



Collagenous Gastritis:

A Rare Cause of Severe Iron Deficiency Anemia in a Basic Military Trainee

Kendra T. Stilwell, DO¹, Douglas B. Walton, MD², James M. Francis, DO¹, Charles B. Miller, MD¹, Geoffrey A. Bader, MD¹

¹Department of Gastroenterology and Hepatology, Brooke Army Medical Center, Ft. Sam Houston, TX

²Department of Pathology, Brooke Army Medical Center, Ft. Sam Houston, TX



Introduction

- Collagenous gastritis is a rare inflammatory disease characterized by deposition of a thick subepithelial band of collagen and associated inflammatory infiltrate.
- This disorder has a reported prevalence of 13 per 100,000 esophagogastroduodenoscopies (EGDs) with a female predominance.
- Two distinct clinical phenotypes have been described: adult-onset characterized by diffuse gastrointestinal involvement and diarrhea, and pediatric-onset manifesting with abdominal pain and anemia.
- Effective treatment strategies are still being investigated and have variable response rates.
- We present an interesting case of pediatric-phenotype collagenous gastritis to highlight this poorly-recognized disorder.

Case Description

- A 19-year-old male basic military trainee was referred for evaluation of incidentally discovered iron deficiency anemia.
- He denied any symptoms, overt blood loss, or NSAIDs.
- Physical exam was unremarkable. Labs revealed hemoglobin of 9.3g/dL, MCV 67, iron saturation 7% and ferritin <15ng/mL.
- The patient underwent EGD and colonoscopy for further evaluation. EGD revealed a diffusely nodular appearance of the gastric mucosa with areas of suspected atrophy under narrow-band imaging (Figures 1, 2). Colonoscopy was normal.
- Biopsies returned with a nonspecific chronic gastritis without evidence of *H. pylori*.
- Abdominal CT and additional work up for autoimmune gastritis, *H. pylori* antigen, syphilis, and heavy metal toxins were all normal.



