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Abstract
Recognition of horses at risk for certain colics can lead to more specific diagnosis and treatment. Cribbing behavior increases the risk for entrapment of small intestine in the epiploic foramen. Therefore, epiploic foramen entrapment should be suspected to be a possible cause of surgical colic in a horse with this vice.

1. Introduction
Cribbing is an oral stereotypic behavior in which the horse grasps a surface with its incisors while simultaneously flexing its neck and swallowing air [1]. Its reported prevalence is 5.5 - 10.5% in the general population [1,2]. Cribbing has been anecdotally associated with flatulent colic and dental problems, and it has recently been described in the literature to be associated with gastric ulceration and equine motor neuron disease [3,4]. At the University of Illinois, we have observed greater cribbing activity in the post-operative period in horses that have had surgery for entrapment of the small intestine in the epiploic foramen, compared with horses with other types of surgical colic. The purpose of this study was to test our hypothesis that horses with cribbing behavior are at greater risk for developing colic caused by entrapment of the small intestine in the epiploic foramen, compared with other types of surgical colic.

2. Materials and Methods
Two hospital populations, one from the University of Illinois's College of Veterinary Medicine and the other from the University of Liverpool, UK, were combined and included in the study. Horses undergoing exploratory celiotomy for colic at both institutions over a period of 8 - 10 yr were included. Horses without available information regarding stable vices were excluded from the study population. The presence of cribbing behavior before surgery in horses with epiploic foramen entrapment was compared with the presence of cribbing behavior before surgery in the control population of all horses with other causes of surgical colic. Cribbing horses included those described as cribbers, wind suckers, and crib biters. Information about cribbing behavior was obtained by a pre-operative questionnaire in the majority of cases or a follow-up phone call. Data were analyzed using Fisher's exact test of 2 x 2 contingency tables, and odds ratios with 95% confidence interval were calculated. Significance was set at P < 0.05.

3. Results
In the combined hospital populations of horses that met the criteria for inclusion in the study, 68 horses had colic caused by entrapment in the epiploic foramen, whereas 721 horses had other types of surgical colic. Horses with epiploic foramen entrapment had a significantly higher (P < 0.001) proportion of horses with a presurgical history of cribbing (54.4%) than did control horses with other surgical lesions (10.2%). Odds ratios (10.45, confidence interval 6.11 - 17.81) indicated that cribbing horses undergoing exploratory celiotomy for colic in both university groups combined were 10.45 times more likely to have epiploic foramen entrapment than were non-cribbing horses. We did not observe predisposition of geldings to developing epiploic foramen entrapment in the study population represented here.
4. Discussion
The predisposition of cribbing horses to epiploic foramen entrapment could possibly be explained by the creation of negative intra-abdominal pressure and expansion of the passageway to the epiploic foramen with elevation of the rib cage during cribbing. Aerophagia could also contribute to the development of the lesion by allowing gas-filled jejunum to rise dorsally in the abdomen toward the epiploic foramen. Alternatively, cribbing and entrapment of the small intestine in the epiploic foramen could share predisposing causes rather than be directly related.
These findings provide strong evidence that the association between cribbing and small intestinal strangulation in the epiploic foramen is unique for this type of colic, because the prevalence of this vice in other types of colic was similar to that reported previously in the general population. To the best of our knowledge, this is the strongest association shown between a well-known stable vice and colic in horses. This information should be useful to the practitioner and specialist, because recognition of horses at risk for certain lesions can lead to a more specific diagnosis and treatment. Results of the present study suggest that horses with a history of cribbing behavior are at increased risk for entrapment in the epiploic foramen. Therefore, this lesion should be suspected as a possible cause of surgical colic in a horse with this vice and with other supporting clinical evidence.

References


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