Gastric Polyps: Shifting Paradigms in the Twilight of Helicobacter

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Background

H. pylori infection is declining in the industrialized world and emerging economies. Simultaneously, as the world population moves to a "Western" diet, obesity and gastroesophageal reflux disease are on the rise, and the use of acid-suppressing drugs, particularly proton pump inhibitors (PPIs) is becoming widespread.

In parallel with these changes, a major shift is occurring in gastric pathology. Multifocal atrophic gastritis, once common, is now rare; reactive gastropathy is the new normal; autoimmune gastritis, previously believed to be unusual, now represents an increasing proportion of the atrophic gastritides seen in practice.

Hypothesis and Aims

Classically, fundic gland polyps (FGP) were rare; hyperplastic polyps (GHP) and adenomatous polyps (GAP) were associated with H. pylori infection, and neuroendocrine tumors (NET) arose in atrophic stomachs.

In a recent prevalence study we have suggested that the proportions and associations of some types of gastric polyps may also have changed, possibly as a result of declining chronic active gastritis and the endemic use of PPIs.

In this study we aimed at testing the hypothesis that the frequency of the most common types of gastric polyps and the histopathologic backgrounds of the gastric mucosa in which they arise are now substantially different from the classic descriptions.

Design and Methods

We used the Miraca Life Sciences database to extract histopathologic, demographic, and clinical information from all patients who had an esophagogastroduodenoscopy (EGD) with gastric biopsies obtained between 1.2008 and 6.2013; patients with a history of upper gastrointestinal cancer or surgery were excluded.

Our analysis focused on the associations between FGP, GHP, GAP, and NETs and pertinent demographic, histologic, and clinical characteristics.

Cases were all patients with any of these polyps; subjects with no polyps served as controls. Associations are described as odds ratios adjusted for individual predictor variables entered simultaneously into the regression model.

Results

The database contained clinical and histopathologic data from 741,351 unique patients.

Of these, 671,042 (median age 58 years; 56% female) had no gastric polyps and were used as controls. There were 70,309 patients with one or more gastric polyps.

The prevalence of each polyp type, sex ratio, most common histopathologic associations, and most frequent indications for EGD are summarized in Table 1.

Table 1 – Patients with any type of polyp were older than controls; case-control age difference increased from FGP (3.8 y) to NETs (7.8 y), GHPs (9.2 y), and GAP (13.1 y). Any one type of gastric polyp was associated with other types, with the strongest association between GAPs and NETs (OR 19.37 95%CI 9.14 – 41.05).

Table: Polyph Presence Risk for female gender Histopathologic association Histopathologic association Histopathologic association Major clinical association
FG 57,214 (7.7%) 1.36 (1.33-1.38) Normal stomach H. pylori 632 (2.9%) GHP 1.47 (1.14-1.91)
GHP 13,288 (1.8%) 1.36 (1.33-1.38) Antrum H. pylori 632 (2.9%) K. pylori 641 (3.41-3.88) Anemia 1.22 (1.07-1.39)
Adenoma 651 (0.09%) 0.76 (0.65-0.89) Antrum H. pylori 641 (3.41-3.88) Anemia 2.39 (1.48-3.93)
NET 4712 (0.06%) 1.28 (1.04-1.58) Antrum H. pylori 641 (3.41-3.88) Anemia 1.47 (1.22-1.76)

• In a population where the prevalence of H. pylori has been steadily declining and is now at 10% of gastric biopsy specimens, all types of polyps are negatively associated with H. pylori.

• Fundic gland polyps were the most common type, and arose only exceptionally in patients with H. pylori gastritis.

• Gastric hyperplastic-inflammatory polyps, classically considered the epitome of the gastritis-associated polyp, were most commonly associated with reactive gastropathy.

• Gastric adenomas and neuroendocrine tumors, while still associated with atrophic states, were exceedingly rare in our population.

References


