

Mycotic gastritis probably due to *Candida sp* in a two-toed sloth (*Choloepus hoffmanni*).

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Summary: A 6-month old, free-living intact female, two-toed sloth (*Choloepus hoffmanni*). Upon initial presentation it was diagnosed with a broncho-aspiration due to gastric reflux. It was treated unsuccessfully with antibiotics and died. Besides the pulmonary lesion, the pre-pyloric gastric area showed multiple growths that resemble a volcanic crater.

Signalment: A 6-month old, free-living intact female, two-toed sloth (*Choloepus hoffmanni*).

Clinical history: Rescued free-ranging sloth that was initially diagnosed with pulmonary aspiration due to gastric reflux. It was treated with broad-spectrum antibiotics and a weekly radiologic pulmonary exam. In the last exam, there seemed to be a slight improvement; however, the left lung remained affected. It was found dead (no clinical date of illness course).

Gross Findings: Digestive system. The distal rectum was dilated. Upon dissection there was dried pelleted feces. Furthermore, the pre-pyloric gastric squamous mucosa had multiple growths similar to volcanic craters, Fig.1. Respiratory tract: mainly the anterior third of the right lung showed dark areas. The left lung had marked interlobular septa. When squeezed fluid came out from the trachea and bronchus.

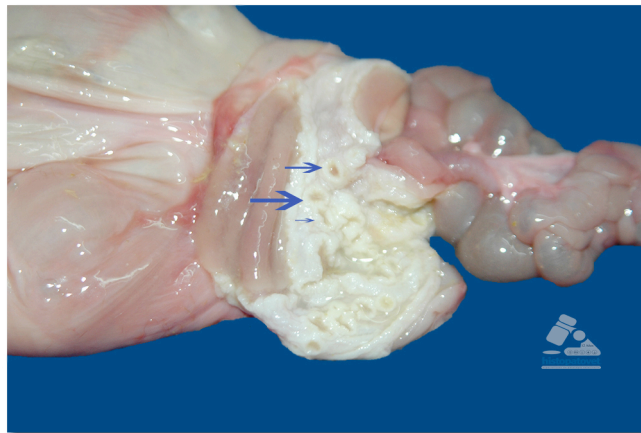


Fig.1 The pre-pyloric gastric squamous mucosa showing multiple growths similar to volcanic craters. See the arrows.

Histopathological findings: The non-glandular (squamous epithelium) mucosa of the pre-pyloric stomach shows multiple necrotic centers like craters very deep, reaching the muscularis of the mucosa. Fig.2.

