Horse Management

BY CHRISTY WEST AND LES SELLNOW

How to Airlift a Horse

John Madigan, DVM, MS, Dipl. ACVIM, director of the large animal hospital at the University of California, Davis, explained how to safely airlift a horse.

"Most horses we lift are healthy, they are just trapped somewhere they can't get out of," he noted. "We do all airlifts on standing horses."

The first thing to do, he reported, is to look into all other available options of moving the horse, as they're usually a lot easier and less dangerous. Or, moving the horse might not be time-critical; for example, a horse in a flooded area could move to high ground and be cared for there until floodwaters recede.

If it's decided that an airlift might be necessary, the horse's owner makes direct contact with the helicopter operator, approves the costs, and places the helicopter on standby, pending scheduling and future determinations.

"Live cargo transport presents numerous problems for helicopter safety," Madigan cautioned. "Horses with uncontrolled movements in the air or on the ground during liftoff and landing can produce significant aircraft instability." To limit this risk, he uses sedation and the UC Davis Anderson sling, which controls and supports the head and body of the horse. His team has used this sling in 28 successful airlifts, and they have also used a sling termed the UC Davis Large Animal Lift to move one recumbent (down) horse.

The helicopter needs to be able to lift at least 1,200-1,500 pounds at sea level, and the pilot needs to have longline experience (using long cables below the helicopter). The horse is lifted on a 150-foot cable, preferably one made of Kevlar rather than steel to reduce static electricity buildup. "If someone's misbehaving, ask him to go ground the sling frame," Madigan said with a grin, knowing a static shock would be the result.

"Ideally, rescue groups should have a prior arrangement and training session with the pilot who is on call," he noted. He described several training sessions at the school with multiple military branches that might have occasion to airlift horses and mules into and out of remote areas.

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Madigan described the procedures, training, communication, and chain of command for airlifts in detail. Consultation with the on-site veterinarian before getting involved is essential, and the overall theme was that prior training and careful, specific planning of procedures and responsibilities is critical to success. Two complete teams are required—one to send the horse, and one to receive it at a safe location.

Once everything is in place and well-understood, the airlift itself doesn't take long if no snags are encountered; he reported on some airlifts that took only about an hour from start to finish.

Madigan offered the following checklist of information to be covered in a pre-rescue orientation.

1. Know who is in charge of the rescue;
2. Know who will perform a brief physical examination of the animal prior to sedation or transport;
3. Orient and inspect the sling equipment and overhead support device;
4. Organize ground-to-air radio communications and hand signals from ground to air;
5. Know helicopter safety orientation and grounding methods of the sling overhead frame prior to human or animal contact;
6. Animal restraint—know who is in charge of physical and chemical restraint, as well as precautions for personnel;
7. Apply and detach Anderson sling;
8. Use personnel safety equipment, including ear and eye protection;
9. Plan for implementation of helicopter hovering, animal positioning, lift protocol (including inspection at 10-foot hover), and landing and detachment methods;
10. Assign lift and receiving teams;
11. Know who will perform cable attachment to the helicopter and overhead frame; and
12. Establish the timetable of events.

He described several airlifts with photos and videos to illustrate his points, including one rescue that didn't even result in an airlift because a nearby band of inmates helped dig a cast horse out of a ditch.

"You never know where help is going to come from," Madigan commented.

"The process of airlifting a horse still carries inherent dangers for the horse and rescue personnel," he concluded. "Risks may be lessened by a program that involves regular training, including a helicopter lift when possible, to increase the team's familiarity and comfort level with the UC Davis Anderson sling or Large Animal Lift and airlift protocols."

Reducing Back Sensitivity

Back pain is often suspected in horses, but most treatments haven't been researched much or at all. Results of a study designed to measure the effects of massage, chiropractic, and phenylbutazone (Bute) on back sensitivity were presented by Kevin Haussler, DVM, DC, PhD,

assistant professor within the Department of Clinical Sciences at Colorado State University.

Researchers used pressure algometry (a spring-loaded device with a rubber-tipped plunger that measures applied pressure on a gauge readout) to measure mechanical nociceptive threshold (MNT)—the pressure at which a horse reacts painfully—at several locations along the spine. This method of objective pain assessment is also used in humans to evaluate pain. A higher MNT means more pressure is required to elicit a response, so the horse is less sensitive (less painful).

