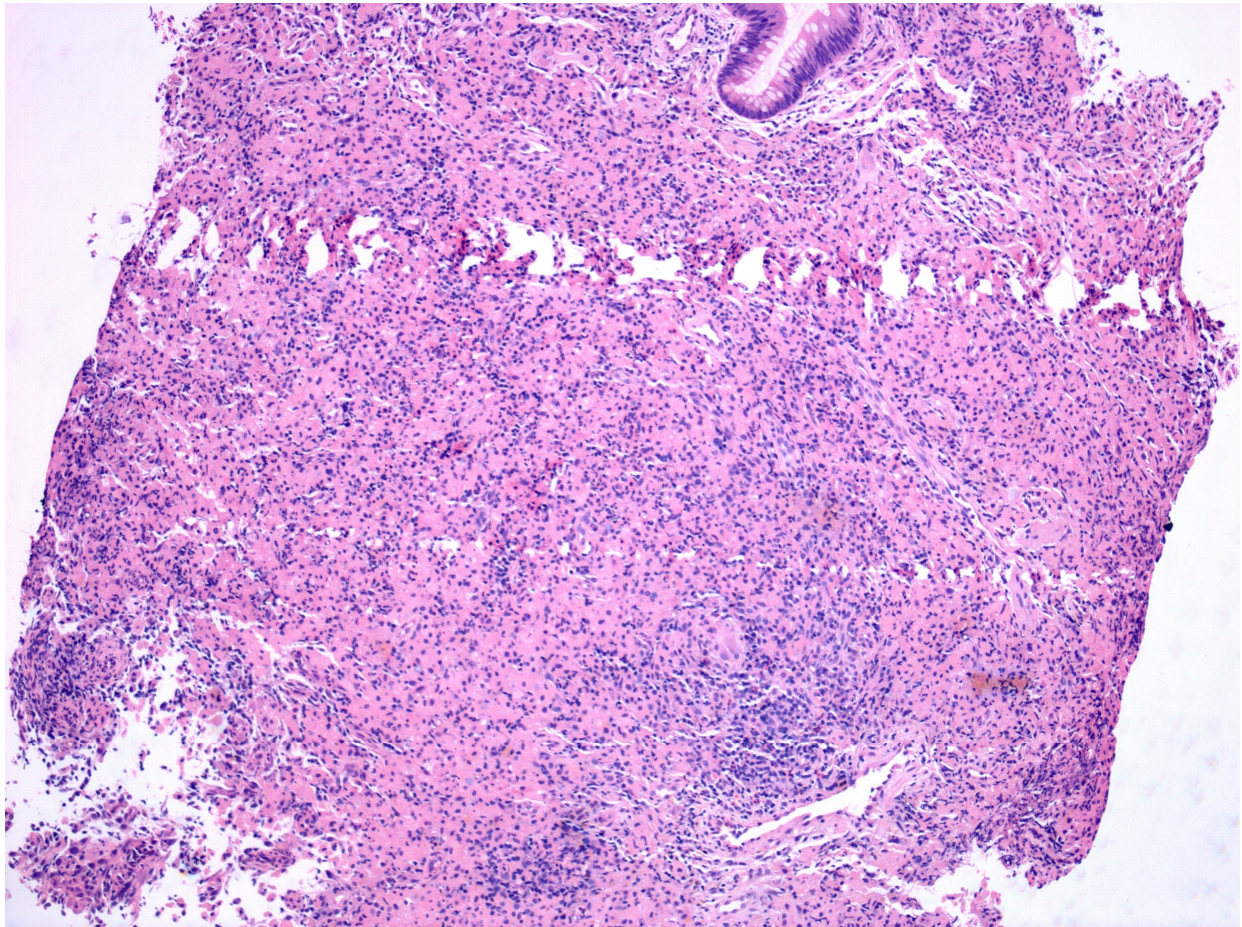
