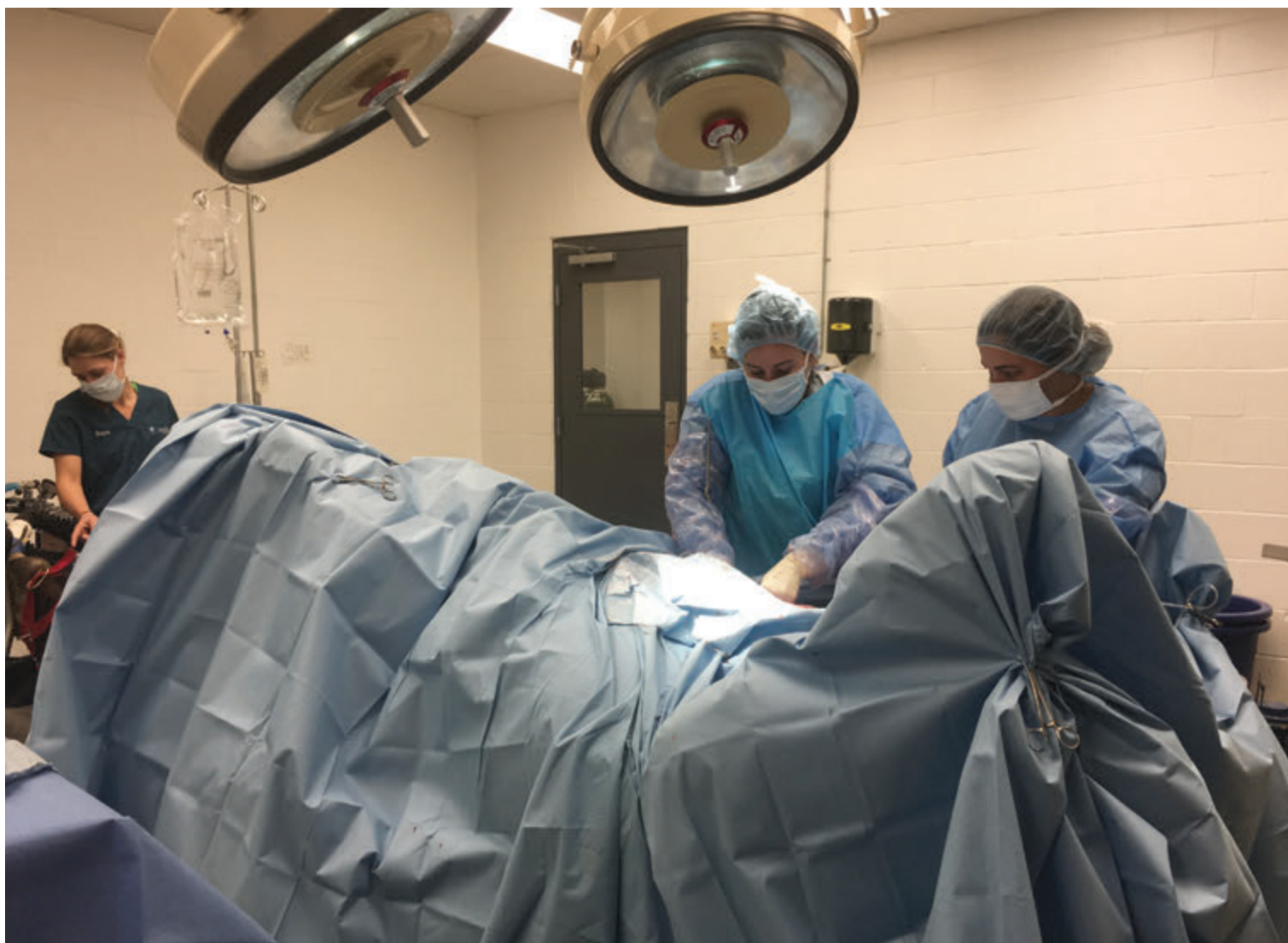


COLIC CONCERNS

PHOTOS COURTESY STEVE FISCH



*What to expect
when your horse
needs colic surgery.*

By Steve Fisch, DVM

YOU'VE JUST ARRIVED HOME AFTER A LONG DAY AT WORK AND WHEN FEEDING YOUR HORSE, you notice he just doesn't seem interested in eating despite the fact that he has not eaten since early that morning. Disinterest in feed is commonly the first of many signs of colic. At this point, you might decide to observe your horse to see if this sign passes, or you might call your veterinarian to examine your horse.

When a veterinarian is presented with a horse showing signs of colic, the first thing he or she does is perform a physical examination, which involves checking the horse's attitude, mucous membranes, heart and respiratory rates, gastrointestinal sounds, rectal temperature and digital pulses.

