EQUINE REPRODUCTION SVC

A transverse MR image of the cervical column between C4 and C5 vertebrae of a horse with cervical stenotic myelopathy (CSM). The image shows narrowed spinal canal and compression of the spinal cord.

Jennifer Janes, DVM, PhD, Dipl. ACVP, an assistant professor of anatomic pathology (disease or condition) at the University of Kentucky's Veterinary Diagnostic Laboratory, in Lexington, has been describing vertebral bone and cartilage lesions seen in horses with CSM. These lesions include bone cysts, osteosclerosis (bone thickening), fibrosis, or cartilage matrix spicules in trabecular bone. Some horses had mixed lesions, which were separate bone and cartilage lesions in the same articular process. Mixed lesions were only identified in the CSM horses, consistent with more severe pathology in diseased horses.

Examining the neck lesions using micro-CT (microcomputed tomography; basically, high-resolution X rays) were performed on a subset of horses to further characterize the bone and cartilage lesions identified on MRI. Superficial lesions, which by definition involved the articular cartilage, fell under the umbrella of osteochondrosis, both in diseased and control horses. Deep lesions, which involved the bone with no communication to the articular cartilage, were comprised of true bone cysts, osteosclerosis, fibrosis, or cartilage matrix spicules.

The study compared 19 Thoroughbreds with CSM to nine control Thoroughbreds; all the horses were an average of about a year old. In addition to an increased frequency, she noted increased severity of bone and cartilage lesions. From this study, Janes identified that cervical bone and cartilage lesions occurred due to changes in biomechanics on the neck. The presence of fibrosis is interesting because this could represent a healing response of a previous lesion. Osteosclerosis can occur from developmental issues in skeletal growth. The presence of fibrosis is interesting because this could represent a healing response of a previous lesion. Osteosclerosis can occur from developmental issues in skeletal growth.

This is the first report of true bone cysts in the articular processes of horses with CSM. Bone cysts can occur due to changes in biomechanics on the neck. Our bone and cartilage lesions occurred with increased frequency and severity in CSM, regardless of whether the lesion was superficial or deep.

On average, if you included all lesions, there were significantly more bone and cartilage lesions in our CSM horses as compared to our control horses. In addition to an increased frequency, she noted increased severity of bone and cartilage lesions. From this study, Janes identified that cervical bone and cartilage lesions occurred in horses with CSM. The lesions were seen in the cervical vertebrae that impinges on the spinal cord and causes neurologic deficits. It's common for wobbler syndrome to develop at the University of Kentucky's Veterinary Diagnostic Laboratory, in Lexington, has been descripting vertebral bone and cartilage lesions seen in horses with CSM. These lesions include bone cysts, osteosclerosis, fibrosis, or cartilage matrix spicules in trabecular bone. Some horses had mixed lesions, which were separate bone and cartilage lesions in the same articular process. Mixed lesions were only identified in the CSM horses, consistent with more severe pathology in diseased horses.

Examining the neck lesions using micro-CT were performed on a subset of horses to further characterize the bone and cartilage lesions identified on MRI. Superficial lesions, which by definition involved the articular cartilage, fell under the umbrella of osteochondrosis, both in diseased and control horses. Deep lesions, which involved the bone with no communication to the articular cartilage, were comprised of true bone cysts, osteosclerosis, fibrosis, or cartilage matrix spicules.

The study compared 19 Thoroughbreds with CSM to nine control Thoroughbreds; all the horses were an average of about a year old. In addition to an increased frequency, she noted increased severity of bone and cartilage lesions. From this study, Janes identified that cervical bone and cartilage lesions occurred due to changes in biomechanics on the neck. The presence of fibrosis is interesting because this could represent a healing response of a previous lesion. Osteosclerosis can occur from developmental issues in skeletal growth. The presence of fibrosis is interesting because this could represent a healing response of a previous lesion. Osteosclerosis can occur from developmental issues in skeletal growth.

This is the first report of true bone cysts in the articular processes of horses with CSM. Bone cysts can occur due to changes in biomechanics on the neck. Our bone and cartilage lesions occurred with increased frequency and severity in CSM, regardless of whether the lesion was superficial or deep.

On average, if you included all lesions, there were significantly more bone and cartilage lesions in our CSM horses as compared to our control horses. In addition to an increased frequency, she noted increased severity of bone and cartilage lesions. From this study, Janes identified that cervical bone and cartilage lesions occurred in horses with CSM. The lesions were seen in the cervical vertebrae that impinges on the spinal cord and causes neurologic deficits. It's common for wobbler syndrome to develop. Researchers still have much to learn about why this condition develops and how to best treat affected horses.