Equine Self Mutilation

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By Sue McDonnell, PhD, Certified AAB | Mar 1, 2000 | Article, Behavior

It’s a beautiful winter weekend, and finally you have a full morning to spend at the barn. You’re happily grooming your horse when you notice a cluster of patches of wet hair on his side. Peculiar pattern to the wet hairs — all are lying forward as if combed with a wet brush. Oh well, odd but probably nothing, you think. But wait, some of the wet spots have hairs missing or chopped off bluntly. You check the other side, and there you find some more patches, like the wet ones, but as if they have now dried. What’s going on? There are more of these patches on the left side than on the right side, but they all are in the same area of the abdomen, from the ribs to the stifle.

Just then the barn manager comes in all excited. She’s glad you’re there early today, because when she was feeding this morning, she found your horse spinning in his stall, tearing at his blanket and biting at his sides. Her first reaction was to scream at him to stop–and he did. She figured the blanket was the problem, maybe it was rubbing or pinching him under the leg. She got some help to investigate. They couldn’t find anything out of order with the straps or the blanket, but took it off anyway. Then, just as they closed the stall door, he really went nuts, spinning in a very tight circle, biting his left flank. With each bite, he squealed and kicked out. As he was turning and nipping, he sometimes was bucking and squealing. They were too scared to open the door. He went on for what seemed like forever, as if he wouldn’t stop until he tore up the stall or killed himself. Then he gradually came out of it.

“When we screamed his name, he turned toward the stall door, looking at us with a sort of a worried, glassy eye, like he didn’t know what was happening. We threw him his hay, and he’s been pretty quiet since.”

You run your fingers over the wet areas on his flanks and feel some crusty bumps on the underlying skin. Separating the hairs, you can feel little marks in the skin — anywhere from one-quarter to one inch in diameter. Some are fresh nicks, some are scabbed over, some look healed. The rest of his coat is unblemished. No marks, no wet spots, no chopped or missing clumps of hair other than on his flanks and over his ribs.

So what is going on here?

This behavior commonly is called flank biting or flank sucking. The biting is one aspect of a cluster of behaviors called self-mutilation, because the horse likely will incur serious self-injury during these explosive episodes.

In addition to biting the flanks, self-mutilation sequences can include seemingly uncontrollable violent behavior. From horse to horse, the sequence and form can vary, but most typically includes spinning in circles, bucking, and kicking out with one or both back legs while nipping at the flank, shoulders, or chest. In the photos at the bottom of page 76, there is an example of a horse biting more violently at his chest, and a resulting chest avulsion.

In extreme cases, the horse can violently lunge its body or head into a wall or other solid object. More rarely, a horse might "throw itself" to the ground (from standing to lateral recumbency). A single episode can last from a few seconds to several minutes, uninterrupted. The horse can work up a lather and steam in cool weather. Episodes usually occur in a series separated by a few seconds to a few minutes over a period of minutes, to hours. The total daily time spent self-mutilating can vary from a few seconds to an hour or more. In addition to bite wounds, the most common injuries are to the legs and feet from the spinning and kicking.

Self-mutilation behavior of one form or another has been described in many different species, including humans. Dog and cats lick and chew on their paws or tails. People do all sorts of things–pull out their hair, bite their fingernails or lips, scratch themselves, or deliberately inflict burns, cuts, or other wounds.

People who have seen a horse in the midst of attacking itself often describe the episodes as the most bizarre animal behavior they ever have seen. Mental health professionals or others with first-hand experience with human psychopathology often ask whether this might be the horse equivalent of severe neurotic or even truly psychotic behavior seen in people. For example, Dr. Nicholas Dodman, a veterinary animal behavior specialist at Tufts New England Veterinary College, said he has wondered whether certain forms of self-mutilation in horses might be similar to Tourette's Syndrome in humans. There are some interesting similarities, and some clear differences.

Since self-mutilation occurs in other animal species and a variety of human psychopathologic syndromes, it's probably too early to conclude that any of the self-mutilation seen in horses represents the same pathology as Tourette's in people. In other species, the trend in clinical veterinary behavior has been to label self-mutilative behavior "obsessive-compulsive disorder," or OCD.

This syndrome in humans has two distinct components. One component is the compulsive, repetitive behavior, such as repeatedly checking to see if the stove has been left on. The other component is the accompanying obsessive thoughts or worries, such as concerns about being caught in a burning building. Often the thoughts or worries are related to the compulsive behavior and logically appear to drive it.

