

Feeling The Pinch Of Kissing Spines

This vertebral disorder can be a serious pain in the back for your horse, but proper management can make a world of difference.

Stacey Reap

As afflicted people, be they couch jockeys or sports nuts, can testify, back pain can be a constant source of discomfort in day-to-day living, let alone in the performance of more ambitious athletic endeavors. The same holds true for your horse.

The cause of many equine performance issues can be traced to an unidentified back problem and pinpointing and alleviating the source of the pain can be a frustrating process.

One of the numerous maladies that can befall this critical region of your horse's anatomy is known as "kissing spines." It's relatively easy to diagnose, but successfully managing the condition requires a combined effort by veterinarian and horse owner alike.

Technically speaking, kissing spines is the impingement of the dorsal spinous processes of the horse's back. If you're looking at a horse

from the side, the dorsal spinous processes are the parts of the vertebral column that project skyward, most evident where they form the slope of the withers. Under normal circumstances, the processes of adjacent vertebrae don't touch each other, but when the "right" combination of conformation and injury cause them to contact one another, a kissing spine is born.

This impingement results in bone inflammation and pain, which sets the horse into a vicious circle known as a "pain cycle."

"When something is injured, the body's natural response is to spasm or contract the muscles to protect the area so it doesn't move anymore. It's an involuntary response," said Mark Revenaugh DVM, of the Equine Performance Institute, in Beaver Creek, Ore. "The problem is, when these muscles contract [in the case of kissing spines], generally speaking, it pulls those spinous processes closer together, which causes it to be more painful,

which causes more muscle spasm, which draws them closer together. It's this cyclical scenario, and all of the management and therapy techniques revolve around intervening in the pain cycle."

Revenaugh, who accompanied the United States Equestrian Team to the 2000 Olympic Games in Sydney, Australia, explained the two components believed to contribute to the incidence of kissing spines: anatomy and injury.

"Genetically, in some horses these spaces [between spinous processes] are narrower than in a normal horse, so that sets the stage a little bit," he said. "The second component is that some type of accident happens, a back injury, something that drives those guys together that can instigate the pain cycle."

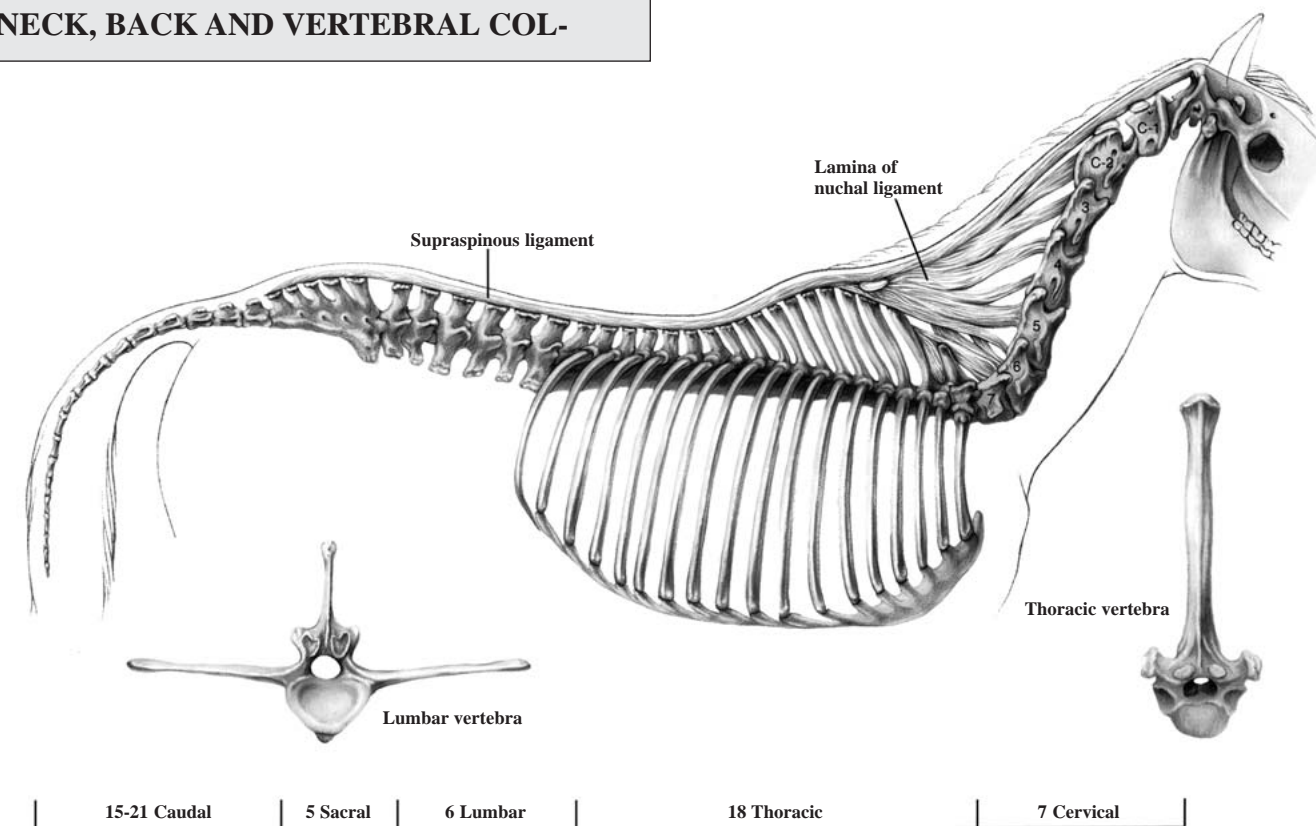
Any number of injuries can start a horse down this road, but one such cause is the tearing of the interspinous ligament, which holds two vertebrae in proper alignment. "You can see on a radiograph, a little bone spur, even a chunk of bone on the dorsal spinous process will come off with that ligament when it's ripped," said Revenaugh.

