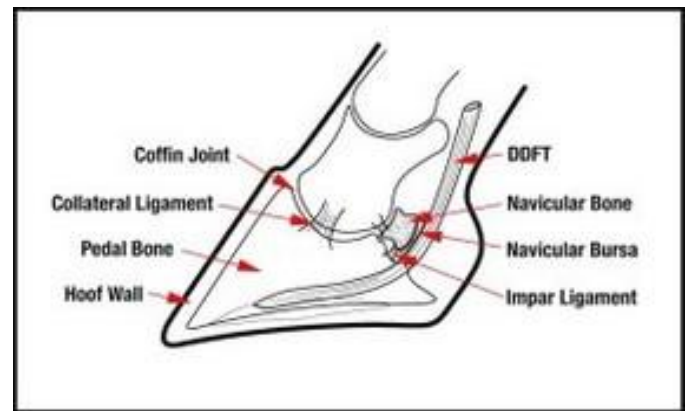


OSPHOS - A Promising Therapy for Navicular Syndrome

What is navicular syndrome?

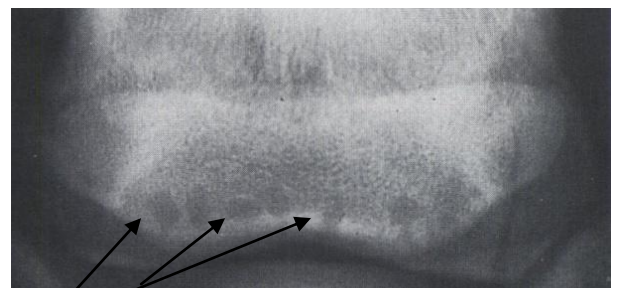
Navicular Syndrome causes a chronic forelimb, often bilateral, lameness associated with several different structures inside the hoof capsule. These structures include: the collateral ligaments of the navicular bone, sometimes referred to as the navicular suspensory ligament; the distal sesamoidean impar ligament; the navicular bursa; the deep digital flexor tendon; or the navicular bone itself.

Lameness originates from these individual structures or combinations of these structures either from being injured or developing a degenerating disease in some fashion. This explains why “navicular horses” present so differently and why treatment options are varied with varying degrees of success. Because Navicular Syndrome is actually several diseases and not a single disease, proper diagnosis is extremely important.



What are the clinical symptoms of navicular syndrome?

Horses present usually with bilateral forelimb lameness. The pain causing the lameness originates from the caudal (back) portion of the foot. Horses will have a decrease in their performance, will often point one foot forward when standing, may shift weight between front legs, may have shortened stride length, may resent going down hills, foot often lands toe first, may begin tripping, become more sensitive on hard surfaces such as gravel. These are a few common symptoms which result from horses experiencing pain in the caudal foot. It is our job as equine veterinarians to diagnose this syndrome or condition and apply this knowledge to develop a therapeutic plan to help manage or alleviate the pain associated with the injury or degenerative process.



Typical degenerative lesions within navicular bone.

Traditional and new therapies for navicular syndrome

I will briefly mention the traditional therapies often employed to manage navicular syndrome followed by a more in-depth discussion on a newer drug being used call OSPHOS. Traditionally pain has

been managed with shoeing techniques, NSAIDs such as Bute, combination of joint or navicular bursa injections (typically using anti-inflammatory drugs such as corticosteroids), and possibly surgical intervention through neurectomy. All these therapies target the reduction of pain but have little to no effectiveness on slowing or altering the degeneration of the navicular bone specifically. With the traditional management methods, the degeneration of the navicular bone typically continues and eventually becomes severe enough the horse no longer responds to therapies. This has always been a frustrating component of managing these horses. With the emergence of OSPHOS, we may have better long term ability to slow this degenerative process. OSPHOS and TILDREN are drugs called bisphosphonates.

What are bisphosphonates?

Bisphosphonates are a class of drugs commonly prescribed to prevent bone loss in people. While TILDREN and OSPHOS are not used for this purpose in horses, knowing how bisphosphonates work in people will help you better understand this drug class overall. Bones undergo constant turnover; cells called osteoblasts form or produce bone and cells called osteoclasts which resorb bone. In normal bone tissue, there is a balance between bone formation and bone resorption. But in diseased bone, this balance is disrupted in a negative manner. Bisphosphonates inhibit bone resorption (bone degeneration) by encouraging osteoclasts to undergo cell death, leading to a decrease in the breakdown of bone. Bisphosphonates preferentially “stick” to calcium and bind to it. Because most of the body’s calcium is stored in bones, these drugs accumulate to a high concentration only in bones. Bisphosphonates are incorporated into the bone matrix and are gradually released over months to years.

How Can Bisphosphonates help manage Navicular syndrome?

The majority of horses with lameness associated with Navicular Syndrome have varying degree of bone degeneration within the navicular bone. This bone degeneration often has different causes but ultimately this degeneration is fully or partially the root cause of pain responsible for the lameness. If we are able to halt or slow this degeneration for periods of time, we should also see a decrease in lameness. The osteoclast cell is partially responsible for causing these degenerative changes. Therefore, by impeding the osteoclast activity, through the administration of Bisphosphates such as OSPHOS, we should be able to reduce pain within the navicular bone. This would result in less lameness. This is the whole premise in using this class of drug to help manage Navicular Syndrome.

Does it work on all horses with Navicular Syndrome?

Unfortunately the answer is no, it will not make all horses with this condition sound. This is because, as described earlier in this article, there are multiple factors associated with Navicular Syndrome. In horses where the pain is originating almost entirely from navicular bone degeneration, Bisphosphonates should help significantly at decreasing lameness. But in horses where pain is originating from soft tissue components (e.g., the Impar Ligament, Navicular Suspensory Ligaments, Navicular Bursa of Deep Digital Flexor Tendon), they will not respond as favorably to Bisphosphonates. These horses will have varying degrees of improvement since injuries to the above structures also induce bone degeneration within the navicular bone, but this facet is not the only disease process responsible for creating pain.

What adverse reactions are caused by OSPHOS or TILDREN?

Adverse reactions in horses treated with TILDREN or OSPHOS most commonly occur within four hours following the injection. The most common reaction was colic like symptoms. A general appearance of being uncomfortable, mildly kicking at belly, yawning, licking lips, looking at sides is

often observed. Expect about 30 to 45 percent of horses treated to show transient signs of colic. Horses should be observed closely for four hours after treatment. Colic signs can last about 90 minutes and may be intermittent. In many cases, hand-walking may improve or resolve the colic signs. It can also be damaging to kidneys; thus, any horse which may have renal insufficiencies should not be given TILDREN or OSPHOS. A general blood test may be performed to check renal function prior to administering this drug.

Conclusion:

OSPHOS is a newer drug to help reduce lameness associated with Navicular Syndrome. We have seen promising results in horses battling this debilitating disease. It is not a miracle drug replacing or making traditional therapeutic modality mute, but it can supplement these therapies and improve outcomes. With any new therapy, we will continue to gather knowledge and further our understanding going forward. OSPHOS may not only be limited in helping horses with Navicular Syndrome but may have the ability help with lameness associated with other disease processes involving bone. If you have any questions, please contact our office.