theHORSE.com
YOUR GUIDE TO EQUINE HEALTH CARE

Equine Strangles

Strangles is an important disease because it can spread quickly through horse populations

Overview

Strangles is a highly contagious and debilitating equine disease caused by the bacterium *Streptococcus equi*. Strangles is an important disease worldwide because it is highly contagious (meaning it can spread quickly through horse populations).

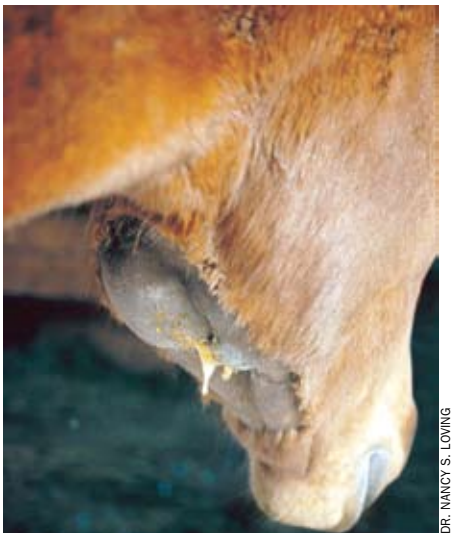
Clinical Signs

The most common clinical signs observed in horses with *S. equi* are a mucopurulent nasal discharge (a greenish, yellow, or white "snotty" discharge), fever, loss of appetite/anorexia, depression, cough, and swellings that are a result of abscessation of the lymph nodes (usually the nodes located in the head and neck region) due to an accumulation of pus.

The lymph nodes can become so enlarged that swallowing is painful and the trachea or pharynx can be compressed, causing labored breathing (hence the term, "strangles"). An affected horse might stand with its head and neck stretched out to relieve the pressure caused by the swollen lymph nodes. The enlarged lymph nodes usually burst and drain thick, yellow pus. The lymph nodes in the throat area can burst into the guttural pouches and result in copious nasal discharge. This pus is contaminated and can spread the disease.

In rare cases *S. equi* can infect lymph nodes in areas other than the head and neck (such as the chest or abdomen). This is called "bastard" or metastatic strangles. Horses severely affected by strangles can die or require euthanasia. *S. equi* also can cause immune complexes that damage blood vessels (called purpura hemorrhagica) and subsequently cause limb and head swelling, circulatory failure, and death.

Horses with partial immunity to *S. equi* or that were infected with a less-virulent strain of the bacterium can show an abbreviated course of disease with only minor or no lymph node abscessation. This is called the catarrhal form of strangles.



DR. NANCY S. LOVING

Swollen lymph nodes, a common clinical sign of strangles, usually burst and drain infectious thick, yellow pus.

How *S. equi* Causes Disease

How long *S. equi* can survive in the horse's environment is unknown. If the area is protected from ultraviolet light and the bacterium does not have competition from soil flora, it can survive for several weeks. It is spread in the pus from infected horses' noses, draining lymph nodes, or by coughing. A horse shedding the bacterium can infect any object in the barn, including tack, feed and water buckets, shared water sources (such as automatic waterers and tanks), brushes, and bedding. *S. equi* can also be transmitted by direct nose-to-nose contact between horses or even by flies.

In classic strangles, *S. equi* invades the tonsil tissue then enters the regional lymph nodes. Within three to eight days the horse develops clinical signs. Once the abscesses rupture and drain, recovery is typically uneventful and occurs in approximately two weeks. Horses can remain infective for weeks after recovery, and a small number continue to shed the bacteria intermittently for a prolonged time—even years—despite appearing completely healthy.

Not all horses exposed to the bacterium become infected. Infection depends on the amount of bacteria the horse is exposed to, the immune status of the horse, and underlying conditions such as stress, nutrition, and pre-existing diseases. All ages of horses are susceptible to *S. equi*; however, foals and young horses are most susceptible because they often have lower (not as protective) immune responses. This disease is more commonly seen in horses with exposure to outside horses through travel to competitions or those maintained in large herds with a mobile horse population.

