Navicular Disease

By Jessica Michel, DVM

Navicular disease is a diagnosis that has haunted many horse owners over the years. It is a diagnosis that in the past has been difficult to diagnosis with certainty and has been difficult to treat effectively. Due to advances in imagining capabilities and new treatment research, the future for horses with navicular disease may be looking a little brighter.

The navicular bone is the distal sesamoid bone that is positioned between the second and third phalanx (pastern and coffin bones). Navicular disease results in pain associated with the navicular bone and its closely related structures, the collateral ligaments, distal sesamoidean impar ligament, navicular bursa, and the deep digital flexor tendon which glides along the flexor cortex of the navicular bone and attaches to the coffin bone.

Horses with navicular disease are often middle age horses that have had a gradual decrease in performance and a slow onset of bilateral forelimb lameness. They often move with a shortened stride due to the pain in both front feet, this may make them appear to be stiff with increased difficulty turning tight circles in either direction. Some horses will stand pointing with the foot that is the most painful. The breeds most commonly affected are the Quarter horse breeds, Warmbloods, and Thoroughbred crosses.

Perineural analgesia of the palmar digital nerve (a PDN block) is performed as part of a lameness examination to help to isolate the location of the pain. A nerve block is performed by targeting lidocaine over the nerve, which then numbs a specific area of the limbs. A horse with navicular disease will often become sound on the blocked limb and will then show lameness on the opposite limb. This is because navicular disease is a bilateral condition and the horse favors the most affected limb. When the nerves to the navicular bone of the most affected foot are blocked the horse then feels more pain from the other foot and is lame on the unblocked limb. This scenario is very typical of navicular disease, but can not be used alone to diagnosis the problem.

Navicular disease has been termed a syndrome because there are many different manifestations of the disease and radiographic changes do not always correlate with the degree of lameness. Some horses can have significant radiographic changes to their navicular bone without showing signs of lameness, whereas other horses can have mild radiographic changes and have severe lameness due to their navicular pain. Nuclear scintigraphy (bone scan) can also be used to help diagnosis navicular disease, with navicular problems the navicular bones will have increased uptake of the radioisotope and will appear “hot” on the scan.

Magnetic Resonance Imaging (MRI) has greatly increased the diagnostic imaging capabilities for the diagnosis of navicular disease. MRI can detect pathophysiological changes within the navicular bone that plain radiographs cannot and provides a more specific diagnosis of the cause of the pain. MRI also allows us to differentiate between

soft tissue problems closely associated with the navicular bone, which may appear to be navicular disease on plan radiographs or bone scan, but are actually primarily soft tissue problems and require a different course of treatment.

Treatment of horses with navicular disease revolves around management strategies such as corrective trimming and shoeing, non-steroidal anti-inflammatory medications, and intra-articular or intra-bursal medications (navicular bursa injections). Palmar digital neurectomies (nerving) can be performed in horses that are non-responsive to management strategies.

A handful of clinics around the United States, including Arizona Equine, are currently participating in a FDA clinical trial of a treatment that has been used in Europe for treatment of navicular disease. If this proves to be safe and effective, it may become the newest form of treatment for navicular disease.

Ross M, Dyson S: Diagnosis and Management of Lameness in the Horse Saunders, 2003.