Kissing Spines: Fact or Fiction

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Impingement of the dorsal spinous processes (DSPs) of the vertebral bodies aka “kissing spines” is a well-recognized disorder of the equine back.¹ Diagnosis is made during radiographic evaluation. Narrowing or loss of interspinous space(s), sclerosis of the cortical margins of the DSPs, and/or radiolucent zone(s) along the cranial and/or caudal borders are the radiographic characteristics. The most common locations are between T10 and T18. Simple grading system of impingement of the DSPs can be graded using the following:

Grading of impingement (From Denoix²)
Grade 1: Narrowing of the interspinous space, mild increased opacity of cortical margins of DSPs
Grade 2: Loss of interspinous space with moderate increased opacity of cortical margins
Grade 3: Severe increased opacity of cortical margins or radiolucent areas
Grade 4: Severe increased radiopacity of cortical margins, changes in shape, overriding of DSPs

Figure 1: Radiographic image of the middle thoracolumbar region. There is loss of interspinous space with mild remodeling of the cortical margins (arrow) consistent with grade 2 impingement.

Figure 2: Radiographic image of the cranial to middle thoracolumbar region. There is loss of numerous interspinous spaces, severe remodeling of the associated cortical margins, and overriding DSPs consistent with grade 4 impingement.
However, it must be emphasized that radiographic evidence of overriding DSPs can be found in horses performing satisfactorily with no clinical manifestations of back pain. Reportedly, the incidence of radiographic abnormalities in normal horses is 34% and 33% of horses with history of back pain. And, gross postmortem studies have reported the incidence of kissing spines is between 86-92%. Nuclear scintigraphy can also help to identify evidence of active bony remodeling of the DSPs. However, areas of active bony remodeling are not synonymous with pain. Scintigraphic signs include increased radiopharmaceutical uptake (IRU) in the summits of the DSPs. The degree of IRU is well correlated with radiographic changes. But, IRU as a sole finding is not well correlated with clinical signs of back pain. IRU of the DSPs is a very common finding in asymptomatic young Thoroughbred racehorses. The clinical significance of IRU of the DSPs is increased when combined with abnormal radiographic and clinical examination findings.

Ultrasound examination of the back can also assist in the diagnosis of overriding DSPs. It can be used to evaluate the summits of the DSPs, the interspinous space, remodeling of the margins of DSPs, and abnormal alignment of the DSPs. Although, ultrasound examination is more useful to diagnosis soft tissue injuries of the back.

Diagnostic analgesia of the back is very useful to assess the clinical significance of impingement of the DSPs. Local anesthetic is infiltrated between or around the DSPs. After injection, the response of the horse and the rider can be tested. In a horse with authentic back pain, there will be a marked improved or resolution of the abnormal clinical signs. This diagnostic tool aids the clinician in authenticating radiographic and/or nuclear scintigraphic abnormal findings.

There are multiple treatment options for overriding DSPs. Conservative therapies include physiotherapy, acupuncture, and back injections. Corticosteroids and/or Sarapin are commonly used medications for perispinal or interspinal injections. Modification of the training program and rest may also be beneficial. Other therapies include extracorporeal shockwave therapy and mesotherapy. Surgical resection of one or more dorsal spinous processes has been successful in some horses that do not respond to medical therapy. The newest surgical procedure, interspinous ligament desmotomy, has been beneficial for some horses with back pain. Prognosis is variable, but generally considered poor for the chronically, severely affected athlete.

REFERENCES