

## VERMINOUS ARTERITIS / WORM ANEURYSM

Large strongyle worms (*Strongylus vulgaris*) are considered **the most destructive parasite of horses due to the severe damage it causes in the mesenteric artery (main artery to the bowel) during migration of immature larvae.** As part of their normal life cycle, infective third-stage larvae (L3) ingested from contaminated pasture penetrate the lining of the large intestine, molt to fourth-stage larvae (L4) in the sublining, and then proceed for **months at a time** along arteries that supply the intestine to end up at the root of the main mesenteric artery. Once there, larvae turn into immature adults causing severe inflammation of the artery wall (arteritis) before returning, again via the blood vessels, to complete their life cycle in the large intestine and become a mature worm. Damage to the artery wall consists of inflammation and fibrosis (thickening), and when severe enough can cause colic. This used to be a much more common cause of death due to artery rupture (aneurysm) or severe colic. The perception now of the veterinary profession is that it is very uncommon due to the “improved” dewormers, and since fewer horses are dying from it.

Osteopathy is a system of medicine that uses the quality and quantity of spinal mobility to determine whether there is some sort of problem with an organ. **The general rule is that if there are 3 or more spinal vertebrae (spinal bones) rotated and reduced in movement in a row and in the same direction, then an organ related to those vertebrae is always involved.** With this worm problem the spine is restricted in mobility from Lumbar #6 (last lumbar vertebra in the lower back) to Thoracic #12 (12<sup>th</sup> thoracic vertebra, just behind the withers). That is a total of *13 vertebrae* (a lot!) and this is because horses are herbivores and therefore have large amounts of intestine, so there is a lot of nerve flow to and from the intestine. It is more common to be restricted in motion down the right side.

Since in these “worm cases” the intestine and the inflamed arteries have altered “status” or function, the nerve flow returning back to the spine is changed. This is what causes the individual vertebra to have reduced motion. Because the origin of the reduced spinal mobility is actually coming from an organ, doing a chiropractic adjustment on the spine and/or pelvis will have a very temporary effect (hours or days). ***This is one reason why some horses do not hold chiropractic or osteopathic adjustments for very long. The organ must be treated first.*** After the worming protocol is finished much of their spine is moving better without any manipulations or adjustments!

Horses with this problem can have negative fecal egg count tests. We also find it commonly in horses that are dewormed very regularly, since a single dose of a wormer is not strong enough to clear out the larvae in the wall of the artery. It is also possible that dewormers are less effective now (increased resistance from the worms, especially to the dewormer Ivermectin). **It can be a relatively silent yet insidious disease.**

Common symptoms of verminous arteritis are: **generalized stiffness** (their spine can be like a steel rod!), especially down the right side of the back, lameness issues that never seem to resolve, poor hair coat, pot-belly, difficulty keeping weight on, poor immunity, coat does not shed out well. Not all “worm cases” have these symptoms though. Very athletic horses can also have this problem so in many it is not all that obvious. This condition is actually quite common since all domestic horses have a greater exposure to parasites than horses in the wild. The only way to definitively diagnose these (other than with rectal examination and ultrasound) is with an osteopathic evaluation (motion testing) of the spine. The spine does not lie!