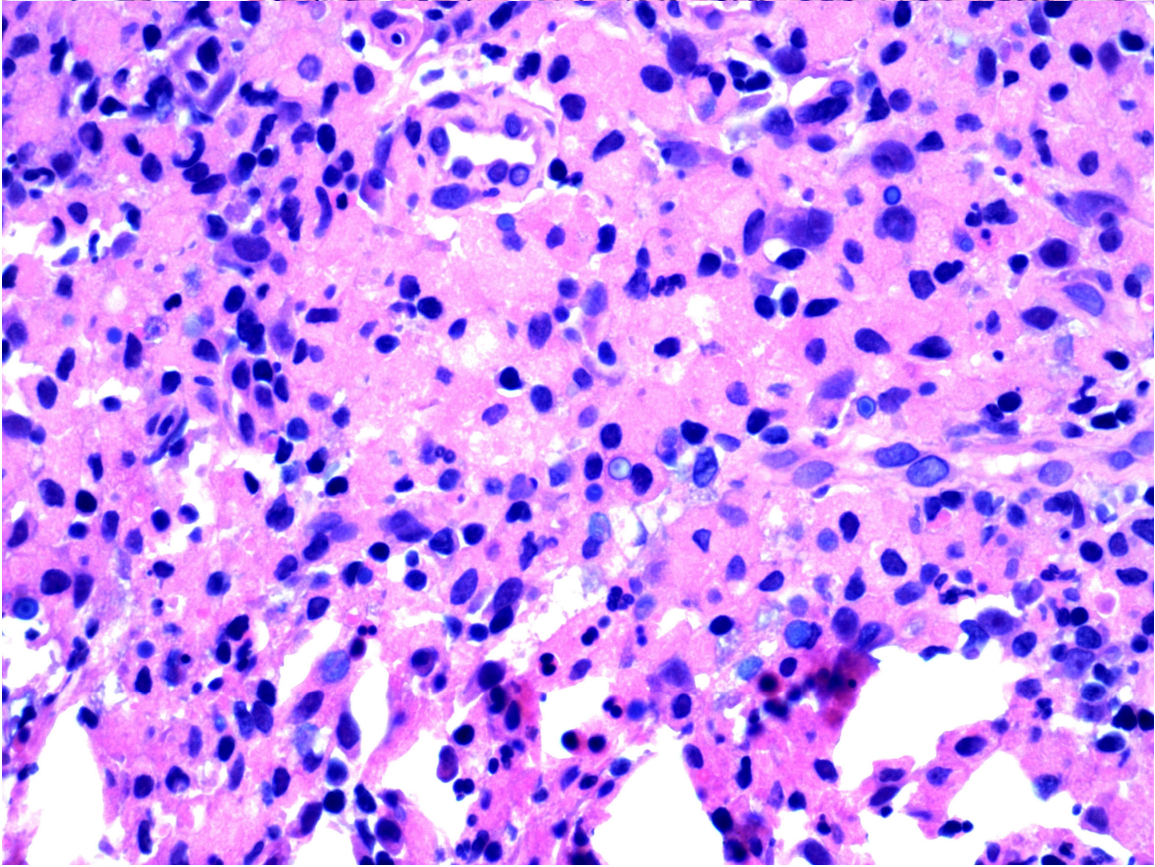
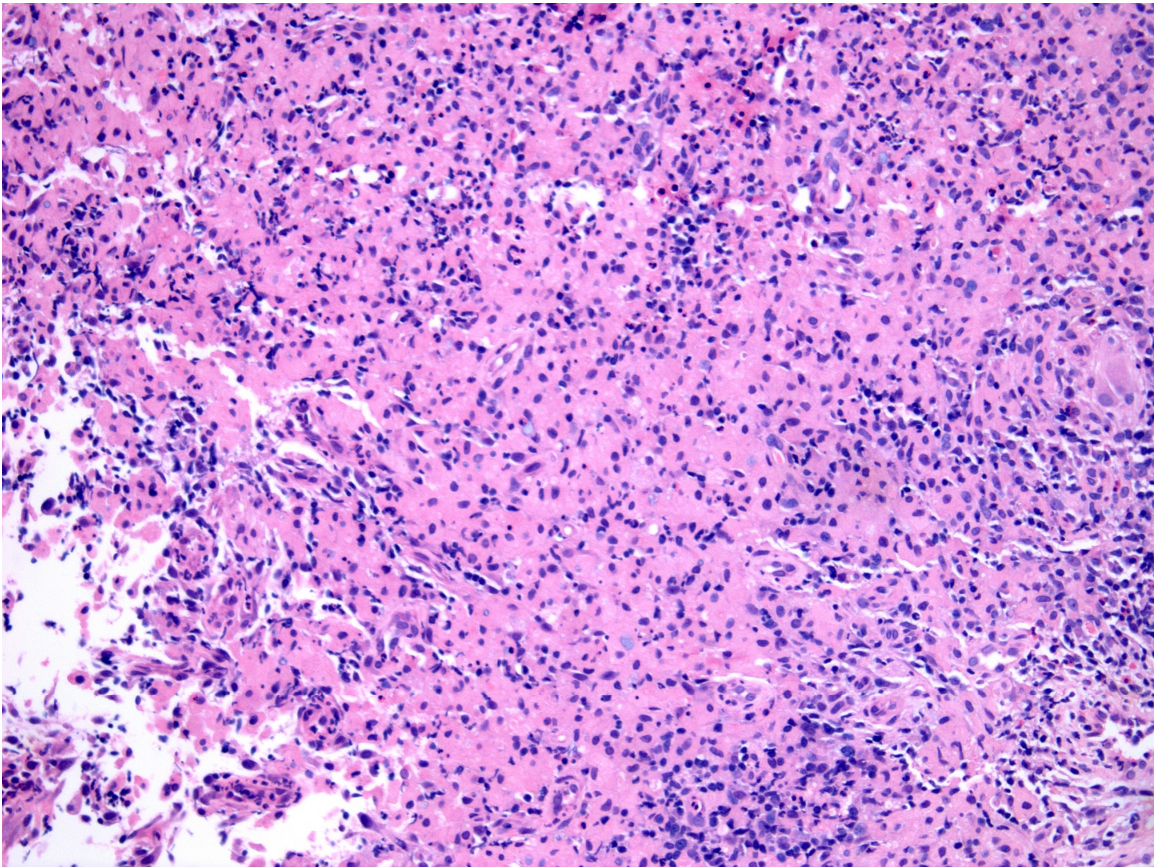
