

Beyond the X-Rays: Understanding Two Common Causes of Equine Performance Problems: Kissing Spines and ECVM

Based on a Grayson-Jockey Club Research Foundation webinar featuring Dr. Steve Reed, Dr. Kara Brown, and Dr. Elizabeth Elzer

A horse that suddenly resists a lead change. A talented hunter that begins stopping at fences. A dressage horse that struggles with collection despite careful training. Too often, these issues are dismissed as training problems, attitude adjustments, or simply part of the sport.

But what if they're not?

For horse owners, trainers, and veterinarians, few topics generate as much discussion—and sometimes controversy—as kissing spines and Equine Cervical / Complex Vertebral Malformation (ECVM). These conditions have become increasingly recognized as potential causes of poor performance, behavioral changes, and chronic pain in horses, yet both remain challenging to diagnose and manage effectively.



One of the key messages from the webinar was that radiographs alone should never dictate treatment decisions. Many horses show significant radiographic changes yet perform normally, while others exhibit clinical signs despite relatively modest imaging findings.

Clinical signs associated with kissing spines include:

- Poor performance under saddle
- Resistance to collection
- Difficulty engaging the hindquarters
- Back soreness
- Behavioral changes during riding
- Reluctance to jump or perform certain movements
- Bucking, rearing, or other evasive behaviors

Because these signs can overlap with numerous other conditions, veterinarians must evaluate the entire horse rather than relying solely on imaging findings.

THE DIAGNOSTIC CHALLENGE

According to the panelists, diagnosing clinically significant kissing spines requires a combination of factors, including:

- Thorough clinical examination
- Imaging studies
- Diagnostic anesthesia when appropriate
- Assessment of the horse's response to treatment
- Correlation between findings and performance issues

No single test definitively identifies whether radiographic changes are responsible for a horse's discomfort.



Dr. Kara Brown

Dr. Elizabeth Elzer

Dr. Steve Reed

During a recent webinar hosted by the Grayson-Jockey Club Research Foundation, equine experts Dr. Kara Brown, Dr. Elizabeth Elzer, and Dr. Steve Reed discussed what we know about these conditions—and what we need to learn.

Their discussion underscored an important message: diagnosing pain in horses is rarely straightforward, and imaging findings alone never tell the entire story.

UNDERSTANDING KISSING SPINES

Kissing spines, formally known as overriding dorsal spinous processes, occur when the bony projections extending upward from the vertebrae become abnormally close together or make contact. While radiographic evidence of kissing spines is relatively common, determining whether those changes are actually causing pain can be considerably more difficult.

Instead, diagnosis often requires assembling multiple pieces of evidence. This challenge highlights one of the central themes discussed throughout the webinar: horses should be treated, not radiographs.

TREATMENT OPTIONS CONTINUE TO EVOLVE

Management of kissing spines often begins with conservative approaches focused on improving spinal function and reducing pain.

Common strategies include:

- Rehabilitation and targeted exercise programs
- Physical therapy
- Saddle fit evaluation
- Medical management
- Shockwave therapy
- Strengthening of core and topline musculature

For horses that fail to respond adequately to conservative treatment, surgical options may be considered.

One procedure discussed was interspinous ligament desmotomy, a minimally invasive technique designed to reduce pain associated with overriding dorsal spinous processes. The procedure has gained popularity in recent years because it can often be performed with limited recovery time compared to more invasive surgical approaches. However, the panel emphasized that surgery is not appropriate for every horse and should be considered within the context of a complete diagnostic workup.

THE GROWING AWARENESS OF ECVM

The second major topic of the webinar focused on ECVM, a developmental abnormality affecting the cervical vertebrae.

Awareness of ECVM has increased dramatically over the past decade. As advanced imaging becomes more available and veterinary understanding expands, clinicians are identifying the condition more frequently in horses presenting with unexplained performance issues.



Despite this increased recognition, significant questions remain regarding prevalence, inheritance, diagnosis, and clinical significance.

