The Endoscopically Normal Stomach: Is It Worth a Biopsy?

Daniel T. Nevin MD, Kevin O. Turner DO, Robert M. Genta MD
Miraca Life Sciences Research Institute, Irving, TX, United States

Miraca Life Sciences RESEARCH INSTITUTE

Background

In the absence of endoscopically visible lesions (such as tumors or ulcers), the gross appearance of the gastric mucosa is not believed by some gastroenterologists to be a reliable predictor of histopathologic findings. This is because in their experience, biopsies obtained from endoscopically abnormal appearing areas with "erythema," "inflammation," or "atrophy," often turn out to be histologically unremarkable. Using a kind of *a fortiori* reasoning, they assume that if endoscopically *abnormal* areas often reveal no histopathologic findings, then surely neither should endoscopically *normal* areas.

Aims

The purpose of this study was to use a large database of histopathologic and endoscopic data to test the validity of the above *a fortiori* assumption that an endoscopically normal stomach is unlikely to reveal significant histopathologic findings and does not need to be biopsied.

Methods

We used the Miraca Life Sciences database to extract histopathologic, demographic, clinical, and endoscopic information from all patients who had gastric biopsies obtained between 1.2008 and 12.2013.

Patients were stratified into two groups according to the endoscopic description provided by the clinician: 1. "Normal stomach," for patients with gastric mucosa explicitly described as endoscopically normal and 2. "Gastritis," for those with an endoscopic description of inflammation or gastritis. Patients with no or unclear reports and those with specific lesions were excluded. The prevalence of each of the following gastric histopathologic diagnoses (evaluated according to the updated Sydney System) was then calculated for each group: normal mucosa, *H. pylori* gastritis, chronic inactive gastritis (CIG), reactive gastropathy (RG), intestinal metaplasia (IM), and atrophic gastritis (AG). The likelihood of a patient having antral only, corpus only, or unidentified biopsies was also evaluated for each group.

Results

There were 53,789 patients (median age 51y; 63% female) with a "normal stomach" and 317,401 patients (median age 57y; 62% female) with endoscopic "gastritis." Figure 1 depicts the prevalence of the conditions detected more frequently (with statistical significance) in the "gastritis" group versus the "normal stomach" group. Although histologic atrophy was rare, it was also significantly more prevalent (p <.0001) in patients with "gastritis" (0.54%) than in those with a "normal stomach" (0.31%). The antrum was the most commonly sampled site in both sets of patients (67% in the "normal stomach" and 79% in the "gastritis" group), and the corpus was sampled equally in both groups (41%). However, patients with a "normal stomach" were twice as likely as those with "gastritis" to have random gastric biopsies from unspecified sites: 7.5% versus 3.8%; OR 1.95 (95% CI 1.88-2.03); p<.0001.

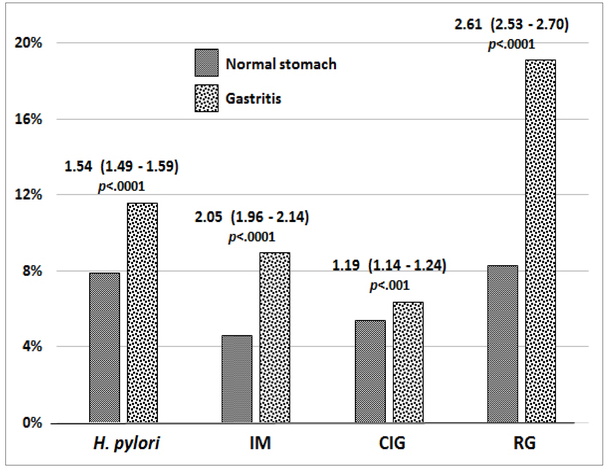

Figure 1 – Conditions detected more frequently (with statistical significance) in the endoscopically "normal stomach" group versus the endoscopic "gastritis" group.

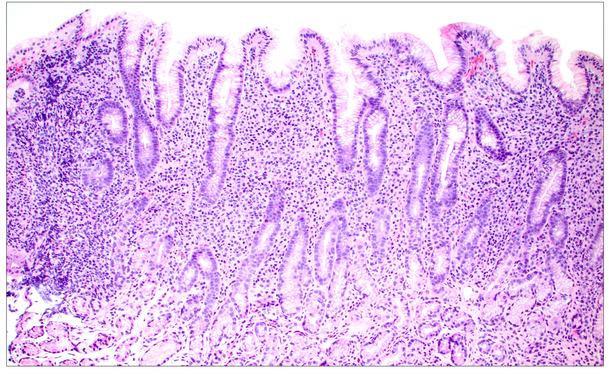

Figure 2a – Photomicrograph of an endoscopically "normal stomach" showing chronic active gastritis.

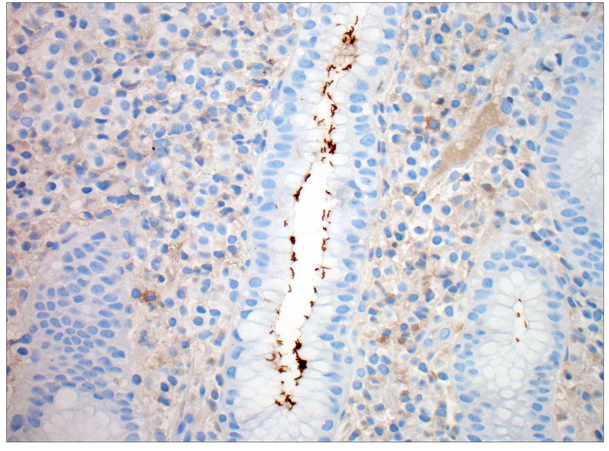

Figure 2b – Immunohistochemical stain from the same case showing numerous *H. pylori* organisms.

Study Highlights

- Even though histopathologic abnormalities were detected more frequently in the "gastritis" group than in the endoscopically "normal stomach" group (figure 1), 27% (14,940 of 53,789) of patients with an endoscopically "normal stomach" were found to have significant gastric pathology (see figures 2a and 2b).
- This argues against a "no biopsy from the 'normal stomach' policy," which would result in significant gastric pathology being missed in nearly a third of patients with endoscopically normal gastric mucosa.
- Biopsy sampling patterns are variable: the antrum was the most common site biopsied (67% in the "normal" group and 79% in the "gastritis" group); the corpus was sampled 41% of the time in both groups; "normal stomach" mucosa was twice as likely as "gastritis" to be sampled by random biopsies.

Reference

Carpenter HA, Talley NJ. Gastroscopy is incomplete without biopsy: clinical relevance of distinguishing gastropathy from gastritis. *Gastroenterology*. 1995;108:917-924.

Pursuant to 45 CFR 46, section 101b (4) – research was reviewed by Miraca Life Sciences Research Institute IRB