

Experimental Infection of Donkeys (*Equus asinus*) with Equine Isolates of *Streptococcus equi* subsp. *Equi*

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To enhance our understanding of *Streptococcus equi* subsp. *equi* infection in donkeys (*Equus asinus*), we selected sixteen donkeys as an experimental model for strangles in horses. The animals were randomly assigned into three groups. Twelve donkeys (Groups 1 and 2) were inoculated intranasally and orally with 2×10^9 CFU of *S. equi* subsp. *equi*. Four donkeys (Group 3) were inoculated with culture medium minus *S. equi* subsp. *equi* and served as the control group. Compared to the control group, the infected donkeys exhibited fever (mainly 1-5 days post-inoculation), mild depression, enlarged submandibular lymph nodes (2-7 days post-inoculation), slight purulent nasal discharge (3-7 days post-inoculation), and respiratory distress in some cases. All infected donkeys showed consistent leukocytosis due to mature neutrophilia, developing within three days of infection. Eight infected donkeys (Group 2) were euthanized at multiple time points post-inoculation. Histopathologic examination revealed varying degrees of nasopharyngeal and regional lymphoid pathology. Multiple bacterial abscesses were observed in the retropharyngeal and submandibular lymph nodes, as well as the guttural pouch, liver, and spleen of one donkey. *S. equi* subsp. *equi* was re-isolated from the nasopharynx of infected donkeys but not from the control group. The close resemblance of this model to strangles in horses supports its use for investigating pathogenesis and protective immunity.

Keywords: *Streptococcus equi* subsp. *equi*, Donkey, Strangles