



EQUINE HEALTH UPDATE

For Horse Owners and Veterinarians
Vol. 17, Issue No. 2 – 2015

Purdue Veterinary Medicine Breaks Ground for \$8.8 Million Equine Facility

In Purdue Veterinary Medicine celebrated the start of construction of the new \$8.8 million Centaur Equine Diagnostic and Surgical Center with a groundbreaking ceremony Tuesday, October 20 in Shelbyville, Ind. The satellite facility will provide specialty medical and surgical services for horse owners, while supporting equine research and education of future equine specialists. With site work already underway, the ceremony took place trackside at the Indiana Grand Racing and Casino.

Dean Willie Reed started the ceremony by welcoming guests and sharing about the facility's importance in enhancing the College's outreach and engagement efforts in support of the state's equine industry. "This is an exciting day that marks a major milestone in our dream of creating a state-of-the-art equine referral hospital on location in the heart of Indiana's horse racing industry, enabling our College to bring advanced medical and surgical services directly to the equine athletes and their owners," said Dean Reed. "This center will house the most technologically advanced medical equipment to diagnose and treat equine patients while also facilitating groundbreaking research and vital educational opportunities for students preparing for careers as equine specialists."



(continued on pg. 2)

Contents...

Health

NSAIDs & Analgesia . . .pg. 5

Chokepg. 4

Community Practice

Winter Shoes.pg. 7

News & Notes

Shelbyville Clinicpg. 1

Horseman's Forum.pg. 2

In Depth

Shelbyville Clinicpg. 1

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HORSEMAN'S
FORUM**
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News & Notes

Equine Facility *(continued from cover)*

The 18,000 square foot state-of-the-art facility is slated for completion by late 2016. Located just a few miles from the Indiana Grand Racing & Casino's track in Shelbyville, and within an hour's drive from Hoosier Park in Anderson, Ind., the facility will be part of the Purdue Equine Sports Medicine program based on the West Lafayette campus. It will offer advanced diagnostic imaging, shockwave therapy, regenerative medicine, endoscopy laser surgery and specialized equine orthopedic surgery and specialized equine surgery. →



Cover Photo: Indiana Grand representatives present Dean Willie Reed with a customized race blanket in the winner's circle after the commemorative race held following the groundbreaking ceremony for the Centaur Equine Diagnostic & Surgical Center. Pictured (left to right): Vice President of Indiana Grand Jon Schuster, Chairman and CEO of Centaur Gaming Rod Ratcliff, Dean Willie Reed, Retired Senator Bob Jackman (PU DVM '67), President of the Shelby County Board of Commissioners Kevin Nigh, Shelbyville Mayor Tom DeBaun, President and Chief Operating Officer of Centaur Gaming Jim Brown, and Vice President of Hoosier Park Rick Moore.



(Photo courtesy of Ed Lausch)

(continued on pg. 3)



Dean Willie Reed, Chairman and CEO of Centaur Gaming Rod Ratcliff, President Mitch Daniels, President of the Shelby County Board of Commissioners Kevin Nigh, and Shelbyville Mayor Tom DeBaun ceremonially break ground for the Centaur Equine Diagnostic and Surgical Center.

“This new facility compliments Purdue University’s longstanding commitment to serving the equine industry and will continue to build on what the Indiana Horse Racing Commission and so many in Indiana’s horse racing industry have worked toward for the last 20 years—making Indiana a top-notch racing state and a recognized leader in the sport,” said Rod Ratcliff, Centaur Gaming chairman and CEO. Indianapolis-based Centaur Gaming, founded in 1993, owns and operates Indiana Grand Racing & Casino in Shelbyville; Hoosier Park Racing & Casino in Anderson; the Winner’s Circle Pub, Grille & OTB in Indianapolis as well additional off-track betting operations in Clarksville and New Haven, Indiana.

“Shelbyville and Shelby County are excited about the groundbreaking for the new Centaur Equine Diagnostic and Surgical Center,” said Shelbyville Mayor Tom DeBaun.

“This project is a great model of public and private partnerships between the City of Shelbyville, Shelby County, Centaur Gaming and Purdue University. Now that construction is beginning, we look forward to the completion of a beautiful equine specialty referral hospital that will have a significant positive impact on our community.”

The ceremony also featured remarks by Kevin Nigh, President of the Shelby County Board of Commissioners and Purdue President Mitch Daniels. Then Dean Reed joined the others on the stage to ceremonially break ground. A reception followed as well as a commemorative horse race—the “Purdue Veterinary Medicine Classic,” named in honor of the College. After the race, Indiana Grand presented a commemorative horse-blanket embossed with the date of the event and the College’s logo.