In the case of animals, we don't know whether they think or worry, so this label of obsessive-compulsive behavior might be too elaborate. Some behaviorists now are calling these behaviors in animals simply compulsive behavior.

There are at least three distinct types of self-mutilative behavior in horses. One type is simply an "extreme" behavioral response to physical discomfort. We know that physical pain alone, particularly in the abdominal area, can evoke behavior similar to that of the horse in the situation described above. We know it is physical pain because coincident with finding and correcting an apparently or potentially painful condition, the self-mutilative behavior stops without any other treatment. For example, the classic behavior we associate with colic or early labor in broodmares involves turning the head back toward the flank, either looking or nipping at the flank, and sometimes kicking out. Although it is not as common, some horses' behavioral response to physical pain has more violent episodes, including spinning, kicking, bucking, and serious self- biting. Some of the less-common physical root causes for violently colic-like behavior have been a twisted testicular cord, an abdominal abscess, urethral tears, or gastric ulcers. These sometimes can be intermittent and difficult to find. This is in contrast to the other types of self-mutilation. When there is a physical cause, there often is an increase in the behavior in association with work. The most explosive episodes might be during or soon after work. As time goes on, the horse might anticipate the exacerbation of pain with work, so can become agitated when being prepared for work.

A second type of self-mutilation is what could be called self-directed intermale aggression. This type occurs in stallions and geldings. The sequence follows what two stallions at liberty would do when meeting, except that the stallion himself is the target of his own behavior. When stallions meet, they typically stand parallel to one another, head-to-tail. They investigate each other's flank area, usually sniffing and nipping at the flank and genitals. The encounter can be pretty noisy. The stallions usually squeal and kick out with each nip or bite. They also might spin, buck, stomp, and romp, going

around one another in circles. The sniffing of each other's flank and genitals, and of each other's feces, is an important trigger for the nipping and biting.

Sometimes the self-mutilation process begins over a stud pile. In the stallion which is sniffing and biting himself, each episode begins with the sniffing of his own feces or feces of other stallions in shared turn-out facilities. Oily body residues on stall walls, fences, or doorways can trigger episodes. We have seen several cases of self-mutilation that appeared to have started when a stallion was exposed to the smelly residues of another stallion in a trailer.

Unlike the pain-related self-mutilation, this type usually develops over a period of months. It can start as early as the first year of life or as late as the teens. It typically continues for the life of the stallion.

A third type of self-mutilation is a more quiet, rhythmic, repetitive nipping at various areas of the body. It looks similar to stereotypic weaving or stall walking in that it appears that the horse has nothing better to do. By formal definition, stereotypic behavior is characterized by repetitive, highly stylized, and seemingly functionless movements and sequences of movements.

Spanning the top of pages 76 and 77 is a series of photos of a stallion which had a very fixed pattern of biting himself from flank to shoulder to chest to opposite shoulder to opposite flank and on and on. He did it at the same place in the pasture at the same time of day for the same length of time, just as some horses walk their stall in very complex and fixed patterns day after day.

Stereotypies occur in one form or another in all captive wild and domestic animal species, and are a common feature of human psychopathology, as well as developmental and neurologic disorders. Subadequate environment and nutrition seem to be the major factors predisposing animals to stereotypies.

In horses, the classic stereotypies are cribbing, weaving, pacing, stall-circling, and head-shaking. Certainly, in cases in which a physical root cause is not apparent, self-mutilation fits this definition of a stereotypy. Of course, the performance of a stereotypy, no matter what the initial precipitating cause, is self-rewarding. Endorphins are released, and they can be positive reinforcement sufficient to sustain the behavior as a habit. We often wonder if self-mutilation, for which we can find no contemporary physical cause and that doesn't quite fit the self-directed intermale aggression type, might have started during a period of physical discomfort, but now is a lingering habit.

How Common Is Self-Mutilation?

It's very difficult to estimate how many horses suffer from self-mutilation. My guess would be that the problem occurs in less than 0.005% of all horses. Most equine veterinarians might see only a few cases in their entire careers. Self-mutilation can occur in stallions, mares, and geldings. Of course, the self-directed intermale aggression type is almost always in stallions and geldings. We don't know whether or not the predisposition for self-mutilation is highly heritable. We know that the behavior probably is the result of domestic environmental and nutritional factors, in that it apparently does not occur in wild or feral horses.

Where Does It Hurt?

