Colitis, Diarrhea & Intestinal Health in Adult Horses

The equine digestive tract is a complex and fragile system that is easily disrupted. The intestines (about 80 feet long in an average adult horse) digest and absorb feed, extract nutrients, absorb water, and eliminate waste. One sign that the intestines are disturbed or otherwise stressed is the development of diarrhea. The causes of equine diarrhea can range from mild to life threatening. In adult horses, these causes include everything from mild stress to severe intestinal infection. Given that the function of the intestine in adult horses differs from that in foals, this article only addresses the problem in adult horses.

THE LARGE COLON

Digesting, absorbing and utilizing the normally indigestible sugars in hay and other green plants would be impossible for horses without the action of microbes (bacteria and protozoa) in their specially adapted large colon. Microbes break down these sugars into products that can be readily absorbed and used by horses. The large colon is the car tire sized lower part of the intestine that contains a huge population of these microbes. It is critical to the digestion and absorption of nutrients and water uptake. These processes are interdependent and require a normally functioning flora (microbe population), and a healthy colon lining made up of cells that absorb water and nutrients, and functioning vessels to move fluid into the circulating blood.

Diarrhea is an excess of water in the manure and is caused when anything disrupts the very specific balance of microbes in the colon or damages the colon lining or circulation. When water is not absorbed in the colon, it is lost into the manure

resulting in loose stool or diarrhea. Serious diarrhea accounts for huge water loss, and can cause rapid loss of fluid from the circulatory system. This leads to a vicious cycle of low blood pressure and reduced blood flow to vital organs (circulatory shock), which can quickly result in death if untreated.

It is important to differentiate between acute (sudden) and chronic (long term) diarrhea. Mild, acute diarrhea may be caused by stressful situations such as trailering. This is a reflex caused by the nervous system. Most horses produce normal manure soon after the stress is resolved. In addition, rapid diet change alters bacterial populations resulting in diarrhea and usually improves as the intestinal balance shifts back to normal. In severe cases, however, it can lead to colitis, a severe inflammation of the large colon.

Chronic diarrhea in adult horses usually relates to a damaged colon wall and reduced uptake of water. Horses with chronic parasite infestation, inflammation or tumors involving the colon wall often have chronic diarrhea. These horses usually also have severe weight loss. Parasite infestation causes weight loss and diarrhea by causing damaging the intestinal wall and causing low-grade colitis.

COLITIS

Colitis is inflammation of the colon. When the colon wall is irritated it loses function, thereby losing its ability to internally uptake water, and may actually dump fluid from the blood stream into the manure. Colitis can be caused by a variety of problems, but often results from a disruption of the normal bacterial flora due to a rapid feed change. A classic example of this is grain overload, which can cause entire populations of normally occurring microbes to die off and others to flourish. This imbalance and direct damage to the colon from the acid products from the grain can lead to colitis, which results in diarrhea.

Bacterial colitis is caused by overgrowth of undesirable

organisms in the colon. Overgrowth of organisms that normally live in the colon can take place, or a new organism may be introduced. Often we do not know why these bacterial populations shift, but when they do, life threatening colitis and diarrhea can result. Bacterial colitis is often caused by types of *Salmonella* and *Clostridial* organisms. Understanding where these organisms come from or what causes them to multiply suddenly has proven to be difficult and is still not completely understood.

Researchers have learned that some types of bacteria can be transmitted through contact with horses that are shedding the organism in their manure. Some have been isolated from environmental sources like contaminated drinking water. An important point is that these organisms appear when the normal flora of the gut is disrupted, especially by the use of certain antibiotics.

Whether or not a horse becomes infected with these diseases depends their immunity, as related to their general health and the specific balance of microbes in their intestine. Acute colitis is rare but occur more often under more crowded and stressful conditions. There have been serious outbreaks of bacterial colitis in equine hospitals and breeding farms. An important factor in these outbreaks is that most of the horses infected are sick or stressed and usually have been on antibiotics. Antibiotics alter the normal bacterial populations and make horses more susceptible to overgrowth of these bacteria. A less common cause of colitis in the Southwest (more common in the Northeast) is Potomac Horse Fever, caused by an organism that relies on a parasite in freshwater snails for its life cycle and transmission to horses.

SAND COLIC

Sand accumulation, so called “sand colic” also often causes diarrhea. Horses accumulate sand accidentally as they eat hay off sandy ground or graze short stubble in a sandy pasture.

Diarrhea results from partial blockage of the colon, and irritation to the colon lining from large quantities of sand. At its worst, a horse can accumulate more than 100 lbs of sand in their colon. The critical factor determining a horse's likelihood of getting sand impaction is whether or not the soil upon which horses are fed is sandy or not. Fine clay soils are not likely to accumulate in the colon like sand. *See Sand Accumulation in the Colon: A Common Cause of Equine Colic for more details.*

TREATMENT & PREVENTION

Veterinary diagnostics for horses with diarrhea include a careful history and physical exam. Laboratory tests on blood and manure are used depending on the case. The veterinary treatment of diarrhea in horses depends on a properly diagnosed cause. Stress induced watery manure, for example, may require little or no treatment. Colitis, on the other hand, must be treated immediately and often requires hospitalization. Types of treatments in these cases may include oral and intravenous fluid therapy, plasma, antibiotics, anti-inflammatories, and nursing care. Unfortunately, severe colitis has a high rate of complications including laminitis, which can also be life threatening.

Horse owners should observe the following precautions to reduce the likelihood of diarrhea and colitis in horses:

- Reduce stress and provide the most natural lifestyle possible with consistent turnout.
- Feed a staple of a good roughage source in the form of quality hay or pasture free of toxic weeds. Use grain as a supplement, not as a staple.
- Avoid sudden changes in diet.
- Ensure access to fresh water at all times. Avoid relying on stagnant or contaminated ponds, streams, or ditches.
- Maintain an appropriate parasite control program.

- Use antibiotics only when truly necessary and under the guidance of your veterinarian.
- Always communicate with your veterinarian immediately if you notice diarrhea.
- Horses suspected of having intestinal infection should always be isolated until your veterinarian can advise you.

Prevention of sand accumulation involves determination of whether or not your soil type puts your horses at risk. If your soil is sandy, you should take proactive steps to ensure that your horses do not accumulate sand. These steps include:

- Feed off the ground in mangers or tubs.
- Ensure that the spillage from these is not picked up from sand (lay down mats or other barrier under the tubs).
- Use psyllium as a preventative supplement, per your veterinarian's instructions.
- Horses grazing on sandy pasture should not be allowed to graze down to short stubble. When they do, they are more likely to ingest sand.

Diarrhea is an uncommon but potentially serious symptom in adult horses and is a sign of disrupted intestinal function. The observation of diarrhea in an adult horse should not be grounds for panic, but should prompt you to monitor the situation carefully and contact your veterinarian right away.

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