

Sand Accumulation in the Colon: A Common Cause of Equine Colic

Most horses live long and healthy lives with small amounts of sand and dirt in their intestine. As they eat, horses naturally pick up small amounts of soil, which usually moves through with other feed material and causes no problems. Horses accumulate sand in their intestine by eating off of sandy ground, or grazing short stubble on sandy soil.

The most important factor determining whether or not a problem develops is the soil particle size at a given location. Unlike sand, fine clay and silt soils usually do not accumulate. Sand grains are larger than those of silt or clay, and their heavier weight causes them to settle to the bottom of the intestine rather than pass through. If sand intake becomes greater than outflow, then accumulation begins. Over time, horses can accumulate huge quantities of sand, mostly in the large intestine (large colon). I personally have removed up to 100 lbs. of sand from horses at surgery. Large accumulations of sand lead to diarrhea, weight loss, colic, and potentially to life threatening obstruction.

Sand causes intestinal pain and damage by a variety of effects. The sheer weight of the sand pressing down probably causes decreased blood flow to the colon wall. Gritty sand probably also causes abrasion to the intestinal lining. The damaged colon wall also loses the ability to absorb nutrients and reabsorb water, causing diarrhea. Sand may combine with feed to create an obstruction that physically blocks movement of feed material in the colon. Stretch from impaction and gas distension of the gut causes gut damage in itself, which further reduces function and leads to more distension and sand accumulation.

A cycle of damage and dysfunction can develop. Toxins (endotoxins) sometimes are taken in from the damaged gut into the circulation, causing problems like laminitis. The colon can further displace or twist, resulting in an immediate life-threatening crisis only solved by rapid surgical intervention. In the worst-case scenario, the colon wall may become so damaged that it ruptures, spilling manure into the abdomen and causing rapid death.

SIGNS OF SAND ACCUMULATION

Diarrhea and/or colic are the most common signs of sand accumulation. Horses with sand accumulation may be depressed and eat less than normal, and can also experience weight loss and fever. Colic (abdominal pain) is demonstrated by generalized restlessness and apparent discomfort, lying down, kicking at the belly, pawing, sweating, looking at the side, rolling or any combination of these signs and many others.

Diarrhea is the most common and "classic" sign of sand accumulation in the horse. Horse owners should recognize diarrhea in the adult horse as a medical emergency.

DIAGNOSIS

Your vet differentiates sand accumulation from other causes of diarrhea and colic with a thorough examination and diagnostics. A familiar method used to diagnose sand is hearing it in the colon with a stethoscope. Fluid and feed washing over sand sounds like waves washing over sand at the beach. An important part of the veterinary colic examination is rectal examination. Your vet might feel a feed impaction in the colon which accompanies sand accumulation. In serious cases, they might even notice obvious grit in the rectum.

Another helpful diagnostic tool is radiography (x-ray). The minerals in sand show up brightly on an x-ray. Unfortunately, for an animal as large as a horse, sufficient penetration of the abdomen requires a very powerful x-ray generator not available in most equine hospitals. Ultrasound examination of the belly also can help identify sand.

A simple diagnostic tool that you can use is the “glove test.” Collect a handful of manure and place it in a clear plastic glove, plastic bag or jar. Add water, thoroughly mix it with the manure and allow the contents to settle. If a significant amount of sand settles to the bottom, it is reasonable to assume that there is significant sand in the colon.

TREATMENT & PREVENTION

The goals of veterinary treatment of horses with sand accumulation revolve around pain relief and nursing care to support the body systems, while high doses of psyllium (often given by stomach tube) begin to move the sand out. It may take weeks for the intestine to completely “clear” of sand. Unresponsive or fully obstructed cases may require surgery, which can be very difficult and is not always successful.

The key to prevention of sand accumulation is reducing sand intake. Know your soil type. If your horses live or eat around sandy soils, they are at risk for sand accumulation. In this case, it is not enough to simply feed in a hay bunk. Horses eating hay from a bunk pitch much of it onto the ground and eat it from there. If that is happening, you may need to feed on mats or in feeders. Some horse owners construct special feeding areas to reduce sand ingestion. Horses thought to be ingesting some sand despite good management should be fed a psyllium product as directed. Psyllium is a plant fiber that forms a watery gel in the intestine. It is thought to bind sand and act as a vehicle to move it out of the intestine.

There are a variety of commercial psyllium products on the market. Your vet can help you choose the most appropriate one for your situation. Just keep in mind that feeding a psyllium product is not a substitute for reducing sand intake through good management.

Sand accumulation is a far-too-common problem that causes horses a great deal of pain and suffering. By being aware of and on the lookout for this condition, horse owners and caretakers have the opportunity to prevent it.

Douglas O. Thal DVM Dipl. ABVPBoard Certified in Equine
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