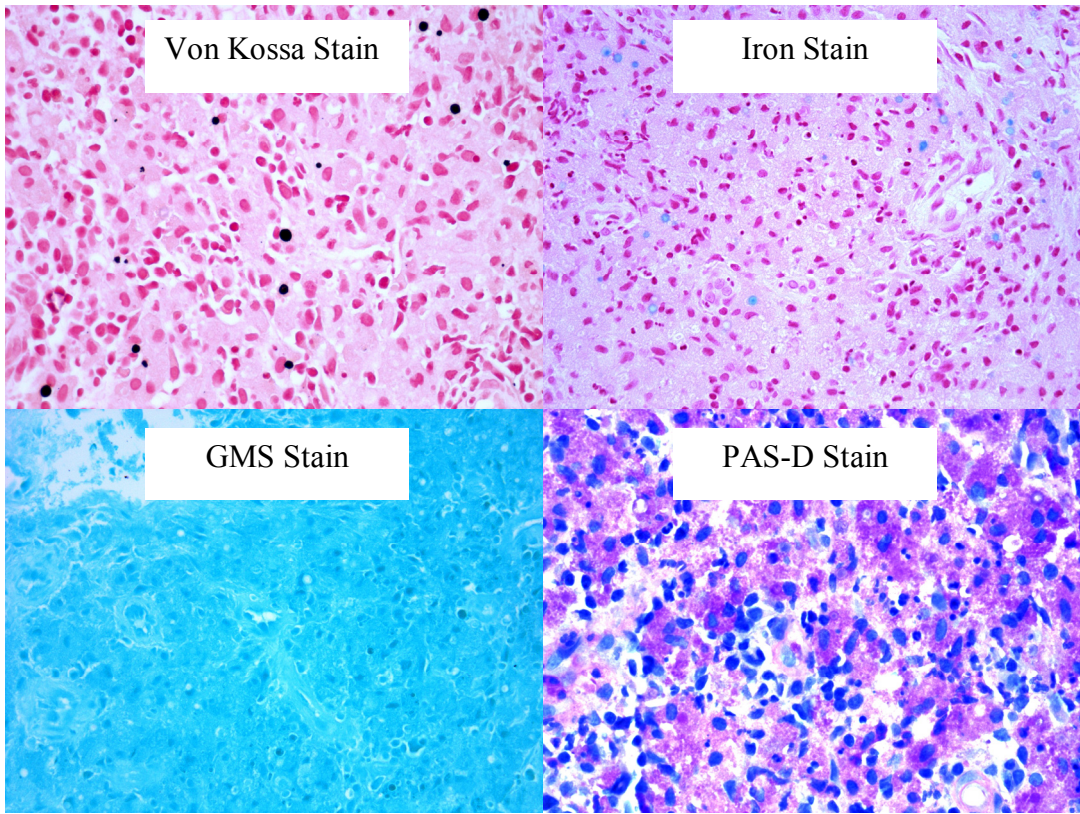


