

The Odd Couple: Active *H. pylori* Infection Within Long Segment Barrett's Esophagus

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Background

Barrett's esophagus (BE) is a consequence of poorly-controlled GERD leading to intestinal metaplasia, which predisposes to esophageal cancer. Similarly, there is a well-established link between *H. pylori* and development of gastric cancer. However, there is a negative association between *H. pylori* and risk of BE. Here, we present a rare case of *H. Pylori* infection within Barrett's mucosa.

Case Report

A 54-year-old woman was referred for one month of dysphagia to solids. She described food sticking in her mid-esophagus without difficulty swallowing pills or liquids. She also endorsed significant heartburn and belching but denied systemic symptoms, regurgitation, abdominal pain, or weight loss. EGD demonstrated a 5 cm segment of circumferential salmon-colored mucosa suspicious for Barrett's esophagus, a small esophageal ulcer, and a normal stomach and duodenum. Gastric biopsies revealed mild gastritis with *H. pylori* organisms. Esophageal biopsies showed intestinal metaplasia consistent with Barrett's esophagus as well as *H. pylori* organisms. Quadruple therapy was initiated with metronidazole, tetracycline, omeprazole, and bismuth.

Discussion

We describe a rare case of *H. pylori* discovered within long-segment Barrett's esophagus. Evidence suggests an inverse association between *H. pylori* and BE. However, a recent meta-analysis demonstrated that this association disappeared in patients with GERD. One proposed mechanism for *H. pylori*'s protectiveness against BE is decreased gastric acid production. Together, this suggests *H. pylori* protects against BE by preventing development of GERD but once GERD is present, *H. pylori* is no longer protective. Thus, our simultaneous diagnosis of BE and *H. pylori* could be explained by long-standing GERD and BE prior to *H. pylori* infection.

Pathology

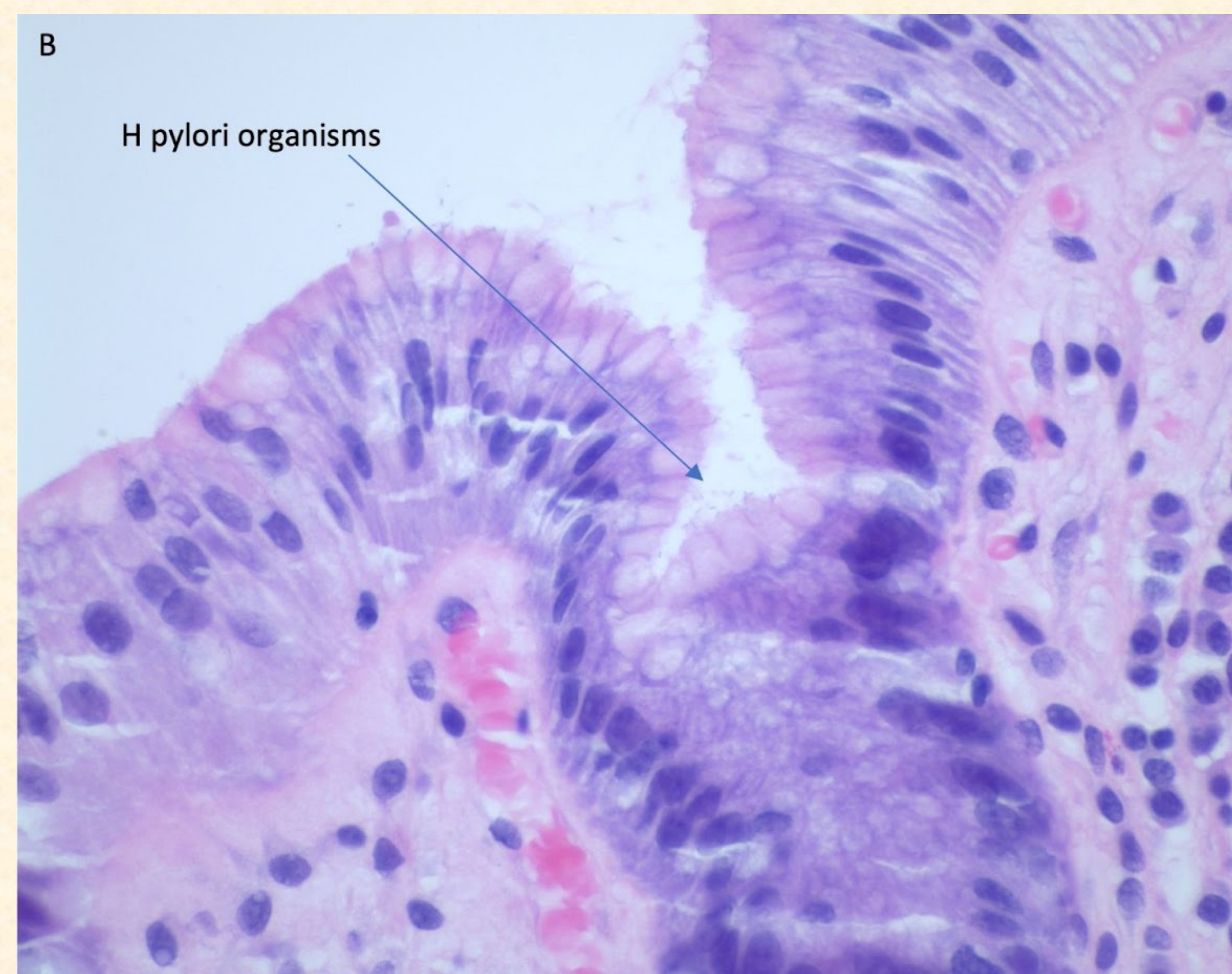


Figure 1. Hematoxylin and eosin (H&E) stain of esophageal mucosa demonstrating intestinal metaplasia and *H. pylori* organisms.

