Kissing Spines

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Kissing spines, also known as Dorsal Spinous Process Impingement, is the most common cause of back pain in horses (Coomer, 2013). It has been found that 39% of horses have kissing spines but it does not cause problems in all horses (Turner, 2011).

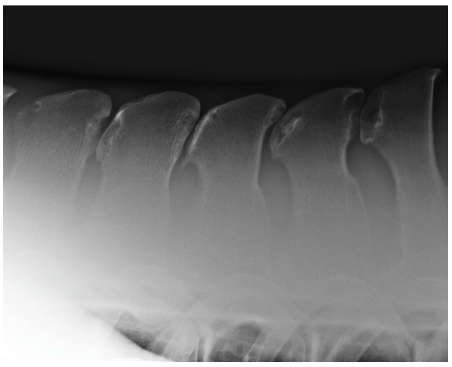
Regarding the origin of the syndrome, it seems that the results of research on kissing spines are often contradictory, leaving the owners intellectually in the dark. The true underlying cause of kissing spines is not completely understood (Zeiger, 2018). Nevertheless, scientific advances, particularly in terms of research on possible genetic origins and feedback from practitioners in the field, are modifying the approach to the syndrome.

My approach to understanding the kissing spines syndrome is a hands-on approach by talking to horse owners. So I decided to do a survey allowing me to globalize the inventory of horses suffering from this problem. According to that survey, 30% of owners have a horse diagnosed with kissing spines. 50% of these horses are diagnosed between the age of 6 and 10 years old (22% between 11 and 16 years old). 62% of owners think they have a good knowledge of the subject. 50% after diagnosis by the veterinarian turn to an osteopath, 30% to a physiotherapist. 33% think that the technique to relieve the horse is stretching, 20% opt for massage, 11% for medication only.
55% of owners believe that the origin of the kissing spines might be genetic. 44% are positive that the appearance of the syndrome is due to poor riding practice (38% are not sure but remain oriented in this direction). 92% think that horses are put to work too young. 44% think (and 32% are sure) that there is a link between the adjustment of the material and the appearance of the syndrome. 75% consider that there is not enough prevention in the practice of riding concerning the physiological aspects of the horse.

Concerning equine health professionals, I also conducted a survey but more technical, thanks to the IAAT. 75% are confronted with between 3 and 5 horses per month affected by the kissing spines syndrome with an average age between 10 and 15 years for 50% of them. 75% of kissing spines are at stage 3 (overlapping resulting in a periosteal reaction). 100% of practitioners have no protocol but work empirically. 50% think of massage in the first intention, 50% in stretching in second intention then in clay and medications for 50% in third intention.

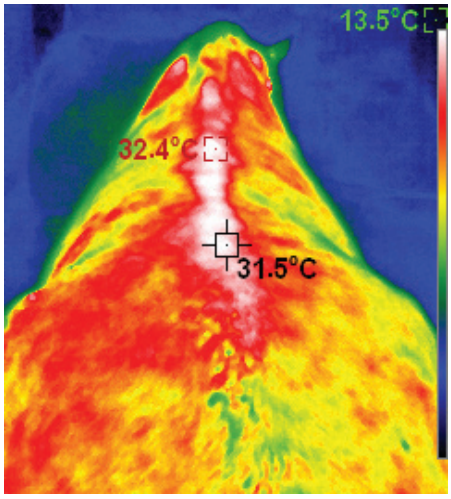
A free section was installed at the end of each survey. This is due to the intense exchanges between equine owners. Some owners insist that putting horses to work too young with unsuitable exercises is the main cause of kissing spines. This

includes the idea of quickly putting the horse into a frame by adding many “gadgets”. Others address ergonomic issues throughout the equine’s life.



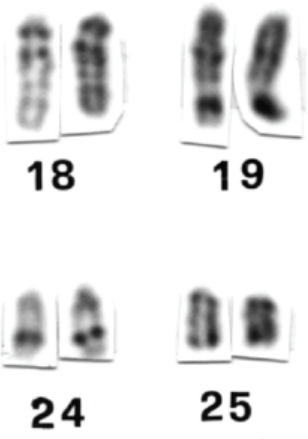
Regarding the management of the syndrome there are different possibilities. First it starts with a diagnosis made by a veterinarian. Diagnosis is normally a combination of symptoms displayed, reduced spinal movement and X-Ray. The most common site of the problem is at T15 (Marcella, 2015). There are a number of treatment options available to horse owners ranging from simple saddle fitting to invasive surgery (Marcella, 2015). However the least invasive remains physiotherapy. Then, the most common is steroid injections to control pain and inflammation. Finally when none of those two methods are successful surgery is the final option.

About thermography, the image proved to be the most useful diagnostic test to differentiate kissing spines cases from other causes of back soreness prior to radiology (Miller, 2011). Thermography can be a valuable, practical and rapid investigation tool. But also thermography could appear as a useful tool in terms of prevention on horses showing signs of reduced performance. However the proper use of thermography to evaluate surface thermal patterns requires a controlled environment and rigorous adherence to an imaging protocol to eliminate errors of interpretation (Soroko, 2016).



