

DEALING WITH HOOF CANKER

Once it gets going, there's no mistaking this potentially lethal malady, but identifying it early and working as part of a hoof-care team offers the best hope of successfully treating it



FROG INVOLVEMENT. (previous page)
A hoof canker, displaying the distinctive cauliflower-like appearance. This type of appearance is indicative of a more advanced state of the condition. (Photo by Dr. B. Ramanathan)

By Pat Tearney, Managing Editor

Equine canker presents an unusual problem for farriers and veterinarians alike. On one hand, it's a condition that seems easily prevented. Horses kept in sanitary conditions, with regular cleaning of stables and changing of bedding and whose feet are regularly maintained, are rarely afflicted with it. On the other hand, once canker does become established in a hoof, it can be very difficult to eradicate, may reoccur even after you think you've gotten rid of it and — in extreme cases — can even result in a horse having to be destroyed.

A Potentially Deadly Condition

"I've seen cases where canker has penetrated all the way into the deep digital flexor tendon," says Scott Morrison, equine veterinarian and head of equine podiatry at Rood & Riddle Equine Hospital in Lexington, Ky. "When it's that involved, it can easily be fatal."

While canker is still thought of by some as a draft horse disease — and these horses do seem to be particularly susceptible to it — veterinarians and farriers see it in many non-draft breeds as well. They also see it in one or multiple feet and in front and hind feet. Some report that it seems more common in horses with long heels and deep sulci near the frogs. But whatever the breed, canker seems to be associated with damp, unsanitary conditions, particularly when there is a high ammonia content (1).

What Causes It?

Like so many equine diseases, an actual cause of canker has yet to be pinned down. Bacterial and fungal infections have been suspected, but not proven. Equine veterinarian Dallas Goble, who has extensive experience



EASILY MANIPULATED. Canker tissue, like that involved with the small canker in this hoof, can be easily manipulated. The tissue may be rubbery to the touch.

with draft horses, points out that while canker is seen more often in drafts, it is unclear whether that means drafts have a predisposition toward the condition or

"The principle consequence of misdiagnosing canker as thrush is that optimal treatment is delayed..."

are simply more likely to be kept in unsanitary conditions and are less likely to have their feet inspected due to their size and the difficulty of lifting them. (2)

A. J. Neumann, an equine veterinarian, notes that injuries to the frog are often present before the onset of canker. He theorizes that the injury helps set up a favorable environment for the growth

of anaerobic bacteria, but stresses that this is a theory and has not been proven. He believes that whether such bacteria are actually a cause of canker or merely a symptom remains unresolved. (3)

What It Is

Goble describes canker as a "proliferative pododermatitis of the frog that may extend to undermine the frog and heel bulbs" in extreme cases. In other words — borrowed from Dr. Frankenstein — it's alive!

Canker is a hypertrophy — or abnormal or excessive growth — of the horn-producing tissues of the foot. (4) That makes it significantly different from thrush, which it is often misdiagnosed as and treated for in its early stages. Thrush is an infection, an invasion of the hoof. Canker is an actual product of the hoof.

(If it helps, you might think of thrush as being an attack on the hoof from an outside agent. Canker — although it may be set in motion by an outside agent — is more like a cancer or tumor, in which something causes the body to attack its own systems).

Another distinction is that thrush destroys tissue around the frog, while in canker, the tissue actually grows — but in an unhealthy, almost out-of-control manner.

Team Approach Is Best

Generally speaking, veterinarians believe that if farriers encounter canker, they should call in a veterinarian or ask the horse owner to do so.

“Once a farrier thinks that the disease has gone beyond thrush, a vet should be involved, because treatment of canker is best done in conjunction with antibiotics — mostly topical, but sometimes systemic as well — says Andrew Parks, a veterinarian and member of the faculty at the School of Veterinary Medicine at the University of Georgia. “Additionally, to do correct debridement, local — if not general — anesthesia and sedation is almost a necessity to do an adequate job. Both of these would dictate that treating canker is an act of veterinary medicine — as debridement would if it is considered an act of surgery, which it probably should be.”

Morrison agrees, pointing out that canker is a problem best treated with a team approach involving the veterinarian, farrier and horse owner.

Identifying Canker

One of the most difficult things about canker, particularly in its early stages, is distinguishing it from thrush. Canker is often misdiagnosed as thrush — and not just by farriers.

“A vet can just as easily make this mistake,” says Parks. “The principle consequence is that optimal treatment is delayed. If it is delayed for a long time, it can make it a lot harder to treat and prolong the treatment.”

Morrison says that while misdiagnosing canker as thrush can put off treatment, treating canker as thrush won't

involve anything that's contraindicated. In other words, if you use a commercially available anti-thrush product on canker, it's not going to make the canker any worse.