RECOGNIZING CLINICAL SIGNS OF NECK-RELATED PAIN

Dr. Brown discussed how horses with cervical abnormalities may present with a variety of signs that are not always immediately recognized as neck-related.



Potential clinical signs include:

Non-Lameness Signs

- Abnormal head and neck carriage
- Difficulty bending
- Behavioral concerns
- Poor performance
- Resistance during training

Lameness-Related Signs

- Lameness that cannot be localized to a specific limb
- Lameness that does not respond predictably to diagnostic nerve blocks
- Changes in gait associated with neck position
- Improvement following pain management directed at the cervical region

The panel noted that some horses exhibiting persistent training or behavioral issues may actually be experiencing discomfort rather than displaying unwillingness to work.

TREATING THE HORSE, NOT THE IMAGE

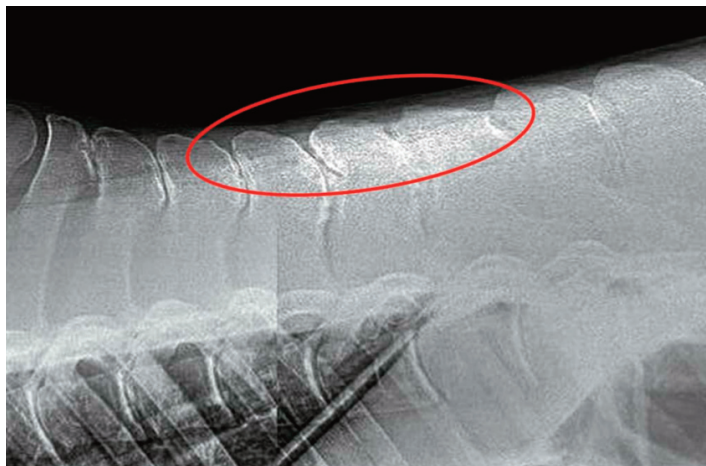
For many riders, receiving a diagnosis can feel like finally finding the answer they've been searching for. Yet the experts emphasized that diagnosis is only the beginning.

A complete evaluation includes:

- Clinical examination
- Performance history
- Imaging findings
- Response to diagnostic procedures
- Assessment of movement and behavior

A recurring theme throughout the webinar was the importance of “treating the horse, not the image.”

As diagnostic imaging continues to advance, veterinarians can identify abnormalities with remarkable precision. Determining whether those findings are causing pain, however, remains one of the profession's greatest challenges.



For horse owners, this means avoiding the temptation to assume every abnormality seen on an image is responsible for a horse's performance issues.

A BETTER FUTURE FOR HORSES

Perhaps the most important takeaway from the webinar is that equine medicine is entering an era where science, welfare, and performance increasingly work hand in hand.

Advanced imaging has transformed our ability to identify abnormalities within the spine and neck, but an image alone does not tell the whole story. Neither kissing spines nor ECVI can be fully understood without considering the individual horse—its history, movement, behavior, athletic demands, clinical examination, and response to treatment.

For owners, riders, and trainers, that means paying attention when a horse's behavior or performance changes and recognizing that resistance may be communication rather than defiance. For veterinarians, it means combining clinical expertise with emerging research to determine which findings are truly significant and developing an individualized approach to treatment and rehabilitation.

That distinction is increasingly important. The goal is not simply to identify abnormalities—it is to understand which abnormalities matter, how they affect the individual horse, and what can be done to support that horse's long-term health, comfort, and performance.

There are still important questions to answer, particularly surrounding the biomechanics, genetics, clinical significance, and rehabilitation of spinal and cervical disorders. Continued research will help veterinarians better distinguish meaningful findings from incidental ones and ultimately provide horse owners with better tools for making informed decisions about their horses.

Educational programs such as this webinar are an important part of the Grayson-Jockey Club Research Foundation's commitment to advancing equine health. By supporting research and bringing veterinarians, researchers, owners, and riders together to discuss what the science means in practice, Grayson helps move new knowledge from the laboratory into the barn.

Because sometimes the most important diagnostic tool isn't simply the most advanced technology available—it's paying attention to the horse standing in front of us.



Research update from Holly White,
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