COURTESY DR. KEVIN HAUSSLER

Pressure algometry can help researchers measure pain.

Researchers theorized that subclinical back pain is present in all ridden horses, so therapy should lessen that pain and raise MNTs. Thirty-eight healthy adult horses with no history of back pain from four farms were used for this study, which aimed to see which treatment modality raised MNTs the most over the course of a week. The horses were treated as follows:

- Seven horses received Bute (1 g/500 pounds orally every 12 hours) for a week.
- Eight received one chiropractic treatment using a spring-loaded mechanical force instrument at localized regions of joint stiffness, abnormally high muscle tension, or pain (this mechanism ensured a consistent force/velocity of the treatment).
- Eight received one directed massage by a certified massage therapist.
- Seven received no treatment, but continued to be ridden (active controls).
- Eight received no treatment, but were turned out and rested (inactive controls).
- All horses' MNTs were evaluated on Day 0 (before treatment) and at Days 1, 3, and 7 post-treatment.
- The results of MNT evaluation on different sites on each horse were pooled for evaluation, and the numbers were somewhat surprising, said Haussler.
- The Bute group actually had a negative response, with 9% and 8% lower MNTs on Days 1 and 3 compared to Day 0. On Day 7, this group had an 8% higher MNT. Bute is much more effective if given when active inflammation is present, noted Haussler.
- Massage was beneficial throughout the study period, with an 8% higher MNT on Day 1, 9% higher on Day 3, and 12% on Day 7.
- Chiropractic resulted in a slight (1%) decrease in MNT on Day 1, an 11% increase on Day 3, and a 27% increase on Day 7 on average.
- Both active and inactive controls' MNTs fluctuated by about 1% across all days.

"We hypothesized that low-grade back pain or inflammation was present in ridden horses, and we found this to be true; otherwise the MNTs would not have increased in all three treatment groups relative to the two control groups," said Haussler. "Massage was beneficial throughout the study; Bute had negative effects for 3 days, then it had a positive effect; and chiropractic had a negative effect on the first day, but then it had the most positive effects.

"Pressure algometry provides an objective tool to evaluate commonly used, but unproven, treatment modalities for the treatment of back pain," he concluded. "Future studies need to evaluate combined treatment effects and long-term MNT changes in horses with documented back pain."

Investigating Horse Poisoning

When an owner suspects that a horse might have eaten something poisonous, the veterinarian is generally the first person he or she calls. In addition to treating any health problems, that veterinarian is uniquely suited to investigate the cause of the problem as well, said Bob Wright, BSc (Agr), DVM, of the Ontario Ministry of Agriculture, Food and Rural Affairs.

"Private practitioners often lack confidence in their abilities to investigate these cases, but we're ideally suited because we're on farms all the time, we have extensive knowledge of equine behavior, agricultural practices, what's normal in the horse world, feeding practices, etc.," he explained. "Often the primary problem is a change in husbandry that has encouraged horses to seek anything edible.

"Most horses won't touch poisonous plants unless they're forced to," he stated. "Thin pasture sets them up for that. Even poor-quality hay might cause a horse to look for other things to eat. And limited feeding because of weight or insulin resistance worries can make the horse go looking for more to eat."

Pasture plants aren't the only culprit, of course; toxicity from stored feed or supplements, or a combination thereof, can also cause clinical signs.

What signs suggest poisoning? Wright noted that clinical signs are often vague and varied, and they can include laminitis, colic, hair loss, skin lesions, photosensitivity (a skin reaction that can look like sunburn), or, at worst, death.

In an investigation, "I start with body condition scoring and determine whether the horse might be looking for something else to eat, or if there might be a point source of toxin," he said. "And I'll record feeds and feeding practices, including the presence or absence of pasture, supplemental feeding, every scoop and pinch of anything, and the feeding schedule. Management is also important; horses housed individually or limit fed are often at greater risk. Bedding should be evaluated, too."

Feeds are sampled and pastures are carefully walked, but Wright warns that pasture walks can turn up a lot more than you might think. "Most pastures and fencerows contain numerous poisonous plants," he noted. "You need to be able to recognize the most common toxic plants and trees in your area, and know under what circumstances they are toxic (i.e., when they are fresh or frozen). Sometimes horses can eat certain weeds and be okay, and other times it will really hurt them.

