Equine Strangles

Strangles – a word feared and despised by horse owners. It was first recognized and described by Jordanus Ruffus in 1251. Strangles is a highly contagious bacterial disease caused by *Streptococcus equi*. It is spread by direct contact with infected horses or carriers. The disease can also be transmitted via contaminated water troughs/buckets, feed bunks/buckets, stalls, tack, trailers, and people. It usually affects young horses but can afflict horses of any age. Horses in high-density management systems (i.e. breeding farms) and those in high traffic areas such as shows and events are at higher risk of being exposed and infected by *S. equi*. There are, however, many steps horse owners can take to protect their horse from the disease.

After a horse ingests or inhales the organism, it migrates to local lymph nodes and multiplies. Within 3 to 14 days of exposure, the horse may exhibit fever, depression, decreased appetite, sore throat, difficulty swallowing, cough, nasal discharge, and swollen lymph nodes under the jaw. When the infection spreads to the lymph nodes, acute swelling and abscess formation develop around the horse's throat or upper neck region. If the lymph node enlargement becomes severe, there is a risk of partial or complete airway obstruction. This is how the disease became known as "strangles". Eventually, the enlarged lymph nodes can rupture resulting in pus-filled draining tracts externally through the skin or internally into the guttural pouches. Abscessed lymph nodes usually rupture 7-14 days after initial clinical signs are seen. A severe complication of infection is termed 'bastard strangles' where the organism spreads throughout the body causing abscesses in the brain, lungs, thorax, or abdominal lymph nodes.

Procaine penicillin G is the treatment of choice; however, initiation of antibiotic therapy should be considered cautiously. Treatment of horses with established disease (i.e., lymph node abscess) provides only temporary

improvement and usually clinical signs reoccur shortly after antibiotics are discontinued. Alternatively, early antibiotic treatment within 24 hours of the onset of fever often stops the infection. However, the elimination of the infection with antibiotics decreases the horse's ability to develop proper immunity against *S. equi* and the likelihood of reinfection upon subsequent exposure is increased. Antibiotics are indicated in horses exhibiting severe complications such as respiratory difficulty, prolonged high fever, difficulty swallowing, loss of appetite, and purpura hemorrhagica. It is preferable to let the disease run its course in uncomplicated strangles cases because horses become protected from the infection for a prolonged period of time after a natural infection – possibly as long as 4 years. Hot packing will promote maturation of abscessed lymph nodes and after the abscess ruptures it should be flushed with dilute antiseptic solution (i.e. povidone-iodine).

The decision to vaccinate a horse against strangles and the type of vaccine used should be discussed with your veterinarian. Vaccination is usually reserved for horses expected to be at high risk for exposure (farms with heavy horse populations, facilities with current or recent outbreaks, etc.).
Intramuscular *S. equi* bacterin and subunit (M-protein) vaccines are approved for use in the United States. These have been shown to generate a weak immune response in the horse's airways, which is the primary route of S. equi infection. However, systemic antibody response is sufficient enough to decrease the severity and duration of clinical signs as well as reduce the attack rate during strangles outbreaks by an estimated 50%.

Adverse reactions to intramuscular strangles vaccines include injection site swelling and abscess formation. In rare cases, a serious vascular inflammation called purpura hemorrhagica can also develop days to weeks after the injection. It manifests as edema (swelling) of the limbs and possible small hemorrhaging of the mucosal membranes. The disease is potentially life threatening.

Intranasal (modified-live bacteria) vaccines are also approved for use in the United States. They tend to have fewer vaccine-related reactions and result in higher production of secretory IgA antibodies for enhanced airway immunity. They are not suggested for use in foals younger than 4 months of age because these foals have decreased ability to produce the immunoglobulin IgA and will not fully benefit from the vaccine. The intranasal vaccine is safe to use in pregnant mares. Therefore, some passive protection can be expected up to 4 months for foals born from vaccinated mares.

Intramuscular strangles vaccination begins with an initial series of 2-3 doses at intervals of 2-4 weeks, then annually or before anticipated exposure. Intranasal vaccination usually starts at 4-6 months of age with an initial vaccine followed by a booster in 2-3 weeks and then annually. It takes 2-3 weeks to acquire adequate immunity after the administration of the intranasal vaccine. Proper management practices to control the spread of the organism should be utilized to help minimize the spread of the disease in the event of a strangles outbreak.

Contact Brandon Equine Medical Center at 813-643-7177 or email info@brandonequine.com with any questions regarding this topic.