The veterinarian will examine the horse's abdomen by placing his or her gloved arm in the horse's rectum. During this procedure, the veterinarian is feeling for signs of a feed impaction or distended or displaced intestine. A nasogastric tube will be inserted through the horse's nose into the stomach to evaluate for accumulation of intestinal fluid in the stomach. If the stomach is empty, or nearly empty, of

stomach fluid, the horse is often administered fluid containing electrolytes or a laxative such as mineral oil through the tube. Next, your veterinarian will most likely administer a dose of Banamine to relieve the abdominal pain.

This medical therapy resolves signs of gastrointestinal pain about 80 percent of the time, with 15 percent of the remaining horses showing signs of colic requiring intensive medical therapy at an equine hospital. This could include intramuscular or intravenous medications for pain, additional administration of medication through a nasogastric tube and intravenous fluid therapy.

The final 5 percent of horses require surgery. A surgical candidate is identified several ways including palpation, ultrasonographic examination, a "belly tap" (abdominal centesis) of abdominal fluid, blood work and, rarely, radiographic examination of the abdomen. But the most reliable indication is the horse's lack of response to pain medications.

Ultrasonographic examination of the abdomen is a useful diagnostic tool for colicing horses that allows veterinarians to identify abnormalities such as distended or displaced intestine and increased presence of abdominal fluid. In a belly tap, the fluid is analyzed to determine if intestinal blood flow is seriously impaired.

Typical blood work includes a biochemical profile, a complete blood count (CBC) and concentration of blood lactate. Results of blood work help the veterinarian determine the severity of colic, or if the horse has any underlying problems.

Radiographic examination of the abdomen can be helpful when examining foals or miniature horses. It can be useful to examine the abdomen for the presence of sand or an enterolith, which is a hard, stone-like item, within the large intestine or small colon.

If your veterinarian determines that surgery is necessary, you need to decide whether or not you want to proceed with surgery. Some owners forego surgery for various reasons, such as financial constraints or the advanced age and condition of the horse. If the owner decides surgery is not an option, medical therapy is sometimes continued in the hope that the intestinal insult is reversible, but in most cases the horse must be euthanized for humane reasons.

Going Forward With Surgery

If you elect surgery, you must know it is a big commitment. Colic surgery can range from \$4,000 to \$12,000 or more, depending on what portion of the horse's intestine is involved, the duration of the surgery and complications that can occur after surgery. The cost of a colic surgery performed to resolve a problem of the large or small colon is usually on the lower end of the price range. The cost of a surgery to repair a problem of the small intestine is typically in the higher end of the price range. Horses that undergo surgery to resolve a problem with the large or small colon typically have a better prog-

Opposite page: A well-equipped surgery room like this one at AVS Equine Hospital is crucial to undertaking colic surgery.

Below: A surgery room at AVS Equine Hospital with padded recovery room visible in the background.



nosis for survival and return to work than do horses that undergo surgery to resolve an issue of the small intestine.

If the decision is made to perform surgery, there is a lot of preparation and organization required. The horse must be transported to an equine hospital that is equipped and staffed to perform the surgery. Such a facility will have a well-padded induction and recovery stall for the safety of the horse while the horse is induced and recovered from the surgery along with a large, well-padded surgery table. Most surgery facilities use an anesthetic gas, isoflurane, to keep the horse anesthetized during surgery. To use gas anesthesia, an endotracheal tube is inserted into the horse's trachea, through which the anesthetic gas and oxygen are administered into the horse's lungs. The horse is monitored closely using equipment designed to detect any cardiovascular or respiratory abnormalities such as low blood pressure or low oxygen saturation that can occur when a horse is anesthetized. The team required to handle colic surgery is usually composed of a veterinary surgeon, a surgical assistant, an anesthetist and a technician. There are many things that are needed to perform a colic surgery. Having the right team and the right facility are essential to increase the success of the colic surgery.

Prepping for Surgery

To prepare the horse for surgery, an intravenous catheter is inserted into a jugular vein. The catheter provides easy access for administering medications before, during and after surgery. The horse is administered a NSAID (non-steroidal anti-inflammatory drug), such as Banamine, before it is anesthetized, to relieve pain and help prevent endotoxemia; antibiot-

Below: The two enteroliths on the bottom left were taken out of a barrel horse during the surgery photographed for this article.

Bottom left: Anesthetist and AVS Equine Hospital technician Megan Messick keeps the patient asleep during surgery using the equine anesthesia machine.

Bottom right: Dr. Jennifer Godman and Tylo Farrar deflating the intestine with a suction pump.



