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Differential diagnosis of reactive gastropathy

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Reactive or chemical gastropathy is the constellation of endoscopic and histological changes caused by chemical injury to the gastric mucosa. Its diagnosis rests on the histopathological demonstration of nonspecific elementary lesions that may occur simultaneously or separately in different degrees and various proportions. These lesions include foveolar hyperplasia, interfoveolar smooth muscle fibers, erosions, edema, and hyperemia, in the absence of significant inflammation. Their respective occurrence in a set of gastric biopsies can be placed on a spectrum of diagnostic certainty that is never absolute because each of such changes can and does occur in other conditions. Although a correlation between histological evidence of chemical gastropathy and clinical manifestations, particularly risk of bleeding, is yet to be documented, reporting the suspicion of drug-induced gastric damage may help clinicians to identify patients that might benefit from change, reduction, or discontinuation of certain medications.

He who can properly define and divide is to be considered a god.

Plato

A few tortuous pits separated by a diaphanous pinkish matrix in which small bundles of sinuous smooth muscle fibers breaking away from the even coat of the *muscularis mucosae* seem intent to reach the surface (Figure 1). Most pathologists familiar with the criteria for the classification of gastritis would not hesitate to label such a landscape chemical—or reactive—gastropathy. How often would they be right? What are the alternative interpretations? Do we really know what reactive gastropathy is and what it looks like under the microscope? This review attempts to answer these and some other questions related to an entity that continues to elude a precise definition and unequivocal diagnostic criteria.

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Historical perspective

An association between the presence of bile in the stomach and gastric mucosal damage was first postulated by William Beaumont in 1833 as part of his decade-long observations of Alexis St. Martin's permanent open gastric fistula.[1] Changes in the gastric mucosa exposed to biliary and duodenopancreatic reflux after Billroth II operations were described in the 1960s and 1970s as postoperative gastritis[2-5]; the possible premalignant nature of such changes was later noted in cohorts of operated patients.[6,7]

The histopathological changes found in association with bile reflux were described systematically for the first time in 1983.[8] Initially, the term "bile reflux gastritis" was proposed to describe a distinct clinicopathological entity.[8-12] Subsequently, after determining that the lesions in the gastric mucosa associated with the use of nonsteroidal antiinflammatory drugs (NSAID) were similar to those induced by bile reflux, the term "chemical gastritis" was introduced. Synonyms include "reactive" gastritis, "type C" gastritis, and "chemical gastropathy." The latter term was recommended by the Updated Sydney System.[13]

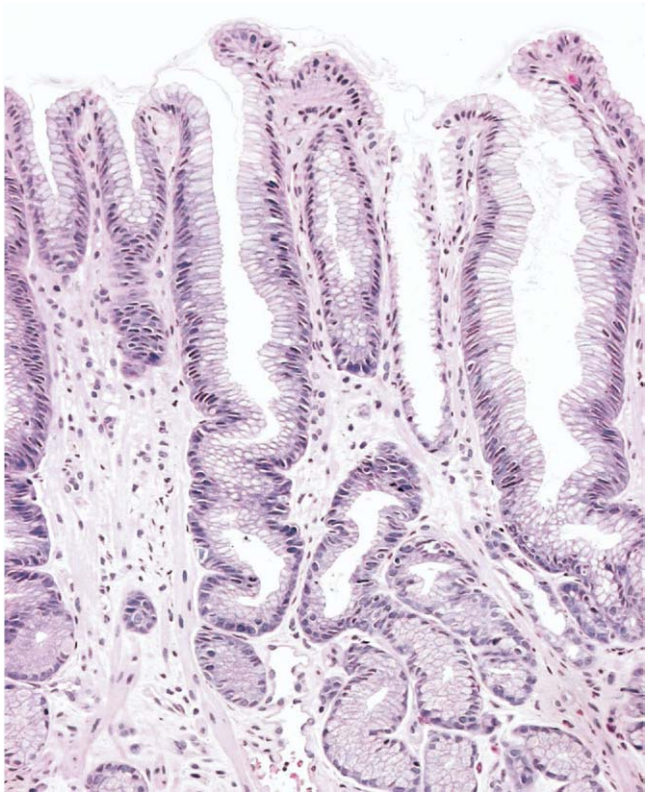

Figure 1 Antral mucosa with moderate foveolar hyperplasia, mild edema, prominent interfoveolar smooth muscle fibers, and no inflammation. This is highly suggestive of chemical gastropathy.