Endoscopy

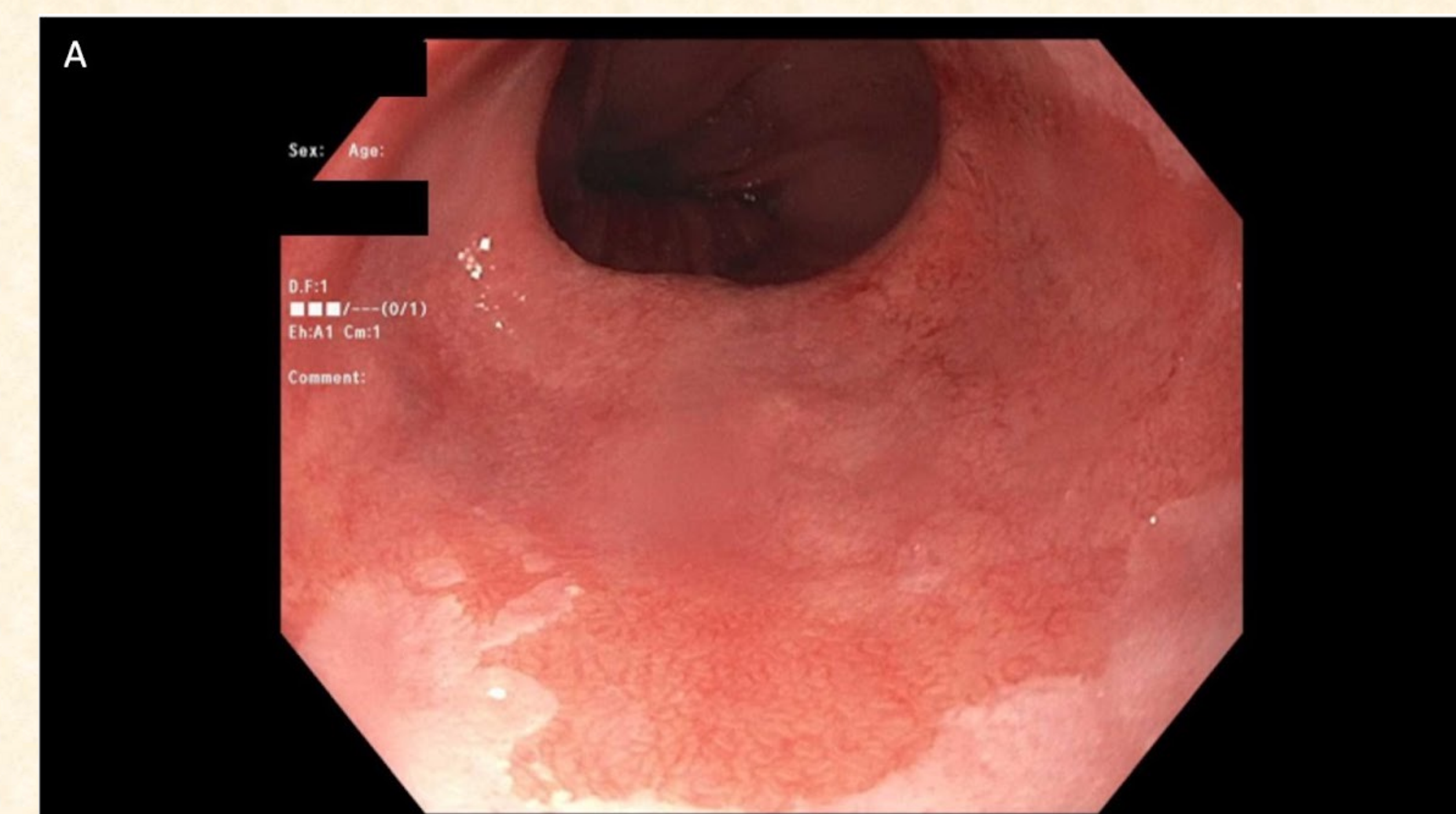


Figure 2. Esophagoduodenoscopy (EGD) image of 5 cm circumferential salmon mucosa consistent with Barrett's esophagus

Discussion

While it is uncommon to diagnose *H. pylori* and BE together, it is even rarer to see *H. pylori* within Barrett's mucosa, given the organism's proclivity for gastric epithelium. One potential explanation is that this patient's significant GERD allowed reflux of *H. pylori* organisms into the esophagus, leading to colonization of the metaplastic epithelium. Furthermore, there may be microscopic satellites of gastric mucosa within the segment of BE, providing a friendlier environment in which the organisms could grow. More observation is needed to determine the significance and long-term effects of active *H. pylori* infection in Barrett's mucosa and if this facilitates progression to dysplasia or carcinoma.

Selected References

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- Wang Z, et al. *Helicobacter pylori* Infection Is Associated With Reduced Risk of Barrett's Esophagus: An Analysis of the Barrett's and Esophageal Adenocarcinoma Consortium. *American Journal of Gastroenterology*: August 2018 - Volume 113 - Issue 8 - p 1148-1155