

Latin Comparative Pathology Group

The Latin Subdivision of the CL Davis Foundation

Diagnostic Exercise

Case #: 4 Month: December Year: 2010

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Clinical History:

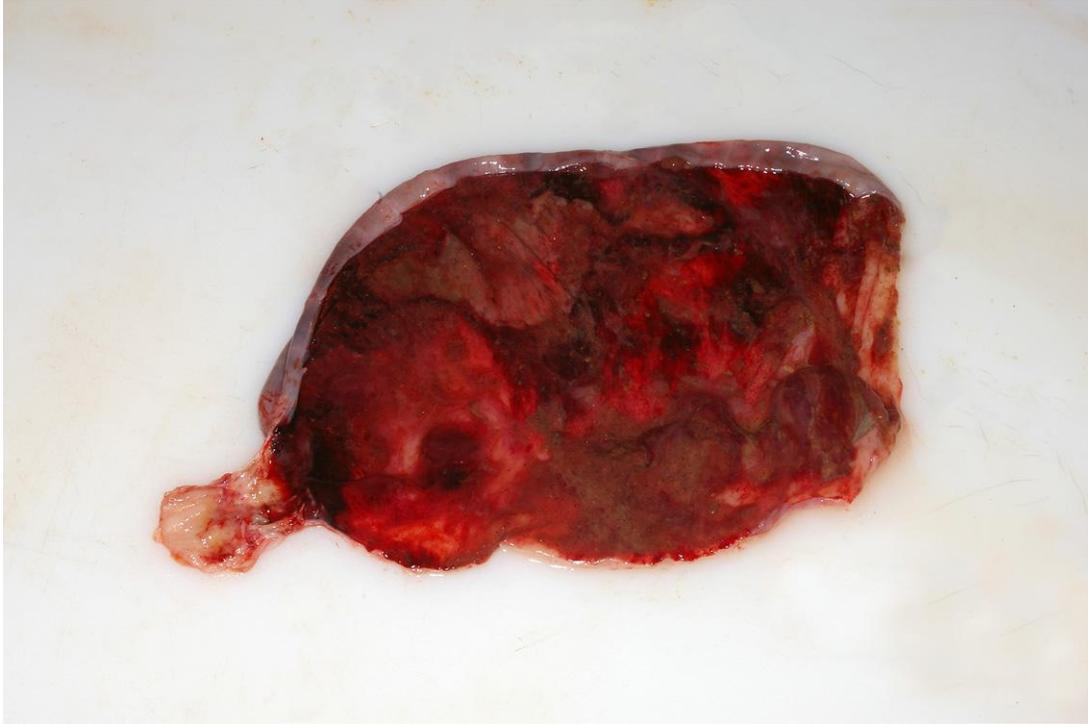
One week prior to necropsy this 5 year old female cynomolgus monkey was reported for inappetance, dehydration, and abdominal distention. Ileus secondary to menses associated inappetance was suspected and had improved over several days. Mild improvement was short-lived and her condition deteriorated over the weekend to include hypothermia and unsuccessful attempts to decompress both the large intestine and stomach. Abdominal fine needle aspirate was the only method that resulted in moderately successful decompression.

Necropsy Findings:

See attached pictures

Gross images:





Morphologic diagnoses (3):

Differential diagnoses (at least 2):

ANSWER:

GROSS FINDING:

There was a 360 degree counterclockwise torsion of the descending colon around the omentum. Distal to this torsion, at the intersection between the colon and rectum, there was an approximately 2 cm long colonic stricture. The affected colon was markedly distended by gas and feces and the colonic wall necrotic. The serosa of affected colon was focally thinned and covered by fibrin.

GROSS MORPHOLOGIC DIAGNOSES:

Colon: Stricture, megacolon and necrosis

DIFFERENTIAL DIAGNOSES:

Cicatrizing ulcerative colitis
Adenocarcinoma, colon
Aganglionosis/ganglionic dysplasia, colon

HISTOPATHOLOGY

Multiple sections of descending colon anterior and posterior to the stricture and at the level of the stricture were processed for microscopic examination.

Descending colon at the level of the stricture (Figure 1): The wall the colon was extensively replaced by granulation tissue and infiltrated by abundant neutrophils, macrophages and lymphocytes. The mucosa was multifocally ulcerated and partially lined by flattened epithelium. The necrotic mucosa was replaced by fibrin, neutrophils, bacteria and cell debris. The serosa had hyperplastic mesothelium and contained distended lymphatics.