But such thrush treatments also seem

“Horse owners need to keep the hoof clean and dry, through regular attention to both the affected hoof and the horse's environment...”

to have no beneficial effect on a canker-infested hoof. Ted S. Stashak, an equine veterinarian at Colorado State University, notes that canker actually seems to thrive

under most thrush treatments. (5)

Farrier Kirk Adkins wrote about a 1966 case in which a warmblood mare was treated for thrush by a veterinarian for 4 months before it was determined that the hoof actually had canker. He noted that the condition kept returning despite thrush treatments that included curetting the proliferative tissue and wrapping it with a mixture of dimethyl sulfoxide with tincture of iodine and formaldehyde. (6) Neumann discussed several case histories in which horses had been misdiagnosed as having thrush. In all of the cases, the thrush treatments were ineffective against the canker, but the horse recovered once a correct diagnosis of canker was made and a proper course of treatment was followed.

Canker can also be identified using



OTHER SIGNS. In addition to the vegetative mass that indicates canker, the foot will have an extremely foul odor. A creamy substance may ooze from the feet and the hoof may have strands of epithelial tissue spreading from the affected area, giving it almost a spider-web appearance.



REMOVING A CANKER. *Cankers are a hypertrophy, or abnormal or excessive growth of the hoof. Part of treating the canker is debriding the hoof of as much of that growth as possible. This can be done using a hoof or loop knife. Care should be taken not to remove healthy tissue and if farriers debride the hoof, they should do so under the supervision of a veterinarian. (Photo by Dr. B. Ramanathan)*

laboratory tests on a biopsy taken from the margin of the affected area, including both normal and abnormal tissue. But Neumann notes that once veterinarians realize they are not dealing with thrush, this test is often not needed because the general appearance and odor makes it easy for the condition to be identified — provided the veterinarian or farrier is familiar with canker.

Fast Spread

Morrison does caution that canker can spread rapidly in some cases. If you have the bad luck to see a horse when the condition is in its very early stages — perhaps believing it to be a case of thrush — and don't see the horse again for 6 to 8 weeks, you may find the canker widespread, especially if lameness or some

other symptom hasn't caught the horse owner's attention.

Stashak points out that since neglect of the feet seems to be involved with the development of canker, it is probably more likely that the condition may not be noticed until it has advanced far enough to be a real problem.

If a farrier is dealing with what seems to be a persistent case of thrush that fails to respond to normally effective treatments, it's a good idea to ask the horse owner to bring in a vet — particularly if the "thrush" seems to be spreading.

Lameness Comes Late

Diagnosing canker is also complicated in that often, in the early stages, a horse suffering from it may not even become lame. Lameness may appear

only after the condition has become very advanced. Neumann says the lameness doesn't typically appear until tissue in the frog and sole are destroyed, exposing more sensitive structures within the hoof to pressure.

Some veterinarians report that a horse may stamp the affected foot as the condition becomes irritable, and in more advanced cases, there may be swelling in

"The farrier's primary role would be to debride the tissue in conjunction with a vet and maintain the conformation of the frog and adjacent bars..."

the pastern and lower limb.

Goble notes that two things that typically distinguish canker from thrush are a very foul, necrotic odor and the presence of granulated tissue that may bleed very easily when manipulated.

Morrison says that the foul odor is caused by the fact that the part of the canker farthest from healthy tissue is actually dying.

FOR MORE ON MAGGOT THERAPY, SEE:

"Maggot Therapy: Old Technique Finds New Life, Pat Tearney, *American Farriers Journal*, May/June, 2004, Pages 32 to 35.

"The Maggot Therapy Project Home Page," www.ucihs.uci.edu/com/pathology/sherman/home_pg.htm.

"Larval Therapy: A Review of Clinical Human and Veterinary Studies," www.worldwidewounds.com/2000/oct/janet-hinshaw/Larval-Therapy-Human-and-Veterinary.html.

Past issues are \$8 each. Photocopies of articles are \$6 each. Some stories may be available only as photocopies. To order, call (800) 645-8455 (U.S. only) or (262) 782-4480.

LASERS AND MAGGOTS

Scott Morrison, veterinarian and head of podiatry at the Rood & Riddle Equine Hospital in Lexington, Ky., has had success in canker cases combining a modern, high-tech treatment with a decidedly low-tech one that dates back to ancient times.

"I've had a lot of success using laser surgery to take off most of the tissue, then using maggot therapy in the debridement," he explains. "Especially when the involvement is deep, the maggots can debride the foot without doing a lot of extra damage."