Figure 1. Gastric Body, High-Definition White Light

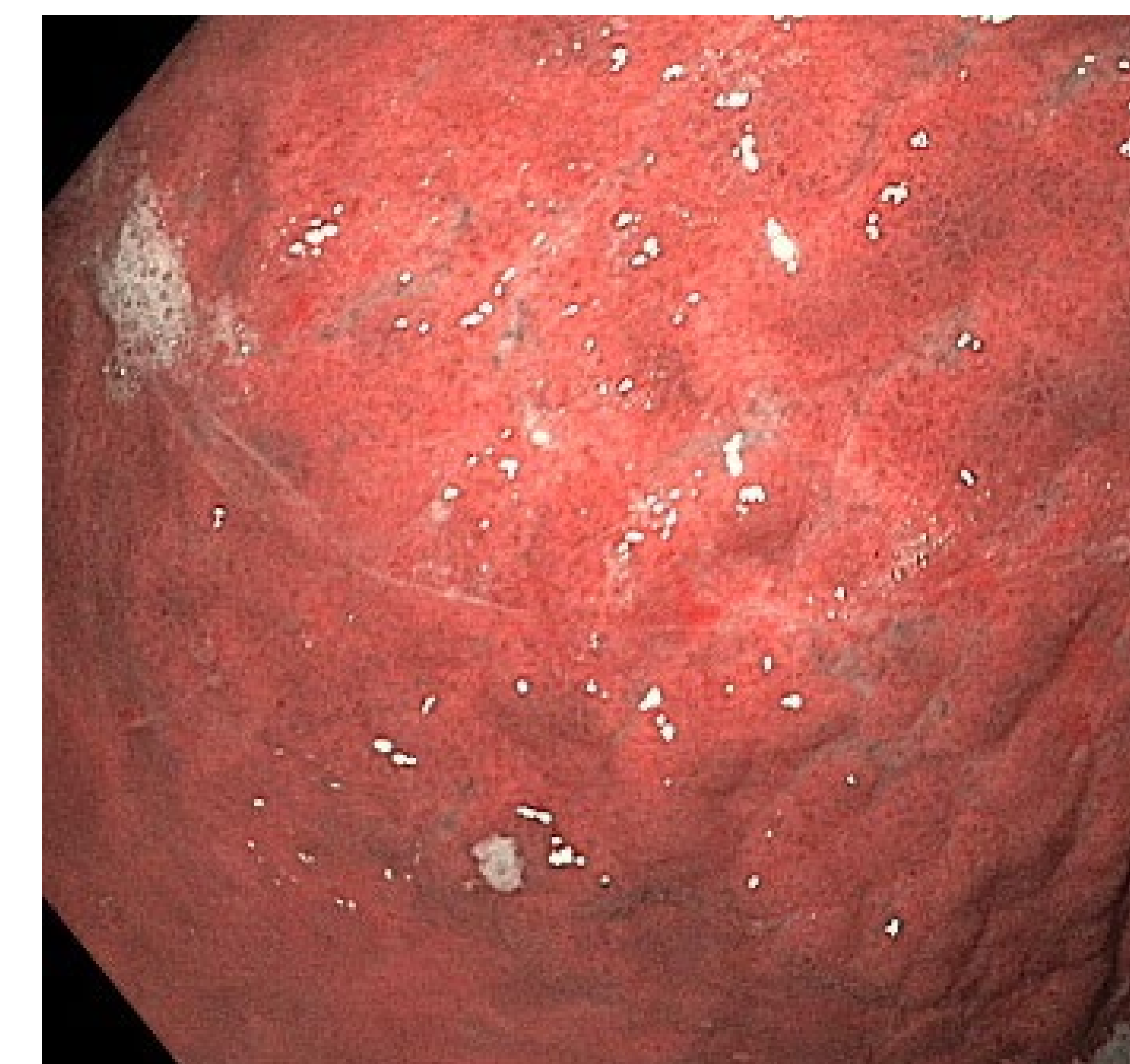


Figure 2. Gastric Body, Narrow Band Imaging (NBI)

