This presentation will review the salient information available on equine back pain as it relates to impingement of the dorsal spinous processes (kissing spines) and available treatment options.

Impingement of the dorsal spinous processes (DSPs) is a common cause of pain and poor performance in sport horses, but there is limited information regarding regional differences in the prevalence and severity of DSP osseous lesions in the equine thoracolumbar spine. Lateral spinal radiographs are increasingly included in routine pre-purchase examinations specifically to provide owners and potential buyers with information about this condition. Equine practitioners are being asked to address the issue because of concerns about conditioning and exercise and inquiries about treatment ranging from pain relievers and local injections to shockwave therapy and more. Recently, a number of new surgical techniques have also been developed and implemented to address this issue.

The equine spine has been likened to a “string and bow” arrangement where the BOW is the rigid vertebral column and the STRING, comprising all of the muscles and ligaments supporting the spine, keeps it under constant tension. As the head is lowered, the string has to cover a longer distance - tension in the spinal soft tissues translates to tension on the caudal facing spinous processes straightening them out, bringing the back up into flexion. Horses with impingement can therefore exhibit a range of signs from being asymptomatic, that is exhibiting no abnormal signs, up to having a horse that is not rideable, possibly bucking, refusing to be saddled and/or having behavioral issues even on the ground.

The most common location of kissing spines is the vertebral segment between T10 and T18, although these lesions are also identified between L1 and L6. Abnormal findings can be seen in the dorsal part of the spinous processes where their identification is easy; they include kissing and overriding lesions. Different grades can be identified (grade 1: narrowing of the interspinall space; grade 2: densification of the margins; grade 3: bone lysis adjacent to the margins; grade 4: severe remodeling). Abnormal findings can also be seen in the ventral part of the spinous processes and may involve the interspinall ligaments or be associated with osteoarthrosis of the articular processes. Their severity can be established using the same grading system; their clinical incidence seems higher.

Acute or subacute desmopathies can be identified ultrasonographically, because they demonstrate dorsoventral or transverse thickening of the ligament, altered echogenicity, and obvious alteration of the linear longitudinal pattern. They can be seen both in the median plane or asymmetrically. In old or chronic injuries, the ligament often remains thicker, with a reduced
echogenicity and an irregular architectural pattern. Hyperechogenic images with or without acoustic shadows are compatible with mineralization or calcification of the supraspinous ligament. Alteration of the bone surface of the top of the spinous processes indicates insertional desmopathy (enthesopathy) of the supraspinous ligament. The significance of findings can be difficult to definitively prove, because ultrasonographic abnormalities can be seen in healthy as well as injured horses.

Desmotomy of the interspinous ligament (ISLD) aims to relieve tension on afferent nociceptive receptors in the ligament insertion and relieve pain (it may well be a form of neurectomy). It is combined with a controlled exercise program to re-establish spinal re-mobilization.

In a study by Coomer et al thirty-four horses (89%) treated medically initially resolved signs of back pain compared with 35 horses (95%) treated surgically. From these, back pain recurred in 19 medical cases and in none of the surgical cases. Horses having ISLD were 24 times more likely to experience long-term resolution of signs of back pain (OR 24; 95%CI: 5-115; P = < .0001). Repeat radiographs in 19 surgical cases indicated that interspinous spaces widened significantly postoperatively (P = < .0001).