In maggot therapy, live sterile maggots are packed into a wound and covered with a hospital plate or a bandage. Because the maggots eat only dead tissue, they accomplish the goal of debriding the affected area with minimal damage to healthy tissue that is more common with more invasive methods of debridement.

During the inaugural International Hoof-Care Summit in Cincinnati, Ohio, in February, 2004, Morrison mentioned the effectiveness of the unusual therapy in canker cases.

"Most of the ones (cankers) we get are smaller and are on Thoroughbreds," he said. "We surgically remove them, then laser the surrounding tissue to kill any affected areas. When we have had racehorses laid up, trainers are very anxious to get them back out on the track. Maggot therapy seems to speed up the healing and we're usually able to get these cases back on the track within weeks."

Morrison also uses maggot therapy as a tool in other cases that involve widespread infections or wounds that won't heal. He's even found them effective in cases in which antibiotics were ineffective against an infection.

The benefits and advantages of maggot therapy include:

It's Safe. Maggots eat only dead tissue and don't harm living tissue.

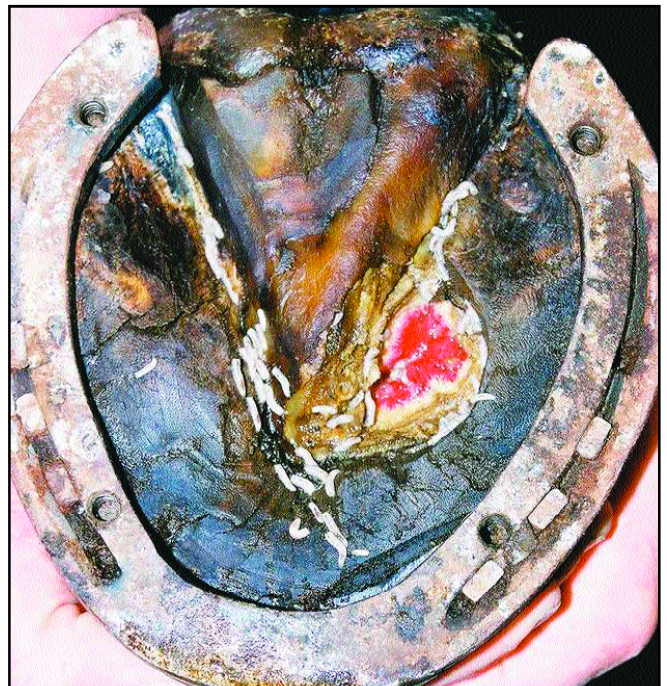
It Promotes Healing. Maggots secrete chemical compounds that promote growth, stimulate granulation of tissue and also stimulate blood vessel growth in the area.

It's Relatively Non-Invasive. Maggots can be introduced into an infection and debride a wound without the type of damage to hoof structures that often occurs in surgery and other forms of debridement.