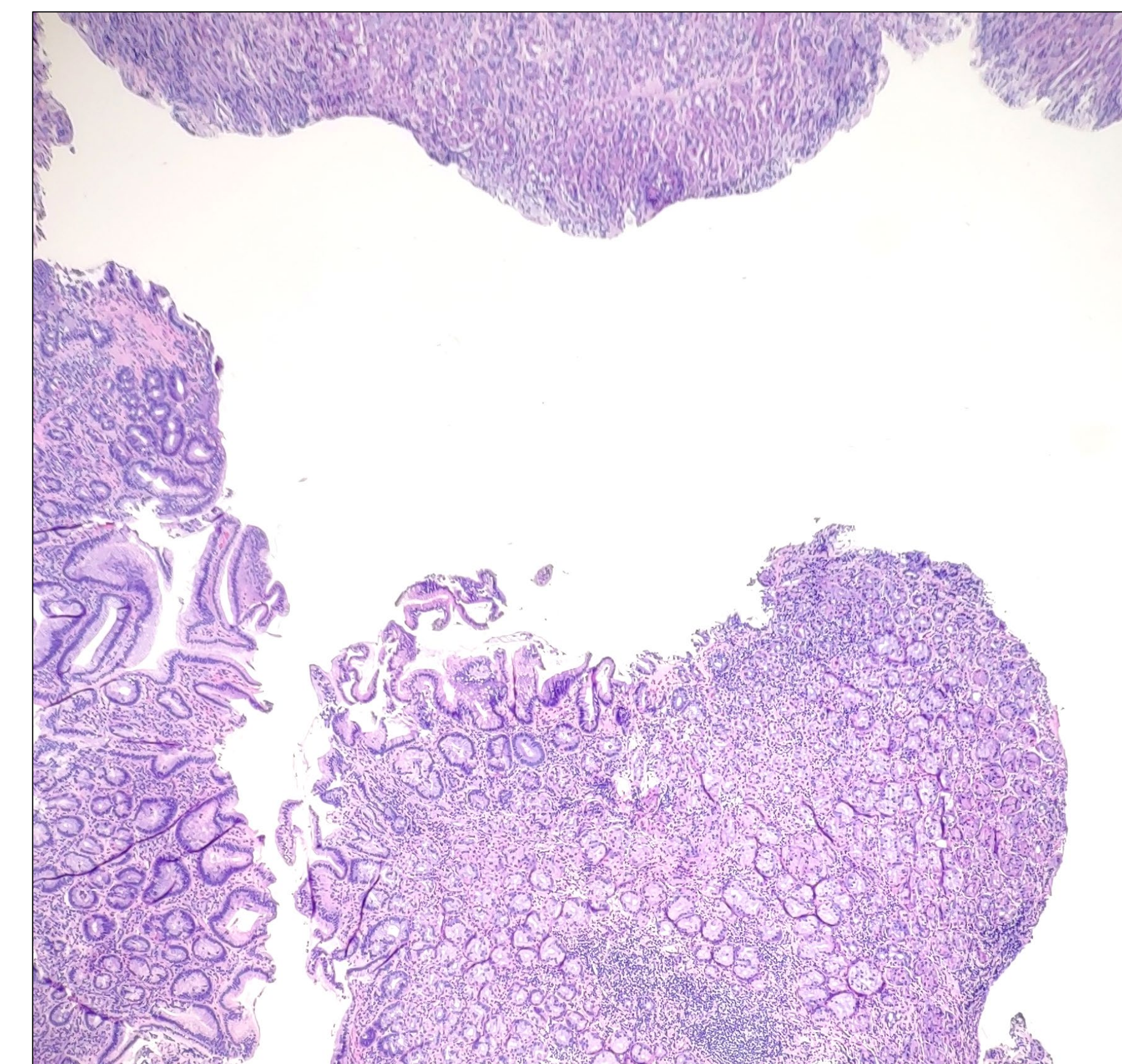


Figure 3A. Gastric mucosa with a prominent lymphoplasmacytic infiltrate within the lamina propria and occasional foci of increased subepithelial collagen deposition. [H&E, 40X]

