

# Understanding Equine Vasculitis & Lymphangitis

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*Vasculitis and lymphangitis are broad terms that cover anything from slightly puffy legs to a sick horse that needs hospitalisation and intensive care. Before talking about these scenarios we first have to appreciate the anatomy.*

## The Anatomy

Throughout the body is a network of blood vessels, with arteries narrowing to capillaries and then widening to veins. These capillaries naturally lose a small amount of fluid and protein. This is where the lymphatic system comes into play. Mirroring the network of blood vessels are lymphatic vessels. These lymphatic vessels absorb lost protein and fluid and return it to the heart. This system of give and take is very sensitive, with the drainage of the lymphatic system relying largely on external factors. The lymphatic vessels themselves have intermittent valves to prevent some retrograde movement of fluid, but otherwise they have no tone and no way of moving the fluid forward. Therefore they rely on: muscular contraction, movement, posture, respiration and blood vessel pulsation. Veins also rely on many of the above factors to return the blood to the heart. Add to that the fact that they need to try and move fluid up the legs against gravity and you quickly appreciate how impressive this system is.

When this delicate system fails we get an accumulation of fluid between cells, termed 'oedema'. This typically presents as swollen legs.

## So what can cause this system to fail?

Increased permeability of blood vessels:

This happens when the blood vessels become inflamed and is termed 'Vasculitis'.

Decreased oncotic pressure:

The oncotic pressure essentially relates to the amount of protein circulating in the blood vessels. Protein is important for keeping fluid in the blood vessels. When it is low fluid readily leaks out.



## Increase in venous resistance:

When resistance is increased in the veins it forces blood to sit in the capillaries for longer and therefore fluid has more time to leak out of the vessels.

## Lymphatic obstruction/ inflammation:

Masses such as tumours or significant scar tissue can block lymphatic drainage. The lymphatic vessels can become inflamed, termed 'Lymphangitis', which prevents them from functioning properly, allowing fluid to escape.

This article will only deal with the first cause and its secondary effects on the lymphatic system.

## So what can cause vasculitis?

Vasculitis most commonly occurs secondary to another condition, such as:

Localised infection – This causes inflammation which can spread to the blood vessels causing vasculitis and fluid leakage. This can be caused by anything from bacteria, fungus, or viruses.

Septicaemia – As for localised infection but on a whole body scale.

Endotoxaemia – This is where endotoxins are released from bacteria into the circulation. This causes wide spread inflammation, organ damage, and can result in cardiovascular collapse. Endotoxaemia can develop in conditions such as severe colitis (diarrhoea), colic, or pneumonia, to name just a few.

Immune mediated – This is where immune complexes damage the blood vessel walls, such as can happen in 'Purpura Haemorrhagica'. This condition can develop following infection with strangles (*Streptococcus equi* subsp. *equi*).



photos courtesy of Jeanette Rice

## Common scenarios and their treatment:

### Scenario 1: After a night kept in the stable your horse now has 'puffy' legs.

This commonly is noted as a loss of the sharp definition of the tendons and ligaments that run behind the cannon bone. This mild swelling is non-painful and does not cause any lameness. Movement will increase drainage from the lymphatic system and reduce venous resistance, therefore the best cure for this is exercise. This rarely requires veterinary intervention. Any horse that has had extensive injury to their lower leg and resultant scar tissue may be predisposed to developing this oedema. The scar tissue can often affect the lymphatic drainage from the leg.

### Scenario 2: Your horse has scabs around its pastern and fetlock and his legs are swollen.

This is commonly referred to as 'Greasy Heel'. This is when bacteria and or fungi infect the pastern area of your horse's leg and this infection causes localised inflammation and infection (cellulitis). This can then extend to vasculitis and even lymphangitis. Greasy heel is most common, and typically more severe, in horses with white legs as there is a photosensitivity component to greasy heel. Greasy heel is common in the wet season, or in horses that have access to dams, as macerated skin is more readily penetrated by bacteria and fungus.

This is painful to varying degrees and the swelling can vary from mild to extreme. Your horse may walk stiffly or appear lame. To treat this the cause must be addressed. Antibiotics are used to treat the cellulitis, anti-inflammatories, such as phenylbutazone (bute), are used to control the inflammation, and topical anti-septics such as malaseb or dilute iodine can be used to wash the legs. In more severe cases a steroid injection may be given to further reduce the inflammation. In cases that have a photosensitivity component the legs sometimes need to be bandaged or the horse stabled to protect them from the sun. To help prevent further inflammation and to protect the skin topical ointments such as zinc based ointments and topical steroids (e.g. Neotopic H and Dermaped) are also often used.

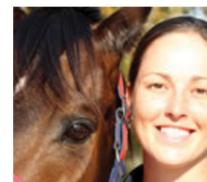
### Scenario 3: My horse has very swollen legs, is dull, has a temperature, and is off his food.

This is serious and requires immediate veterinary attention. This can be caused by any of the before mentioned causes of vasculitis.

In this scenario the widespread and extensive vasculitis can cause many signs. The legs can be so swollen that serum begins to seep through the skin – this is obviously very painful and horses will be lame. Other body systems can be affected and result in diarrhoea, colic, difficulty breathing, neurological signs (staggering), kidney disease, and abscess formation, to name a few.

These horses are very sick and your vet will try to treat the underlying cause of the vasculitis as well as trying to control the consequences of such wide spread vasculitis. This may involve a combination of antibiotics, anti-inflammatories (both non-steroidals and steroids), intravenous or oral fluids, and more.

By understanding what the driving forces are behind swollen legs we can better respond to these scenarios and ensure the correct treatment is instigated. If you are ever unsure of what is happening with your horse please do not hesitate to call your regular veterinarian.

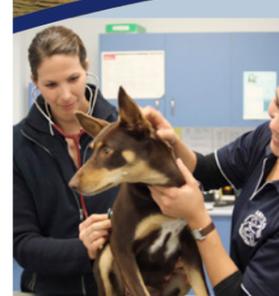


**ABOUT THE AUTHOR:** After graduating with honours in 2009 from the University of QLD, Katelyn McNicol joined the WestVets team as a mixed animal veterinarian. Although Katelyn loves all animals, her true passion is horses, being particularly interested in medicine and anaesthesia. Katelyn has also undertaken further study in equine dentistry and she is dedicated to the science of balancing a horse's teeth to enhance health, nutrition and performance.



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