Definition

In an implicit admission that that this diagnosis can be made only when converging clinical and histopathological evidence is present, chemical gastropathy has been defined "the constellation of endoscopic and histological changes caused by chemical injury to the gastric mucosa."[13] This tautological definition reflects the lack of independent specificity of the endoscopic or histological features found in subjects with a history of endogenous or exogenous chemical damage to the stomach.

Types of chemical injury to the stomach

Acute, caused by the ingestion of acid, alkali, or large quantities of ethanol

Most of these substances cause extensive and severe necrotic lesions that are usually not biopsied and, therefore, remain beyond the scope of this review. In subjects who consume large quantities of strong alcoholic beverages, endoscopy commonly shows subepithelial petechiae. Histologically, they are seen as localized hemorrhages of the foveolar region with edema in the surrounding mucosa, but without prominent inflammation.[14]

Reflux of duodenopancreatic contents in the operated stomach

Ten to 30% of patients who underwent partial gastrectomy with Billroth II for benign conditions (in most cases

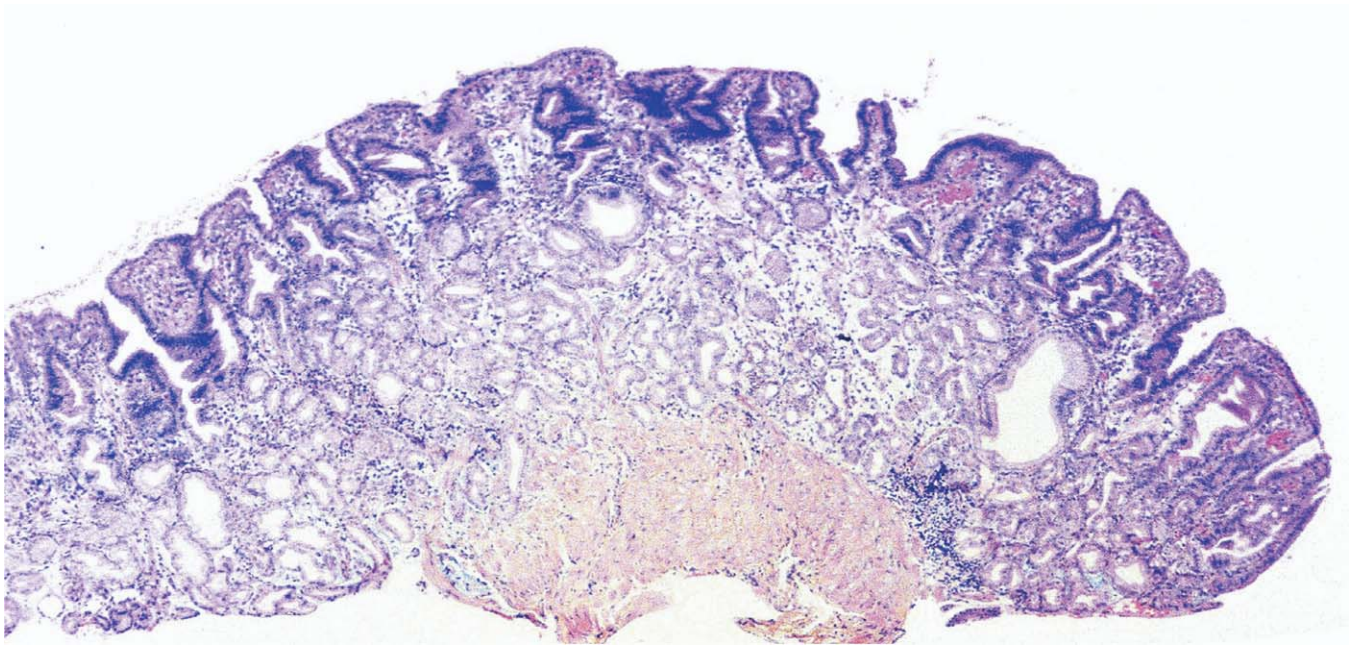

Figure 2 Stomal gastropathy in a patient who underwent a Billroth II resection two decades earlier. The pits are tortuous and the epithelial lining has a regenerative appearance, with large nuclei but a regular architecture that helps exclude dysplasia; the glandular component is somewhat hypertrophic, with several dilated glands. These features give the mucosa its characteristic polypoid aspect seen at endoscopy.