

Medical management of dorsal spinous process impingement in a thoroughbred racehorse

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Introduction:

Vertebral and sacroiliac disorders are a common cause of chronic lameness and poor performance in the equine athlete. Understanding, diagnosing, and treating these disorders properly is critical in clinical practice. Dorsal spinous process impingement, or kissing spine syndrome (KSS), is the most common osseous cause of back pain in horses (1). One necropsy study of Thoroughbred racehorses revealed that dorsal spinous process impingement or overlap was present in 92% of specimens (2).

Impingement most frequently occurs between T13-18 because of altered spinous process morphology in that region (3,4). The area of T13-18 is also responsible for supporting the weight of the saddle and rider. This weight alters spinal kinematics by increasing spinal extension, which can contribute to spinous process impingement (5). Athletic horses that perform advanced tasks such as dressage or jumping horses are more prone to spinal process impingement because of the demands of spinal ventroflexion and jumping maneuvers (3). Horses with dorsal spinous process impingement often present clinically with bucking, a change in attitude, refusal of fences, and painful or rigid spinal palpation (6). The condition can be diagnosed via thermography, ultrasonography, radiology, and/or nuclear scintigraphy.

Traditional medical treatment options for thoracolumbar dorsal spinous process impingement commonly include 3-9 months rest, intralesional corticosteroids, and physiotherapy (7). Newer techniques such as extracorporeal shockwave therapy and mesotherapy have also been used with some success.

Surgical treatment involves subtotal ostectomy of affected dorsal spinous processes, a procedure that can be performed in the standing horse or under general anesthesia with a dorsal midline incision (7,8). Of horses treated surgically, 72% returned to full work after recovery, and an additional 9% improved to a lower performance level (7).

Clinical Report:

A 3-year-old Thoroughbred gelding racehorse who had won nearly \$100,000 from his 13 career starts, presented for evaluation of his back and stifles.

When trotting on the longe line, he was hypermetric with a stab-like motion in both rear limbs, with the right hind limb worse than the left hind. Standing passive flexion of his left hind limb was mildly to moderately positive, and his right hind flexion was moderately positive. Palpation of his spine revealed moderate to severe sensitivity to pressure over the thoracic and lumbar vertebrae. He was moderately sensitive to palpation over his sacroiliac joints. He also carried moderate effusion in both stifles. Rule-outs after the clinical examination included problems such as stifle or hock OCD or osteoarthritis, or soft tissue injury at the hock, stifle, back, or sacroiliac locations.

A bone scan was ordered to evaluate all osseous structures. Bony inflammation was seen at the thoracic vertebrae from T11 to T18. Because of the vertebral inflammation on the bone scan, spinal radiographs were taken. The films showed significant osteolysis and cystic changes of the dorsal spinous processes from the base of the withers to the cranial lumbar region (see photos).

The final diagnosis was moderate to severe T1-L1 dorsal spinous process impingement.

The dorsal spinous process impingement was treated with three treatments of extracorporeal shockwave therapy and one treatment of mesotherapy using carbocaine, dexamethasone, and Traumeel, a homeopathic product. The owner was told to rest the horse for one week and slowly progress to very light work for the following two to three weeks. An appointment was scheduled in four weeks for a recheck and to receive additional shockwave and mesotherapy treatments before the horse could resume full training.

Once his treatments were completed, he slowly returned to full work and raced again. At the time of this article, the horse has been sound for four months.

Discussion:

This horse presented clinically with confusing signs of back or hind leg lameness, making it difficult to locate the lesion. Positive passive flexion of the horse's hocks and stifles, distension of both stifles, and painful palpation over the horse's back and sacroiliac joints did not help to localize the lesion. Therefore, whole body nuclear scintigraphy was chosen as a diagnostic tool. Scintigraphy was able to localize the lesion to T11-T18. As in this horse's case, dorsal spinous process impingement can often be a difficult diagnosis to make clinically because it can mimic pain in the sacroiliac joints or hind legs.

In this case, thoracolumbar spinal radiographs showed changes from T1-L1, while scintigraphy only showed active bony inflammation from T11-T18. This may indicate that spinal radiographs are more sensitive in diagnosing dorsal spinous process impingement than scintigraphy.

The use of Traumeel in mesotherapy has been advocated by some equine practitioners because of its ability to decrease inflammation locally without adverse systemic effects. This homeopathic compound also has been shown to be undetectable in a horse's drug tests, so it can be used at any time before a competition.

Summary:

Thoracolumbar dorsal spinous process impingement is a frequent cause of clinical back pain in horses. Impingement is most common in vertebrae T13-18 of athletic horses used for dressage, jumping, or racing. Horses with dorsal spinous process impingement may present clinically with a change in attitude, refusal of fences, bucking, and painful or tense spinal palpation. Medical treatment, traditionally consisting of rest, intralesional corticosteroids, and physiotherapy, can be rewarding in some patients. Horses that fail to improve on medical management may require a ostectomy of affected dorsal spinous processes. The rate of return to athletic work after surgery is good. In this case study, a 3-year-old Thoroughbred gelding racehorse was diagnosed with thoracolumbar dorsal spinous process impingement via nuclear scintigraphy and radiology. He had severe osteolysis and cystic changes in the dorsal spinous processes from T1 to L1. His medical treatment consisted of mesotherapy, extracorporeal shockwave therapy, rest, and a slow return to work. This medical management was successful; the horse returned to racing and did not return for additional diagnostics or treatment due to lameness.

References:

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