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## Sesamoiditis and Suspensory Branch Changes? Keep a Close Eye

Suspensory ligament injuries can limit or even end horses' careers. But what if a little diagnostic imaging could help veterinarians spot predisposition to these injuries, so owners could manage horses appropriately?

Sarah Plevin, BVMS, MRCVS, CVA, Dipl. ABVP, ACVSMR, a practitioner at Florida Equine Veterinary Associates, in Ocala, wondered if early detection of significant sesamoiditis and suspensory ligament branch changes (any deviation from a normal suspensory branch)—two conditions that affect horses' lower limbs—could give them any indication of future likelihood of suspensory ligament injury. She shared what she and colleagues learned at the 2015 American Association of Equine Practitioners' Convention, held Dec. 5-9 in Las Vegas.

The sesamoid bones are located at the back of the horse's fetlock, and their inflammation—sesamoiditis—is a common finding in Thoroughbred yearlings, Plevin said. The suspensory ligament attaches at the top back of the cannon bone, runs down the cannon bone, and splits into two branches—one attaching to each sesamoid. Researchers know that severe sesamoiditis can predispose a horse to future suspensory ligament injuries.

"It seemed logical that a horse with significant sesamoiditis would have some kind of change in the corresponding branch," she said. But the prevalence of subclinical (not resulting in any outward signs of injury) suspensory branch changes in yearlings with sesamoiditis hadn't been investigated.

In a prospective study, Plevin and the team conducted radiographic and ultrasonographic exams on 50 yearlings—all homebreds (so the team knew each horse's entire history) and free of signs of injury—at a single Thoroughbred training facility prior to the start of their racing careers. This meant the team collected data on 200 forelimb sesamoid bones and their associated suspensory branch units. Then, they observed the horses for signs of suspensory branch injury as training progressed. Plevin said the team only conducted further imaging studies if a horse displayed clinical signs of injury, such as pain on palpation, visible swelling or thickening, and inflammation with or without lameness.

Upon reviewing results, they determined that:

- 33 horses (66%) had severe sesamoiditis in at least one of their sesamoid bones;
- 30 horses (60%) had suspensory branch changes; Plevin noted this prevalence was higher than the team anticipated;
- 28% of the sesamoid bones that were significantly inflamed were attached to suspensory ligament branches that also had substantial changes;
- Sesamoids with significant sesamoiditis were five times more likely to also have significant changes in the associated suspensory branch; and
- Eight horses (16%) developed clinical injury as training progressed. Of those, five had also shown significant sesamoiditis and significant subclinical suspensory ligament branch changes as yearlings pre-training.

Ultimately, the study results confirm a statistically significant relationship between significant sesamoiditis and significant suspensory branch changes in yearlings in this population, Plevin said.

"If a yearling is found to have both significant sesamoiditis and concurrent significant suspensory branch change in the associated branch, we advise monitoring the horse both clinically (via physical examination) and with ultrasound examination," she explained. "We advise our clients to take their time with the horse.

"Many horses in this study with both significant changes pre-training did not go on to develop clinical injury over the study period," she noted. "So although a link has been found, the presence of both significant findings pre-training does not seem to be a great predictor for future disease."

She said that further studies are needed to establish what type of intervention, if any, can prevent suspensory ligament branch injuries in at-risk horses.

"The associations identified in this study highlight the importance of performing an ultrasound examination of any suspensory ligament branch attached to a sesamoid demonstrating a significant grade of sesamoiditis," Plevin said, noting veterinarians should be more cautious when they find both significant sesamoiditis and significant suspensory ligament changes than either finding alone.

Wrapping up, Plevin stressed, "Information from this study should be used more to help identify at-risk horses so they can be managed appropriately, as opposed to using it as a screening tool for horse selection. The study size is far too low to do this reliably."