**INDIANA
GRAND**
RACING · CASINO



Horses race to the finish line at a race during the Centaur Equine Diagnostic and Surgical Center groundbreaking celebration.

(Photo courtesy of Ed Lausch)

It's No Choking Matter

By Liz Hansen, DVM Student (Class of 2016)
Edited by Dr. Stacy Tinkler, DVM, MPH, Dipl. ACVIM,
Purdue Large Animal Internal Medicine



Choke in horses can be a dramatic experience for both horse and owner. In people, choke refers to an obstruction of the airway, while choke in horses refers to an obstruction of the esophagus. While the horse is still able to breathe, choke is a veterinary emergency and requires immediate attention.

Presentation and Clinical Signs

Horses presenting with esophageal obstruction commonly have excessive salivation and nasal discharge that contains saliva and feed material. As the horse attempts to swallow, muscle spasms can be seen along the neck. Horses will try to extend their head and neck, cough, may show signs of colic, or be anxious or depressed. In over 80% of cases, horses presenting for choke have a palpable mass on the left side of the neck.

Causes and Diagnosis

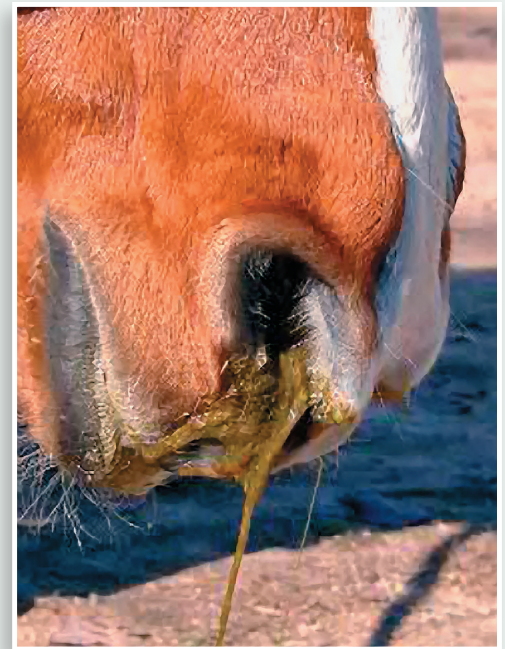
Causes for choke include poor dentition, improper mastication (chewing), types of feed (pelleted or cubed), or treats (apples or carrots). Sedated horses are at risk of choke because the drugs used for sedation also have an effect of slowing down the normal motility of the esophagus allowing for slower passage of feed and more of a chance of feed accumulation in the esophagus. Greedy eaters are also at risk because they eat large amounts of feed faster than the esophagus can move the feed through normally. Lastly, geriatric horses are naturally more predisposed to choke, either from poorer dentition from inadequate dental care over their life, or from natural age-related changes in dentition and tooth loss. Your veterinarian will make the diagnosis of choke based on history, clinical signs such as nasal discharge containing saliva and/or feed material, and passage of a nasogastric tube into the esophagus to estimate the extent of the obstruction.

Intervention

Some horses can pass the obstruction without veterinary intervention. However, choke is a veterinary emergency as the horse can become quickly dehydrated or develop pneumonia from aspiration of feed material if it is severe or long-standing. A veterinarian will heavily sedate the horse in order to get the horse to lower its head. A nasogastric tube will be passed and attempts to soften and push the mass into the stomach will be done by lavaging (rinsing) the esophagus with water. Most obstructions will resolve with sedation, rehydration, and withholding feed for a short time; however, prolonged or untreated esophageal obstruction can result in permanent scarring and narrowing of the esophagus and be life-threatening to your horse.

Endoscopy can potentially be utilized to detect the presence of an obstruction and any significant damage to the esophagus. With longer-standing obstructions, the esophagus can become irritated, inflamed, and ulcerations may be present. Feed should be reintroduced slowly once the obstruction is relieved by feeding a slurry or mash. Depending on the severity and duration of choke, some horses may require anti-inflammatories and/or antibiotics to prevent pneumonia from aspirated feed. Prognosis for horses following esophageal obstruction is favorable provided the clinical signs are detected early and treated; however, complications include aspiration pneumonia (inhalation of feed material into the lungs), esophagitis (esophageal inflammation), stricture formation (narrowing or scarring of the esophagus), and esophageal rupture.

