

Equine Strangles

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Strangles in the horse is a highly contagious disease caused by *Streptococcus equi* that results in lymph node abscessation along with other clinical signs such as fever, anorexia and lethargy. The highly contagious nature of the disease warrants precautions in regard to disease control. Most cases of strangles recover uneventfully but complications should be kept in mind. This PowerPage reviews basic information of *S. equi* infection as well as treatment options and complications.

Key Points

- Strangles is caused by the **gram-positive bacterium, *Streptococcus equi***
- Infection can occur in any horse, but young horses (<2-5 years old) may be more common
- Bacterium is **highly contagious** and can frequently result in herd outbreaks
- When indicated, **penicillin** is the drug of choice
- Most cases of strangles resolve uneventfully; however, complications such as **bastard strangles** and **purpura hemorrhagica** are possible

Pathogenesis

Causative Organism: *Streptococcus equi*

- Gram-positive bacteria in the β -hemolytic Streptococcus family, Lancefield Group C
- **Not a normal inhabitant** of equine respiratory tract

Pathogenesis:

- Organism typically establishes itself in a healthy population of horses when a new horse is purchased or transferred from another facility without proper quarantine
- Organism inhaled or ingested after direct contact with purulent discharge from infected horse or contaminated equipment
- Organism adheres to epithelial cells of mucosa and is able to replicate within local lymph nodes, thus establishing itself within the pharyngeal region of the horse. Infection eventually results in lymph node abscessation and drainage until the host is able to clear the infection

Clinical Signs and Clinicopathologic Abnormalities

Clinical Signs:

- Incubation period is 2-7 days
- Fever, inappetance and lethargy
- Serous to mucopurulent nasal discharge
- **Lymphadenopathy** (Figure 1 and 2)
 - Initially firm and then becomes softer over days until rupture
 - Lymphadenopathy may be so severe as to occlude the airway significantly, hence the name strangles
 - Horse can suffocate from severe airway compromise secondary to lymphadenopathy
 - Affected lymph nodes

- Intermandibular lymph nodes
- Retropharyngeal lymph nodes
- Internal lymph nodes (**bastard strangles**)

Figure 1: Endoscopic view of the nasopharynx of a horse with strangles. Note the dorsal collapse of the airway that may severely compromise the ability of the horse to breathe.

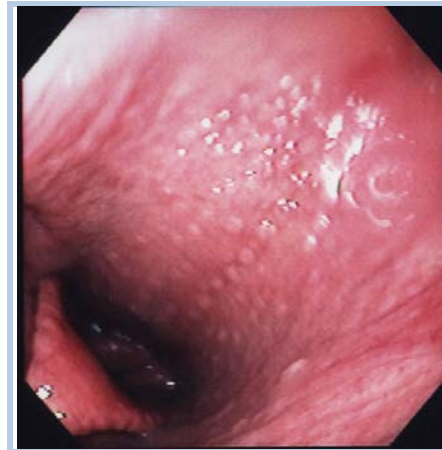


Figure 2: Endoscopic view of the guttural pouch. Note the enlargement of the retropharyngeal lymph node on the ventral floor of the guttural pouch.



Clinicopathologic Abnormalities:

- Neutrophilic leukocytosis
- Hyperfibrinogenemia

Diagnosis and Treatment

- Diagnosis is based on history and clinical signs. Definitive diagnosis can be made with culture of the pharynx or purulent discharge
- Treatment of strangles is controversial and partially depends at what stage of the disease the horse is in:
 - Emergency tracheostomy may be necessary if the horse is in severe respiratory distress
 - If the horse demonstrates signs of strangles (fever, anorexia) without lymph node abscessation, the clinician can allow the horse to run its natural course (abscess and drain on its on) or potentially treat the horse with penicillin, which may arrest the disease
 - If abscessation has already occurred, penicillin therapy may slow the progression of disease and **should not be instituted** unless the horse is severely depressed, anorectic and febrile
 - If the horse has only been exposed, penicillin may prevent seeding of the lymph nodes
 - Hot packing firm lymph nodes may help mature the abscess. NSAIDs (i.e. flunixin) may also help control fever and improve appetite



- Once abscess has matured and is soft, the clinician can open up the abscess with a scalpel blade. Typically, large amounts of purulent material will be expressed
- **Isolation and disinfection** protocols should be instituted when more than one horse is on the premises

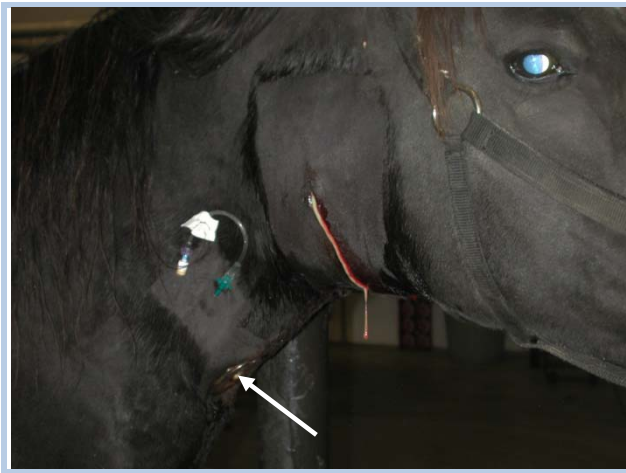


Figure 3: Horse with strangles that has developed a mature abscess in the throatlatch region. Note the purulent discharge draining from the incision. Also note the tracheostomy tube that is in place as the horse has severe respiratory distress.

Complications of Strangles Infection

- Numerous complications are associated with *S. equi* infection in horses. Some of the more common complications include:
 - **Internal Abscessation** (also known as bastard strangles) – the mesenteric or other internal lymph nodes can develop abscesses. Horses typically have a chronic history of intermittent colic, fever, anorexia, and weight loss along with neutrophilia, hyperfibrinogenemia and anemia of chronic disease
 - **Purpura Hemorrhagica** – this complication causes a **vasculitis** resulting in clinical signs such as pitting **edema of the limbs and head, petechiation**, and non-specific signs such as intermittent fever and weight loss
 - **Guttural Pouch Empyema** – purulent material may collect in the guttural pouches resulting in chronic infection; these horses may serve as chronic shedders of the bacterium (may not have overt clinical signs)
 - **Septicemia/Encephalitis** – occasionally the infection may involve the CNS resulting in encephalopathic signs. This complication warrants a poor prognosis

Prognosis

- The prognosis with strangles is good as most horses recover uneventfully. Once a horse has had strangles, immunity to the disease is good. However, horses are not completely immune to a second infection of strangles later in life.

References

- Streptococcus equi infections in horses: guidelines for treatment, control, and prevention of strangles. Sweeney CR, Timoney JF, Newton JR, Hines MT. J Vet Intern Med 2005;19(1):123-34.