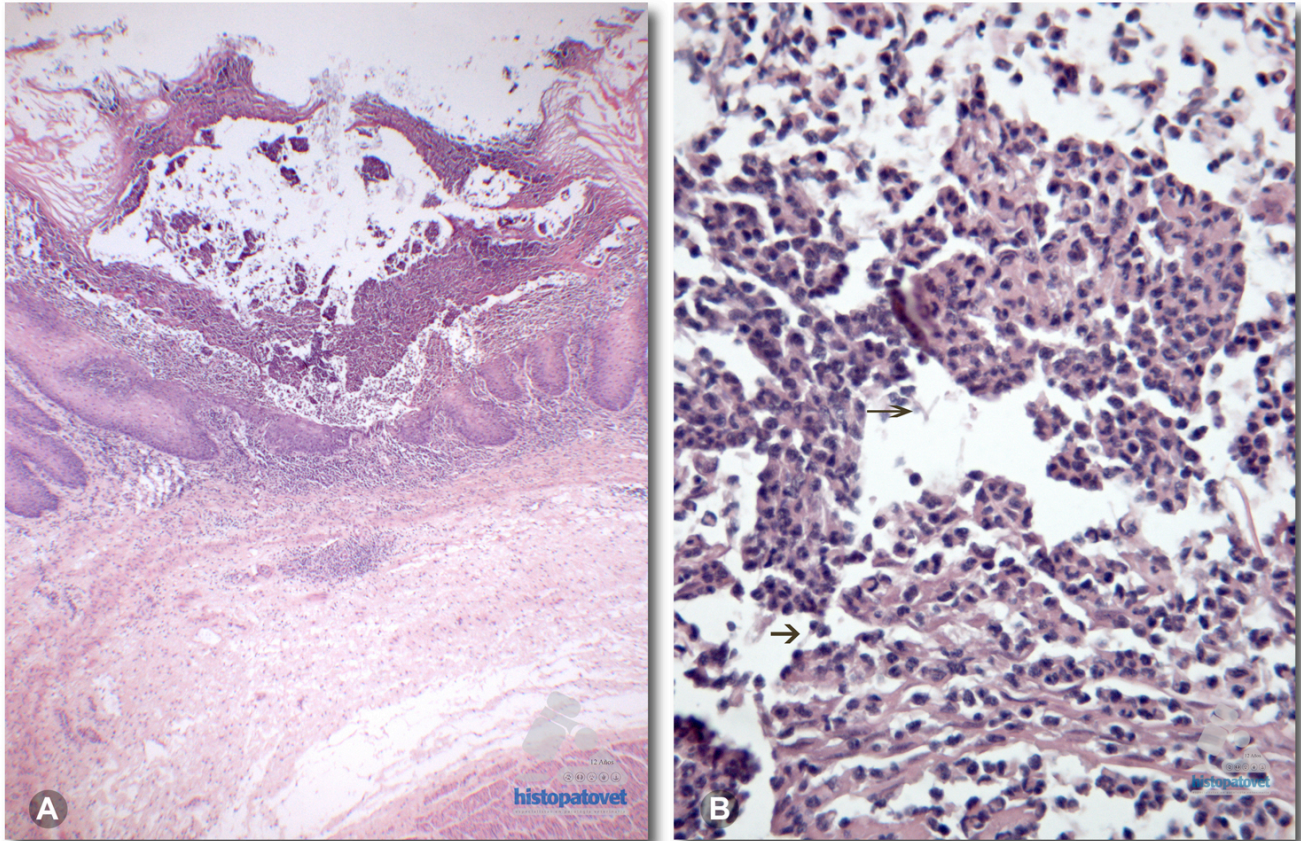


Fig. 2 A. The non-glandular mucosa of the pre-pyloric stomach shows multiple necrotic centers reaching the muscularis of the mucosa. The 2-B reveals a lot of necrotic debris.

The necrotic material had a lot of cellular debris. Admixed with the cellular debris there were myriads of mycelial structures. Grocott and PAS stains were performed and both were positive. Nevertheless, the fungal elements stained much better with the PAS revealing yeasts and septate hyphae free, within the debris and in the epithelium. Fig.3.

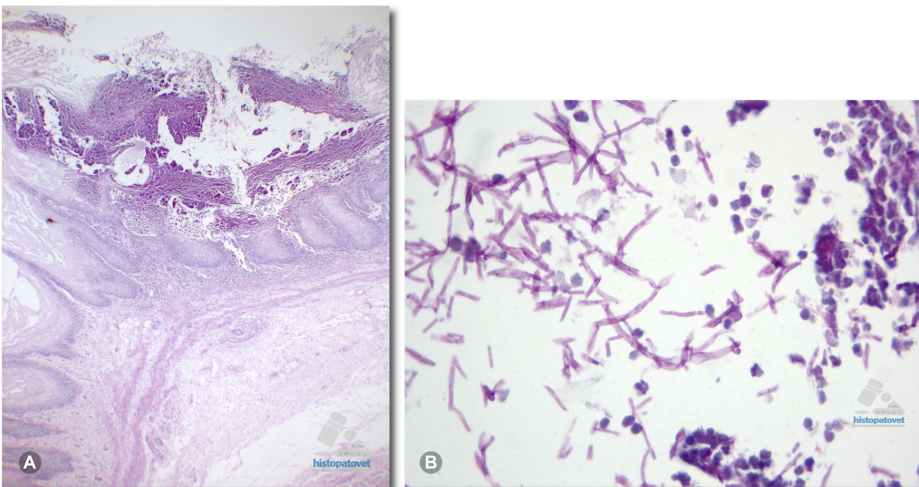


Fig.3 A and B. with the P.A.S stained yeasts and septate hyphae free, within the debris and in the epithelium are more visible.

Morphological diagnosis: Multifocal ulcerative necrotic gastritis of the pre-pyloric stomach. Furthermore, there was a severe necrotic bronchopneumonia compatible with the clinical diagnosis.

Etiological diagnosis: the morphological features especially with PAS are indicative of a mycotic gastritis due to *Candida sp.*

Discussion: *Candida sp* is a dimorphic commensal fungus that normally inhabits the digestive, upper respiratory and urogenital tracts. Reproduction occurs by budding from the yeast. From the budding, it may form new yeast, pseudohyphae (chains of elongated yeasts) and true septate hyphae. There are more than 200 species of *Candida*, however, only a few are pathogens for humans and animals. Among them, *Candida albicans* has been the most frequently reported cause of candidiasis. It generally occurs in immunocompromised hosts or animals with underlying disorders such as malnutrition, or prolonged use of antibiotics or corticosteroids. In the case reported here, the only associated disease process was the pulmonary infection treated with broad-spectrum antibiotics (drugs information not available). Candidiasis has been mainly reported as a localized infection of the skin or mucosa where the normal anatomic barrier is disrupted, allowing penetration. Interestingly in this sloth the damage with secondary adherence and invasion occurred in the squamous epithelial mucosa and not in the glandular component. Aside from humans, candidiasis has been reported in domestic animals (dogs, cat and pigs) and captive wild animals especially birds of prey. To our knowledge this is the first report of gastric mycosis due to a *Candida spp* in sloths. Unfortunately, due to the lack of experience with this particular species, the gross lesions were not initially associated with any mycotic infection and a culture was not performed. We hope that in the future we can do it.

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