Suitability of Chlorhexidine Gluconate for Equine Guttural Pouch Lavage

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Chlorhexidine gluconate (CG) at antimicrobial concentrations causes severe inflammation when infused into the guttural pouch (GP) and is not recommended for this purpose. Authors’ addresses: Department of Clinical Sciences (Brosnahan, Holbrock, Moll) and Department of Pathology (Breshears), Center for Veterinary Health Sciences, Oklahoma State University, Stillwater, OK 74078; e-mail: david.moll@okstate.edu. © 2007 AAEP. *Presenting author.

1. Introduction
Guttural pouch (GP) empyema is often associated with an infectious agent such as Streptococcus equi. Medical treatment includes lavage with or without added antimicrobials. Anecdotal reports of chlorhexidine gluconate (CG) solution used for this purpose and reported neurotoxicity of CG prompted evaluation of clinical and histological consequences of CG infusion.

2. Materials and Methods
Six horses needing euthanasia were used. Three horses each received either 0.5% or 0.05% CG solution into one GP while sterile water was infused into the other as a control. After euthanasia, at 24 h after one lavage (0.5% group) or 48 h after five daily lavages (0.05% group), samples of GP tissue were formalin fixed for histology. Nerve tissue was fixed in cold glutaraldehyde for electron microscopy.

3. Results
Horses lavaged with 0.5% CG solution showed severe signs of inflammation, including copious nasal discharge, fever, dysphagia, lymphadenopathy, and mucosal necrosis. Horses lavaged with 0.05% CG solution showed moderate signs, including milder nasal discharge and mucosal ulceration. Control pouches showed very mild inflammation on histopathology.

4. Discussion
Although CG is widely used in both veterinary and human medicine, neurotoxicity has been shown. Horses in this study did not show signs attributed to cranial nerve dysfunction. CG has also been shown to cause local tissue damage in horses. Concentrations of CG used in this study induced signs of inflammation considered unacceptable for therapeutic purposes.

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