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Horses presenting with esophageal obstruction commonly have excessive salivation and nasal discharge that contains saliva and feed material, such as grain.

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<http://www.thehorse.com/articles/10022/choke-esophageal-obstruction>

Inside the Equine Medicine Cabinet: Analgesics

By Dr. Alex Bianco, DVM, Purdue Equine Community Practice

Though it may be difficult to believe, the concept of animal pain has been historically controversial. The definition of pain is the feeling of suffering, and describes an emotional rather than a physical response to unpleasant stimuli. Animals were thought to be incapable of feeling pain because they were unable to communicate such an emotion. The physical response to negative stimuli is called nociception; early research on animal behavior focused on the animal's physical response to stimuli without acknowledgement of an emotional response.

In the past 50 years, however, the role of companion animals in our lives has drastically changed. One major area of change has been in recognition of the human-animal bond, i.e. the emotional attachment we have with our animals. As a result, the paradigm has shifted, and current research is focused on how we, as humans, can better recognize and interpret animal emotions, including pain.

Animals are assumed to experience pain in any situation that would cause a human to experience pain, such as after an injury, surgery, or with chronic disease, namely osteoarthritis (OA). Treatment of animal pain is best achieved through a multimodal approach. This may include a combination of pharmaceuticals (drugs), physical therapy, bandaging, cryotherapy (ice), and alternative modalities such as chiropractics or acupuncture. Because most pain is caused by inflammation, the most common drugs used to treat pain in horses are non-steroidal anti-inflammatory drugs (NSAIDs). These drugs work by decreasing the body's normal inflammatory response to tissue injury through the inhibition of the cyclooxygenase (COX) enzymes. Because NSAIDs only work when there is an inflammatory response and do not affect the transmission of pain, they are non-habit forming.

Many horse owners are familiar with NSAIDs in their own medicine cabinets, e.g. Ibuprofen, Aleve®, as well as in their barns, e.g. phenylbutazone (“bute”) and flunixin meglumine (“Banamine®”). However, while there are many different types of NSAIDs used in humans, there are only 3 approved for use in horses. This includes the two previously mentioned as well as firocoxib (Equioxx®).



(continued on pg. 6)

Choke (continued from pg. 4)



Prevention

Proper dental care and feed management should be discussed with your veterinarian to prevent future esophageal obstructions. Remember, older horses are particularly at risk as they age and their teeth start to wear abnormally. This normal aging and change in dentition can prevent horses from chewing their hay well and could put them at greater risk of choke. Feeding a diet consisting of pelleted feed and/or hay cubes instead of hay may be best for your horse if this is the case. Management strategies for preventing choke include scheduling regular dental exams annually, feeding away from other horses to reduce competition, slowing down fast eaters by using bricks or stones in the bottom of the feed bucket, feeding smaller amounts more frequently over the course of the day, and by having adequate drinking water available at all times.

NSAIDs and Analgesics *(continued from pg. 5)*

Due to the limited drug options, veterinarians often rely on the same drugs and drug dosages to treat a wide variety of painful conditions. A horse that undergoes major abdominal surgery, suffers a mild laceration, tendon sprain, or has a corneal ulcer will likely receive the same NSAID at the same dosage despite the differing degrees of pain. Not surprisingly, several studies have found that horses that undergo abdominal or orthopedic surgery still experience pain despite appropriate use of NSAIDs. This underscores the importance of accurate pain recognition, as such animals should receive additional analgesic medications.

In human medicine, opioids such as hydrocodone, oxycodone, or morphine, are much more heavily relied on to provide pain relief. Opioids, unlike NSAIDs, are centrally-acting, which means they affect the nervous system's ability to acknowledge and transmit pain to the brain. This is why opioids are addictive; they produce an affect even when the body is not experiencing any pain. Opioids such as butorphanol and morphine are also used in horses, but usually only in horses that experience pain despite NSAID use. While addiction is not a major concern for most equine patients, opioids have other well established side effects, the most significant of which is a decrease in gastrointestinal motility, which can lead to colic.

Unfortunately, NSAIDs can also have side effects. The COX enzymes affected by NSAIDs play a role in maintenance of normal body functions in addition to inflammation. Most importantly, COX enzymes help maintain the tissue that lines the gastrointestinal tract, called the intestinal mucosa. The COX enzymes also help to maintain blood flow to the kidneys in times of dehydration. With an overdose or even after long term usage of an appropriate dose, NSAIDs can lead to ulceration of the stomach and/or large intestine, diarrhea, and kidney failure.