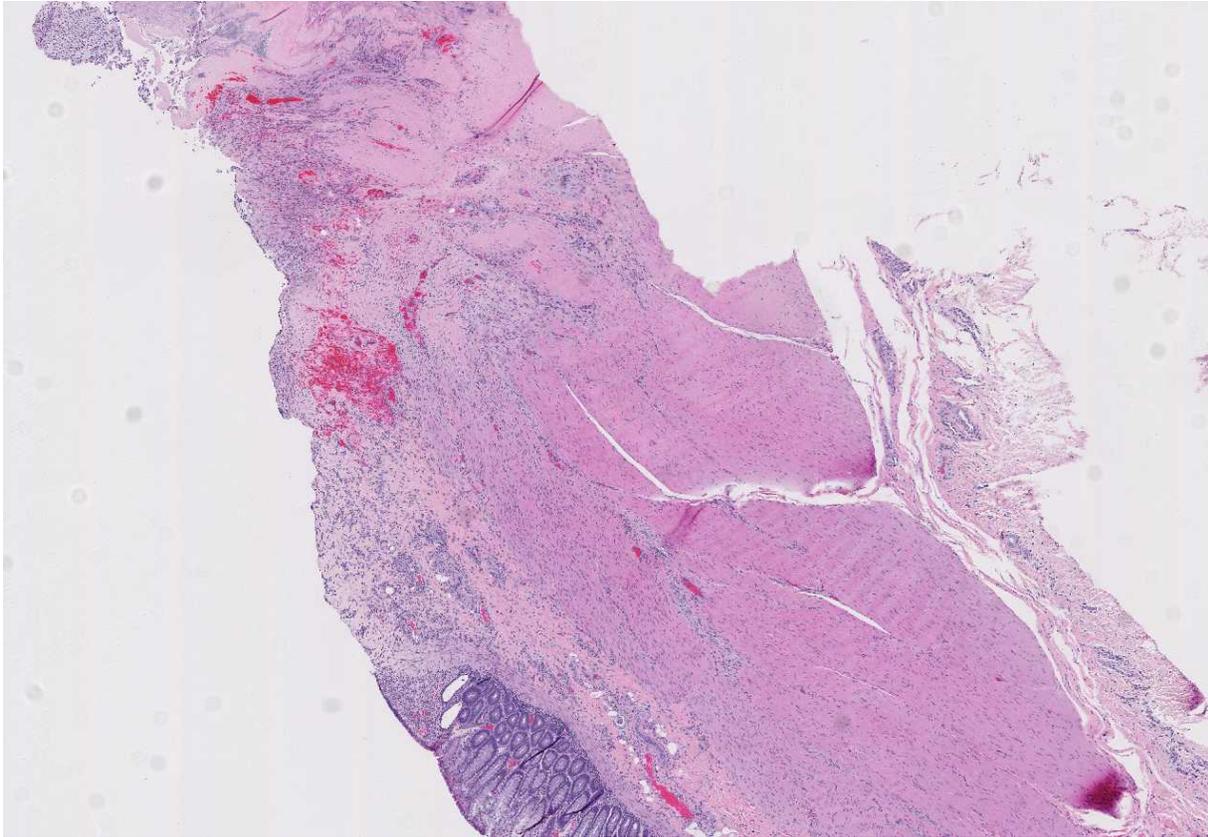


Figure 1 (H&E. 2X). Descending colon at the level of the stricture

Descending colon anterior to the stricture (Figure 2): The mucosa had large areas of necrosis that extended to the underlying intestinal wall resulting in transmural necrosis. Necrotic areas contained fibrin, hemorrhage, neutrophils and cell debris. Areas of transmural necrosis/ischemia corresponded to the grossly over-distended colon. The lamina propria of the remaining mucosa was expanded by hemorrhage, neutrophils, necrotic lymphocytes and cell debris. Inflammatory cells also infiltrated the submucosa, muscularis and serosa. The muscularis had prominent lymphoid follicles. The serosa subjacent to the necrotic colon was expanded by fibrin, neutrophils and edema, and was lined by hyperplastic mesothelium (peritonitis).

