Out on a limb

There are several reasons for leg swelling in your horse. Knowing the difference between lymphangitis and lesser causes can save his life.

By Kelli Taylor, DVM

Your horse was fine when you brought him into his stall for dinner last night. This morning, his right hind leg is so swollen it looks like a stovepipe. It’s hot to the touch, and he’s very sore. What happened?

What causes leg swelling?

Limb swelling in horses can be caused by a variety of issues, including lack of exercise (stocking up), trauma (blunt, fracture or open wound), infection (bacterial or viral) and immune-mediated diseases (purpura hemorrhagica, pemphigus, etc.).

Swelling caused by cellulitis or lymphangitis, however, results most commonly from a break in the skin’s protective barrier that allows bacteria to enter the body. Once the bacteria have established an infection in the skin’s dermal and subcutaneous layers, the horse has cellulitis. If the infection progresses to involve the lymphatic system, it becomes lymphangitis. These are both very serious and potentially life-threatening diseases that need to be addressed by your veterinarian as soon as possible.

Opportunity knocks

In western Washington and other wet climates, horses are unavoidably housed on wet pastures or in muddy paddocks, which means their skin is continuously exposed to moisture. This creates the same type of hyper hydration effect (known as skin maceration) that you observe on your own wrinkled fingertips after spending too much time in the bath.

Macerated skin has increased permeability. Opportunistic pathogens normally found on the skin (usually the bacteria Staph. aureus in horses) can invade the weakened barrier and establish an infection. Mild infections are known as pastern dermatitis (scratches, mud fever) while infections that spread into the dermis and subcutaneous layers lead to cellulitis or lymphangitis.

More obvious trauma, such as a laceration or puncture wound, can also result in cellulitis or lymphangitis. Less obvious causes include spider or other insect bites. But most of the time, the actual cause of a specific case of lymphangitis is difficult to determine. This is because by the time we recognize there’s a problem, the leg has already swollen two to three times its normal size, which makes finding the initial wound virtually impossible.

Signs and symptoms

Lymphangitis usually only affects one limb, more commonly a hind leg than a foreleg. The leg can be swollen to twice its normal size from the hock down (sometimes even from the stifle down). The leg loses all normal definition, hence the common names for the disease: stovepipe leg or fat leg.

Often, the affected horse is off his feed, depressed and/or running a high fever (103°F to 104°F). The swollen leg is warm and tender and the horse is most often lame, usually only willing to rest
a toe on the ground. If left untreated, the swelling will progress and the skin on the affected leg may crack or split over pressure point areas. The leg may also ooze serum, a honey-colored constituent of blood. The infection can spread deeper to tendons and joints, resulting in scarring and permanent lameness. Once the lymphatics are involved, the lymph vessels may become scarred, making your horse more prone to recurrent swelling, especially after long periods of rest.

The lymphatic system and what it does

The lymphatic system is a network of vessels that runs through the entire body, similar to arteries and veins. Its job is to drain extra fluid and substances (proteins, dead cells, toxins, etc.) known as lymph from around your cells and bring them back into the blood to be further processed. Bacteria or viruses collected in the fluid are filtered out by the lymph nodes. The lymphatic system is therefore closely associated with the immune system. Think of the lymphatic system as the body’s “cleanup crew”. This process not only protects the body from toxins, but also allows cells to function at their best.

When bacteria or fungi invade the skin, a series of events begins leading to inflammation – the body’s second stage of healing. Swelling and heat progress as the circulatory system increases blood supply to the affected area. Vascular permeability also increases, allowing white blood cells to leave the circulatory system and directly combat the infection. The increased blood supply causes heat and redness, while the increased vascular permeability causes swelling. All this leads to pain, the fourth hallmark of inflammation.

Normally, the lymphatic system collects the excess fluid and returns it to the circulatory system as discussed above. But when the lymphatic vessels themselves are inflamed, they become much less efficient at their job and the fluid is left around the cells. The swelling increases further, causing the characteristic “stovepipe” leg.

