

Equine Newsletter

Osteoarthritis

132 Commerce Park Drive, Unit N
Barrie ON L4N 8W8
705-722-3232
info@centralontariovet.com



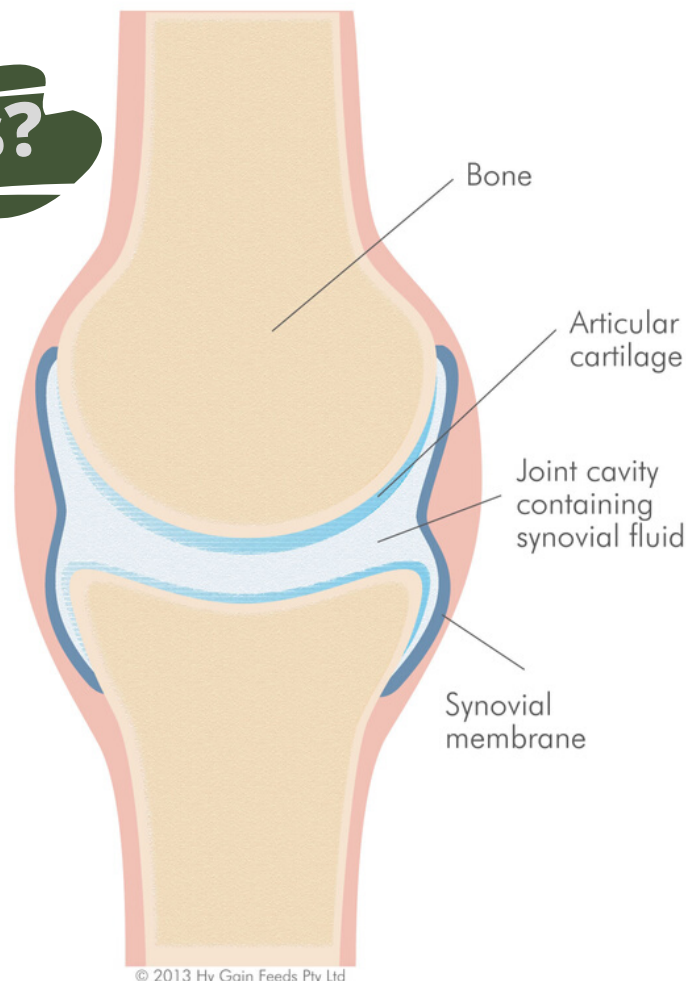
January 2020

At the end of November Central Ontario Veterinary Services, with the help of Boehringer Ingelheim, put on an education event for our equine clients. The topic up for discussion this time was osteoarthritis. We know that not everyone is able to attend these meetings and we wanted to provide a summary of what was discussed to be used as a resource for all of our clients.

What is Osteoarthritis?

Many of our clients will have heard the term osteoarthritis, as it is one of the most common causes of lameness in horses; however, to fully understand the nature of the disease, we should delve into some specifics. Osteoarthritis is a disease of the joints.

Synovial joints are surrounded by a fluid-filled capsule which helps the bones move against one another without creating excess friction.



This image shows some basic anatomy of synovial joints.

Arthritis is the word for inflammation of joints, and includes inflammation of both the bones and the soft tissue structures involved in the joint.

Osteoarthritis is a chronic and progressive form of joint inflammation. The ongoing inflammation causes damage to both the cartilage and the underlying bone. It is important to note that this damage is not reversible. We cannot cure osteoarthritis, but it can often be managed in ways that make your horse less painful.

Diagnosis of Osteoarthritis

What does joint inflammation in horses look like? Often, the most obvious clinical sign will be a lame horse. Other things that we can see are heat, joint swelling, pain on palpation, or even joint deformation.

There are several steps that can be involved in diagnosing osteoarthritis. What diagnostic options we choose to take will depend on the severity of the disease present. One thing that it will often include is a lameness exam.



Swelling typical of osteoarthritis of the pastern joint

Determining where a horse is lame can be crucial when trying to figure out the cause of lameness and even when deciding which treatments we are going to use. Lameness evaluation is something that our veterinarians have spent a lot of time training for, but it can also be valuable for owners. The Equine Guelph's Lameness Lab is a good resource for owners who are trying to learn more about evaluating lame horses.

[www.equineguelph.ca/
Tools/lame_video.php](http://www.equineguelph.ca/Tools/lame_video.php)



www.centralontariovvet.com

Once we determine which leg is lame, we can use diagnostic local analgesia - commonly known as nerve blocks - to determine the site of pain within the limb. This is done by introducing a local anesthetic such as lidocaine to strategic regions within the limb. If we manage to take away sensation from the area that is sore, then the lameness should be improved.

Once we have isolated the lameness to a specific region within a limb, we are finally able to take some images. Radiographs are most commonly used if we suspect osteoarthritis as the cause of the lameness.

Our digital x-ray system allows us to obtain excellent radiographs of bones, which is why we recommend using it in cases of suspected osteoarthritis. The inflammation will often result in changes to the bones that we can observe on radiographs. It is important to note that radiographs are not as good at imaging soft tissue. If a horse is early on in the disease process and has not yet had time for bony change to occur, there may be no signs visible on the radiographs.