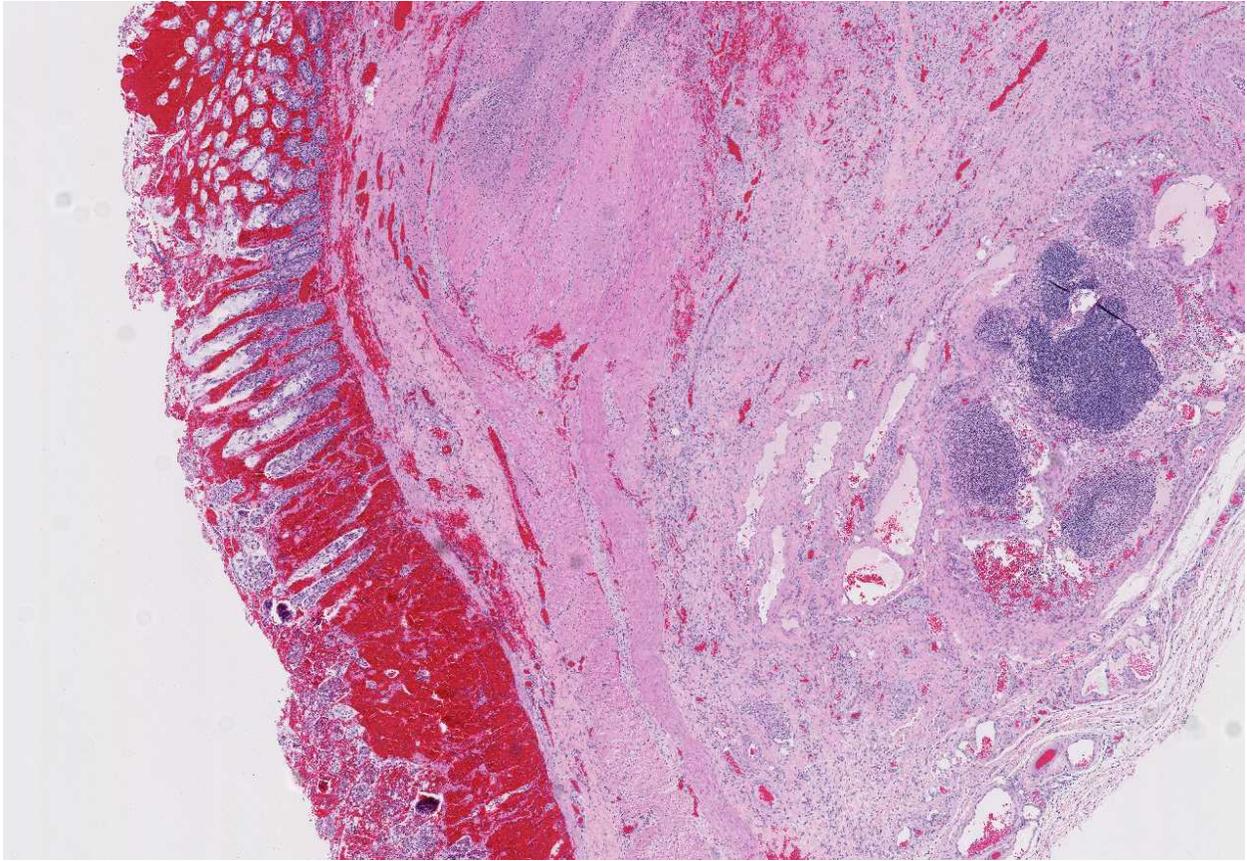


Figure 2 (H&E. 5X). Descending colon anterior to the stricture

Neoplastic cells were not noted in sections of colon examined. Mesenteric ganglion cells were unremarkable (Figure 3).