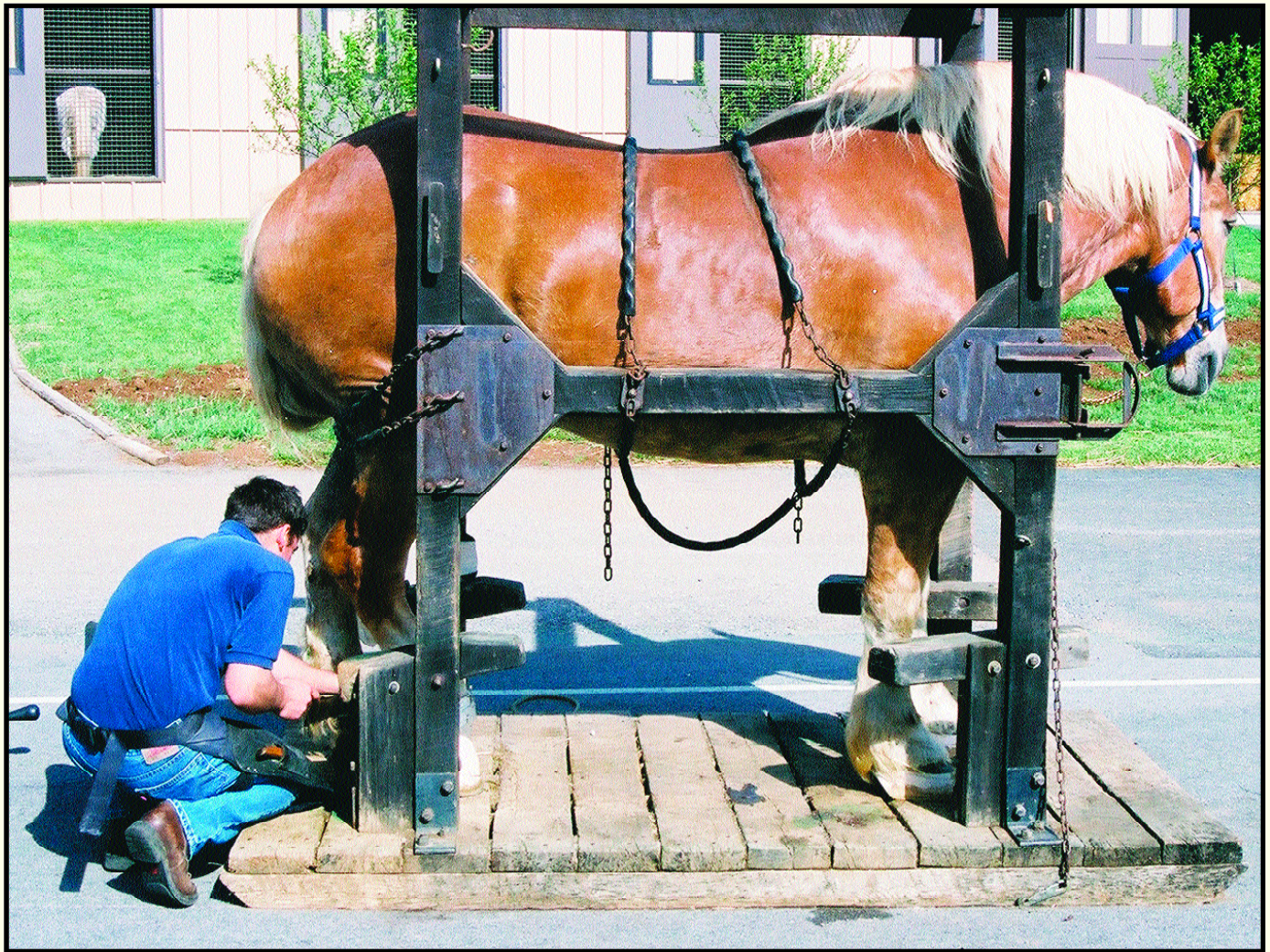
It Can Be Used In Hard-To-Reach Situations. Morrison has used maggots in cases where a cast has been placed over a wound. He drills a small hole in the cast and introduced the maggots into it. The maggots clean the wound of infection while the cast remains in place.

The Therapy Terminates Itself. When a wound has been debrided of dead tissue, the maggots exit the area on their own.

"Maggot therapy seems to speed up the healing and we're able to get these cases back on the track within weeks..."



MAGGOTS AT WORK. In maggot therapy, sterile maggots are packed into an infected area, then covered with a hospital plate or bandage. The maggots liquefy and digest necrotic tissue, kill and ingest bacteria and promote healing. At left, the maggots are concentrated around an infection in the hoof. At right, they are leaving the area after the dead tissue has been removed. Scott Morrison, equine veterinarian and head of podiatry at Rood & Riddle Equine Hospital in Lexington, Ky., has used maggot therapy successfully against infection as well as in treating canker. When treating canker, he first removes the canker, uses a laser to kill tissue in the surrounding area, then packs the areas with maggots beneath a hospital plate.



SECURING A HORSE. During the debriding of a hoof canker, local or general anesthesia is usually required and the horse may need to be secured, as this one is in stocks.

“The canker actually outgrows its own blood supply,” he says. “It’s dying at the edges because of a lack of oxygen.”

As time goes by, canker seems to spread much more than thrush. It extends to areas around the frog and — as Morrison notes — deeper into structures within the hoof. As this occurs, lameness is more likely to appear. It’s at this stage that canker has been described as having a cauliflower-like appearance. A creamy exudate, sometimes compared to cottage cheese in appearance, may ooze from it.

Neumann notes that the horn tissue of the frog may have a rubbery appearance and beneath it the corium may be swollen and bloody. Strands of epithelial tissue may span the affected area, resembling a spider web.

In well-established cases in which it is feared that sensitive inner structures within the hoof may have been affected, a veterinarian may want to radiograph the foot to help determine the extent of damage.

“A number of different topical agents are used in treating canker...”

Historical Treatments

Nuemann reports that in the 19th century, the most common treatment of canker was to strip out the sole and frog on the foot and cauterize the area with acids or a hot iron. This was not partic-

ularly effective and gave way to paring away only affected tissue early in the 20th century. The affected area was dressed daily with drying powders and other treatments. This course of treatment seems to have been an improvement over earlier methods.

Treating Canker Today

Treating canker effectively requires a team approach. A veterinarian is needed to debride the hoof, prescribe and administer antibiotics and decide how the affected area should be wrapped and covered. Farriers are needed for trimming and protective shoeing, often requiring a hospital plate. Some veterinarians may also want farriers to aid in debriding the affected area. Horse owners and grooms



BLEEDING IS COMMON. A foot afflicted with canker may bleed easily even before it is debrided. A tourniquet should be placed around the fetlock before debriding of the hoof begins.

need to be responsible for keeping the hoof clean and dry, through regular attention to both the affected hoof and the horse's environment.