Case: The patient is a 57-year-old male on immunosuppressants (azathioprine and tacrolimus) status post heart transplant in 1996, who presents with non-bloody diarrhea for a few months. He had negative stool examinations for neutrophils, red blood cells, ova and parasites, *Clostridium difficile*, *Cyclospora*, *Microsporidia*, and stool culture. On colonoscopic examination, erythematous plaques and ulcers were found in the cecum and ascending colon and biopsied. Representative images of the colon biopsies are shown below.







What is your diagnosis?

- A. *Cryptococcus* infection
- B. Colonic Whipple's disease
- C. Foreign material
- D. Colonic malakoplakia
- E. *Mycobacterial* infection

### **Answer and Discussion:**

The correct answer is "D. Colonic malakoplakia".

The collection of histiocytes within the colonic lamina propria shows abundant granular eosinophilic cytoplasm and intracytoplasmic small (<10 µm), round, basophilic, dense Michaelis-Gutmann bodies. The presence of Michaelis-Gutmann bodies is diagnostic of colonic malakoplakia. Some of the dense bodies have a centrally condensed core. Michaelis-Gutmann bodies are positive for von Kossa stain (indirect calcium stain) and iron stain. No fungal or mycobacterial organisms were identified by GMS or AFB stain (not shown), respectively. PAS-D stain did not reveal intracytoplasmic *Whipple* bacillus.

### **Discussion:**

Gastrointestinal (GI) malakoplakia is an exceedingly rare condition that is associated with infection (*Mycobacterium*, *E. coli*, *Klebsiella*), inflammatory bowel disease, or adenoma/carcinoma. The pathophysiology of malakoplakia is not well understood. An abnormal macrophage response to microorganisms caused by defective lysosomal function has been postulated to underlie the malakoplakia. The defect in macrophages results in accumulation of bacteria and subsequent deposition of calcium and iron on residual bacterial glycolipid. The most common microorganisms include *E. coli*, *Klebsiella*, and *M. tuberculosis*.

The clinical presentation includes diarrhea, weight loss, and abdominal pain. Cecum and rectosigmoid colon are the most common sites involved by GI malakoplakia.

The histologic differential diagnosis of malakoplakia includes *Cryptococcus*, *Whipple* disease, *Mycobacterium avium-intracellulare*, and other fungal infection.

### **Reference:**

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