

## **“STRANGLES” in Horses**

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One beautiful spring morning, you are milling around in the barn after the morning feeding trying to decide how to spend the rest of the day. Then you notice that one of your horses just isn't quite right today. The mare is not typically an aggressive eater, but today she really is not interested in her morning grain ration at all. On closer inspection, you notice that she feels warm. A quick check with a thermometer reveals a temperature of 103.5 Fahrenheit - - significantly above her normal 100.4 Fahrenheit. You also note that there is a cloudy nasal discharge from both nostrils, and as you are stroking her head, you notice several small “lumps” in front of the throat latch area that she resents you touching. After a visit and consultation with your veterinarian, your fears about “strangles” are confirmed, and within several days, two more horses in the barn are showing similar signs.

This scenario is a typical textbook description of a strangles outbreak, a problem with which many horse owners are all too familiar.

“Strangles” is a disease caused by the bacterium *Streptococcus equi*, a Gram positive (stains purple with a special Gram stain) organism that is considered to be an “obligate” parasite of the equine species. The nature of a species of bacteria that is considered to be an obligate parasite is that it does not survive well outside the body. However, it survives well enough and long enough to be transmitted from horse to horse via nasal secretions and pus from draining abscesses.

“Strangles” is ostensibly a disease of the upper respiratory tract, and it generally involves the lymph nodes of the head region. The inner lymph nodes occasionally can become so large that the horse has great difficulty breathing and can actually asphyxiate, hence the name strangles. More technically, the disease is a purulent (associated with pus) pharyngitis (inflammation of the throat) and lymphadenitis (inflammation of the lymph nodes).

*Streptococcus equi* is considered to be highly “host-adapted” to the equine species, meaning that it has evolved as a micro-organism that is very good at causing disease in horses, donkeys, and mules. The organism does not typically cause disease in other species of animals.

The disease is highly contagious and can be transmitted by direct contact with nasal secretions or pus from a draining abscess. In addition to direct “nose-to-nose” contact, the organism can be transmitted by people (your dirty hands), flies, or “fomites.” A fomite, by definition, is an inanimate object (i.e., a water bucket) that transmits a disease to a healthy animal via its contamination from a sick animal.

Members of the equine species of all ages can be affected, but the disease is most common and most severe in young horses. Many foals have some degree of immunity to the disease that they acquire from their dams' colostrum. If the mare has had the disease and developed immunity and/or has been vaccinated, then there will be high levels of protective blood proteins (antibodies) that can be transferred in the colostrum to the foal. This “passive immunity” acquired by the foal via the colostrum might afford protection against this disease (and many others) for the first three to six months of life. It is during that time that foals become more susceptible to disease as the “maternal antibodies” start to decline and their own immune systems begin to create protection either from exposure to disease or via stimulus from vaccinations.

Because the organism does not survive well outside of the horse's body, there often is a horse or exposure to a horse (sale, show, etc.) that is a source of the organism. In a few isolated and rare reports, horses have been identified as “long-term” carriers of the disease, but the typical situation is one where the “source” horse is still incubating the disease or is in the recovery phase and shedding the organism in nasal secretions. The situations are endless: mares coming and going from breeding farms; sale horses coming and going; horses-to-horse contact at shows, events, and races; just who was in this stall before my horse and how well was it cleaned/disinfected?

Once the *Streptococcus equi* organism is transmitted to a horse via the mouth or nose, the organism attaches itself to the tonsil and adjacent lymph nodes. The lymph nodes are connected throughout the body by channels called the lymphatics, so once the organism has invaded one lymph node, it has a highway, so to speak, of lymphatics to spread around to other lymph nodes. However, most all cases of strangles are restricted to the lymph nodes in the head.

## **THE ONSET**

There is typically a three to 14 day incubation period after exposure to the organism before the onset of clinical signs. The typical disease onset is characterized by mild lethargy, a low-grade fever (102 - 103 Fahrenheit), and a nasal discharge that is first clear and thick, then becomes white and contains pus. There is often a slight cough, loss of appetite, trouble swallowing, and a progressive swelling and tenderness of the lymph nodes around the head. Some horses might stand with their head and neck extended because of pain in the throat area.

The "external" lymph nodes in which we might observe swelling commonly are those under the lower jaw (in between the mandible), behind the back edge of the mandible (the high throat latch area), and above the eye. In most cases, these infected lymph nodes "mature," rupture, and drain for seven to 14 days after the onset of clinical signs. It is noted that not all affected horses develop lymph node swelling. Some older horses which might have established some degree of immunity can have lethargy, fever, and nasal discharge without further progression of the disease - - those cases still shed the organism and act as a source of infection for healthy horses.

Some horses can become more "systemically" ill and potentially spread the streptococcus organism throughout their bodies. Those horses might have a very high and persistent fever and severe depression. The term "bastard strangles," is used to describe the condition when other lymph nodes within the body are affected. This condition can be difficult to accurately diagnose and treat and generally carries a poor prognosis.

If you feel your horse may have strangles or have had contact with a horse that had strangles, contact your veterinarian for treatment and prevention recommendations.