Diagnosis

Diagnosis of horses with active signs of strangles relies on the clinical presentation of the horses and culture identification of *S. equi* in swabs of nasal discharge and lymph node contents. Diagnosis of chronic shedders of the bacteria is more challenging and requires collection of nasopharyngeal wash samples with more extensive testing through PCR and culture.

Treatment

Suspected strangles cases should be examined immediately by a veterinarian to confirm the diagnosis, alleviate the some of the signs of disease, prevent the development of secondary complications, and limit the spread of *S. equi* to other horses.

Horses with strangles should be isolated for six to eight weeks. Follow strict hygiene measures and disinfecting to ensure the bacterium is not carried to other horses on clothing, buckets, or vet equipment. Test to see if the horse is still shedding bacteria prior to contact with other horses.

Many strangles cases do not require specific treatment, and the use of antibiotics is controversial. Thus, it is critical to involve a veterinarian in developing a treatment plan. Nursing care is advocated and involves warm compresses to relieve pain caused by the swollen lymph nodes. If the

theHORSE.com
YOUR GUIDE TO EQUINE HEALTH CARE

enlarged lymph nodes are compressing the trachea or pharynx and making breathing difficult, the veterinarian might lance the lymph nodes or perform a tracheostomy to allow the horse to breathe easier. Draining lymph nodes can be lavaged until they are ready to seal and heal.

Prognosis

Most horses recover from strangles within seven to 10 days from the onset of clinical signs with no long-term residual health concerns. Non-fatal complications associated with strangles include post-strangles inflammation of the heart muscle (myocarditis), cellulitis (inflammation of the skin tissues), laryngeal hemiplegia or "roaring" (a noise caused when the airway isn't fully operational), anemia during recovery, and pus-filled guttural pouches.

Remember recovered horses can be infective and should be isolated from other horses for at least eight weeks after resolution of clinical signs and optimally tested to determine their shedding status. Horses with persistent infections of the guttural pouches can serve as carriers of strangles and are major sources of infection that can cause outbreaks of disease when mixed with susceptible horses.

Prevention

To prevent introducing strangles to your facility, isolate all new horses two to three weeks to ensure they do not develop signs of strangles prior to mixing with resident horses. Take the new horses temperatures twice a day for early detection of infectious disease. A veterinarian should examine all newly introduced horses prior to mixing. Depending on the health history of the new arrival, you can test to detect *S. equi*.

Two strangles vaccines are available: a subunit M-protein-based vaccine for intramuscular use and a modified live bacterial vaccine for intranasal administration. There are pros and cons associated with each vaccine that should be discussed with your veterinarian.

Carriers can be identified by detecting *S. equi* genetic material (DNA) using a polymerase chain reaction (PCR) test on nasopharyngeal lavage samples or samples from the guttural pouches. Use of the live *S. equi* vaccine in the previous 30 days can interfere in this process.

FAST FACTS

- ***Strangles*** is caused by the bacterium *Streptococcus equi* subspecies *equi* and is an important, highly contagious respiratory tract infection of horses.
- ***Classic signs*** of disease include a nasal discharge, swelling/abscessation of the lymph nodes of the head and neck, fever, coughing, difficulty eating, and lethargy.
- ***Metastatic or "bastard" strangles*** occur when the bacterium infects areas elsewhere in the horse's body, such as the chest, abdomen, or brain.
- ***Recovery*** for most horses occurs uneventfully within six to eight weeks with appropriate nursing care.
- ***To minimize*** the spread of infection, all infected horses should be immediately quarantined and strict hygiene measures should be instituted.
- ***Carriers or chronic shedders*** can occur following recovery in a small percentage of horses with *S. equi*; these are an important source of infection for susceptible horses.
- ***Vaccination*** against *S. equi* might be beneficial depending on risk factors for the disease your horses experience and should be discussed with your veterinarian.