TVMDL Texas A&M Veterinary Medical Diagnostic Laboratory

Equine Strangles: TVMDL offers definitive ID, prevention & consultation services

The Texas A&M Veterinary Medical Diagnostic Laboratory (TVMDL) offers assays to definitively identify *Streptococcus equi* subspecies equi (*S. equi*), the causal agent of "strangles." Strangles may be suspected based on clinical signs but diagnostic testing is the only means to positively identify the organism in order to provide proper care.

Strangles is a disease known worldwide for infecting the upper airway and lymph nodes of a horse's head and neck. Recognizable by pyrexia, enlarged nodes under the throat that can become abscessed and burst, and nasal discharge, strangles is highly contagious(1). Though clinical signs often point to a strangles diagnosis, diagnostic testing is required to confirm the clinical findings.

Both direct culture and polymerase chain reaction (PCR) are the tests for definitive diagnosis of current infection with strangles. PCR is reported to be more sensitive than bacterial culture for detection of *S. equi*(2). A serology test will only con rm exposure to *S. equi*, not current infection.

TVMDL offers a (PCR) assay that differentiates between *S. equi* and a closely related organism, *S. equi* subspecies zooepidemicus (*Streptococcus zooepidemicus*). Although *S. zooepidemicus* has the ability to cause illness, it is often regarded as a commensal or a secondary bacterial pathogen of the equine upper respiratory tract. The PCR assay targets two genes (sodA and seeI) that are present in *S. equi*, whereas *S. zooepidemicus* only possess the sodA gene(2). The PCR test is validated for any of the following: guttural pouch washings (both pouches should be lavaged), pharyngeal washes, nasal secretions, nasopharyngeal swab, lung tissue or a bacterial isolate. The PCR may be useful in identifying asymptomatic, subclinically infected carriers, especially horses in which shedding may be too light and intermittent for successful culture, and to determine the success of the elimination of *S. equi* from the guttural pouches.

The Bacteriology Section at TVMDL can also culture the sample; an aerobic and anaerobic culture is priced at $28 for all clients, beginning September 1.

If a serum sample is sent to TVMDL, testing is available to identify antibodies to the *Streptococcus* strain. TVMDL facilitates serologic testing through Equine Diagnostic Solutions (EDS), based in Kentucky. The enzyme-linked immunosorbent assay (ELISA) costs $50 and will be shipped from TVMDL to EDS for a rate of $10.

Occasionally the organism may become systemic resulting in internal abscesses, often referred to as metastatic or "bastard" strangles, which is difficult to treat. The serologic measurement of SeM specific antibodies can be helpful to practitioners through:

- making informed decision on whether the horse has metastatic strangles
- the identification of hyper-responders, or horses at risk for developing purpura hemorrhagica
- determining need for vaccination or additional booster vaccine
- diagnosing recent but not necessarily current infection

Ensure you are treating the correct *Streptococcus* strain by selecting one of the testing options offered at TVMDL.

Strangles can strike horse herds in cycles; a program for control and prevention is one way to ensure the disease does not affect your herd. TVMDL offers farm consultation through our collaboration with equine infectious disease epidemiologists Drs. Noah Cohen and Michelle Coleman of the Texas A&M College of Veterinary Medicine & Biomedical Sciences. Dr. Cohen, Dr. Coleman and TVMDL will work with clients to set up a prevention program or to offer best practices to stop an outbreak. Contact TVMDL for more information on consultation services.

For more information on TVMDL's testing services, contact one of the two full service labs.

References:
1. "New perspectives for the diagnosis, control, treatment, and prevention of strangles in horses" by Andrew S. Waller. *Vet Clin Equine* 30 (2014); 591-607.
2. "Comparison of sampling sites and laboratory diagnostic tests for *S. equi* subsp. equi in horses from con rmed strangles outbreaks" by S. Lindahl, V. Baverud, A. Egenvall, A. Aspan, and J. Pringle. *J Vet Intern* Med 2013; 27:542-547.

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