"Don't jump to a conclusion about the first toxic plant you find," he advised. "Often the primary cause of the problem is poor-quality feed or underfeeding. Look at those things first, because the toxic weeds will often be there, but the horse might not be eating them. In my experience, improper or poor husbandry practices were a primary contributing factor to the disease problem in more than 50% of recent poison investigations. Too commonly, a single plant in the pasture is blamed when an

underlying problem, such as insufficient high-quality feed, is the primary cause."

Feed and Weed Sampling

Wright tests all feeds, bedding, hay, vitamins, minerals, whole grains, nutraceuticals, pasture, water—anything the horse might consume. Visual examination is the start, identifying things such as whether there are a lot of noncultivated plants (weeds) in hay and what species of grasses/legumes are in the hay. Then he sends carefully collected samples to laboratories for further investigation.

When walking the pasture, he prefers to work alone—without owners or assistants asking questions—so he doesn't miss anything. He'll look for places where trees can be reached by horses near fences and see if any toxic plants appear to have been equine snacks, especially along fencelines.

COURTESY DR. BOB WRIGHT

Photosensitization-type lesions with damage and peeling of the skin are sometimes a clinical sign of poisoning.

"All plant material is suspect," he said. "Look for potential contamination from roadways or neighbors' lawn clippings."

He noted the following common toxin sources:

- Botulism, which often occurs from haylage contamination;
- Clippings from ornamental yew shrubs;
- Poison hemlock, which is common in swampy areas;
- Blister beetles in alfalfa hay, which can cause severe toxicity;
- Oleander leaves;
- Red maple leaves

Public health units can help test the water for contamination, he said. Streams and ponds carry a higher risk of contamination and blue-green algae poisoning than deep wells or city water sources.

"The take-home message is that you've got to know the common acute toxins in your area," he said. "Take charge of the situation and don't rely on the lab to give you a diagnosis. Complete a thorough farm investigation, keep an open mind, and use a common-sense approach to find the inciting cause.

Healthy Horses Workshop

It started as Horseman's Day back in 2000 when the American Association of Equine Practitioners (AAEP) convention was held in San Antonio, Texas. Today it is known as the Healthy Horses Workshop, but the basic concept remains unaltered. During the convention for veterinarians, researchers, and veterinary technicians, one day is set aside for horse owners in the area to listen to experts in the field lecture and demonstrate on specific aspects involved in the overall wellness, training, and care of the horse.

The presenters and their topics, were: Rob Arnott, DVM, a practitioner in Palm City, Fla., dentistry; Heather Heiderich, DVM, associate veterinarian with Florida Equine in Clermont, Fla., acupuncture and chiropractic; Jennifer MacLeay, DVM, PhD, Dipl. ACVIM, assistant professor of large animal medicine at Colorado State University, Understanding the Science of Natural Horsemanship; David Hayes, DVM, owner of The Pet Hospital in Meridian, Idaho, One Step Horsemanship; and Olympic gold medalist David O'Connor giving demonstrations and discussing horsemanship. Following are some comments from some presenters.

Dentistry

Arnott told his listeners that the equine tooth has evolved over million of years to allow the horse to become a grazing animal. The horse, he said, has hypsodont teeth, which means they erupt throughout the horse's lifetime—at the rate of three to four millimeters per year—to compensate for the wear from the daily grinding action when eating.

The hypsodont tooth eventually will be used up, but it can least for 25 to 30 years with proper care. Proper dental care is important, he said, because horses are living longer today than ever as the result of good nutrition and medical care.

Dental care should begin in conjunction with the first "wellness" examination for a newborn foal. A brief visual examination might reveal problems that can be successfully treated early in the animal's life, but they might not be as treatable later on.

Arnott said as the horse grows and matures, regular dental exams should be conducted. "The frequency with which your horse should receive a comprehensive dental exam and dental work is dependent on many factors," he told the group. "As a general rule of thumb, many equine veterinarians recommend at least a brief dental exam biannually until the horse reaches five years of age. During this time there is a tremendous amount of activity going on in your horse's mouth; 24 deciduous teeth erupt and are shed and 36 to 44 permanent teeth erupt. Early identification of any potential problems allows for a faster intervention, which will hopefully minimize the impact of the problem over the lifetime of your companion."

