



MONTANA EQUINE MEDICAL AND SURGICAL CENTER

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Neonatology etc.

Everything is getting green all of a sudden. Mother Nature is finally ready for Spring; foals are being born, and breeding season is fully upon us. In this newsletter, we've discussed some Spring-time topics, including Dr. Flint's expertise regarding reproductive medicine. And more than one person has recently suggested that I need to talk a bit more about my own specialty, so I'm doing just that in this newsletter. Since foaling season is now fully upon us, I thought this might be a good time to discuss one of my favorite topics: equine neonatal medicine.

My specialty of Internal Medicine is often about diagnosing the odd and unusual. Metabolic abnormalities, internal infections, and neuromuscular diseases are among the core components of internal medicine. And like other true specialists in private practice, I also regularly evaluate and treat complex lameness in performance horses. All of these cases can include diagnosis and treatment of many subtle diseases, but the quintessential internal medicine case is the sick newborn foal. All equine veterinarians practice some internal medicine every day, but we have some special techniques and tools at Montana Equine that allow us to dig deeper into many of these cases. During my specialty training, I was fortunate to learn from some of the best in the field -- maybe that is why I enjoy neonatal medicine so much. I am constantly amazed by the resilience of these apparently fragile critters.

As always, prevention is 90% of the challenge. Remember that foal should be born in about 15 minutes, should stand within another 15-45 minutes, and be suckling the udder within another 30 minutes after that. The placenta should pass within 2 hours after delivery. Even when foals appear totally normal, a veterinary exam should be performed soon after birth. Besides confirming normal

transfer of maternal antibodies via colostrum, an exam of the placenta can help avoid problems for the mare. A foal's umbilicus should be dipped twice daily for 1-5 days after birth using dilute chlorhexidine or betadine solution. And although crooked legs usually do straighten somewhat over time, it is obviously far better to help a crooked-legged foal in the first weeks of life using techniques including glue-on shoes or special wraps rather than to perform surgery weeks or months later.

Sick foals present many medical challenges, but too often, even just determining a prognosis can be very difficult. Even with experience, it is not always easy to separate the sick from the hopeless cases. For example, low blood-sugar can make a foal look extremely weak, but a simple blood-sugar test allows quick determination (human glucometers work fine). Many of these limp, down-and-out foals can be quickly rescued with a basic infusion of fluids and dextrose. In contrast, even apparently normal foals harbor subtle signs of infection. When necessary, we often use a combination of bloodwork, radiographs, ultrasound and other tools to identify an underlying illness. In sick foals, fever isn't always present, so even mild lethargy, or lameness should prompt a call to your veterinarian.

Obviously, no-one wants to embark on treatment of a hopeless case, but advances in veterinary neonatology mean that it is not only possible to rescue some of the sickest foals, but for them to go on to extraordinary athletic performance. So in each case, the trick is to determine which of these foals has a good chance, and those that have a poor prognosis. It usually takes a combination of modern technology and old-fashion examination to determine prognosis, and determine the best course of treatment. We continue to offer advanced neonatal care at Montana Equine, and welcome local and referred cases for evaluation and treatment.

PH

The DVM's Corner

So-called 'Dummy Foals' are more common than you might think. There are often subtle neurologic deficits that occur following poor perfusion during delivery, especially due to dystocia or placentitis. Whenever oxygen is not being adequately delivered, the foal's delicate organ systems can suffer damage. In these susceptible tissues, drugs that inhibit the enzyme 'nitric oxide synthase' can act to limit hypoxic free-radical damage from reactive oxygen and nitrogen species. **Allopurinol** is one drug that limits free-radical damage by arresting nitric oxide synthase, and is widely used as neuroprotective therapy after perinatal oxidative stress in human children. Even beyond the central nervous system, other susceptible organs like heart, skeletal muscle, kidneys and gastrointestinal tract may suffer the consequences of hypoxic damage. Similar damage may be limited in foals by treatment with **allopurinol** (or other inhibitors of neuronal and inducible nitric oxide synthase) during the first days after birth.