The process begins with cleaning the hoof and removing all the affected tissue. Parks says the farrier and veterinarian should work together in this area.

"The farriers primary role would be to debride the tissue in conjunction with a vet and maintain the conformation of the frog and adjacent bars so that they can drain and that necrotic tissue and feces are not trapped," he says.

Hoof Soaking May Help

Sedation is usually required for this process and in cases where the canker has spread deep into the sensitive structures of the hoof, general anesthetic may be necessary. Some veterinarians do suggest soaking the hoof and treating it in a povidone-iodine soapy solution for a couple of days prior to surgery.

Mike Wildenstein, resident farrier at Cornell University in Ithaca, N.Y., has had good results in presoaking using a

hoof cleanser — such as Clean Trax from Equine Technologies — with an inner tube used as a soaking boot. (7)

Wildenstein says the inner tube, when secured, allows the horse to move, creating a hydraulic action within the hoof which helps clean the hoof. He says it may be necessary to do some trim-

"Caustic compounds are not effective and may actually worsen the condition..."

ming of the sole, frog or hoof wall to ensure that the cleanser can get into the affected area.

Wildenstein believes that debriding the area affected by the canker doesn't do any good until what caused the canker is removed.

Goble cautions that complete debridement of all abnormal tissue is not always possible, particularly if attempting



PACKING THE AREA. After the necrotic tissue is debrided, the wound is packed with sponges, cotton gauze or some other material impregnated with a topical ointment.



COVERING THE CANKER. Many veterinarians prefer to use a hospital plate in the treatment of canker. Here one is attached to a draft horse shoe after the area had been debrided and packed with a topical dressing. The hospital plate helps keep the foot dry and can also be removed for frequent changing of the dressings.

complete debridement is likely to result in exposure of sensitive and uninvolved tissue. Stashak reports that studies seem to indicate that superficial debridement of canker, combined with topical treatment, often seems to produce better results than radical debridement. Therefore some believe that only grossly abnormal tissue should be debrided.

Topical Treatment

After the abnormal tissue is removed, aggressive topical antibiotic therapy is begun. As Parks noted, systematic antibiotic or drug therapy may also be an effective part of treatment.

Veterinarians have reported using a number of different topical agents in treating canker. Goble reports metronidazole seems to be the best such agent but he also reports using tetracycline and sulfapyridine powder with success. He also cautions that caustic compounds are not effective in treating canker and may actually worsen the condi-

tion. He does say it may be possible to use them in the final stages of treatment, after the healing sole has cornified.

Goble also puts horses on trimethoprim-sulfamethoxazole for 3 weeks, starting the day before debriding the hoof. He prefers this over penicillin

“An important aspect in treatment is keeping the hoof in a clean and dry environment...”

because the former can be administered orally.

Stashak reports on a study that had successful outcomes on seven horses treated with chloramphenicol, but he also notes that a 2 percent metronidazole ointment had been successful at a lower cost and did not involve health risks to

humans that can be associated with chloramphenicol. He also reports on a case that was successfully treated using a combination of ketoconazole, rifampin and DMSO, as well as a study in which five horses were successfully treated with parenteral procaine penicillin.

Neumann reports a successful outcome in a case in which he used a calamine powder consisting of 98 percent zinc sulfate and 2 percent ferris sulfate. He also uses metronidazole both topically and internally and offered anecdotal evidence of possible benefit from using a turpentine-pine tar-carbolic aide salve. He also has used Nolvasan packs on the hooves.

In the case Adkins reported, working with a veterinarian, he cleaned the affected areas using a disinfectant soap and then rinsed with a Nolvasan solution. Hydrogen peroxide was used to clean out deep clefts of the sulci around the frog.

The feet were then treated with a mixture of benzoyl peroxide dissolved in acetone, which was applied to the area using a small brush. The feet were wrapped in bandages and changed daily for 2 weeks. After that period, the bandages were changed every 2 days and the feet were treated with an ointment made by mixing 25 milliliters tiramcincolone ointment, 25 milliliters Corona ointment and 4 milliliters of Nolvasan. He reported the mare's feet had healed enough at the end of 30 days for her to be turned out.

Keeping The Hoof Dry

One of the most important aspects in treating this disease is keeping the hoof in a clean and dry environment. Therefore, the foot often will need to be kept in a bandage and shod with a hospital plate. A veterinarian may recommend hoof boots.