Below are some radiographs of horses with moderate to severe arthritis.

Some of the changes seen are areas of rough, new bone formed around a joint, obliteration of joint spaces, and destruction of bone beneath joint cartilage.



**Osteoarthritis
of the pastern
joint, with
formation of
rough, new
bone
(High ringbone)**





Severe osteoarthritis with new bone causing complete fusion of the fetlock joint



Osteoarthritis of multiple joints within the carpus



Moderate osteoarthritis of the distal intertarsal joints of the hock.

The second joint space from the bottom is indistinct, and there is new bone bridging the joint space on the front of the joint.



Treatment

There is no single ideal treatment for osteoarthritis. Which treatment we choose will vary on a case-by-case basis. When determining treatment options for your horse, we consider the severity of the disease and what performance expectations there are for the horse.

It is important to remember that osteoarthritis is a painful disease, and that even if our horse is expected to do nothing more than hang out in a field, it is good medicine and the most humane choice to treat this condition.

It is once again important to remember the progressive, irreversible nature of this disease. We are unable to fix any damage already done to the joint and even with treatment, the disease and its clinical signs are likely to worsen.

There are so many treatment options available for osteoarthritis that discussing each in detail could fill an entire book. Instead, we will go over some highlights of the treatments most commonly used by our veterinarians.



Severe osteoarthritis of the distal intertarsal joints of the hock.

There is a dark area of bone destruction on the right side of the picture and the joint space is obliterated at that level.



Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)



This category of drugs contains products such as Bute, Banamine and Previcox. These medications are used for a variety of different reasons, but the intent is always to decrease inflammation.

These medications are very effective at alleviating discomfort that originates from inflammation. We know osteoarthritis is an inflammatory disease and therefore it makes sense that these drugs can play a big role in its treatment.

These medications are given orally and therefore have an effect throughout the entire body. They are able to address multiple sources of pain simultaneously. As with all medications, they do have some side effects. The most common side effects seen with long term use include gastric ulcers and kidney toxicity.



Corticosteroids

Corticosteroids have a powerful anti-inflammatory effect. In osteoarthritis their use is mostly limited to intra-articular injection, placing the steroid directly within the capsule of the inflamed joint.

In order to use corticosteroids appropriately, we will need to specifically identify which joints are affected.



Limiting corticosteroids to intra-articular use decreases their side effects. While some medication will escape the joint capsule, the doses that we can give are lower than if we wanted to treat the entire horse.

Historically, there were some concerns that corticosteroids could be toxic to the cartilage within the joints; however, the corticosteroid that we use most commonly (triamcinolone acetate) has not been shown to be toxic to cartilage, and in fact, may even promote cartilage health.

Hyaluronic Acid

Hyaluronic acid is a normal component of synovial fluid. It is made by the synovial membrane and acts to lubricate the cartilage within the joints. Inflamed joints do not produce normal amounts of hyaluronic acid.



The initial idea behind using this substance to treat osteoarthritis was to replace the hyaluronic acid that the diseased joints lacked. Hyaluronic acid does have a beneficial effect on osteoarthritis, but how it works is not entirely understood. The best medically-informed guess at the moment is that it has anti-inflammatory action within the joint. Hyaluronic acid can be administered directly into the joint, intravenously, or orally.

There are multiple studies showing benefits from intra-articular and intravenous administration. There is less evidence for the effectiveness of oral administration.



Other Pharmaceutical Options

Polyglycan is a medication that has been administered both directly into joints as well as intravenously. Intra-articular administration has been proven to result in a visible improvement in lameness.

Pentosan is given by intramuscular injection. In horses it has not yet been demonstrated to result in a visible improvement in lameness, but it does show improvement in several parameters used to measure joint inflammation.

Autologous Conditioned Serum (or IRAP) is produced from the horse's own blood that has been processed in a way that will increase the number of natural inflammatory mediators. This is then injected back into the joint. When autologous conditioned serum is used in cases of traumatic osteoarthritis (inflammation that is the result of an injury such as a broken bone), there is a notable reduction in lameness.

Joint Supplements

There are a large number of joint supplements available on the market. There are many that are even targeted at horses with osteoarthritis. The problem with supplements is that the companies making them do not have any obligation to prove that the supplement works before they begin to sell it.

Additionally, since the supplement industry is not well-regulated, no one ensures that the labels on supplements are accurate. In one recent study of glucosamine supplements available in Ontario, 40% of the supplements tested did not contain as much glucosamine as their labels claimed they did.





This is not to say that all supplements are useless; some companies have taken it upon themselves to do clinical research to prove the efficacy of their supplements.

If you are interested in such products you can always contact us at COVS. We are

happy to recommend and discuss products with clinical research supporting them.

For horse owners looking to learn more about supplements, Boehringer's Wendy Vos provided an excellent resource with some basic information on joint supplements in horses: <https://aaep.org/horsehealth/joint-health-supplements-information-and-how-read-product-label>. It is important to remember that a supplement is unlikely to be as effective as pharmaceutical treatments, but they can be an important component in our treatment plan.

Osteoarthritis is a complicated disease. Please contact our veterinarians to discuss diagnosis and treatment options best suited to your horse. Although there may not be a cure, management early in the disease is important for the health and comfort of your horse.



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