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Treatment Resistant *Helicobacter Pylori* Infection Secondary to Malabsorption

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Introduction

- *Helicobacter pylori (H. pylori)* is checked in all patients off of proton pump inhibitor (PPI) therapy prior to Roux-en-Y surgery because of the risk for ulcers and their complications.
- Ulcers carry a potential for bleeding; and if located in the excluded stomach, it would not be possible to reach by scope.
- Over time, H. pylori has become more difficult to treat.[1] Failed attempts at treatment are usually attributed to poor medication adherence or antibiotic resistance.[2]
- This case highlights a patient with treatment resistant *H. pylori* infection after Roux-en-Y gastric bypass.

Objectives

- Appreciate the potential for difficult to treat H. pylori in the setting of malabsorption

Case Report

Presentation

- A 48-year-old female with a history of Roux-en-Y performed in 2012 due to obesity (BMI 41) presented to clinic with ongoing abdominal pain, nausea, 18 kg weight loss, and poor oral intake. She denied diarrhea.
- She was initially diagnosed with H. pylori in 2014, with EGD and gastric biopsies revealing chronic active gastritis with H. pylori. She reported being treated twice without eradication.

Management

- Treatment Attempt 1: Quadruple therapy: bismuth subcitrate potassium, metronidazole, tetracycline, and PPI.
  - Subsequent EGD w/ biopsy and culture with susceptibilities only showed resistance to metronidazole.
- Treatment Attempt 2: High dose amoxicillin three times daily and rabeprazole.
  - It became clear that the etiology of treatment resistance was secondary to malabsorption.
- Treatment Attempt 3 (successful): IV ampicillin, IV levofloxacin, and omeprazole for 10 days.
  - Her stool antigen studies returned negative after IV treatment.

Pathology

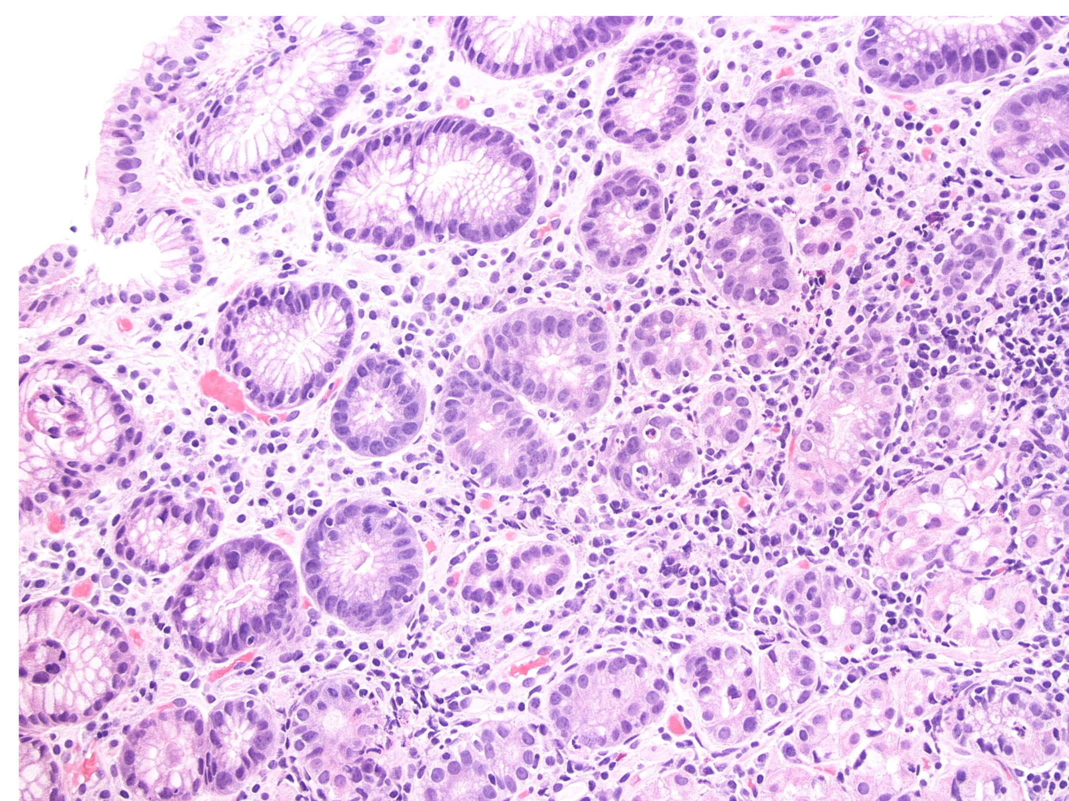

Image 1. Gastric biopsy with chronic active gastritis (H&E stain at 20x magnification)