Wildenstein uses a shoe that is well

“The average length of treatments was 4.6 weeks, with a range of 2 to 8 weeks...”

seated out to prevent contact with the affected area of the hoof. He then applies a 10-to-1 mixture of tetracycline power mixed with dimethyl sulfoxide gel to the affected area and covers it with felt or cotton, before attaching the treatment plate to the shoe.

Goble calls that use of a shoe and hospital plate “critical,” explaining that the treatment of canker is usually a long-term project. He believes that sole pressure has a positive effect on healing, and a hospital plate will allow the horse to be exercised during treatment, allowing for increased sole pressure while still affording protection. The hospital plate is also required because dressings and treatments will need to be changed frequently — daily in some cases as noted above.

Freezing A Canker

Stephen O’Grady, a Virginia veterinarian, reports having success treating

canker using a combination of debridement followed by cryotherapy.

O’Grady identifies debridement as the most important part of the treatment. He performs this under general or local anesthesia, using a sharp hoof or loop knife, with a tourniquet around the fetlock. He removes all abnormal tissue down to the corium. He then uses cryotherapy to freeze the debrided area until the tissue becomes hard, allows it to thaw, then repeats the freezing procedure.

After the treatment, O’Grady wraps the hoof in dry bandages, which are changed every 2 or 3 days, with care taken to keep the horse in a dry environment. He says topical treatment may be used and recommends mixing metronidazole with Betadine ointment.

O’Grady says a shoe with a treatment plate can also be used, but points out it is sometimes hard to keep the foot as dry as necessary with this method. He recommends repeating the freezing procedure if canker reoccurs. (8)

Horse Owner Involvement

Canker, particularly in advanced cases, is not a “quick fix” type of disorder. It’s important to convince the horse owner and grooms or other barn help that they need to be part of the hoof-care team.

Goble, for instance, says dressing on hooves that have been debrided should be changed daily for the first 10 to 14 days and then as needed. He also says debriding may need to take place several times.

Keeping the affected hoof clean and dry, changing bandages or changing the dressings under a hospital plate can be difficult and time consuming for people who aren’t used to doing it. Farriers and vets can help by spending some time showing horse owners what needs to be done, perhaps standing by the first time or two that they try something like removing the hospital plate from the shoe and replacing it after changing a dressing.

Horse owners may also need to be aware that the full treatment may take weeks. Stashak notes studies showing excellent results in treating canker cases



SHOEING CARE. After a canker has been debrided, the hoof should be shod with a shoe seated out to avoid pressure on affected areas. Note that this shoe has been drilled and tapped for the addition of a hospital plate. One of the horse's other feet had already been shod with a shoe-hospital plate combination.

A COMPLICATED CANKER CASE

The draft horse being worked on in some of the pictures in this report has a particularly bad case of canker according to Scott Morrison, the equine veterinarian who oversaw its care at Rood & Riddles Equine Hospital in Lexington, Ky.

While the photos show Rood & Riddle farrier Aaron Gygart working on the horse's hind limbs, things were actually much more complicated than that.

All Four Feet

"He had canker in all four feet when he was brought in," Morrison recalls. "It was pretty involved."

Morrison says the horse had already been under treatment for canker for some time when he was brought into the hospital.

"A farrier had cut out the necrotic tissue and treated the hooves with antiseptic dressing, but it kept coming back," he recalls.

This was not a case when Morrison could use the maggot therapy described elsewhere in this report.

"That generally works better with smaller cankers," he explains. "When we catch them early and get them taken care of, the maggot therapy works well."

Treating With Heat And Cold

In this case, after cleaning the hooves and sedating the horse, all four feet were debrided. As in the cases where maggot therapy was used, the area around the debrided area was lasered, to kill any resulting infection. Following this, the feet were frozen using cryotherapy in a method similar to that used successfully by equine veterinarian Stephen O'Grady.

The feet were then treated with meronidazole and shod with hospital plates. While Morrison prescribes hospital plates in almost all cases of canker, they were particularly important in this instance because all four feet were involved.

"We really needed to protect and support the feet in this case," he says. "I think you can do a much better job of protecting the treated areas as well as keeping them clean using hospital plates."

through a combination of superficial debridement of the affected area and systematic and topical application of various ointments and antibiotics. The average length of treatments was 4.6 weeks, with a range of from 2 to 8 weeks. Generally speaking, the more wide spread the canker and the more deeply involved the inner structures of the hoof, the longer treatment will take.

The Long-Term Outlook

As with many hoof maladies, the earlier a proper diagnosis is made and a program of treatment is begun, the better the chances for a successful outcome. There seems to be evidence that it is important not to discontinue treatment too early, or to allow the supposedly cured hoof to become neglected again.