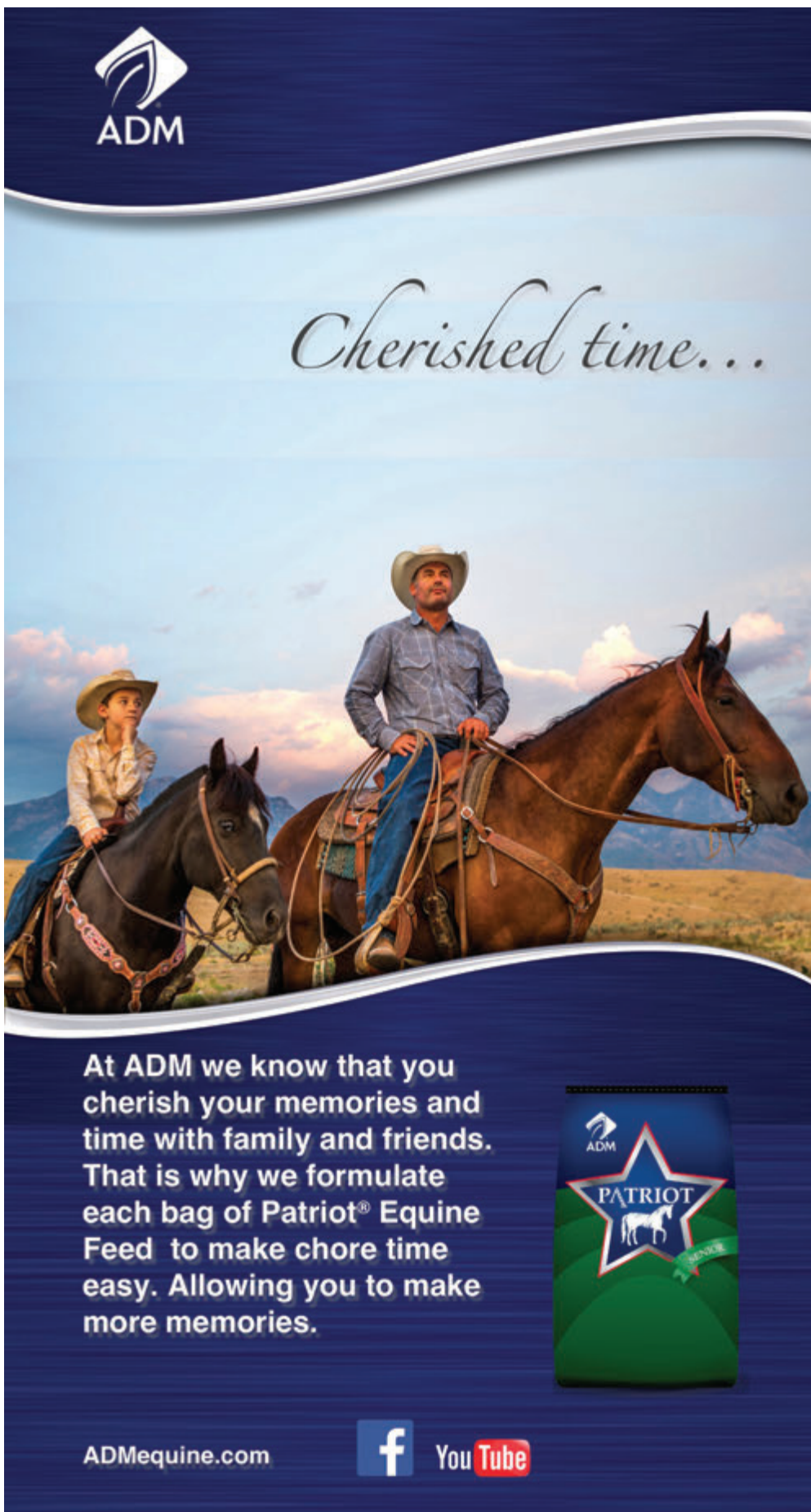
ics, such as penicillin and gentamycin, to prevent infection; and intravenous fluids, to correct dehydration and electrolyte imbalances and maintain cardiovascular function. At that point, the horse is taken to the induction room, where it is anesthetized with an intravenously administered anesthetic agent such as ketamine, xylazine and diazepam. Hobbles are placed around the pasterns, a hoist is connected to the hobbles, and the horse is lifted onto the surgery table and positioned on its back. Hair on the ventral aspect of the horse's abdomen is clipped, and the ventral aspect of the abdomen is prepared for sterile surgery by the surgical technician.

The Surgery

The surgeon typically begins the abdominal incision at the umbilicus and advances the incision forward to make an opening into the abdomen long enough to allow one or two arms to be inserted into the abdomen for exploration of the gastrointestinal tract. The contents of the abdomen are examined in a methodical manner by pulling the intestines out through the incision then replacing the segments of intestine after examining them. About 75 percent of the intestinal tract can be exteriorized. Once the problem is identified, and based on the severity of the case, the horse's prognosis for survival is determined to be good, fair, guarded, poor or grave. This determination depends on which segment of intestine is involved,

Meet the Expert


Dr. Steve Fisch, DVM, owns AVS Equine Hospital, a full-service equine hospital and reproductive center in Tallahassee, Florida, where he, Dr. Jennifer Godman, MRCVS, and Dr. Rachel Lacey treat horses for performance-related lameness, internal medicine, emergency and critical care and reproduction. AVS Equine Hospital provides 24/7/365 emergency service. Fisch is also a racehorse owner and breeder. Their website is avsequinehospital.com and they can be reached at 850-386-3619.



