

Strangles

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Abstract

Strangles is a highly infectious respiratory disease in horses. It is caused by the Gram positive bacterium, *Streptococcus equi subspecies equi* (*S. equi*). Outbreaks generally occur when a new horse(s) who are actively shedding the organism are introduced to a naive or susceptible herd. The bacterium is then maintained in a population by horses who carry the disease without showing clinical signs, called asymptomatic carriers. Transmission occurs via the nose or mouth, such as when a susceptible horse shares contaminated feed or water bins or rubs noses with a horse actively shedding the organism. Though most cases are not life-threatening, it is extremely contagious and strangles will spread rapidly through a facility. The best way to prevent an outbreak is to quarantine new arrivals for three weeks.

Clinical Signs

The first clinical sign is usually a fever. The fever is then followed by inappetence, lethargy, and reluctance to drink. Swelling and lymph node abscessation occurs 3-5 days after the onset of the fever. Depending on the location of the affected lymph nodes, the enlarged nodes can swell externally or internally. The internal ones can impinge on the airway, seeming to “strangle” the horse or make it more difficult to breathe. That is how *S. equi* earned its name, Strangles. In one to four weeks, these abscesses rupture externally, into the airway, or into a structure in the head called the guttural pouch. The guttural pouch is a large air-filled space in front of the ears that connects to the nasal passage. Multiple important structures pass through the walls and floor in the guttural pouch including several cranial nerves and the internal carotid artery. Pus in the guttural pouch due to *S. equi* is called guttural pouch empyema. Severe cases can result in suppurative (pus) bronchopneumonia. Though predominantly a respiratory disease, Strangles can affect other organ systems too. Other common sites include lung, gastrointestinal tract, spleen, kidney, and brain. When Strangles affects a site outside the respiratory tract, it is called “Bastard Strangles.”

Shedding of *S. equi* via nasal secretions occurs one to two days after the onset of the fever. If an abscess ruptures and drains, that pus is filled with *S. equi* and can easily transmit disease. Horses can be infectious for at least six weeks after the pus dries up. Horses with guttural pouch empyema can remain asymptomatic carriers for months to years. The pus dries up and hardens, forming chondroids. These chondroids remain active sources of bacteria.

Prevention

As mentioned above, the best way to prevent an outbreak of *S. equi* is to quarantine all new arrivals to the facility for three weeks. It is also important to establish good biosecurity practices and adequately disinfect shared equipment. *S. equi* can be killed with household bleach, quaternary ammonium compounds, and phenolic compounds. Note that chlorine products (ie bleach) and quaternary ammoniums are deactivated in the presence of manure and other organic material so it is important to clean surfaces of debris prior to disinfection. Direct sunlight for 24 hours will also eliminate the pathogen on wood, rubber, and metal surfaces.

Two vaccines for Strangles are available. The antigen extract vaccine is given intramuscularly and contains a portion of the bacterium that the immune system learns to recognize. The attenuated, live

vaccine is administered intranasally. The bacterium is still alive per say but its ability to cause disease is diminished. This way, the immune system learns the pathogen itself versus a piece a pathogen as with the antigen extract vaccine. The attenuated, live vaccine is more effective but comes with greater risks. It should only be administered to healthy horses and cannot be given during an outbreak. It should also not be given during other procedures such as dentals, castrations, or joint injections because it contains a live organism. We do not consider Strangles a core vaccine. Whether your horse needs or is a good candidate for the Strangles vaccine is something to discuss with your veterinarian.

Zoonotic Risk

S. equi is a zoonotic disease, meaning that it can be transferred from horses to humans. It is important to note, however, that transmission from horses to humans is rare and all reported cases have been in people who were already immunocompromised. Good biosecurity practices should still be maintained. Always wear gloves when handling an infectious horse, wash your hands afterward, and avoid accidental inhalation or ingestion of pus.

Treatment

Treatment for *S. equi* depends on the stage and severity of the disease. In most horses, treatment is supportive: rest, adequate shelter with dry bedding, and soft, palatable, good quality food. Antibiotics are only indicated in cases with very high fevers, respiratory distress, severe lymph node swelling, or Bastard strangles. Antibiotics are not indicated if a horse has only been exposed or once an abscess ruptures. If drainage does not occur on its own, hot packs can be applied or the abscess may need to be drained by your veterinarian. Rupture and drainage of these abscesses is an important part of the healing process. Guttural pouch empyema cases are identified with endoscopy and antibiotic therapy is applied directly into the pouch. Non-steroidal anti-inflammatory medications (Bute, Banamine) can be helpful to reduce fever, improve comfort, and promote eating and drinking.

Source: Reed, et. al. Equine Internal Medicine (Third Edition)