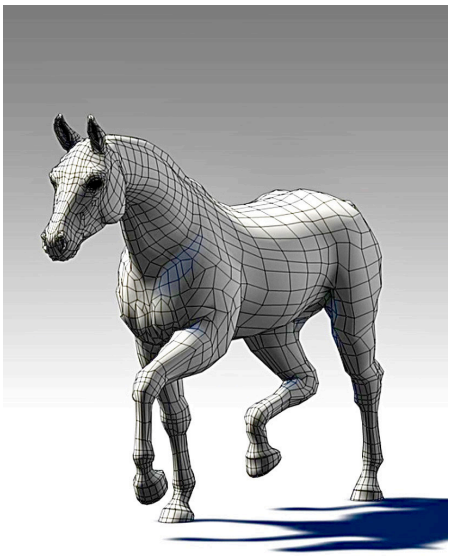
Physiotherapy treatment is an effective option. A complete range of care is promulgated by the practitioner (TENS, stretching and myofascial massage…). However, early recognition of an altered posture or pain ensures that treatment can reduce the chance of developing performance problems in the other career (Shakeshaft, 2020). Physiotherapy is therefore essential in terms of prevention. Then in a care setting providing comfort to the horse while restoring its performance in terms of biomechanical observation. Different protocols can be implemented, but often in a relatively empirical way. After various exchanges with my colleagues, the protocol demonstrating the most effectiveness is based on the use of TENS (Transcutaneous electrical nerve stimulators) initially. Then, targeted massages of the back muscles prepare for the stretching work carried out by the therapist. Finally, regular monitoring with physiological riding exercises to bring the horse into stretching and relaxation work allows good final results.

According to Turner: “the most important aspect of any treatment regimen is the exercise program” and the exercise must achieve the goal of the horse moving freely forward in a relaxed frame. Turner thinks that the kissing spines syndrome is consequently, predisposing conformation coupled with specific use and inappropriate riding technique may be the contributing factors to development of the condition. Saddle fit to rider technique and exercise regimen should be carefully evaluated and monitored to help prevent kissing spine syndrome. Cornille said “Kissing Spine develops from an incorrect combination of lateral locomotor patterns, which can only be done with the horses in motion. Basically competent equitation is the horse’s best therapy.”



Even though the origins of kissing spines syndrome are unknown, there is an important and very recent advance regarding a possible genetic factor. A genetic variant is associated with the severity and likely development of kissing spines

in horses. The variant is or allele is on chromosome 25. This single nucleotide is linked to an average increase in one kissing spine severity grade for each of the horse's two copies of the allele, one from each parent (Patterson, Whitaker, 2022). Indeed the genetics: one severity grade higher for each copy (Lesté-Lasserre, 2022).



In conclusion, Kissing spines is common and for a lot of horses it is not a problem. However it should be seen as a predisposing factor for future concern. From saddle fit to rider technique and exercise regimen, all should be carefully evaluated and monitored to prevent kissing spines syndrome. The physiotherapist with the veterinarian has an essential role in the prevention, allowing to evaluate and warn the owners vis-a-vis the risks of poor performances of their horses due to the syndrome of kissing spines.

The surveys are on panels of 100 people questioned online via different platforms. A majority of respondents live in France (50%), then in Europe (40% Germany, Hungary, United Kingdom, Belgium) and mainly in Australia (10%). The surveys took place between May and August 2022. Regarding health equine professionals, the survey was conducted in partnership with the IAAT.
The online discussion groups cited in the article are : Horses With Kissing Spine and Equine Biomechanics, Massage & Chiropractic.

- Coomer, R.P.C. McKane, S.A. Smith, Vanderweerd, J.E., A Controlled Study Evaluating a Novel Surgical Treatment of Kissing Spines in Standing Sedated Horses. Veterinary Surgery, 2012
- Cornille JL, Kissing Spine, Science of Motion LLC, scienceofmotion.com/documents/279.html
- Lesté-Lasserre, Spines Gene Found, The Horse, 2022
Marcella, Kissing Spines in Veterinary Equine Patients: Easy to Diagnose, Complicated to Treat. DVM360 Magazine, 2015.
- Patterson, Whitaker, Allen, Genomic Loci Associated with Performance Limiting Equine Overriding Spinous Processes, Research in Veterinary Science, 2022
- Shakeshaft, G Taylor, The Effect of a Physiotherapy Intervention on Thoracolumbar Posture in Horses, MDPI Animals Journal, 2020
- Soroko, Howell, Infrared Thermography: Current applications in Equine Medicine, Journal of Equine Veterinary Science, 2016
- Turner, T.A., Overriding Spinous Processes in Horses: Diagnosis, Treatment and Outcome in 212 Cases. AAEP Proceeding, 2011
- Zeiger, S.B. Adams, Dismiss the Kiss! Understanding Kissing Spines and How You Can Help Your Horse, Equine Health Update Vol. 20 Issue No. 1, Purdue University College of Veterinary Medicine, 2018