**OUR SPECIALIST DOCTORS
ARE ALWAYS ON-CALL
IN-HOUSE AND RANCH CALL**

406-285-0123

Dr. Jack Snyder

Lameness Specialist & Consulting Surgeon

Dr. Snyder is Professor of Equine Surgery at UC Davis, and is again serving as head veterinarian for the equine hospital at the Olympic Games in China this summer. As a consulting specialist at Montana Equine, Dr. Snyder treats all types of English and Western performance horses. Dr. Snyder will be seeing cases during June and early July. Please call to schedule appointments.

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Exclusively Dedicated to the Highest Quality Care of Horses

Mare Reproductive Care

As a long winter draws to a close, it brings the promise of another breeding and foaling season. We've already had many foals born at Montana Equine this year. At this point the fillies outnumber the colts but the season continues. We offer around-the-clock monitoring by our experienced staff and veterinarians. During the first week of each mare's stay, we will carefully examine the foal, uterus, and placenta via ultrasound, a non-invasive procedure very similar to a human pre-natal sonogram. This advanced monitoring allows us to be prepared to treat any potentially life-threatening conditions. Once the foal has been born, both mare and foal receive a complete exam; we always ensure timely passage of the placenta and examine it for any abnormalities. The mare and new foal usually return home within 24-48 hrs after delivery. Besides the advanced monitoring we offer, pregnant-mare-care may make sense if you are out-of-town or otherwise indisposed as the mare's due-date nears, or if the breeding-date is uncertain.

Once a healthy foal is on the ground it is time to start thinking of breeding the mare again. Generally, mares will ovulate 7-9 days post-foaling (foal heat). This heat cycle provides the earliest opportunity to breed a mare back for the following year. However, foal-heat can be hard to detect and may not be as fertile as subsequent heats (which occur about 19-21 days later).

We offer complete mare breeding evaluations, performed at the clinic or at your ranch, depending on circumstances. At initial presentation, we typically perform a trans-rectal ultrasound exam,

and are always prepared to answer any questions that you might have. Depending on the case, we may discuss the pros and cons of any other necessary testing, such as uterine culture or biopsy. Obviously, the state of the mare's cycle determines the number and timing of subsequent ultrasounds, but we generally just charge a flat fee for examinations during a breeding cycle, so you don't accrue separate charges for our repeat exams. Regardless, we carefully stage the time of ovulation to match your chosen stud's collection dates using a combination of careful monitoring and when necessary, reproductive hormones. Following insemination, mares usually return home. We usually see the mare back at about 2 weeks post-breeding to confirm pregnancy via ultrasound. At this point we can also discuss mare nutrition, and any other management strategies.

Some mares or situations may require advanced reproductive techniques. These days, embryo transfer is becoming quite common, involving the collection of an embryo from your mare and transplantation into a surrogate "recipient" mare. Montana Equine is one of the only veterinary clinics region-wide that owns a herd of dedicated recipient mares, but we can also ship embryos to any synchronized mare of your choice nationwide. Embryo transfer may be necessary in older mares with decreased fertility, or just to allow a mare to continue to compete during the following year. Other exciting techniques include deep horn endoscopic insemination, which is used to maximize fertility when a stud's viable sperm concentration is decreased, or when using some low-quality frozen semen.

Mare management is just one side of the story. Montana equine is also fully equipped to collect, cool, freeze and ship equine spermatozoa. The sperm from each stud is unique. In order to achieve the best results we may utilize different materials and techniques to provide the correct environment for each stud's sperm, thus maximizing breeding potential. We will discuss the details of stallion management in future newsletters. Please contact us with any questions involving reproductive management of your mare or stud. We enjoy consulting with clients and veterinarians on all types of equine cases.

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Why does Montana Equine recommend Spring Vaccinations be given in April/May and not in March?

Our recommendations are due to issues related to West Nile Virus (WNV). Peak incidence occurs in August and September, but even in Montana, the season historically lasts from July through October. And although the disease is relatively rare in Montana, scores of horses die in our state every year from this preventable disease. The vaccines against WNV are very well tested; all 3 provide excellent protection against this serious disease, but horses' immunity from vaccination is known to wane quickly, even within 6 months. Other than measuring WNV titers (which are partially correlated with protection), recent vaccination is critical. Therefore, we recommend Spring vaccines be given in late April, providing reliable immunity through the peak WNV season. Having seen too many horses die from WNV, we highly recommend protecting your horses with vaccination.