While there are many cases of canker being completely cured, there are also

farriers and veterinarians who describe reoccurring cankers, some of which reappeared after long periods of dormancy.

"The real question is this," says Parks. "Does recurrence follow a complete cure or does it follow a period in which the horse is asymptomatic? In other words, is the causal agent really gone or just quiescent waiting for an opportunity to recrudescence? There are some complete cures, so recurrence is not inevitable, but vigilance is most certainly warranted."

Almost everyone seems to agree that canker is much easier to deal with through prevention than it is to cure. Farriers and veterinarians may be doing their clients the biggest favor by making them aware just how dangerous canker can be and under what conditions it seems most likely to flourish.

Farriers who shoe draft horses or other large horses with with long heels and deep

sulci around the frog should caution their clients about the possibility of canker, as should any farriers who find themselves dealing with neglected hooves or horses that are not kept in clean stable conditions.

Farriers should stress to horse owners the importance of regularly checking their horse's feet and cleaning them out, particularly when the horse involved is a big animal with feet that owners may be reluctant to pick up. The increasing popularity of various draft-crosses for riding would seem to make such an emphasis even more important.

Farriers and veterinarians should also keep in mind the possibility of canker, even though it remains relatively rare. Hoof-care professionals working in climates where warm, wet weather adds to the danger may want to consider early biopsies in cases of persistent thrush that don't seem to respond to usual thrush treatments.

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Hospital plates are a useful tool for a farrier who is treating canker. They are designed to provide protection to the hoof, while also making it easier for a horse owner to change dressing on the injured foot — something that may need to be done daily, especially during the early stages of treatment. But picking up hooves and changing a hospital plate isn't that easy for someone without experience. This hospital plate is designed to make that task a little easier. This is from the book, *Better Basics, Better Horseshoing*, by Chris Gregory. This new book brings together some of Gregory's best "Back To Basics" articles that have appeared in the pages of *American Farriers Journal*.

BUILDING A USER-FRIENDLY HOSPITAL PLATE

**Single-bolt adaptation makes its removal easier
for horse owners who need to apply hoof medication**

By Chris Gregory, CJF, FWCF

ANYTIME THE SENSITIVE structures on the bottom of the horse's foot are exposed, it is a good idea to protect them. There are various ways to protect the

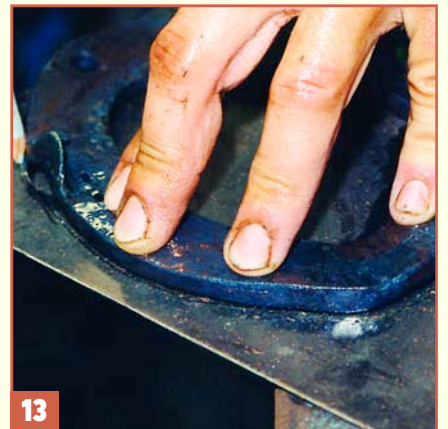
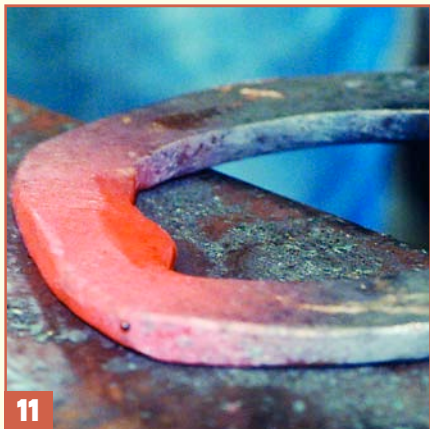
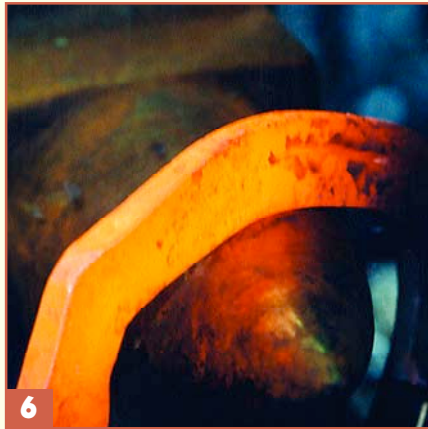
"Every farrier will encounter a time when the hospital plate is the ideal method..."

foot, including bandages and pads, however almost every farrier will encounter a time when the hospital plate is the ideal method.

Limiting The Bolts

Traditionally the hospital plate is attached with four bolts. This is a very secure way to attach the plate, but many horse owners do not have the stamina or skill needed to hold the foot up and remove four bolts to clean the hoof,







apply medication or some other treatment, then reattach the plate. The easier you can make this job for your customer, the more likely he or she will do it. That's success not just for the horse, but for you as well.