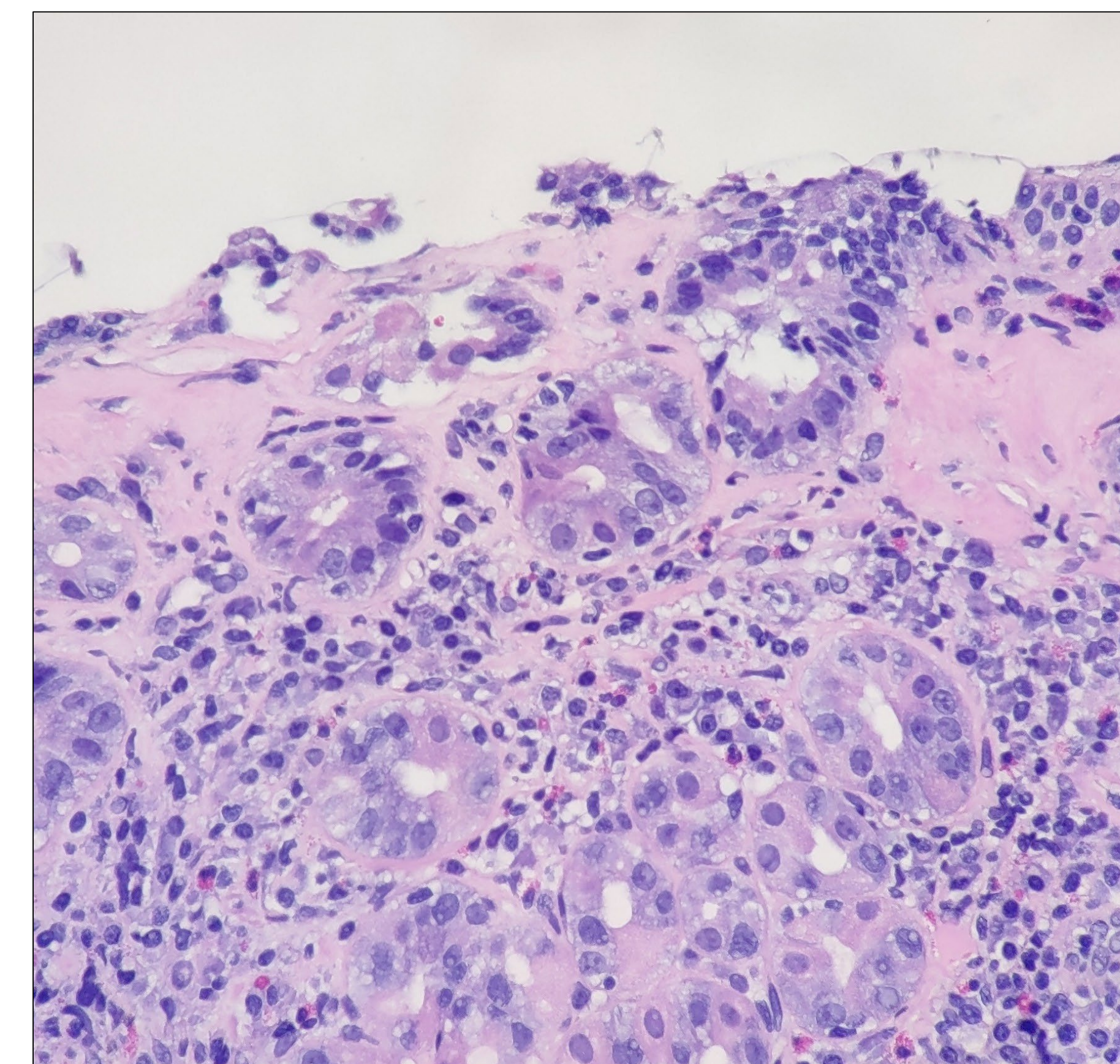


Figure 3B. Higher magnification shows an irregular subepithelial collagen band enveloping inflammatory cells with associated epithelial injury indicated by vacuolization and detachment of the surface epithelium. [H&E, 400X]

Case Description Continued

- Decision was made to repeat EGD for additional tissue sampling, including cold snared samples
- Repeat gastric biopsies with expert GI pathologist review revealed collagenous gastritis, characterized by subepithelial deposition of a thick (>10µm) collagen band and associated inflammatory infiltrate (Figures 3A, 3B)
- Patient was lost to follow up due to disqualification for military service

Discussion

- Collagenous gastritis is an exceedingly rare heterogeneous disease process of poorly understood causes and pathogenesis, with autoimmune conditions, medication effects, and infections theorized to be responsible.
- Numerous treatments have been reported with variable effect, including antisecretory agents, corticosteroids, immunomodulators, and hypoallergenic diets, along with micronutrient supplementation.
- Topically targeted budesonide was recently found to be a more effective treatment in a recent study, but further research is needed.
- Due to its rarity, a high level of suspicion is required by gastroenterologists and pathologists based on clinical and endoscopic findings.
- Our case helps to bring awareness to collagenous gastritis, and emphasizes the potential value for repeat tissue sampling with expert GI pathologist review.

Contact Information:

Kendra T. Stilwell, DO
Maj, MC, USAF
Assistant Professor, USUHS
Division of Gastroenterology & Hepatology
Brooke Army Medical Center
Kendra.t.stilwell.mil@health.mil

References:

- Matta, J., et al. Pediatric Collagenous Gastritis and Colitis: A Case Series and Review of Literature. JPN 2018;67(3):328-34
- El-Zimaity, H & Riddell, RH. Beyond Helicobacter: dealing with other variants of gastritis -- an algorithmic approach. Histopathology 2021;78:48-69
- Kamimura K, Kobayashi M. Collagenous gastritis: Review. World J Gastrointest Endosc. 2015 Mar 16;7(3):265-73.
- Choung RS, Murray JA. Collagenous Gastritis: Characteristics and Response to Topical Budesonide. Clin Gastroenterol Hepatol. 2022 Sep;20(9):1977-1985