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inian and Meissner corpuscles in horse pericardium, as in other animals. It is possible to consider, however, that the pericardial nerves

receive and transmit, as whole, physical stimulations, such as pressure and extension, by regularly arranged meshwork of nerves.

## Histological study on mucosal lesions of gastric ulcer in horses

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Gastric ulcers have been identified in over 80% of racing Thoroughbred horses. Ulcers in horses differ from those in humans, in that almost all lesions exist at non-glandular gastric mucosa covered with stratified squamous epithelium in horses. The purpose of this study is to understand the pathogenesis of the racehorse-specific illness from a morphological point of view. Six horses (1 to 17 years old) were used in the present study. Ulcerative erosions were detected in three horses at stratified squamous epithelium of the margo plicatus. When gastric ulceration was highly severe, mucosal erosions were also found at pyloric part of the stomach. The horse gastric ulcer was characterized by the invasion of papillary lamina propria with prominent cellular infiltration into stratified squamous epithelium. Electron microscopy (TEM) demonstrated that the infiltrating cells were largely neutrophils, and many neutrophils directly contacted epidermal keratinocytes, some invading into epithelial tissue.

These neutrophils were closely related to necrosis and destruction of epithelial cells. Observation of glandular and non-glandular mucosa injected with indian ink demonstrated less developed vascular systems in non-glandular parts. Although I cannot exclude the possibility of bacterial infection as a cause of gastric ulcer, ischemic necrosis with invasion of neutrophils are more important. It is known that myofibroblasts appear in the repair process of gastric ulcer in humans and laboratory animals. Immunostaining with  $\alpha$ -smooth muscle actin antibody demonstrated accumulation of positive cells upon lamina muscularis mucosae, in which the epithelium was lost. Such a myofibroblastic layer was not formed in the part where stratified squamous epithelium still survived. Even though tissue destruction and inflammation expanded to larger areas, erosion did not extend to the submucosal layer and muscular layer. In this point, it might not be proper to use the term "ulcer".