As neighboring bones continue to contact and traumatize each other, a condition called sclerosis can occur, where the bone tissue thickens and hardens.

"When there's a recurring encounter between the adjacent bones, you can start to see the bone remodel in the area where they're hitting. It starts to hypermineralize," he said.

The cause of many equine performance issues can be traced to back problems, one of which is kissing spines.

NECK, BACK AND VERTEBRAL COL-



(Illustration by Susan E. Habel/Equistar Publication)

Kissing spines is most commonly found in the mid-to-lower thoracic region of the back, which is the area where the saddle typically rests.

"Beyond that, sometimes you'll see areas of demineralization, where the bone is being resorbed. Finally, there are cases of actual fusion—which I find to be very uncommon—where two bones become one."

► Back Basics

With all of this nastiness occurring in an affected horse's back, he's got to be one unhappy camper, right? Probably, but that doesn't mean his owner is going to pick up on it. As is the case with many back problems, a horse with kissing spines probably won't be lame, but he may exhibit any of a wide range of signs that can point to an equally wide spectrum of causative agents.

"A horse might not step as far forward with his hind legs, but very seldom will you see a horse that's lame because of this," said Revenaugh. "And just because a horse responds to a brush on his back or doesn't like a saddle doesn't mean it's kissing spines. If he doesn't like a saddle, look at the saddle and make sure that's not the problem. Back pain in horses a lot of times is a challenge to the veterinarian because there are so many things that can be going on."

That being said, there are a number of clinical signs of kissing spines that may or may not be present and may indicate other problems instead of or in addition to impinging dorsal spinous processes.

A lot of horses suffering from the condi-

tion will have poorly defined topline, although Revenaugh said he's seen it present in well-muscled specimens as well. In the case of the former, the horses don't develop the proper back musculature because those few muscles in pain-cycle spasm are holding the rest of the muscles in gridlock, preventing them from moving and developing properly.

"They're the muscles you want to develop, the ones that allow the horse to support the rider's weight," he said. "You tend to see horses that have very tense back muscles, poorly developed back muscles, that they tend to invert their backs to protect themselves. Performance-wise, a lot will resent the rider's weight or even just putting on a saddle. They won't want to stretch forward and stretch their topline because they're trying to protect themselves."

Revenaugh has seen cases where some riders will complain that their own backs hurt after riding a horse with kissing spines because there's so little give in the horse's back.

A problem with any one aspect of the spine's complex range of motion can wreak havoc on the whole, which can make identifying the origin of a problem difficult.

"The dorsal spinous process is only one part of the vertebral unit. The vertebra articulate with one another, and they are supposed to have a very elaborate range of motion, including rotation, flexion, compression and extension. There are a lot of things the back and the neck are supposed to be able to do.

When you have any compromise in the range of motion, it affects all aspects of the unit, and those aspects are compromised as well," he explained.

Revenaugh, who specializes in treating sport horses, sees a lot of kissing spines cases in his practice, and he sees it most commonly in the mid- to lower-thoracic region of the back, which is in the middle of the back, in or behind the area where the saddle typically rests. But, it can occur anywhere.

► Diagnose And Conquer

There are several tools used to identify kissing spines as the cause of back pain and countless methods utilized to help manage the problem once it's diagnosed.

A basic physical exam often, but not always, reveals a poor range of motion and tense muscles in the back and a resistance to palpation. From there, a common next step is to X-ray the suspect area, which as noted before, can be difficult to pinpoint due to the back's tendency to function as a unit. Kissing spines can also be identified through a bone scan or ultrasound, and a nerve block can also be performed to verify the problem's location.

"One sore area in the back will probably result in stiffness and soreness along the whole topline so it can be a challenge to know where to look," said Revenaugh.

"X-rays are, generally, fairly easy to obtain, and I find correlate very well with identifying



(Bob Langrish Photo)

The horse's vertebrae articulate with one another, and they are supposed to have a very elaborate range of motion including flexion, compression and extension. Kissing spines prevents the horse from achieving this beautiful jump.

the problem," he said, noting that kissing spines may not be the only source of a horse's condition. "It's such a salient X-ray finding. It's not hard to radiograph, and it's easy to see and easy for the clients to see. We tend to fixate on that and say, 'There we go, that's the whole picture.'"