This hospital plate is not a new idea. Several years ago, I attended a Dave Farley clinic in Arkansas. He had a collection of shoes with him, and this hospital plate was among them. Since then, I have used it on countless horses.

The horse featured here was suffering chronic infection from founder. You can see that it is in the later stages (Figure 1), but that there had been the appearance of a slice in the sole. The founder was a result of the horse having to bear weight on this foot while the opposite foot was healing from severe damage incurred from kicking a stall.

Getting Started

The one-bolt hospital plate requires a straight bar shoe. Begin with a normal

straight bar (Figures 2 to 7). Once it is built, make a pair of quarter clips (Figure 8) and a fairly abrupt rocker toe (Figure 9). Heat the bar and forge a bevel on the hoof surface (Figures 10, 11 and 12).

Preparing The Plate

Once the shoe is complete, draw around the shoe on the material you are going to use to make the plate (Figure 13). Mark it cold with your hot-cut

(Figures 17 and 18). Place the hot plate on the bar shoe and bend it to match the rocker toe and clip areas of the shoe (Figures 19 and 20).

Place the shoe and plate in a vise and rasp the plate to match the shoe (Figures 21 and 22). Once the plate is finished, it should look like Figure 23.

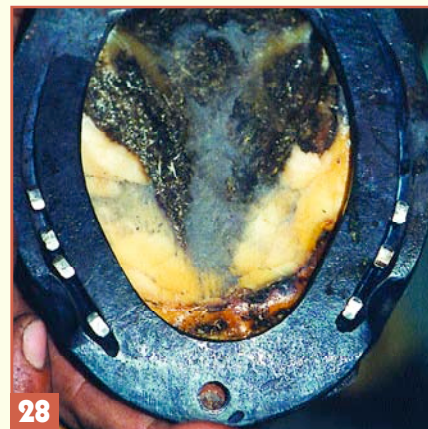
All that is left to finish the shoe is to tap the hole (Figure 24). I generally punch the shoe with a 5/16-inch punch

“The easier I can make this job for the customer, the more likely he or she will do it..”

(Figure 14). Heat the plate and cut it out (Figure 15).

Once the plate is cut out, you need to cut the flange on the bottom of the plate to fit into the bevel you forged on the bar (Figure 16). Reheat the plate and bend the flange so that it fits into the bar

and tap with a 3/8-inch tap. Use a narrow center punch to mark the plate (Figure 25) and drill a hole for the bolt in the plate. The plate should now slide into position easily, and once you thread the bolt into the hole, your hospital plate is finished (Figure 26).

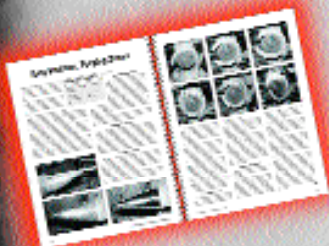


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Putting The Shoe In Place

Hot fit the foot (Figure 27) and nail it (Figure 28). Clinch the foot and rasp the nail heads off from the ground side (Figure 29). Be certain to clinch prior to rasping off the nail heads. If you get the order reversed, you may push the nails out of the holes during the clinching process.

Apply whatever medication is needed for the foot (Figure 30). Figure 31 shows the hands of the horse owner placing gauze into the shoe. Slide the plate into position (Figure 32) and place the bolt in the hole at the toe (Figure 33). The rocker toe should be enough that the foot is still flat on the ground, even

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though the bolt head is sticking out past the shoe at the toe (Figure 34).

I have used this type of hospital plate with great success. Customers who have experience with this type of hospital plate

and the traditional, four-bolt kind really appreciate the user-friendly nature of the one-bolt system. I'd suggest making a couple in the shop for practice before doing the first one at the horse.

FOR MORE ON CANKER, SEE:

"Equine Canker: A New Look At An Old Disease," David Wilson, *American Farriers Journal*, July/August, 1994, Pages 9 to 12.

"Lameness Research Takes Center Stage," Frank Lessiter, *American Farriers Journal*, January/February, 1995, Pages 55 to 58.

"Questions For The Vet: Canker And Foundered Feet," *American Farriers Journal*, January/ February, 1992, Page 54 to 59.

FOR MORE ON HOPITAL PLATES, SEE:

"Fighting Founder With Hospital Plates," Baker Chapman, *American Farriers Journal*, December, 2001, Pages 24 to 28.

"The Right Shoe: "Peekaboo Shoe Vs. Hospital Plates," Walter Koepisch, Jr., *American Farriers Journal*, December, 2003, Pages 10 to 11.

"Hospital Plates Effective For Managment Of Laminitis, Other Hoof Problems," Robert Sigafos, *American Farriers Journal*, September/October, 2002, Pages 77 to 80.

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