Clinical Reviews

New Techniques

Update on the Pathologic Approach to the Diagnosis of Gastritis, Gastric Atrophy, and Helicobacter pylori and its Sequelae

Pentti Sipponen, M.D.

Abstract

Biopsy sampling of the gastric mucosa at diagnostic endoscopy provides information that cannot be obtained otherwise. The most common indication for gastric biopsy is the need to know whether the patient is infected with Helicobacter pylori or not and whether the stomach is gastritic or not. Microscopic examination of gastric biopsy specimens gives, in addition to H. pylori status, information about the grade, extent, and topography of gastritis- and atrophy-related alterations in the gastric mucosa. This information provides further possibilities for the assessment of risk and likelihood of various gastric disorders. The presence of atrophy (loss of mucosal glands) results in failures in secretory functions of the corresponding mucosa and leads to errors in the homeostasis of normal gastric physiology. The grade of atrophy of the corpus mucosa linearly correlates with peak and maximal output of acid. The presence of advanced (moderate or severe) corpus atrophy indicates an extremely hypochlorhydric or achlorhydric stomach in which, for example, ordinary peptic ulcer is unlikely or impossible in spite of a possible H. pylori infection. Some well characterized and common topographic phenotypes of H. pylori gastritis and atrophic gastritis can be delineated as follows: Predominance or restriction of the H. pylori-related inflammation in antrum, in association with a nonatrophic corpus mucosa—of which phenotype is the most common—and with an increased risk of peptic ulcer disease, duodenal ulcer in particular ("duodenal ulcer phenotype" of gastritis); the presence of atrophic gastritis in corpus of the stomach ("corpus predominant gastritis"), which indicates a low risk of peptic ulcer and a reduction in the capacity of the patient to secrete acid; the occurrence of advanced atrophic gastritis and intestinal metaplasia multifocally in the stomach (advanced "multifocal atrophic gastritis"), which are features of a gastritis type and which also indicate a low acid secretion capacity and an increased risk of gastric neoplasias ("gastric cancer phenotype of gastritis"), suggesting a need for a careful exclusion of concomitant presence of small focal neoplastic or dysplastic lesions; and the presence of normal and healthy gastric mucosa, which indicates an extremely low risk of both peptic ulcer disease or gastric cancer and, therefore, is a finding of high clinical relevance. The presence of duodenal or gastric ulcer in conjunction with normal, healthy gastric mucosa suggests either aspirin or nonsteroidal antiinflammatory drugs to be the most likely cause of the ulcer.

Key Words: Helicobacter pylori—Gastritis—Atrophic gastritis—Intestinal metaplasia—Peptic ulcer—Gastric cancer—Endoscopy—Histology.

From the Department of Pathology, Jorvi Hospital, Espoo, Finland.
Address correspondence and reprint requests to Dr. Pentti Sipponen.
Department of Pathology, Jorvi Hospital, 02740 Espoo, Finland.
This study is supported by grants subjected for clinical research in the Helsinki University Hospital District.