As in cases of back pain in people, there's no cookie-cutter approach to management of back pain in horses, regardless of the root cause. (Note the use of the word "management" in lieu of "treatment" in that sentence.)

"Most options you have do not fix the problem, but they interrupt the pain cycle," Revenaugh explained. "Most horses you can manage effectively. The first thing to know is that the owner or rider or trainer has a big part in this management program, whether it's finding the saddle that the horse likes, the pad that he likes, the type of work, the warm-up, the cool-out he likes. It's something that's an ongoing deal and something clients need to understand."

He likened it to how a person handles back pain. That individual has to discover what combination of therapy works for him. Sit-ups in the morning versus no sit-ups, acupuncture vs. chiropractic adjustment, stretching or swimming. The ones in charge of such decisions on the horse's behalf have to find the elusive combination that works in his case.

Before most of these management modalities can come into play, one thing must be done: the pain cycle must be interrupted. There's an arsenal of options at a veterinarian's disposal with which this feat can be accomplished, ranging from mild to severe.

At the timid end of the spectrum is the use of muscle relaxants and non-steroidal anti-inflammatory drugs, such as banamine and naproxin.

"They can be helpful and might be something used in the long run, but usually if you



(Molly Sorge Photo)

take them off those medications you'll be right back where you started. Usually, you have to start with something more aggressive," said Revenaugh.

An injection of cortisone or some other anti-inflammatory agent directly into the region to reduce pain and swelling can sometimes be enough to intervene in the pain cycle, particularly if it's only affecting one or two small areas of the back. "The muscle spasm releases, the muscles relax, the horse starts to use himself, the musculature develops and so on," he said.

Introduced to equine medicine in the late 1990s, extracorporeal shockwave therapy has been used for treating back problems more and more in the past four years, according to Revenaugh, who employs the technique at his own facility. Why this method, which utilizes the pressure of sound waves to stimulate healing, works in these cases remains largely a mystery, but it's a completely non-invasive technique that often has favorable results.

A European drug called Tildren has been effective in treating incidences of bone inflammation in conditions such as kissing spines but

is not approved for use in the United States.

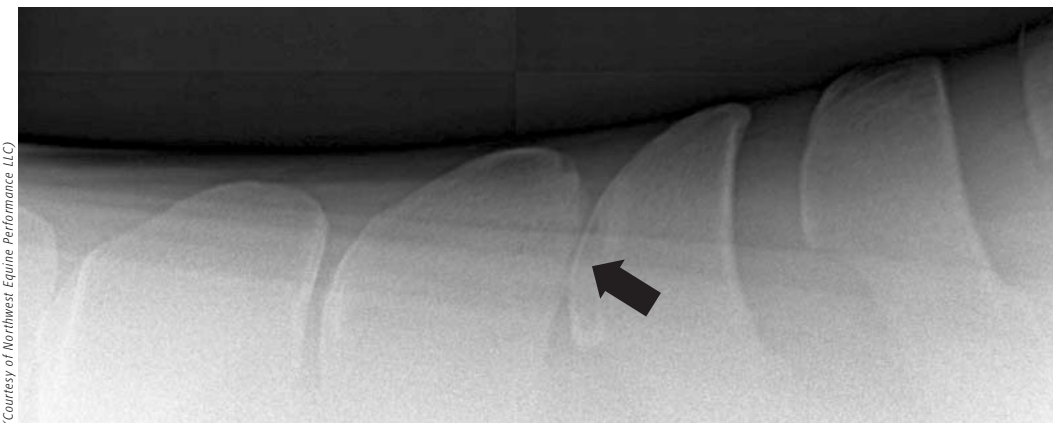
In addition to these medical approaches, there are surgical options available as well. "The original surgical approach removes the complete dorsal spinous process, which is a very invasive procedure," he said. "It's not done routinely and is probably saved for cases that are not manageable through other avenues."

Revenaugh is currently working with a surgeon who has developed another, less-drastring surgical alternative, and they're comparing medical versus surgical management of the disorder.

"None of these things fixes all cases, but you have a bunch of tools to try until you find the one that works for you and your horse," he explained. "But these medical therapies will not be successful if the trainer and rider are not active participants in the management. If they don't adjust their program to tailor what that horse does well with, they're going to have a hard time."

Revenaugh believes kissing spines is a lot more common than we realize because it, as well as other sources of back pain, often go unrecognized because the horse isn't limping.

"The horse doesn't have a clear way to tell us there's a problem unless we're really paying attention to him," he said. "It's amazing how many horses are out there competing and doing fairly well that have this problem. You treat them and they do a lot better." ◀



Under normal circumstances, the process of adjacent vertebrae don't touch each other, but when they do it's called kissing spines.