For those horses whose self-mutilation episodes looks like a violent form of colic, it is critical to look for and immediately treat any possible causes of discomfort. Except for classic colic, this often is easier said than done. It sometimes can be tough to find (see the boxed table of examples of possible physical causes of discomfort on page 74). No matter what the slickest animal psychic would have us believe, our animals, like human infants, have only their non-verbal behavior as clues to tell us where they hurt. After years of losing sleep trying to find causes of self-mutilation in horses, I think our best hope for figuring out potential physical sources of discomfort that might be provoking episodes of self-mutilation turns out to be pretty inexpensive and very low tech. It is simply to critically observe the horse for hours at a time. This can be done live, but there are many advantages to video recording the behavior.

Long, continuous observation periods allow the horse to go back to its ongoing behavior, as opposed to being distracted by human presence. Long observation periods also will enable you to see how the self-mutilation episodes start and stop, and what in the environment might provoke them. When casually watching a self-mutilating horse, your attention is drawn to the noisy, more violent episodes. When watching the horse continually for hours, you likely will see mild and violent episodes. The milder episodes often are more useful than the explosive episodes in localizing potential sites of discomfort.

Once you have a clue as to where the pain might be, you can be aggressive with veterinary diagnostics. This might include classic radiography, scintigraphy, endoscopy, and ultrasound imaging.

Even if it appears to be a classic stereotypy, or a psychological behavior problem, we should never stop looking for a possible physical cause. A great example illustrating this point in horses is the case of head shaking behavior. For many years, veterinarians have looked for possible sources of discomfort in cases of head shaking. Many times a source could be found–things like ear mites, tooth abcess, guttural pouch problems, or allergies. But many times, nothing physical could be found and it was assumed that the

problem was psychological. Only a few years ago did scientists in the United Kingdom and California find that some headshaking in horses appears to be induced by bright light or loud sound. It is a real physical problem involving hyperactivation of a nerve tract that is physically irritating to the horse. (See The Horse of October 1996, page 70.)

What Else Can You Do?

The best outcome of immediate and aggressive veterinary evaluation is to identify and quickly treat a physical cause. An equine behavior specialist can be a valuable member of a veterinary team. By evaluating the behavior, possible sites of discomfort can be identified, and an opinion can be offered on primary or secondary psychological components to the episodes. If physical discomfort is eliminated, the self-mutilation typically stops almost immediately. We have seen cases in which months or years passed before a root physical cause was found, in which the self-mutilation stopped immediately when the discomfort was alleviated.

Unfortunately, often a physical cause is not found and the conclusion is drawn that this is the self-directed intermale aggression type, or is simply a stereotypy. Over the years, mostly by trial-and-error, we have found a number of different treatment approaches, each of which typically is either helpful, or at least does not exacerbate the self-mutilation. Most are simple management changes that seem to work by distracting the animal to another activity; some involve sophisticated pharmacology.

Physical restraint Traditionally, a large percentage of the effort, thought, and expense of treatment of self-mutilation has involved various methods of physically preventing or discouraging the behavior. This often is the first thing you will want to consider while further evaluation is organized. Special neck cradles and side poles, grazing muzzles, bibs, and protective wraps and blankets can be used to prevent injury. Physical restraint alone rarely “cures” self-mutilation. All too often when the horse is effectively restrained from performing one behavior, another problem behavior develops. If biting is prevented, the horse might start kicking or lunging into walls. In the short term, while looking for and treating possible causes, it is wise to creatively work at keeping the animal from further injury.

For any restraint, care must to taken in devising materials that don’t cause new rub sores or other irritations. My favorite of all the restraints for self-biting is the grazing basket shown on page 78. The horse effectively can eat hay and grass through the openings. The basket inhibits a substantial grab of flesh, although the persistent horse still can work a small nip of hair or skin through the basket openings.

Social, feeding, and work distractions Typically, the most effective management changes are those that seem to provide motivation for a substitute behavior or a strong

distraction to focus on something else. For a stallion, self-mutilation sometimes can be relieved significantly if the stallion is turned out to live in a large pasture with one or more mares. In that situation, the stallion becomes a harem stallion with great responsibility to herd and defend the mares. Those harem maintenance behaviors seem to occupy the stallion's time and distract him from the problem behavior. If he is not supplemented with concentrated feed, his grazing and resting fully occupy the remainder of his time.

Of course, this often is not a plausible solution for the fancy breeding or busy performing stallion. There might be some difficulty and danger in taking such a stallion or his mares in and out of such a situation. Most stallions will not want to leave their mares. But to the extent that the stallion can be distracted socially, in some cases it is worth trying.