Waiting for the vet

You’ve found your horse with a swollen leg – what do you do? Call your vet! Cellulitis and lymphangitis are both very serious and often require systemic antibiotics. This may mean a trip to the referral hospital for several days of IV antibiotics. Or your veterinarian may elect to perform a regional limb perfusion on the farm to try and get the infection under control quickly. Treating the infection aggressively avoids involvement of the tendons and joints and gives your horse the best chance of returning to his previous athletic level.

Begin to cold hose the leg while waiting for the vet to arrive. Cold hydrotherapy will help counteract the heat and reduce the swelling caused by inflammation. Your vet will probably instruct you to continue the cold therapy for the first 48 hours (15 minutes twice daily) then alternate heat with cold after that.

Traditional and alternative treatments

- **Poultices or sweat wraps** are often used to help decrease swelling and protect skin from cracking. So if your horse is suffering from lymphangitis, you will inevitably become an expert leg wrapper. Poultices and wraps also help make the horse more comfortable. Traditional veterinarians often reach for DMSO gel because of its purported ability to reduce swelling and help control tissue damage on a cellular level. Holistic veterinarians, however, will most likely
recommend gentler clay poultices that are kinder to your horse’s skin, not to mention less toxic.

- **Non-steroidal anti-inflammatories** (Bute, Banamine) are prescribed to help reduce inflammation and therefore swelling and pain. In cases of extreme swelling, some veterinarians will also prescribe diuretics to speed urine formation and output and therefore the absorption of excess fluid.

- **Physical therapy** is another important part of treatment. Movement, both passive and active, increases the efficiency of the lymphatic system. The lymphatic system relies on the contraction of muscles to help push fluid through the lymphatic vessels and back into the circulatory system. Limb massage performed from distal to proximal or “towards the heart” may be very beneficial in re-establishing lymphatic drainage. Acupuncture is another technique that according to traditional Chinese medicine can be used to restore proper lymph flow; it may also help with pain management.

- **Homeopathics** (Gallium-Heel, Lymphomyosot) and **herbal medicines** (solidago, milk thistle, etc.) encourage lymphatic drainage but may be more appropriate for chronic or recurrent cases. After the infection is under control, an herbal cleanser or detoxifying agent may be prescribed to rid your horse of residual antibiotics and bacterial toxins. Herbs to boost the immune system while your horse is fighting off the infection may also be beneficial and include Echinacea, wild indigo and goldenseal. It is best to discuss treatment options with a holistic or integrative veterinarian so that all medications, including homeopathics and herbs, are working together instead of against each other to help your horse.

**What’s the prognosis?**

Uncomplicated cases of massive swelling due to lymphangitis usually take time to resolve and can be quite impressive, but the horse normally returns to full function with proper and timely treatment. Open wounds from complications such as sloughing or cracking of skin take longer to heal. If the infection affects a tendon or joint, damage during the healing process may leave fibrosis or scarring and permanent lameness.

Hopefully, we will one day better understand why this disease occurs in some horses and not others, and prevent it from happening at all!

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**Can lymphangitis be prevented?**

Because the exact cause of lymphangitis is not the same in every case, it’s difficult to prevent. But there are things you can do to help minimize risk.

- Proper hydration and nutrition are critical for correct immune system function.
- Horses with chronic or recurrent swelling may benefit from supplementation with lysine and/or vitamin E.
- Regular exercise helps maintain lymphatic health.
- It’s very important to avoid excessive moisture on the skin.
- Any wound or skin disorder should be promptly treated and monitored for swelling.
Think of the lymphatic system as the body’s “cleanup crew.” This process not only protects the body from toxins, but also allows cells to function at their best.

Cold hydrotherapy will help counteract the heat and reduce the swelling caused by inflammation.

Dr. Kelli Taylor is a 2008 summa cum laude graduate of Washington State University's College of Veterinary Medicine. Just after graduation, she completed an internship in Equine Medicine and Surgery at Pilchuck Veterinary Hospital in Snohomish, Washington and obtained certification in animal chiropractic through the IVCA. She will be completing her certification in veterinary acupuncture this year. Dr. Kelli opened her own mobile veterinary chiropractic and acupuncture practice in Washington State this past winter. When not working, you can find her trail riding or hiking with her husband in the Pacific Northwest. She can be reached at kellitaylorvd@gmail.com.