Diagnostic Exercise
From The Davis-Thompson Foundation*

Case #: 142 Month: April Year: 2020

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Clinical History: A 2-month-old male Golden Retriever puppy presented to a veterinary clinic with vomiting, salivation and diarrhea. It was treated with fluid therapy, metronidazole, sulfamethoxazole/trimethoprim, ranitidine, and maropitant (Cerenia), without success. The animal died within 2 days after admission. The puppy had yet to receive any vaccine.

Necropsy Findings: At necropsy, the intestinal serosa was slightly reddened, with a ground-glass appearance, and the intestinal wall was thickened. The small intestines had watery content with strands of fibrin (Figure 1). The intestinal mucosa was reddened, with a rough, irregular appearance and focal round to oval depressions (Figure 2). Histologically, the intestinal villi were atrophied and fused, with mucosal collapse (Figure 3). There was partial loss of the intestinal crypts and the remaining crypts were frequently dilated, contained necrotic debris, and had attenuated or plump (regenerating) epithelial lining (Figure 4). Small number of lymphocytes, plasma cells and macrophages infiltrated the lamina propria. Along the intestinal luminal surface were numerous oval to round, 3-6 μm diameter yeasts and many filamentous pseudohyphae characterized by chains of elongated yeast cells that invaded the necrotic superficial mucosa (Figure 5). Rarely, thin, regular, filamentous organisms suggestive of true hyphae were also present.

Gross and Microscopic Images:
Follow-up Questions:

1. What is/are your morphologic diagnosis(es)?
2. What etiologic agent is the cause of the diarrhea and death of this puppy?
3. What are the round to oval depressed areas observed in Figure 2?
4. What etiologic agent is shown in Figure 5?
*The Diagnostic Exercises are an initiative of the Latin Comparative Pathology Group (LCPG), the Latin American subdivision of The Davis-Thompson Foundation. These exercises are contributed by members and non-members from any country of residence. Consider submitting an exercise! A final document containing this material with answers and a brief discussion will be posted on the CL Davis website (http://www.cldavis.org/diagnostic_exercises.html).

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