Horses appear to find meaningful social companionship from animals of other species. Donkeys, goats, rabbits, and even chickens are useful as stall or pasture companions. In my experience with chickens as stall companions for self-mutilators, it seems that the horse sometimes is reluctant to move around the stall, lest it cause the chicken to scurry and flutter. Some stallions also seem distracted by their effort to avoid stepping on the chicken.

Another effective distraction for many self-mutilators is a vigorous appetite. A change in diet from one heavy with grain to one of grass and grass hay only (without any grain or richer forage) often can lead to a remarkable change in behavior. The horse might spend almost all of its time eating and resting, with seemingly no time for anything else, including self-mutilation. A grazing muzzle like the one described earlier can effectively prolong the eating time.

The all-grass, no-grain diet might have other benefits for behavior. We know from work in horses and other grazing species that grain diets predispose an animal to stereotypies and other behavior problems. The grain diet might alter the brain neurochemistry, setting the animal up for developing abnormal behavior. We long have appreciated that grain increases the risk of behavior problems and high-forage diets reduce the risk of behavior problems.

Work For the self-directed intermale aggression type of self-mutilation, the behavior seldom is seen during work. Moderate work also stimulates appetite. A horse which works one to two hours a day and which is fed ad lib grass and grass hay almost always will spend 60% or more of his time eating and 20% of his time resting. This approaches the natural time budget of a horse at liberty or in the wild. Breeding work sometimes reduces and sometimes increases the frequency and intensity of self-mutilation.

Gelding stallions? For the self-directed intermale aggression type self-mutilating stallions, some veterinarians recommend castration, and in some cases it works very well. Unfortunately, it also can get worse or won't change. When advising clients on this option, I always am reminded of the dozen or so geldings we have known which seemed normal as colts, but were first seen to self-mutilate soon after castration.

Medications Pharmacologic aids, which in some cases have appeared helpful in relieving self-mutilation, include long-acting tranquilizers, tricyclic anti-depressants such as imipramine and clomipramine, progesterone, and the nutritional supplement l-tryptophan. Some of these have been discovered by accident and some are based on theories of brain neurochemistry. None of these medications alone or in combination is likely to eliminate self-mutilation completely. The particular choice depends on the severity and nature of the self-mutilation. In combination with management changes, medications often are judged to be valuable parts of the plan to eliminate self-mutilation. The tendency is for people to over-estimate their potential. An important concern for clinicians who medicate the horse early in the evaluation is that the drugs might help a horse to cope with physical discomfort, thus could effectively mask the symptoms and delay diagnosis of a treatable physical problem.

Other treatment tips For horses whose self-mutilation seems to be triggered by male odors and feces, any number of creative steps can be taken to reduce the stimulation. Odor-masking preparations can be applied to the nostrils, the horse can be bathed frequently, and feces and oily residues can be removed from stalls and pastures. Sometimes, the sight or smell of another stallion seems to provoke episodes. Housing changes can reduce the frequency and severity of self-mutilation.

In our clinic we find that long-term video surveillance of the horse can reveal events and situations that provoke the behavior. Often these "provokers" can be simply and inexpensively eliminated. For example, occasionally you find a horse which only bites himself when the feed cart is coming down the aisle, or when other stallions are on their way to the breeding shed.

Tie-stalls For reasons I'm not sure we ever will understand, simply housing a horse in a tie-stall can effectively eliminate self-mutilation. Recent work with tie-stalled horses in the pregnant mare urine industry has indicated that abnormal behavior in general is very low in tie-stalled horses compared to box-stalled horses.

No one treatment alone is likely to be effective. The cases for which the greatest relief has been achieved have involved simultaneously implementing as many of the treatment steps as possible. We recommend spending time with your veterinarian to develop a custom plan based on everything you know about the horse. Once everything is organized, we recommend implementing all the changes and treatments at once. This

is not good science in that you might never know which of the changes were most effective, but experience has taught us that major change often is more effective than a systematic, step-wise approach.

In summary, we really know very little about the causes of self-mutilation, other than physical discomfort. It is important to realize that except for those cases for which a physical discomfort can be identified and eliminated, the self-mutilation likely will never be cured. The current treatments for the self-directed intermale aggression and stereotypy types of self-mutilation rarely effect a cure. At best, diligent attention and care will keep the levels of injury low.