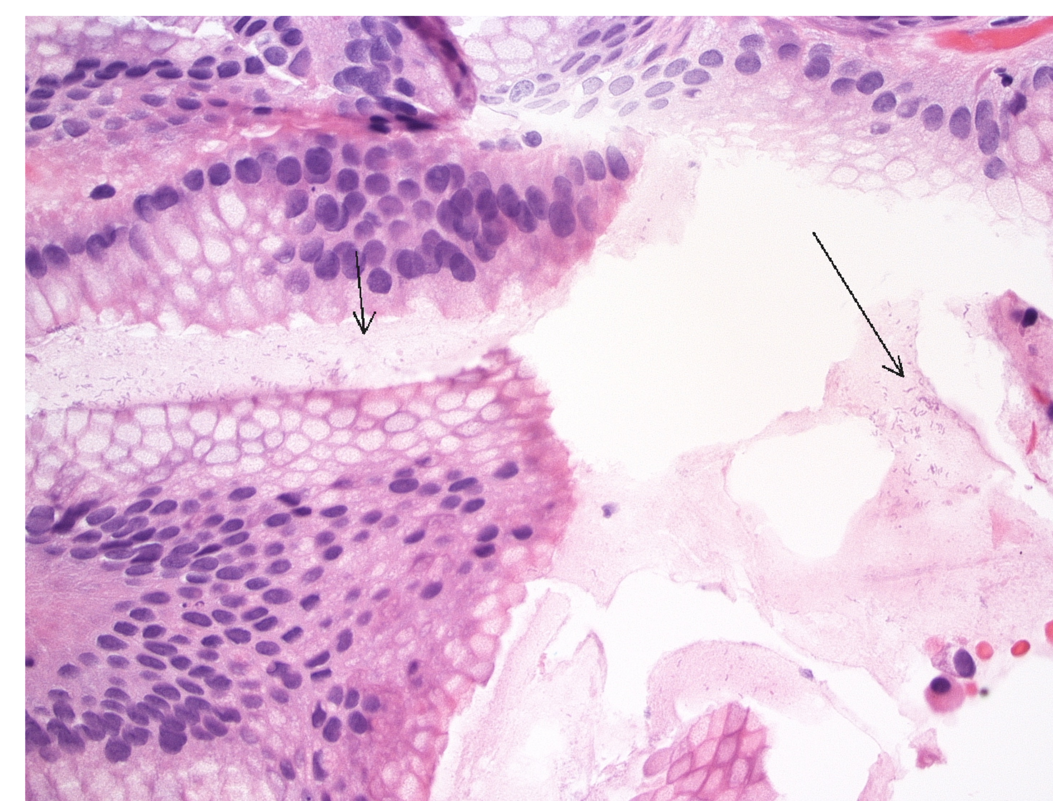

Image 2. Eosinophilic curvilinear organisms consistent with Helicobacter pylori in mucus and foveolar crypts of gastric epithelium (H&E stain at 60x magnification)

Culture Sensitivities

Mayo Clinic Susceptibilities	
Amoxicillin <0.008	S
Levofloxacin 0.25	S
Clarithromycin <0.24	S
Metronidazole 16	R
Tetracycline <0.06	S
Rifampin 1	S

Table 1. Mayo clinic susceptibility panel sent after first failed treatment attempt showed resistance only to metronidazole.

Patient's Anatomy

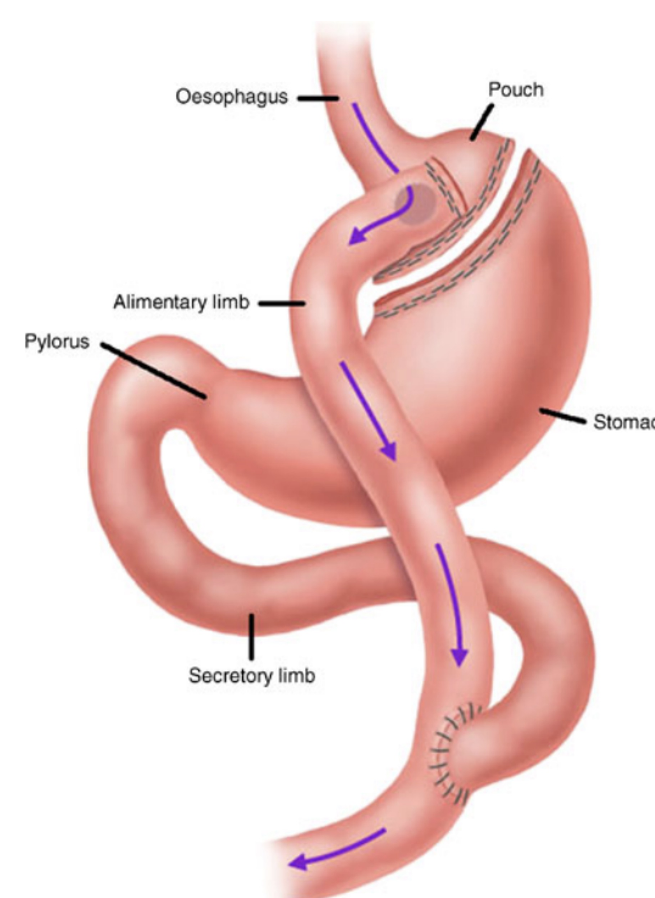

Image 3. Gastrointestinal anatomy after Roux-en-Y gastric bypass[3]

Discussion

- This case describes a patient with history of gastric bypass surgery who had persistent infection with H. pylori despite completing appropriate therapies.
- She was treated with an oral regimen in accordance to susceptibilities without clearance, suggesting malabsorption secondary to her gastric anatomy was rendering treatment ineffective.
- This predicament was overcome by administering antibiotics intravenously.
- At this time, treatment of H. pylori in the setting of malabsorption is not clearly outlined in guidelines or literature.
- Literature does show that IV antibiotics for H. pylori in the setting of active gastric bleeding achieved >90% clearance; however, short duration of IV therapy contributed to lower rates of eradication.[4] IV therapy was shown to be more effective in comparison to oral therapy.[5]
- This case brings to light the need for further research regarding treatment of H. pylori in patient populations with malapsorptive disease and/or altered gastrointestinal anatomy.

References

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