Oxytocin administered as an intravenous bolus at a dose of 1.1–2.2 units/kg can assist with the resolution of proximal esophageal obstructions in horses. Authors' addresses: Rood and Riddle Equine Hospital, P.O. Box 12070, Lexington, KY 40580 (Hance); 206 Reece Lake Rd., Washington, OK 73093 (Noble); Michigan State University, East Lansing, MI 48824 (Holcomb); Dept. of Clinical Science, College of Veterinary Medicine, 1800 Denison Ave., Kansas State University, Manhattan, KS 66506 (Rush-Moore); and Dept. of Clinical Science, The Ohio State University, 2389 Cranford Rd., Columbus, OH 43221 (Beard). © 1997 AAEP.

1. Introduction
Horses with choke or esophageal obstruction usually demonstrate excessive salivation with feed contamination from both the mouth and nares, dysphasia, and coughing, and some will retch while extending the head and neck. Although a horse of any age can develop an esophageal obstruction, it is more common in geriatric patients. The obstructive mass is usually some form of feed roughage (i.e., hay cubes, beat pulp) but can also be caused by foreign bodies such as wood, a tooth, medical bolus, or wire.

The diagnosis of an esophageal obstruction is usually made by the inability to pass a nasogastric tube or endoscopy. However, other diagnostic tools that may be useful include ultrasound, radiographs, and digital palpation. In addition, with any choke it is important that the horse be examined to determine if aspiration pneumonia has occurred as a sequela to the dysphasia.

The treatment of esophageal obstructions with a food mass usually involves the passage of a nasogastric tube and intraluminal lavage. This is usually performed with sedation to lessen the anxiety of the horse and decrease the likelihood of aspiration pneumonia by keeping the horse’s head lower than the thoracic inlet. In the majority of cases, this will resolve the obstruction. If the choke is not resolved by this method, it has been recommended that an endotracheal tube with an inflatable cuff be inserted into the trachea and a second endotracheal tube be inserted into the esophagus with the cuff inflated. A nasogastric tube is then inserted into the end of the endotracheal tube that has been inserted into the esophagus, and fluid is pumped under pressure. This method is useful in that it decreases the likelihood of aspiration pneumonia and allows for a greater mechanical advantage in propulsion of the mass into the stomach. This procedure can be done in the standing horse but is greatly facilitated with general anesthesia.

Oxytocin has been used almost exclusively for obstetrical and reproductive procedures. However, this hormone administered at higher doses may have profound effects on the esophagus and can assist in the alleviation of esophageal obstructions.
2. Materials and Methods
All of the horses in this study were referred for the treatment of an esophageal obstruction. The information gathered was on a retrospective basis and included the signalment, duration of the choke, location of the obstruction, material causing the obstruction, duration of clinical signs, the type of treatment that was initially tried to resolve the obstruction, and the amount of time this treatment was attempted. In addition, the dose of oxytocin administered, the time from administration of oxytocin to resolution of the choke, any adverse effects, and any complications as a result of the choke or oxytocin administration were recorded.

3. Results
Ten horses were included in the study, with a mean age of 12 years with a range of 18 months to 30 years. Four of the horses were females and six were geldings. The breeds represented included (two) Thoroughbreds, (two) Paints, (two) ponies, (one) Saddlebred, (one) Quarter Horse, and (one) Lipizzaner. The range for the duration of the choke was 1.5–36 h with a mean duration of 20 h. The obstructive mass was considered food obstruction in nine horses, and one had evidence of a foreign body consisting of wood and tree bark. Of the ten horses, eight had proximal esophageal obstructions, one had an obstruction just caudal to the heart, and one had an obstruction extending from the diaphragm to the proximal esophageal sphincter. Seven of the horses received treatment for choke in the form of sedation with nasoesophageal intubation and lavage prior to oxytocin administration. The duration of this treatment lasted from 10 min to 3 h; these horses received oxytocin at the end of this procedure. Oxytocin was administered to all ten horses by intravenous bolus at a dose of 1.1–2.2 units/kg. Of the ten horses receiving the oxytocin, eight resolved the obstruction without further treatment. The two horses in which the oxytocin did not resolve were the two horses with caudal obstructions. Mild effects of the oxytocin were noted in several of the horses and included anxiety and sweating. No long-term effects were noticed. Complications associated with the choke were aspiration pneumonia in two horses, which resolved with systemic antibiotic therapy. Two horses developed or had other problems not associated with the obstruction or oxytocin administration. One horse developed salmonella diarrhea immediately prior to its release, and although this horse became severely debilitated and was euthanized, no evidence of choke was noted. In the second horse with nonassociated problems, it was determined to have abdominal pain once the obstruction was relieved. Upon transrectal examination the horse was determined to have a large colon displacement that was confirmed at surgery. All of the horses having an endoscopic examination after resolution of the choke had mucosal edema in the location of the choke, but there was no evidence of mucosal ulceration or lacerations.

4. Discussion
Oxytocin administration appears to be a practicable conservative treatment for esophageal obstructions in horses. In the two cases that had distal obstructions, the use of oxytocin was not as beneficial. This may be related to the fact that the proximal two thirds of the esophagus is striated muscle, and the distal one third is smooth muscle. Oxytocin may not be as effective in distal obstructions because it has a different pharmaceutical effect on the smooth muscle.

Although oxytocin may prove to be a quick and effective method of resolving choke and may decrease the chance of aspiration pneumonia by alleviating the need for esophageal lavage, there are several precautions. In this study, oxytocin was administered to four mares. However, none were pregnant or lactating at the time of administration. Because of the drug's profound effect on the uterus and mammary tissue, it is not recommended that it be used for the resolution of choke in pregnant mares or immediate postfoaling mares, as this could cause premature foaling or severe pain. An endoscopic examination should also be performed prior to the administration of oxytocin in the event there is a foreign body that may cause additional tissue trauma or esophageal lacerations with the increased motility of the esophagus. It is probably also wise to avoid the use of oxytocin in severely debilitated horses.