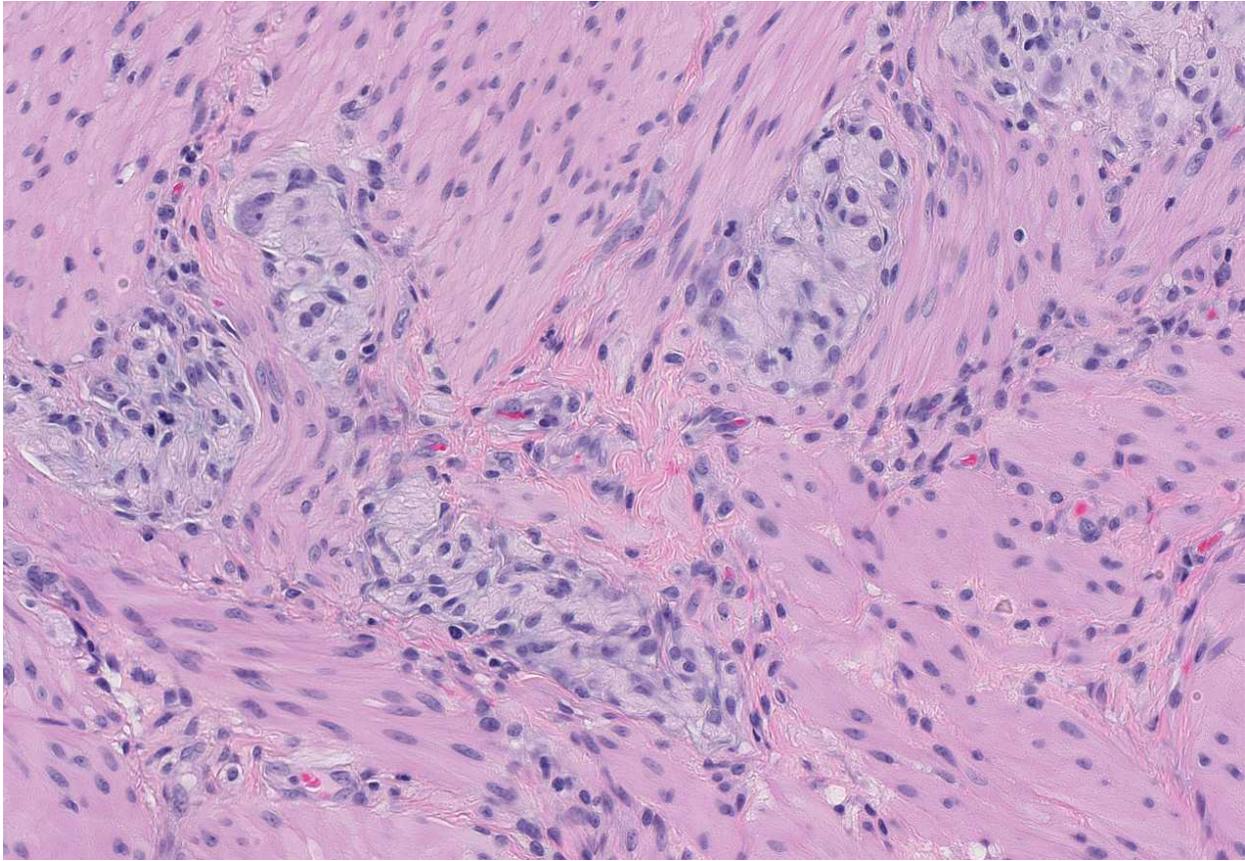


Figure 3 (H&E. 20X). Normal myenteric plexuses (ganglion cells)

HISTOPATHOLOGIC DIAGNOSES

Descending colon: Stricture with cicatrizing (chronic) ulcerative colitis

Descending colon anterior to the stricture: Transmural necrosis and peritonitis

INTERPRETATION

Cicatrizing ulcerative colitis is a syndrome of chronic ulcerative colitis with marked fibrosis seen sporadically in macaques at primate facilities (1). This syndrome usually results in colonic stricture and over-dilatation of the colon anterior to the stricture. Over-dilatation with gas/feces of the colon commonly causes torsion, ischemia, perforation, and peritonitis. Infectious agents that commonly cause ulcerative colitis include *Campylobacter jejuni*, *Campylobacter coli*, *Shigella spp.*, *Salmonella enteric sp.*, *Entamoeba histolytica* and any bacterial infection complicated with *Balantidium coli*. Differential diagnoses include colonic adenocarcinoma and aganglionosis. In this case, myenteric ganglia were normal and neoplastic cells were not observed.

REFERENCE

1. A.D. Lewis, S. Khoungsathiene, R. R. Hukkanen, and L. M. A. Colgin. Cicatrizing Ulcerative Colitis in Macaques. Combined 57th and 41st Annual Meeting of the American College of Veterinary Pathology and American Society of Veterinary Clinical Pathology. Vet path 2006 43:805. SAGE publications