

Horses with blister beetle poisoning can present in a variety of ways, usually within three to 18 hours of ingesting the toxin. The most common presenting sign is colic. Horses may have a fever, diarrhea, decreased appetite, or seem depressed and lethargic. Some horses may also present with enteritis (refluxing). The first sign in horses may be a horse dunking its whole face into the water bucket or aggressively playing with its water bucket. It is thought that the ulcers in the mouth are very painful, and the horses are trying to alleviate this pain. Frequent urination may also be a common presenting sign. Blood may be present in the urine.

In horses that have had a high level of exposure, severe gastric ulceration and electrolyte abnormalities may occur. Your veterinarian will see very low calcium levels on blood work, which can cause a condition known as "thumps." They may describe this is synchronous diaphragmatic flutter, which essentially means the diaphragm is having irregular spasms. It may appear that your horse is having hiccups. If left untreated, this condition may be fatal.

Can my horse be treated?

In most cases, yes! It ultimately comes down to how much cantha-

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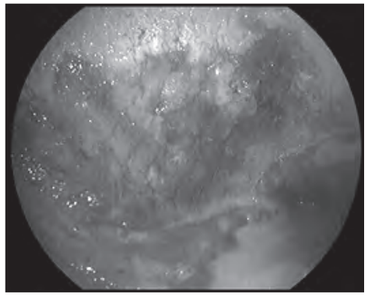
Beetle, *continued from page 9*



Severe Gastric Ulceration of a horse that consumed blister beetle.

radin your horse was exposed to, and how quickly he is treated. Treatment goals are aimed at eliminating toxin exposure and supportive care. A toxin adsorbant, such as activated charcoal or biosponge may be given down a nasogastric tube. Intravenous fluids with calcium would most likely be given to rebalance the electrolytes, correct dehydration, and to protect the kidneys from further damage. Due to the severe ulceration seen within the gastrointestinal tract, a course of GastroGard (omeprazole) – helps ulcer healing) and sucralfate – coats the mucosa – would be prescribed. An easy-to-digest diet consisting of warm mashes would be offered until appetite increases.

How can you be sure my horse's signs are from cantharadin?

Typically, clinical signs are indicative of this disease. Veterinarians can also submit urine or gastric contents for a laboratory test looking specfically for Cantharadin.

How can I prevent this toxicity?

Blister beetles live in alfalfa hay, so if you do not feed alfalfa, you have a much lower risk of your horses being exposed. If you do feed alfalfa, be wary of late cuts. Usually first cuts of alfalfa are best, as the beetles have not yet clustered in the fields.

If you notice any of the above signs, promptly contact your veterinarian! Remove all other horses access to alfalfa. Your vet may want to look at the alfalfa to see if there are any beetles present.

Equine Inspiration

Quotes from Fellow Enthusiasts

"There is something about the outside of a horse that is good for the inside of a man."

— Winston Churchill

"No hour of life is lost that is spent in the saddle."

— Winston Churchill

"When I hear somebody talk about a horse or cow being stupid, I figure it's a sure sign that the animal has outfoxed them."

— Tom Dorrance

"A horse! A horse! My kingdom for a horse!"

— William Shakespeare

"The sunshine's golden gleam is thrown, on sorrel, chestnut, bay and roan."

— Oliver Wendell Holmes

"A horse is the projection of people's dream about themselves – strong, powerful, beautiful – and it has the capability of giving us escape from our mundane existence."

— Pam Brown

"I love the horse from hoof to head, From head to hoof and tail to mane. I love the horse as I have said, From head to hoof and back again."

— James Whitcomb Riley

"People ought to quit worrying so much about whispering to their horses and just start listening to them."

— Greg Darnall

"The horse, with beauty unsurpassed, strength immeasurable and grace unlike any other, still remains humble enough to carry a man upon his back."

— Amber Senti

"I can make a general in five minutes but a good horse is hard to replace."

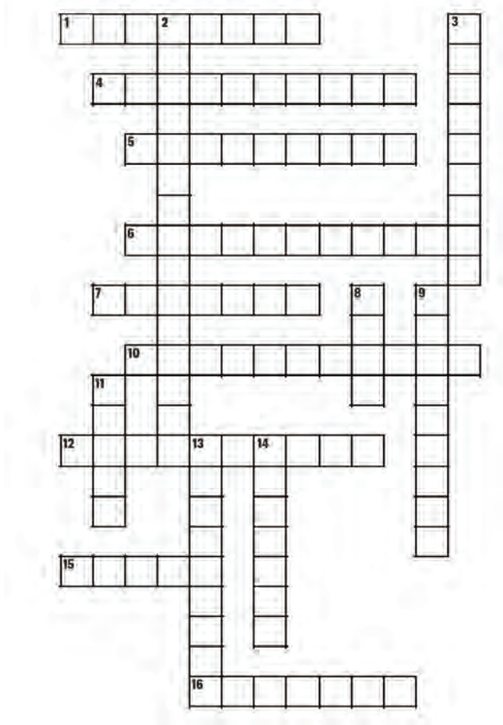
— Abraham Lincoln

"It is best not to swap horses while crossing the river."

— Abraham Lincoln

Crossword Puzzle for Horse Lovers

Lyndsey Hayden, DVM,



Across

1. Osteoarthritic condition characterized by degeneration of joint cartilage and formation of abnormal bone in the pastern and coffin joint.
4. A bacterial infection of the soft connective tissues under the skin. It can occur anywhere on the body, but in horses the infection commonly occurs in the limbs. This problem typically starts with sudden swelling of the limbs that is warm and painful.
5. Disruption of the blood flow to the laminae that may ultimately cause rotation of the coffin bone.
6. Veterinary instrument used for grinding down enamel points.
7. Test for detection of antibodies to equine infectious anemia (EIA) virus.
10. A pincher-like tool used to put pressure on specific regions of the foot in search of a pain response.
12. Arthritis of the distal (lower) hock joints.
15. A _____ Bandage is used to generate heat and help reduce inflammation while providing pressure and support.
16. The most common skin tumor in horses. These are non-malignant, can be locally aggressive, and have many different appearances.

Down

2. A dark line that forms on the outside of the corner incisor teeth; its length and appearance are useful in aging a horse.
3. The first pre-molars that are often removed at time of castration.
8. Common anti-inflammatory medication used for pain control in horses. Too much of this drug can lead to gastric ulceration.
9. A fruit that can cause gastric impactions and signs of colic in horses.
11. A physical obstruction (usually hay or grain) of the esophagus.
13. A common skin condition in horses that can affect the heel, the back of the pastern, the fetlock, and occasionally the cannon bone.
14. Most common cause of acute lameness isolated to the hoof.

Solution can be found on page 12.

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Crossword puzzle solution