At Purdue University, we are currently looking at the safety and efficacy of the NSAID ketorolac tromethamine in horses. Ketorolac is an NSAID widely used in human medicine to treat severe pain, such as after abdominal or orthopedic surgery. One of the benefits of ketorolac is that it is formulated for intravenous (IV), intramuscular (IM), or oral (PO) use. The first step to using a human medication in animal patients is a pharmacokinetic trial to examine how the body metabolizes the drug after administration. The pharmacokinetics of ketorolac in horses was determined here at Purdue and was recently published. Currently, more research is underway to determine ketorolac's ability to decrease inflammation in horses. 🔄



Winter Hoof Care Tips

By Anna Hood, DVM Student (Class of 2016)

Edited by Dr. Stacy Tinkler DVM, MPH, Dipl. ACVIM, Purdue Large Animal Internal Medicine

Winter is here, and it brings many challenges for horse owners. Water buckets are freezing over and there is the constant question of whether to keep your horse shod or not. Keeping these hoof care tips in mind will help keep your horse comfortable and sound during this cold season.

Keeping hooves healthy from the inside out

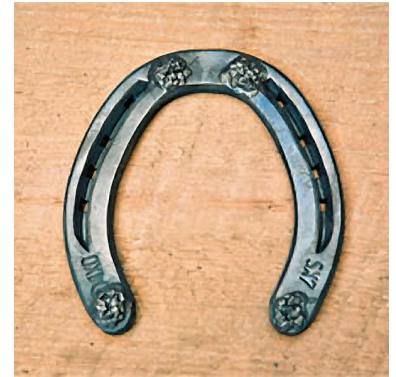
Healthy hooves start with good nutrition. Poor nutrition can result in brittle, cracked hooves despite applying every type of hoof dressing that the tack store offers. A proper balance of amino acids, vitamins, and minerals are important for proper hoof growth and quality. As winter approaches, horses transition from grazing pasture to a predominantly hay-based diet. Even when baled from the same field, hay can vary in nutrients from year to year and between first, second, and third cuttings. To ensure that your horse is getting enough nutritional building blocks for healthy hooves, a ration balancer can be fed to compensate for any deficiencies in the hay. Hoof supplements can also be added to the complete nutrition plan for horses that have especially poor quality hooves.

Regular farrier care

Hoof growth can be slower in the winter months, but it is important to continue routine farrier visits to maintain hoof balance. Discuss with your farrier an appropriate interval between visits for your individual horse during the winter. When the temperature increases enough for the snow to melt, paddocks can become very muddy. Keep an eye out for thrush or white line disease during these wet conditions. Regularly cleaning hooves and providing your horse with dry areas out of the constant mud will help prevent these issues. The sole of the hoof can also become bruised in frozen and icy conditions. Monitor your horse for signs of lameness, a foul smell coming from the hooves, black discharge, or areas of separation of hoof integrity at the white line. Speak with your veterinarian and farrier with any concerns.

Shod or barefoot?

Some horse owners prefer to have their horse's shoes pulled for winter. This can be beneficial because metal shoes decrease traction on icy ground and snow does not pack into the barefoot hoof as easily. Snowballs can form in the middle of the shoe and build up so that it is like your horse is walking in high heels. This can cause strain on the tendons and ligaments in the legs and can be dangerous and uncomfortable on icy ground. However, some horses do not do well barefoot during the winter due to thinner soles that results in sole bruising and other factors. If you choose to keep your horse shod over the winter, you might consider snow pads to help prevent the formation of these snowballs. Rim type snow pads are made of rubber or plastic, and a ring runs along the inside of the shoe. As the horse walks, the movement of the ring prevents the snow from packing and freezing into the shoe. Another type of snow pad is a full pad that covers the bottom of the hoof, and a raised bubble pops snow out of the shoe as the horse walks. Horses who are ridden often in snow and ice may also need the help of borium or studs to increase traction in these conditions. Speak to your farrier about these options to decide the best plan for your horse. ↻



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The **Equine Sports Medicine Center**

Purdue's Equine Sports Medicine Center is dedicated to the education and support of Indiana horsemen and veterinarians through the study of the equine athlete. The Center offers comprehensive evaluations designed to diagnose and treat the causes of poor performance, to provide performance and fitness assessments, and to improve the rehabilitation of athletic horses. Other integral goals of the Center are to pioneer leading-edge research in the area of equine sports medicine, to provide the highest level of training to future equine veterinarians, and to offer quality continuing education to Indiana veterinarians and horsemen. For more information visit our website:

www.vet.purdue.edu/esmc/



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