N-Butylscopolammonium Bromide Relaxes the Distal Equine Esophagus: A Mechanism for Its Purported Usefulness in Esophageal Obstruction

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N-butylscopolammonium (NBSB) bromide administered intravenously is effective in complete and rapid relaxation of the equine distal esophagus. The effect of NBSB on the distal esophagus may explain its anecdotal efficacy in equine esophageal obstruction. Authors’ addresses: College Veterinary Medicine, Western University of Health Sciences, Pomona, CA 91766 (Bertone); and Animal Science, California Polytechnic University, Pomona, CA 98004 (Hoover, Greene, and Wickler); e-mail: Jbertone@westernu.edu. © 2011 AAEP.

1. Introduction
The objective of this study was to determine the effects of N-butylscopolammonium (NBSB) on peristalsis and pressure in the distal esophagus of horses.

2. Materials and Methods
Six healthy adult horses were used. A polyethylene tube with an attached latex balloon was placed into the esophagus proximal to the gastric inlet. The tube was connected to a pneumatic respiration transducer, and peristaltic movements were recorded by a polygraph. Pressures were recorded for 3 min without treatment and then, an additional 5 min after administration of NBSB or a saline control. Esophageal pressure and rate of peristalsis before and after drug administration were compared.

3. Results
NBSB greatly reduced the frequency of peristalsis compared with the control group; however, it had no significant effect on the baseline resting esophageal pressures.

4. Discussion
The reduction of peristalsis induced by NBSB indicates the inhibitory properties of the drug on smooth muscle. This finding could be clinically relevant in treating cases of esophageal foreign material obstruction. However, clinical studies are still required to determine the effectiveness of NBSB in such cases.