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The AVS Equine Hospital Surgery Team with their patient following a successful procedure to remove two large enteroliths from the horse's colon.

the length of the segment, the health of the vascular supply to that portion of intestine and the ability to correct the problem surgically. If the horse has a good prognosis for survival the surgery is finished, but if the outcome appears to be less than good, the owner is informed so he or she can decide if the surgery should proceed.

When the condition is favorable for the horse's survival, the surgeon repairs the problem, places the intestine back in its normal location within the abdomen and sutures the abdominal incision. The first layer sutured is the abdominal musculature. Secure closure of this layer is important because failure of this layer can result in a hernia or even evisceration (intestines falling out). The suture used to close this layer is absorbable and much larger than that used to close the other layers. A smaller absorbable suture is used to close the subcutaneous tissues,

and the skin is closed with sutures or staples. A sticky film is often applied over the incision to protect the incision from contamination while the horse recovers from anesthesia.

Post-Surgical Procedure

After all the sutures are in place, the horse is disconnected from the anesthetic machine and monitoring equipment and hoisted from the surgery table into a well-padded recovery room. Generally, a horse wakes from anesthesia within an hour after surgery. During this time, the horse is monitored closely by the doctors and technicians so it can be assisted to the standing position if needed. Some horses attempt to stand sooner than they are able, causing them to fall, sometimes repeatedly, which is why a well-padded room is vital. Even when the upmost care is taken to ensure that a horse has a safe recovery, the horse can still suffer a catastrophic injury. Injury during recovery is an inherent risk of anesthetizing a horse.

After the horse is fully recovered from anesthesia, it is walked to its stall. The sticky bandage is removed from the incision and an abdominal bandage applied.

This bandage provides support to the abdomen and prevents contamination of the sutured abdominal incision. The horse is administered fluid therapy intravenously immediately after surgery and the fluids are continued for as long as they are needed.

The time at which a horse is allowed access to water and feed depends on the degree of intestinal damage suffered by the horse. Some horses can be fed and given water within 12 hours of surgery. However, for a horse that has suffered damage to the small intestine, feed and water may be withheld for days.

If the small intestine fails to function normally after surgery, a nasogastric tube is inserted to remove excess intestinal reflux that backs up into the stomach. Lack of progressive motility or function of the small intestine after surgery is known as ileus. This condition is difficult to resolve, leading to rapid escalation of the cost and frustration for both owners and veterinarians. Some horses may have ileus for less than 24 hours, whereas others may experience ileus for days. In the uncommon instance that ileus fails to resolve, euthanasia may be necessary.

Your Horse's Health

When progressive intestinal movement resumes, the nasogastric tube is removed, and the horse is offered water. The horse can be grazed or fed, gradually increasing amounts of hay as long as it is able to expel water normally from the stomach.

Most horses are hospitalized five to 14 days after colic surgery so that they can be monitored for post-operative complications such as incisional infection, which can lead to incisional hernia. Other potential complications include jugular thrombosis from infection at the catheter site, colitis (diarrhea), ileus, laminitis, and intestinal adhesions. Some of these complications are minor whereas others can be life threatening.

After-Care

Hopefully, at this point the surgery has been a success and the horse gets to go home. So what is the recommendation for the horse when it goes home after colic surgery? The horse should be confined to a stall for the first month after returning

Take the time to talk with your veterinarian about colic and colic surgery if you have any additional questions."

home. If the incision has healed without complication, the horse can then be turned out into a small paddock for the next one to two months. If there are no complications and with the advice of the veterinarian, a horse typically can be ridden within three months after surgery.

Advance Consideration

Colic surgery is a huge commitment for an owner, and without a doubt, it can be stressful for everyone involved. An owner

should make decisions about such things while his or her horse is healthy, deciding whether or not they would be willing to have their horse undergo colic surgery if the situation ever presented itself. Making this decision before this stressful and emotional situation arises will help ensure that the decision is a good one.

Veterinarians understand the emotional and financial commitment associated with colic surgery and are aware of the intense effort required to save a colicing horse that requires surgical treatment. At some point, you might be faced with this situation, and your decision will make a big impact on what your veterinarian recommends for treatment and if your horse needs to be referred to a veterinary surgery facility that can perform a colic surgery. Take the time to talk with your veterinarian about colic and colic surgery if you have any additional questions.

Email comments or questions to bhneditorial@cowboypublishing.com.

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