After age five many veterinarians will recommend that a dental exam be performed on an annual basis through age 15. From that point on, he suggested, it would be a good idea to revert to biannual evaluations.

Acupuncture and Chiropractic

Acupuncture can be effective in treating chronic pain and musculoskeletal disorders such as lameness, Heiderich told her listeners. She said it also can be beneficial for eye problems, mild colic, respiratory disorders, anhidrosis (the inability to sweat), behavior problems, anxiety, neurological issues, and immune-related conditions.

Acupuncture, she told the group, is an ancient technique that originated from traditional Chinese medicine and involves putting needles in specific points on the body to treat disease or relieve pain. Those specific places, she said, are known as acupuncture points and can be used to diagnose and treat certain conditions.

These points, she further explained, are specific locations on the surface of the skin where pressure is applied in order to affect the channels through which Qi, defined as life force and energy, flows through the body. "By stimulating these acupuncture points, even those located far from the site of the symptoms, the veterinary acupuncturist can help the animal's body to heal itself by balancing its own vital energies," said Heiderich.

Chiropractic, she said, "is a type of

holistic health care that promotes natural health through adjustments of the joints of the body in an attempt to remove interference from an individual's nervous system," she explained.

The chiropractic approach, she told the group, has been around for 100 years and involves the specific portion of the nervous system housed within the skull and the spinal column. It was discovered, she said, that a malalignment of joints (known as subluxation), especially the vertebrae, adversely alters nerve function in those areas. The goal of the chiropractor is to put the joints back into proper alignment.

Heiderich emphasized that chiropractic care does not replace traditional veterinary medicine, but it works very well in conjunction with it. "The chiropractic adjustment," she said, "is designed to restore correct alignment and full working order, thus, restoring the proper function of the nervous system."

The Language of Gold

O'Connor put on a three-hour clinic at the end of the day, complete with dressage and jumping demonstrations and coupled with advice on how to be successful with your horse. He stayed to autograph copies of the book Life in the Galloping Lane that he and his wife, Karen, authored.

Helping him during his presentation was one of the event horses from the O'Connor Event Team, Tigger Too. The horse had a portion of his colon removed in the third of three colic surgeries to solve a medical problem, but he is still competing at a high level with a young rider, although he must be kept on a special diet.

O'Connor's theme for the day was set forth early when he said: "It is our job, outright, to understand the horse's language, not for them to understand ours."

Horse are very social animals, he said, and if we take them out of an environment where they can socialize with other horses, such as in preparation for a major event where they spend much of their time isolated in a protective box stall, the normal environment must be replaced and "you are it." You should spend time with the horse in a relaxed setting, such as grooming, rather than just in training sessions.

When horses are in a group setting, he said, there is always one that is the "bucket" horse. He described that horse as being the one that, if you were to set out a bucket of grain, would always be the horse that took possession of the bucket because it was number one in that group's pecking order.

O'Connor said in learning to communicate with—and relate to—horses, "you have to be the bucket horse, the leader." However, he pointed out, this position isn't established through force, but rather by establishing a line of communication with the horse that leads to respect.

Using his horse as a prop, O'Connor demonstrated how a horse can be taught what he described as "the four basics" on a longe line. The four basics are moving the forehand, moving the backhand, lowering the head, and backing. "The round pen can be a valuable tool," he said.

O'Connor also told the group that various disciplines in equine competition should keep open minds about what others are doing, rather than ignoring everything but that in which they are involved. He said dressage riders, for example, could learn from cutting horses. He explained that many dressage horses are keyed up and on edge much of the time. The cutting horse, he said, moves in quiet, slow motion when going into the herd and bringing out a cow, but when it starts cutting, it is an exploding dynamo of energy and action. The moment the horse is signaled to cease work, it reverts immediately to a calm state.

O'Connor said he learned much about communicating with an equine companion when he was 11 years of age. He, his mother, and his 13-year-old brother set out on horseback from their home in Maryland and rode on a cross-country odyssey to Oregon.