UPPER GASTROINTESTINAL TRACT IN INFLAMMATORY BOWEL DISEASE

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KEYWORDS

• Inflammatory bowel disease • Crohn's • Ulcerative colitis • Esophagitis • Eosinophilic esophagitis • Lymphocytic esophagitis • Nonspecific gastritis • Aphthoid ulcers

ABSTRACT

Involvement of the upper gastrointestinal tract by inflammatory bowel disease was long held to be a feature of Crohn's disease, whereas ulcerative colitis was considered to be limited to the colon. It is now recognized that ulcerative colitis associated inflammation can involve the upper gastrointestinal tract, primarily the stomach. In addition to aphthoid esophageal ulcers in Crohn's disease, eosinophilic esophagitis and so-called lymphocytic esophagitis occur in association with ulcerative colitis and Crohn's disease. Possible immune mechanisms behind these conditions are presented. The differential diagnosis of inflammation in each site is discussed.

Key Features
INFLAMMATORY BOWEL DISEASE

1. Upper gastrointestinal (GI) involvement is not a criterion for subtyping inflammatory bowel disease.
2. The diagnosis of Crohn's disease should not be based solely on active duodenitis.
3. Lower GI tract inflammatory bowel disease, focal lymphoplasmacytic inflammation accompanied by a granuloma is diagnostic of Crohn's disease, regardless of the level of active inflammation.

OVERVIEW

Involvement of the upper gastrointestinal tract (UGT) by inflammatory bowel disease (IBD) was long held to be a feature of Crohn's disease, whereas ulcerative colitis was considered to be limited to the colon and occasionally the distal ileum. For decades, it was dogmatically thought that ulcerative colitis did not involve the UGT to the extent that patients with IBD with otherwise classic ulcerative colitis were given a Crohn's disease diagnosis. Abundant evidence has accrued over the last 20 years that refute these tenets.

Not only have these canonical tenets been shed but the contemporary perspective of IBD has expanded with the understanding that the endoscopic appearance, pattern, and extent of inflammation shifts between the initial presentation and chronic disease state in Crohn's disease and ulcerative colitis. With improved medical therapy, patients with IBD come to endoscopy much earlier, shifting the activity level and extent of chronic changes seen in biopsy specimens. The morphology of Crohn's disease and ulcerative colitis at different stations along this temporal

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road can differ between adults and pediatric patients. Contemporary IBD medical therapy can substantially alter the endoscopic appearance and morphology of both diseases with some medications acting systemically, whereas others target a specific area or region of the gastrointestinal (GI) tract. These superimposed alterations must be factored into contemporary pathologists' interpretation and be reflected in the semantics and phraseology of pathology reports. This article addresses the morphologic features of UGT inflammatory bowel disease, focusing on the clinicopathologic and temporal relationships that are commonly shared and those that are distinctive and unique to each disease.

DEFINITIONS

Contemporary IBD diagnoses and management are predicated on recent evidenced-based consensus and classification agreements.[1–4] Terminology and definitions used in this article reflect these publications. The importance of consensus terminology cannot be understated. Definitions pertinent to this article are listed in the following section.

Ulcerative colitis is a chronic inflammatory condition causing continuous mucosal inflammation of the colon without granulomas on biopsy, affecting the rectum and a variable extent of the colon in continuity, which is characterized by a relapsing and remitting course.

Colitis yet-to-be-classified is the term best suited for the minority of cases where a definitive distinction between ulcerative colitis, Crohn's disease, or other causes of colitis cannot be made after the history, endoscopic appearances, and histopathology of multiple mucosal biopsies and appropriate radiology have been taken into account.

Crohn's disease is a heterogeneous disorder with a variety of demographic, clinical, and phenotypic features. The diagnosis is established by a nonstrictly defined combination of clinical presentation, radiographic, endoscopic, or morphologic evidence of discontinuous and occasionally granulomatous inflammation.

Indeterminate colitis is a term reserved for pathologists to describe a colectomy specimen that has overlapping features of Crohn's disease and ulcerative colitis. It has distinct prognostic factors related to further surgery. It is not a synonym for IBD yet-to-be-classified.

UPPER GASTROINTESTINAL ENDOSCOPY

Upper GI endoscopy is performed to help establish a diagnosis of IBD, evaluate the extent of disease in patients, and evaluate the etiology of UGI symptoms in patients with known IBD. Gastroenterologists biopsy different regions of the UGI with specific questions in mind related to the underlying clinical scenario. The approach taken by the pathologist in evaluating UGI tissue biopsies differs between these situations. Pathologists need to structure their reports to reflect these scenarios to be clinically useful.

EPIDEMIOLOGY

Upper GI involvement in IBD is generally thought to be more common in pediatric patients than adult patients. This difference may be caused by the fact that adult gastroenterologists routinely perform upper GI endoscopy in asymptomatic patients with IBD less often than their pediatric counterparts. The prevalence of upper-GI involvement in ulcerative colitis and Crohn's disease is similar at initial disease presentation; esophageal inflammation in approximately 33% of patients, gastritis in 50%, and duodenitis in 20% (**Table 1**). Focally enhanced gastritis (FEG) was initially thought to be a useful morphologic marker of Crohn's disease in patients with colonic involvement; however, additional studies found the prevalence of focal active gastritis was sufficiently high in ulcerative colitis (12%–24%) and Crohn's disease (38/%–65%) and therefore not a reliable distinguishing marker.[5–11] Focally enhanced gastritis is common in patients without IBD. On its own, FEG should not be used as positive support that patients have IBD.

There are several important distinctions between ulcerative colitis and Crohn's disease: [2,12–23]

1. Most UGI inflammation in ulcerative colitis and Crohn's disease is accompanied by distal disease. Isolated UGI is the initial presenting site in approximately 10% of patients with Crohn's disease and extremely rare or does not occur in ulcerative colitis.

Table 1
Upper GI tract disease in IBD

	Prevalence at Initial Presentation	
Location	Ulcerative colitis	Crohn's disease
Esophagus	12%–50%	25%–72%
Stomach (nonspecific)	41%–69%	55%–92%
Duodenitis	15%–23%	23%–33%